The Source '75: Most Complete and Authoritative Guide To Broadcasting Equipment.

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Fast, easy, economical news gathering. That's the whole point of ENG. Fast, easy, economical operation. That's the whole point of Sony's 3/4" U-matic videocassette equipment. Cassettes and ENG were made for one another. They're a perfect match.

But only Sony can give your ENG all the speed and savings of both cassette recording and cassette editing.

Our all-cassette system consists of two editing units, an editing controller, portable recorder, Trinicon color camera, and camera control unit.

Operating savings? Huge. Because, unlike film, videotape is erasable, reusable, instantly replayable. And there is no processing. Which means no processing delays. No chemicals to dispose of. No processing costs of any kind. No wonder Sony ENG equipment is already making news at ABC, CBS, NBC, and over 200 local stations across the nation.

For the whole exciting story, write Sony Corporation of America, Video Information Center Dept. 224-C, Box 1594, Trenton, N. J. 08607.

SONY
The complete ENG system.
a standard switcher from CDL?
only 120 day delivery?
only $34,000?*
that's right!

And in addition... loaded with “custom” features and CDL Quality
it's the VSP-1260S!

When you need a “Big” Video Production Switcher there are only a few manufacturers who make them. You've been accustomed to a “Big” delivery (6 months and longer), and at a “Big” price.

That's how it has been...

Here's how it is NOW!

- We've taken your most wanted “Custom” options and made them STANDARD.
- Standardizing features and production have reduced costs, and delivery schedules to less than 4 months.
- The VSP-1260S also has all the other original features of Central Dynamics' VSP-1200 Series Switchers.

You get these most wanted “Custom” features:
- 20 inputs
- 8 Busses including 2 Mix/Effects, Preview/Key, Program AND 2 prewired Utility busses for a variety of applications.
- VK-2140 Encoded Chroma Keyer integrated and timed into switcher and including 4x1 input selector.
- Dual 2x1 Chroma Key Switcher to delegate VK-2140 or RGB Chroma Keyer to either M/E amplifier.
- 1 Key Border Module: can be used with either Mix/Effects bus.
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- Fade to Black from nonsynchronous sources
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Following options can be added any time on a plug-in basis:
- RGB Chroma Keyer and Input selector
- Utility Bus Control Panels
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To see the effects of VSP-1200 Series Switchers in color, request our “On-with-the-Show” Brochure. You can also see the effects “Live”. VSP-1200 Switchers are operating in most major cities across the country.

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201-767-1300

*U.S. Price

Circle 102 on Reader Service Card
Products and equipment of the industry . . . who makes it (fresh, updated, verified) . . . where to buy it . . . it's all in The Source 1975, beginning on page 38

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How many days' programming will the system store?

Can the system be modified easily?

Can the system be expanded at a later date?

For answers to these or any other questions about television automation, call or write The Grass Valley Group, Inc.

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SEPTEMBER, 1975—BM/E
NAB & RAB to Hold Joint Regional Conventions
The National Association of Broadcasters and the Radio Advertising Bureau have announced a series of regional radio conferences jointly sponsored by the two organizations to be held this fall. The regional conventions will replace the NAB Fall Conferences and the RAB Management Meetings.

Organizers plan to cover the entire spectrum of interest to broadcasters including government relations, sales, general management, engineering, legal, and FCC problems.

The Regional Radio Conventions will be held on the following dates, which are the same as for the previously announced NAB Fall Conferences: Oct. 13-14, Atlanta/Fairmont; Oct. 16-17, Boston/Marriott; Nov. 10-11, New Orleans/Monteleone; Nov. 13-14, Chicago/Pick Congress; Nov. 17-18, Denver/Brown Palace; Nov. 20-21, San Francisco/Fairmont.

NAB Faults FCC On Ascertainment Policies
The National Association of Broadcasters has urged the Federal Communications Commission to abandon its proposed community guidelines in favor of a simple narrative statement reviewing steps taken to discern local problems, plus a listing of those problems and programs to meet them.

NAB said in comments filed with the FCC that the Commission’s proposed new guidelines are arbitrary and inflexible and, like the old primer they are designed to replace, “misfocus attention upon ascertainment methodology and only secondarily, at best, consider the overall performance of the licensee.”

The NAB feels that a combined narrative-problem/program list would supply enough information for review by the FCC and the public and that it would shift attention from the technical detail of ascertainment to the performance of the licensee.

MDS To Give Boost To Pay-TV In Many Cities
By using the Multipoint Distribution Service for some part of the haul to the subscriber, pay-TV operators are about to expand their services rapidly in a number of cities, with plans for many other cities on the boards.

Cox Cable Communications and Microband National Systems Inc, the latter the operator of MDS in a number of cities, announced at the end of July that Cox would use Microband’s facilities to expand pay-TV in 12 major cities, beginning with Atlanta. The MDS, which is a “private” television broadcasting service operating at 2150 MHz, will carry the Cox programs to antennas on apartment houses and condominiums not reached by Cox cable service. Programs will be distributed to subscribers via each building’s MATV system.

A closely similar joint operation with Microband has been announced by Sammons Communications, cable operator in Kansas City, to take pay-tv programs to apartments, etc., in that city. And another will be set up in Phoenix, Arizona, where Microband will serve the American Cable Television Co. (see news item in BM/E, August).

In Chicago, which has no cable TV operation, Video Entertainment Inc. will use Microband to, again, serve apartments, condominiums, hotels, etc., with pay-TV programs. The MDS signal is converted to a mid-band frequency in each building, which continued on page 8

WFMT Sells Five Years (11,000 Hr) of Sponsorship
Taiiman Federal Savings & Loan Association of Chicago renewed for five years until December, 1980, its all-night classical music program and other sponsorships on WFMT, Chicago’s fine arts station. This renewal is believed to be the largest and longest advertising agreement in FM history. Taiiman will continue sponsoring “Taiiman Through the Night,” heard from midnight to 6 am plus 14 morning newscasts each week and two weekly programs of rare operatic recordings. Pictured at contract signing are Taiiman Federal Savings and Loan Association President and Chief Executive Officer Dimitry Wanda (left), President and General Manager of WFMT Raymond Nordstrand (right), and Taiiman’s Executive Vice President Charles O. Jarasek (standing).
On the air...
Relax...
CDL is there!

At WTCN-TV, Total Automation is a Reality!

At the heart of the station is a CDL Operations Computer System, which handles all the program switching, effects, material verification, run-sheet printing, FCC logging and machine control.

The first installation anywhere to have a direct-wire link to a Kaman Sciences, BCS-Traffic/Accounting System, the CDL System commands the receipt of scheduling information from and the transmission of log verification to the Traffic/Accounting Computer.

Another impressive CDL first at WTCN, is the full closed-loop control and monitoring of two Ampex ACR-25 Video Cassette Machines ... which don't even have to be loaded in the correct air-play sequence ... the CDL Computer sorts that out!

CDL's New System 100 Operations Computer System may be configured for "Total" control or may be used initially to perform automatic switching and later expanded into a fully integrated system, with business computer link-up and ACR-25 closed-loop control.

CDL's latest news ... a System 100 with direct-link capability to a DCC "BIAS" Traffic/Accounting System.

A truly modular approach, the CDL System 100 is today's answer to Total Broadcast Automation.

For more information or to arrange for consultation about your specific requirements, please call or write.

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goes over the building MATV system. Subscribers to the service have small "decoders," which are inexpensive converters to put the signal on an unused TV channel. A spokesman for Video Entertainment told BM/E that, even though the service was not slated to start until sometime in September, they were getting a substantial number of subscribers simply based on news stories of its coming.

In every case the staple programming fare for the operations announced is first-run movies, at least initially.

Looming ahead is national networking of MDS-served pay TV. Don Franco, president of Microband, announced an agreement, in principle, with Western Union for using the Westar Satellites to join Microband facilities coast to coast. Implementation is expected within about 18 months. In various cities joint ventures have been formed by several MDS applicants.

The new companies formed in each city are: Metrotel, Inc.—Los Angeles—a joint venture of Microband Corp. of America, RadioCall Corp. and Microwave Transmission Co.; Microband/MTC West Coast, Inc.—Anaheim, San Francisco and Seattle—a joint venture of Microband Corp. of America and Microwave Transmission Co.; Microvision Corp.—Denver—a joint venture of Microband Corp. of America and Tekkom, Inc.; and Microband United Corp.—Atlanta—a joint venture of Microband Corp. of America and United Video Inc.

No other tape cartridge machine can do so much for so little

Compare for yourself

- ITC's famous air-damped solenoid with Teflon coated plunger assures super-quiet operation.
- Deck is milled from a solid block of 1/2 inch thick aluminum. It won't warp...presents the same flat, stable surface to cartridges every time. Assures correct azimuth of heads.
- Heavy-duty micro adjustment head assembly with adjustable tape guides. Designed for easy, accurate adjustments.
- Direct-capstan, 450 RPM, hysteresis-synchronous drive motor—with an electrolyzed shaft—minimizes wow and flutter. Eliminates need for rubber belts and separate flywheel assembly.
- New trim-line design lets you place three units side-by-side in a 19 inch rack. Each unit is only 5 1/4 inches wide, 5 1/4 inches high and 15 inches deep.
- Features latest solid state components, even for switching applications. No relays. Printed circuit cards plug in.

PD II SERIES

At last—a machine that records and plays mono tapes in the "A" size cartridge, stops automatically on the 1kHz cue tone and—offers you longer life, less maintenance and better performance than any other cartridge machine at an economy price.

FCC ACTIONS

Deadline Cancelled

As reported in a BM/E bulletin in August, the Federal Communications Commission has cancelled the March 31, 1977 deadline for the reconstruction of major market cable systems in existence prior to March 31, 1972, to bring them into compliance with the channel capacity and access requirements of the rules (Docket 20363).

How the rule will ultimately be applied to such systems depends, the FCC says, on the outcome of a rule-making proceeding begun June 3rd (Docket 20508) addressed to that question. Meanwhile, the FCC emphasizes that the cancellation of that particular deadline does not affect the following requirements which must still be met: major market stations must furnish by March 1, 1977 “composite” access services on available channel space, continued on page 10
AT KY-3-TV, THE BRAND OF REPORTING AND THE BRAND OF FILM HAVE A LOT IN COMMON.

When the people in this picture wave 3 fingers in the air, what they’re saying is, “We’re number one” at Springfield, Missouri, Channel 3. Thanks to hard-nosed reporting and hard-hitting promotion, KYTV is the undisputed broadcast king in the Queen City of the Ozarks. By a margin of 3 to 1.

In addition to top-notch journalism, smart programming has meant taking maximum advantage of both videotape and film. And when the film cameras roll, the film they use is Eastman film.

Over the past year, Channel 3 news cameras unlocked the secret of behavior modification programs in a Missouri federal prison; dug up a problem in the underground water supply; whooped it up at a genuine hoe-down; and made friends with a mountain hermit whose only other visitors dropped in by UFO.

Besides winning viewers, their documentaries have won a silver gavel from the American Bar Association, a certificate of achievement from the state medical association, and an Emmy nomination.

For station manager Don Moeller, film is a logical choice: the equipment is rugged enough for any job, portable enough for even the tightest spots, and the end product “looks absolutely great on the air.”

When the KYTV cameras aren’t recording news, the KYTV people are busy making it, through locally produced sports and entertainment shows. Take Virgil Ward (front row left) and the capable assistant you see perched on his lap. You can catch their weekly fishing show on 87 markets in the U.S. and Canada. And when Virgil packs his rod and reel, he includes a reel of Eastman film.

Then there’s Promotion Director Clarence Martin (front row right). His 10-second-film ID spots for the station not only built awareness, but they helped develop a new market for locally produced commercials.

In the words of News Director Bill Williams (2nd row, 4th from right), “Film is essential to everything we do. After all, TV is the visual medium, and it wouldn’t do to have a person on camera merely reading a piece of paper. We use film to tell our story. And, besides, our anchormen just aren’t that pretty.”

FILM. THE BASIC MEDIUM.

Circle 105 on Reader Service Card
NEWS

but without reconstruction; major market systems which started after March 31, 1972 must meet the channel and access requirements; systems with more than 3500 subscribers must meet the origination facilities requirement.

Rules for Antenna

Strobe Lights are Adopted

In a rule adopted July 8, 1975, the FCC has made high-intensity strobe lights permissible for lighting of antenna structures, as an alternative to the standard painting and red obstruction lighting (Docket 19931). The rule, the FCC says, does not obviate acceptability of the painting and red lights, nor does it make strobe lighting in any sense mandatory.

However, the FCC reserved the right to specify, on new antennas, which method would be required in accordance with FAA recommendations or when the standard marking proofs to be confusing, inadequate, or otherwise dangerous.

Broadcasters who want to start or shift to strobe lighting must get specific FCC authorization.

New FM Translator

Polarization Allowed

In January, 1974, the FCC indicated it would permit FM translator service for individual communities to be provided by a combination of signals vertically and horizontally polarized. The amendment allows the radiation of vertically and horizontally polarized signals either from a single antenna or from two antennas, each fed from a separate radio frequency amplifier.

Cable Report Form

Revised by FCC

The Commission has adopted a rule revising form 326, the cable system annual report form, with the aim of making it both more complete as to financial data and less burdensome on the cable operator (Docket 20247).

Among the changes:

- A new format closely resembling normal bookkeeping schedules
- A new schedule of all basic balance sheet accounts, replacing one that carried only original cost and depreciation date
- Removal of the requirement that cable systems report on a calendar year basis—they can now use their fiscal year
- Elimination of the five-community limit on consolidated reporting in favor of a restriction to systems within a 40-mile radius of the “lead” system

Cable operators whose fiscal year ends after October 31, 1975, the effective date of the rule, should make sure they have the new forms.

Institutional Ownership

Limit Increased by FCC

The FCC has proposed rule changes that would set a 5% limit on institutional ownership of broadcast and CATV companies. The proposal would amend the Commission’s rules relating to multiple ownership of AM, FM and TV broadcast stations and cross-ownership of CATV systems.

The rules now set a 1% limit for shareholdings in broadcast or cable operations that have more than 50 voting stockholders. However, mutual funds have a 3% benchmark and banks a 5% benchmark for holdings on such corporations.

The proposed change comes after six companies petitioned the FCC to make the change.

Rules Revised for

Station Applications

The FCC has amended its rules to limit the period for filing competing applications for new FM and TV stations and for filing petitions to deny, and the effect of certain amendments to applications for construction permits for AM, FM and TV broadcast facilities.

The rule changes provide a cut-off date of 30 days after publication of the application which is similar to those now provided for AM new and major change applications. This date will avoid the disruption of application processing that occurs when a new, mutually exclusive application is received after processing of the original application is nearly complete, the FCC said.

The FCC said its action was not intended to reduce the number of comparative proceedings (although it recognized this might happen) but to “avoid serious (and occasionally repeated) disruptions of the processing procedure.”

Other FCC Actions

An up-dated version of the War of the Worlds broadcast that scared millions in 1938 scared a lot of people in Rhode Island last October—and station WPRO, Providence, has received a sharp FCC rebuke. After investigating complaints, the FCC concluded that WPRO’s advance notifications were insufficient to prevent public alarm.

In response to requests for clarification, the FCC has ruled that a broadcast auction of merchandise, with bids phoned continued on page 12
**Puzzle:**

**How do you get a lot of SWITCHER for a little MONEY?**

**Answer:** The Computer Image “Pre-wired” Modular Video Controller System.

Now there is a way to plan for the ultimate in switching potential with the least initial outlay.

If you can afford the industry’s finest broadcast quality switcher with all the latest state of the art techniques and capabilities ... fine! Computer Image will deliver a Model 7243 with 7 buses, 24 inputs, four mix/effects amplifiers, preview and program buses with computer compatible control, and save you money!

If however, your budget is tight, then you may choose a Computer Image Model for as low as $10,000 - have it pre-wired for options you know you'll need and have a broadcast quality switcher today that will not soon be obsolete.

Computer Image Video Controllers are designed with circuit-element building blocks ... to give you every advantage of add-on capabilities, and reliability of functions. Your basic purchase can be pre-wired for the options found in the most complete switching system.

If your future requirements can be estimated at the time of ordering a basic unit, all the add-on options can be pre-wired for only 10% of each option. And, any options ordered within six months of initial delivery will be credited that 10% pre-wire charge! The installation of any option, because it's pre-wired and completely modular, is almost as simple as plugging in the morning coffee pot!

**COMPARE THE VIDEO CONTROLLER WITH ANY OTHER SWITCHER ...AT ANY PRICE!** Ask about price, performance, versatility, reliability, guarantee and delivery ... and ask about some very happy Video Controller users!

For further information call or write:

**Vice President, Marketing, Video Controller Division**

**COMPUTER IMAGE CORPORATION**

2475 West 2nd Avenue, Denver, Colorado 80223

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NEWS

in and the station receiving some or all of the proceeds of each sale, is a program length commercial and must be logged as commercial matter. The Commission has issued a reminder to cable system operators that when they apply for re-certification (by March 31, 1977, or when the present franchise runs out, whichever is earlier) they must present a copy of a new, valid franchise consistent with FCC rules.

An inquiry to determine ways of improving the FCC’s Equal Employment Opportunity program has been opened (Docket 20550) and comments are invited on all aspects of the program with a September 11, 1975 deadline.

Briefs

Ampex Corp. has recently entered into a two-year marketing agreement with Audio Designs and Manufacturing, Inc. to distribute ADM stock and custom audio consoles and components to all international markets excluding Brazil. Mann Media, Inc., a Little Rock, Ark. based communications firm, has expanded its radio station ownership with the purchase of stations WNOS-AM and WNOS-FM serving the North Carolina cities of Greensboro, Winston Salem and High Point. Smith, Cooper Associates, CATV and pay TV management and consulting firm, has formed a new company to distribute Audio Designs and Manufacturing, Inc. to all international markets excluding Brazil.

CHIRON II Electronic Graphics System, unquestionably the most advanced and versatile system available today... the one system that offers the highest character resolution and do-it-yourself capability for unlimited type font and logo preparation, plus more features than any other TV graphics equipment.

CHIRON III Electronic Titling System, at a moderate price CHIRON III provides more flexibility and quality than higher priced units, including unlimited font and logo interchangeability, large message storage capability, and character resolution exceeded only by CHIRON II.

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SEPTEMBER, 1975—BM/E
One of the common discomforts due to excessive videotaping is back pain.

Lugging around those 35 and 40 pound VTRs through crowds, down stairways, up stairways, up hills, steep hills.

Well, no more. Akai has a remedy—our new VTS-150B we call the Hustler.

The Hustler doesn't weigh 35 or 40 pounds like other recording units. It doesn't weigh half that. In fact, it doesn't even need to go on your back.

The Hustler is a 16 pound color videotape recorder you can carry on your shoulder, and a 6 pound color camera you can carry in one hand.

No wonder 63 TV stations are now using our little Hustler.

The lightweight, two-piece, one-man operation that isn't a pain in the back—or anywhere else.

AKAI.
2139 E. Del Amo Blvd., Compton, Ca. 90220
RCA announces
of the film

A special Mylar leader is spliced onto each film segment. Film is inserted into a cartridge—no further film handling.

Each cartridge can contain from ten seconds to two minutes of film, with complete cartridge flexibility.

A cartridge is drawn into the machine on cue, shown by one of the two projectors, then rewound, all automatically.

As the first reel rounds and is replaced in the magazine, the second projector runs film from the next cartridge.

The TCP-1624 will play one cartridge and stop, or will play cartridges continuously until it receives an order to stop.

The TCP-1624 switches automatically from optical to magnetic soundtrack, then returns to optical mode.
Now you can put miscues, make-goods, and imperfect film color all behind you. Do away with time-consuming, costly film clip cataloguing, storage, retrieval, dubbing, splicing, threading, cueing, playing, unsplcing—and the chances for error that go with them. The RCA TCP-1624 Cartridge Film Projector is here. In full production now.

A survey of TV station logs shows that 89% of film segments run from 10 to 120 seconds—the film lengths the TCP-1624 is made to handle. Its magazine holds 24 16mm. film cartridges, each of which can be cued, played and rewound with push-button or computer control, with full intermix; even last-minute changes can be made. Once film clips are cartridge-loaded, no further film handling is needed. You play the film spot on film, without dubbing. Spot reel makeup and breakdown are eliminated; each break can be programmed in any order.

The TCP-1624 is part of a new, problemsolving telecine system from RCA.

The TCP-1624 Cartridge Projector features two identical, self-threading projection systems with automatic cue, zero pre-roll, automatic switching between optical and magnetic sound tracks, and automatic film rewind. It can operate in “automatic sequential” or “single event” modes.

The RCA TCP-1624 can do for film what cartridge systems do for tape. In fact, the TCP-1624 is fully compatible with a cartridge system, to give you automatic station breaks using both film and tape.

In addition, the system offers consistent color quality in real time, automatically, with optional ASCET (Automatic System for Correcting Errors in Telecine). ASCET is available as part of a TK-28 film island. With this new automatic color correction option, you can put a high-quality picture on the air with less than high-quality film.

Whether or not you saw the RCA TCP-1624 at NAB, contact us now. Your RCA Representative will gladly demonstrate the end of the film clip slip-up.
vice of all manufacturer’s CATV amplifiers . . . .

Cinema Products Corp. has been appointed exclusive U.S. distributor for the Cooke Varotal 20-100mm T3.1 zoom lens for professional 35mm cinematography. WMAZ-TV, Channel 13 in Macon, Ga., has been named Television Station of the Year by the Georgia Association of Broadcasters . . . . Mobile Image Atlanta, Inc., a new TV and video tape facility, has opened at 769 Peachtree St., N.E., Atlanta, Ga. 30308; 404-875-9048. The Video Group, Inc. a Detroit-based TV production agency, has acquired the contents of two TV production studios formerly belonging to Lewron Television, Inc., of New York City . . . . Central Communications TV, Inc., has purchased the Ft. Stockton, Texas cable system from Mr. Neville Haynes and partners . . . . The CBS Radio Network recently added stations WOAI, San Antonio, Texas; WJAX, Jacksonville, Fla.; and KO Cheng, Oklahoma City, Okla., to its lineup of affiliates.

American Finance System Inc. of Silver Spring, MD recently sold all of its capital stock of Jefferson Cable Corp. and Martinsville Cable Vision Inc. to the Mansfield Journal Co., owner of several newspapers . . . . Conrac Corp. has been awarded a $2.4 million contract to provide computer-controlled Telscreen scoreboards at five Olympic sites in Montreal . . . . The Customer Service Department at HF Photo Systems Division of Technology Inc. now offers its clients a round-the-clock telephone diagnostic service.

Capitol Magnetic Products, first U.S. company to develop a lacquer formulation for audio mastering discs, has closed down its coating operation in Glenbrook, CT and moved into a new manufacturing facility in Winchester, VA in order to increase production and meet increasingly critical lacquer requirements. . . . Broadcast Electronics, Inc. has established a network of eight regional repair and spare parts depots to service the Spotmaster line of equipment. For locations, call (301) 588-4983.

A contract totalling approximately $2.3 million has been awarded to Scientific-Atlanta for ground station equipment for the domestic communications satellite program being undertaken by the Gov’t of Indonesia . . . . A competition sponsored by Berkey Colortran, Inc. at the Syracuse University School of Architecture to design a drafting table lighting fixture has resulted in cash awards to students totaling $600 and a $400 donation to the Deans Fund at the School . . . . TEAC Corp. has discontinued its fair trade policies effective June 15, 1975

People

Donald F. Smith has been appointed national broadcast marketing manager for TeleMation, Inc. . . . . Alan B. Bennett, vice-president and general manager of WKBF-TV, Cleveland, has been named vice-president, operations and engineering of Kaiser Broadcasting Co. . . . . Jim Scherr, formerly with the General Electric Television Division, is the new component engineer with the Broadcast Products Division of Harris Corp . . . . Edmund Henckel has been appointed director, sales engineering of Vicon Industries, Inc. . . . . The appointment of Roger A. Grover as sales manager has been announced by Walther M.A. Anderson & Associates, Inc.

Larry L. Hayes has joined continued on page 18
Introducing the Expandable Model 7960 Production Switcher—from $13,375

The latest in production effects—all you need, plus the option to expand video input and effects at a nominal cost.

Model 7960 is a 4 bus switcher with re-entry and an independent preview option. The control panel is available in 3 standard configurations: 9, 15 or 21 inputs. Custom panels are available with up to 29 inputs, additional key, preview and program buses, machine control, audio breakaway, etc.

Check the features in this quality switcher:

- Nine wipe patterns □ Modulated wipe
- Wipe borders □ Wipe key □ Presettable wipe limits □ Two Mixers □ Remote controlled □ NTSC or PAL versions available

Plus, look at these options:

- Positioner, including circle, square and diamond patterns □ Spotlight
- Chroma keyer □ Downstream keyer
- Preview bus □ Non-synchronous inhibit □ Color mate and black burst generator □ Soft wipes and keys

But most of all, consider the quality you get from Telemet, the leading name in quality test, production and switching equipment for the broadcast and telecommunications industry for 25 years.

For complete information on Telemet’s new Model 7960 Switcher, or any of the following Telemet products, contact your local Telemet salesman, or use the enclosed coupon.


Circle 111 on Reader Service Card
**B-500 series**

B-501 MONOAURAL  
B-502 STEREO  
B-503 DUAL-CHANNEL

Superior performance  
- 5 mixers  
- 10 inputs  
- Plug-in modules

Choose your inputs  
- microphone, RIAA phono, balanced high level

Standard is 1 microphone 4 balanced high level

Cue on all mixers—built-in cue speaker  
- 4 watts rms monitor amplifier  
- full muting facility

from the "FULL CHOICE" line

**McMartin**

McMartin Industries, Inc.  
4500 South 76th Street  
Omaha, Nebraska 68127  
(402) 331-2000

Circle 112 on Reader Service Card

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**NEWS**

Coastcom, Concord, Calif., as senior research and development engineer responsible for new product development and design . . . . TeleMotion, Inc. has appointed W. Paul Warnock as vice-president, finance . . . . Dr. Walter S. Baer of the Rand Corp. was named as a recipient of one of the 1975 Broadcast Preceptor Awards for his book, "Cable Television: A Handbook for Decision-Making" . . . . Warner Cable Corp. has named Michael J. O'Sullivan as director of operations for the Central Region.

Marc Nathanson, vice-president of TelePrompTer Corp. has resigned to become president of a new CATV company and to join Harriscope Broadcasting Corp. as senior vice-president for CATV . . . . George T. Saddler has been appointed to the newly created post of marketing manager for audio magnetic tape at Fuji Film USA . . . .

K. Blair Benson has been named vice-president of engineering for Goldmark Communications Corp. . . . . Richard W. Burden has joined Automated Processes, Inc., as a broadcast sales engineer . . . . Daniel Aaron, vice-president of Comcast Corp., and Robert Weary, secretary-treasurer of Communications Services, Inc., have been named to NCTA's executive committee . . . .

Harvie E. Schwartz, Jr., former manager of the engineering laboratory of Goldmark Communications, has joined Byron Motion Pictures, Inc., as manager of technical operations of the video services laboratory.

David Paul McNamee has been named operations manager of KLIF, the 50,000 watt Fairchild Broadcasting Group AM station serving the Dallas/Ft. Worth market . . . . Mark Mason, operations manager of WVOS radio, New Rochelle, NY, has been elected vice-president and director of operations for the Westchester Community stations . . . . Lynn Distler has been named sales manager for Comrex Corp. . . . .

James H. Anderson has been elected president of ITT Canon Electric.

Bill Brock has been appointed regional sales manager based in Nashville for Audtronics Systems . . . . Benjamin B. Bauer, vice-president and general manager of the CBS Technology Center, Stamford, Conn., was awarded a "Debby" by the Society of Audio Consultants during the recent Consumer Electronics Show in Chicago for development of CBS' SQ quadraphonic system . . . .

Raymond A. Watson has been appointed vice-president of McGraw-Hill Broadcasting Co., Inc., and general manager of KERO-TV, Bakersfield, Calif.
TEKTRONIX ANNOUNCES

A new concept in portable instrumentation

The TEKTRONIX TM 515 Traveler Mainframe looks like fashionable flight luggage, compact and easy to carry, or slide under an aircraft seat. In reality, it's a five-compartment power module/mainframe that provides power and interface connections for TM 500 plug-in modular instrumentation. Plug in the new (two-wide) SC 502 15-MHz dual-channel oscilloscope, and you have the beginnings of a powerful take-along instrumentation system.

You can optimize a TM 500 system to your needs by selecting from more than 30 plug-in modular instruments. With the TM 515 Traveler Mainframe and SC 502 Oscilloscope as a nucleus, select from DMM's, counters, generators, power supplies, signal processors, and even blank plug-ins for your "home-built" circuits. Intended applications include areas from digital field service to medical, from audio/communications to on-site industrial controls maintenance.

The SC 502 is Tektronix quality, featuring clean triggering characteristics, delay line input, trigger view, trigger holdoff, 1 mV sensitivity, and the capability of working through the rear interface circuit board with other TM 500 instruments. It features a specially brilliant crt designed and built by Tektronix for use in areas of high ambient light. Include a DD 501 Digital Delay alongside the SC 502 and gain the capability of delay-by-events—you can then obtain stable digital displays from electromechanical sources like disc drives that would otherwise be too jittery for accurate viewing on any conventional oscilloscope. Include the DC 505A Universal Counter and DM 502 Digital Multimeter to complete your TM 515 package, and discover the benefits of simultaneous counter and DMM capability with trigger level readout at the touch of a push button.

The TM 500 concept lets you take along on field servicing trips the same instruments you use in the lab or for production testing, thereby enabling you to maintain the same standards on the "outside". The SC 502 Oscilloscope, for example, may be used as a bench instrument in any multi-compartment TM 500 mainframe, and it offers unique systems capabilities, as well, when operated in a rack in the RTM 506.

Contact your local Tektronix Field Engineer or circle the appropriate reader service number for a demonstration of TM 500 instrumentation or additional technical information on the TM 515 Traveler Mainframe and SC 502 Oscilloscope. For an up-to-date TM 500 Catalog write to Tektronix, Inc., P. O. Box 500, Beaverton, Oregon 97077. In Europe write Tektronix Limited, P. O. Box 36, St. Peter Port, Guernsey, Channel Islands.
AM Restrictions Eased
By Frederick W. Ford and Lee G. Lovett
Pittman, Lovett, Ford and Hennessey, Washington, D.C.

In a move surprising for its swiftness, the Commission recently relaxed its AM acceptability and "suburban" policy restrictions, thus "opening the door" for existing AM stations to seek power increases and for new stations to secure assignments. Essentially, the new AM rules eased past restrictions in four areas: 1) existing AM power increases, frequency changes and fulltime services, 2) new stations proposing daytime or unlimited time operation, 3) creation of a new power classification and 4) easing of "suburban" policy requirement.

The new AM rules eased considerably those instituted by the Commission in 19732 which were designed to conserve the remaining AM spectrum space for the assignment of stations that would provide service to underserved areas and to encourage FM development in areas lacking radio services. Pursuant to a rulemaking inquiry initiated in November 1974, the Commission herein found the 1973 rules to be "unnecessarily restrictive in controlling the rate of expansion of the standard broadcast service, and that in some cases they failed to afford reasonable opportunities to satisfy developing needs for new and additional aural service." The new AM rules are designed to encourage community-oriented radio services to many additional separate and distinct localities, especially newly-emerging suburban population centers. Comments on the four central areas of Commission action follow.

Existing AM Station Changes

The Commission loosened its power and time restrictions and opened its doors for applications for power increases and night-time services, so long as interference standards are maintained.

Existing daytime stations may seek power increases to the maximum permitted on their channel so long as they meet Commission interference standards3. That is, in effectuating its power increase, the station may not cause or receive new interference; if the station presently receives interference, it may continue to receive same so long as its total interference is not greater than that presently received.

Existing daytimers may also apply for fulltime service on its present or another frequency upon a satisfactory showing that the community for which the station is proposed presently has fewer than two independent aural transmission facilities during the portion of the day for which the new service is proposed. Put another way, in order to secure fulltime service, the daytimer must show that it will provide the first or add a second fulltime facility to the community of license and, that no unused FM station is allocated to said community. Note: AM-FM combinations, licensed to the same owner in the same community, are considered as one. In addition, its "less-than-two-services standard" would not apply if an existing daytimer proposed a new unlimited time station if such would provide a first or second nighttime facility for the community. In the alternative, if the aforementioned criteria do not apply, proposals which meet the "25% white area" standard (discussed in "New Facilities" section below) would be accepted.

An existing daytimer or fulltimer may also apply to change its frequency to obtain a better allocation without being subject to the restrictions which apply to new stations. Like applications for increases in power, applications for changes in frequency need only meet the standards covering overlap and daytime and nighttime interference. Regarding existing nighttime stations, they may likewise seek power increases on their present frequencies and make changes in directional antenna systems providing they do not cause interference to other co-channel stations. The 50% rule on RSS applies here and a Theoretical design may be utilized for the DA.

In addition, a nighttime station proposing to change its frequency must meet the same interference standards as discussed above. Note: The directional antenna design must be a standard design in accordance with the rules.

New Facilities

The AM rule changes will permit new nighttime or daytime assignments to communities which meet the following standards.

Assuming the availability of a frequency, the Commission will accept applications for new nighttime or daytime AM assignments to communities with fewer than two aural facilities licensed to said community during the relevant portion of the broadcast day. Of course, the Commission still maintains its existing overlap and nighttime interference standards.

If a community has two or more fulltime aural facilities, applications for new stations may still be tendered providing they meet the following exceptions. First, the
Introducing a Color Corrector for Electronic News Gathering.

Electronic News Gathering makes tough demands upon the broadcaster. Color imbalance and colorimetry problems are frequently encountered. Matching remote camera shots to indoor studio programs or assembling tapes from different locations or cameras is "chancy" at best. Often that fast-breaking story doesn't allow for camera rebalancing!

Thomson-CSF Laboratories now provides a solution to such difficult encoded signal color problems. With the Model 5500A Color Corrector, you'll be able to rebalance and match video signals after encoding. It can be used either after the play-back tape machine or following the microwave receiver during live coverage. In most cases, a noticeably improved color picture will result. For ease of operation, a Remote Control unit is included as standard equipment.

As an added feature, an optional automatic Sensor unit is also available to control the Color Corrector for telecine use.

Whether for Electronic News Gathering, tape production or telecine use, the Thomson-CSF Laboratories Color Corrector System should be working for you. Interested? Give us a call.
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WV-2200: Battery-run featherweight— for color anywhere! The ultimate in economical portability. About $4,500, including 6:1 zoom lens. Two vidicons. 1½" viewfinder. Ideal for scouting store locations, plant sites— or next week's sports opponent.

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AK-900: Self-contained, broadcast color for less than $30,000. Three 1" Plumbicons (Trademark N.V. Philips), 10:1 F2 zoom lens. Separate color signals. Tilting viewfinder. Horizontal resolution of 500 lines at center.

*Lens additional.
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more camera than you need.

WV-2800: Color for film chain, remote, security uses. Lightweight camera without viewfinder. It's simple to operate, and can be used with any NTSC color system. Horizontal resolution 400 lines at center. About $3,500.


For more details and specs, write:
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One Panasonic Way, Secaucus, New Jersey 07094

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Anyway you look at them, Unimedia's SMT color monitors are good news! Professional quality ... affordable prices.

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Grand color monitors... Great dollar savings!

FCC RULES & REGS cont. from page 20

applicant must demonstrate that its facility would serve a 25% "white area," i.e., that area lacking in interference-free, full primary service from either an AM or FM station. Note: "Primary service," in its "white area" context, refers to a 1 mv/m AM or FM signal from another AM or FM station. As mentioned above, these rules obtain both to (1) new facilities and (2) daytimers seeking to go fulltime.

New Power Classification

The new AM rules also create a new 2.5 kW power classification to provide an intermediate step between the present 1 kW and 5 kW classifications specified in the rules. Power classifications permitted by "station class" are listed below.

<table>
<thead>
<tr>
<th>Station Class:</th>
<th>Power Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>250, 500 watts or 1.0 kW</td>
</tr>
<tr>
<td>IIIA</td>
<td>250, 500 watts, 1.0, 2.5, or 5.0 kW</td>
</tr>
<tr>
<td>IIIB</td>
<td>500 watts, 1.0, 2.5, or 5.0 kW</td>
</tr>
<tr>
<td>IIIA</td>
<td>10.0, 25.0 or 50.0 kW</td>
</tr>
<tr>
<td>IIIB or D</td>
<td>250, 500 watts, 1.0, 2.5, or 5.0 kW, 10.0, 25.0 or 50.0 kW</td>
</tr>
<tr>
<td>I</td>
<td>10.0, 25.0 or 50.0 kW</td>
</tr>
</tbody>
</table>

The Commission felt that the creation of a new step between 1 kW and 5 kW "facilitated the maximum use of facilities" in cases where power greater than 1 kW was feasible, but not as much as 5 kW.

Suburban Policy

The new AM rules also relax the heretofore troublesome "suburban" policy (Section 307 (b)*. The Commission's "suburban" policy, adopted in 1965, required applicants for AM stations in suburban communities to rebut the presumption that if the proposed station delivered a 5 mv/m signal over a nearby larger community, the facility was intended to serve the larger community. In its new AM rules, the Commission will now forego applying their "presumption" to (1) uncontested applications for new stations and (2) increases in power of existing stations. Hence, the rule will be limited to mutually exclusive applications that are involved in a comparative hearing. Note: The Commission issued its caveat that applications for power "clearly in excess of that necessary to serve the proposed community of license and its immediately surrounding areas" will be examined carefully.

Conclusion

In relaxing its acceptability restrictions and "suburban" policy for AM stations, the Commission has opened the door for a flood of AM applications seeking new or changed facilities. If a large backlog of unprocessed applications develops, it said it would likely impose measures to control the rate of application filings by declaring "open" and "closed" seasons for the filing of same. These measures will, if implemented, be temporary and advance notice will be given. The rule changes are effective August 22, 1975. Applicants for new or changed facilities should stay current with the Commission's processing schedule. BME

*Designed to implement Section 307(b) of the 1934 Communications Act calling for a "fair, efficient and equitable" distribution of broadcast facilities in the U.S.
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So, if you need a Mark X or a Mark III quad head in our "L" or "M" Series ... or an RCA High Band or Low Band quad head in our "M" Series ... contact Videomax.

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How To Backtime With Your Pocket Calculator

By Mary F. Zoller

As an air-director for 39 TV's "Eyewitness News," the author found her attention focused on the second hand of a too-small clock hanging on a dark wall fifteen feet away. To determine whether the station was running early or late she turned to the calculator as a digital backtimer. "It's the greatest aid since the stop watch," she says.

If you ever have trouble backtiming or adding a column of minutes and seconds, here's an efficient method you can really count on.

Adding segment times, predetermining reel changes, backtiming, totaling commercial material in an hour, and filling breaks can all be done quickly and accurately with a regular eight digit calculator. Any eight digit standard four function calculator can add and subtract hours, minutes and seconds without changing the figures to their decimal equivalents.

Because calculators function differently from model to model, you may have to set up the procedure a little differently i.e.: as to whether you punch + before the number you enter or = afterward. Regardless of the sequence, the events are the same, and the results fast.

Directors, both on-air and production, can utilize the calculator with ease; as can traffic, accounting and sales. The method is simple, but like anything new, it takes a little getting used to. To compute time, use the following procedure, watch how it compares to clock time as illustrated in the left column.

<table>
<thead>
<tr>
<th>clock time</th>
<th>calculator display</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30:57</td>
<td>303005</td>
</tr>
<tr>
<td>2:50:40</td>
<td>3028040</td>
</tr>
<tr>
<td>1:30:15</td>
<td>3015030</td>
</tr>
<tr>
<td>0:45:00</td>
<td>3000045</td>
</tr>
</tbody>
</table>

Now insert this series as one entry. Your commercial break runs 1:05, so add 1, a 0 for the colon, and 05 as a single entry.

| + 1:05                                      | + 1005 |
| 3:30:02 | Your total is | 3029062 |

Here now is the key to the system. Because the seconds total over 60, add 940 to the total.

| (3:30:05) | Your converted total now is | 3029060|

Whenever your seconds show up as 60 or more, add 940. You can keep adding 940 until the seconds read under 60. For example:

<table>
<thead>
<tr>
<th>clock time</th>
<th>calculator display</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:42:35</td>
<td>4042035</td>
</tr>
<tr>
<td>+ 1:05</td>
<td>+ 1005</td>
</tr>
<tr>
<td>5:47:40</td>
<td>5047040</td>
</tr>
</tbody>
</table>

The only pitfall to avoid when learning to count time on a calculator is to remember to use the 0 in place of a colon. Once you've mastered that small obstacle, you've got it.

Ms. Zoller is a producer and on-air director for KCST, San Diego.
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AURAL STUDIO-TRANSMITTER LINKS
PCL-101 — AM Mono — 148 to 960 MHz
PCL-505 — AM/FM Mono — 148 to 960 MHz
FM Stereo (Dua!)  
PCL-505/C — Composite Stereo — 148 to 960 MHz  
(Single Link for Stereo)

AURAL REMOTE PICKUP LINKS
RPL-3 — 2 microphones, 1 line — 148 to 174 MHz
RPL-4 — 2 microphones, 1 line — 450 to 470 MHz
AMP-3 and AMP-4 Companion RF Power Amplifiers

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  □ Companion 24-Channel Status Subsystem
  □ DLS-1 Digital Logging System Records up to 20 Parameters
□ Computer Option — Allows Computer-Assisted Operation, Even Full Automation

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SEPTEMBER, 1975—BM/E

Circle 228 on Reader Service Card

Circle 229 on Reader Service Card

Circle 230 on Reader Service Card
Picking the Right ENG System for Your Market by Rupert Goodspeed

If you don't have $75-100,000 for a high quality ENG system, you don't have to let the Revolution pass you by.

We take you now to Portland, Oregon... Stand by Portland, five second roll... where our correspondent, Ross Hunter, has the latest word on the fishing rights... Okay, New York, sync lock... controversy between the U.S. Government and the Umatilla Indians.

Switch to Portland.

Good evening, we're standing at Celilo Falls and off to the north you can see... Looks good Portland.

It had better look good, Portland, because your efforts at the moment are being directly compared to those of other network news gathering crews throughout the nation.

Network news groups, network owned-and-operated stations, and key network affiliates in major markets have an obligation to present a quality product to the viewer. It's not an easy obligation to fulfill, because you have to be in the right place at the right time, with the right kind of equipment to cover a fast-breaking story.

Electronic news gathering techniques have been pioneered by the networks and their owned-and-operated stations. The networks have indicated to equipment manufacturers the kind of ENG gear they require and the manufacturers have responded. The problem for the smaller broadcasters who want to be able to provide a feed on a hot story originating in their area is coming up with the capital. And the move to ENG may be resisted by news crews who fear that it could trim their ranks, or even eliminate jobs.*

Previous to the advent of electronic journalism everyone had about an even break: 16mm film was equally accepted everywhere. But now the station who can offer immediate 'direct from the scene of action' through ENG viewing has gained the upper hand.

But it's not easy for the smaller or medium sized market to find the $75,000 to $100,000 to set up a first class system. To match 16mm quality, a 3 Plumbicon tube system plus a good video tape recorder is necessary. Is there a reasonable alternative? Of course there is, but you trade off something for the lower dollar cost; namely quality of finished product. And because of the reduced sensitivity of your lower cost equipment there are limitations on where, and under what conditions you can shoot.

Two-tube color camera systems have proven capable of doing an excellent job under a wide variety of conditions, as long as there's adequate light. Some ¼-in and ½-in videotape recorders even include an assembly edit mode, allowing a reporter to field edit an article or feature. In the case of fast breaking news stories this technique does not seem practical because you don't know how the story will end, and a taped story cannot be built in any logical sequence. Therefore you'll still need a videotape editing capability and you'll have to use a $14,000 time base corrector in order to meet FCC specs when you air your finished tape. All of which brings us to a total of $35,000 for a single camera electronic journalism package of this performance level.

There are still other approaches to ENG for some smaller market stations. Most stations already have a quad videotape machine, and by judicious scheduling the news department can usually be allocated some time on it to put their shows together. Using a one- or two-tube camera and a mating helical scan portable VTR, newsmen can cover an event, bring all the tapes back to the studio and then transfer them to quad through a time base corrector; after which the product can be edited and assembled like a regular television show. The ENG investment now comes down to approximately $25,000; (including the time base corrector) assuming of course that the station already has color editing capability in house on quad VTRs.

An even more economical approach to ENG is to obtain a one- or two-tube camera with a matching VTR—either cassette or reel-to-reel—and invest in one of the lower cost time base correctors. Here again there's an inevitable trade off for the cost reduction. Less expensive TBC's use a different technique to accomplish their goal, resulting in a slight degrading of SNR and definition in the finished picture. The originating package has come down to about $10,000, but you still face an editing problem. A ½-in EIAJ color editing machine can cost as little as $1,900 but that's really the hard way to edit.

The most satisfactory solution appears to be investing the required $13,000 in a decent editing system dedicated only to news and special events; to put your show together on this equipment and air it directly through a time base corrector.

It's been suggested that the most economical and practical method, although not exactly electronic journalism, is the use of super 8mm film with the newly available broadcast super 8 color scanner (Kodak Videoplayer VP-1). Requiring only the investment in some super 8 single system mag sound cameras, an editing system for

Mr. Goodspeed is vice-president, technical operations, Tri-Tronics, Inc., North Hollywood, Calif.

*However, except for the small two-tube hand-held cameras, ENG equipment weighs 50 lbs or more (not counting the VTR). Thus, two-man crews are necessary whereas one man can handle a 16mm film camera.
super 8, and one of the super 8 scanners, this entire system can be put together for under $3,000; (exclusive of the rapid processor). A lot of people knock super 8, but if you want to see a really surprising result, just feed the output of one of the scanners through an inline vertical aperture corrector. Voilá, a fine airworthy product at a nominal cost.

But if you don’t already have an aperture corrector, that adds another $3,000, meaning that now you’re up to $6,000 and you haven’t started to buy or process film yet.

Dilemma! If you send your film out to be processed you’ve lost the immediacy of a hot report. If you put in a rapid processor for super 8 you’ll add another $12,500. That brings the total package to $18,500, and whoops, you’re back up there to electronic journalism costs.

That’s right, there’s no such thing as a free lunch. Those who advocate staying with ‘good old reliable 16mm film’ conveniently forget that at one time they had to lay out about $50,000 for editing and processing equipment. And keep in mind there’s that $85,000 color film island which has to be at least partially amortized against your news operations.

It all seems to boil down to this: ENG, or electronic journalism if you prefer, is a fact of life. To remain competitive you’ll have to indulge in one form or another of the art. In view of that inescapable fact it seems advisable to make a careful examination of your competitive position in terms of the market you serve, the budget you can justify for equipment, the savings you could make by intelligent utilization of manpower and equipment, and the status and image you need to maintain.

Weighing all these factors will enable you to determine the type of electronic journalism package best suited to your own needs.

---

<table>
<thead>
<tr>
<th>Camera type &amp; cost</th>
<th>VTR Type And cost</th>
<th>Editing and Processing Equip. cost</th>
<th>Playback Equip. or correction Equip. &amp; cost</th>
<th>Total Cost</th>
<th>Results obtainable and advantages or disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>16mm film $3.5K</td>
<td>Audio Rec. $5K</td>
<td>16mm wvr/spi. color proc. $47K</td>
<td>Film Telecine (10% of 65K) $8.5K</td>
<td>64.5K</td>
<td>High quality, good definition, easy to handle, 1 man crew possible, direct report not avail. High cost of film</td>
</tr>
<tr>
<td>3 Plumb. 45.5K</td>
<td>Helical cassette $3K</td>
<td>Helical VTR Editor/contr. $13K</td>
<td>Time base corrector $13.5K</td>
<td>74.5 K</td>
<td>High quality excellent definition, good oper. flex., low oper. cost, good pix direct from action scene.</td>
</tr>
<tr>
<td>3 Vidcon 27 K</td>
<td>Helical cassette $3K</td>
<td>Helical VTR Editor/contr. $13K</td>
<td>Time base corrector $13.5K</td>
<td>56.5K</td>
<td>Good quality, close to 16mm, good flex. &amp; immediacy—pix fair under lower light &amp; poor under dim light. Low oper cost.</td>
</tr>
<tr>
<td>2 tube col.cam. 5K</td>
<td>R. to R. VTR ¼ or ½ in $3K</td>
<td>Reel to reel or cass. edit $13K</td>
<td>Time base corrector $13.5K</td>
<td>34.5K</td>
<td>Fair quality under brightly lit cond. flexible &amp; immediate, lower qual. under low light, low weight. 1 man package</td>
</tr>
<tr>
<td>1 TUBE col.cam. 5K</td>
<td>Helical cassette $3K</td>
<td>Exsit. Quad W/edit. (150 K)</td>
<td>Low cost T. B. C. $3K</td>
<td>11.5K</td>
<td>Fair quality under good light, econom. flexibity limited, less quality under low light, light weight, 1 man package</td>
</tr>
<tr>
<td>Super 8 mag and $450</td>
<td>Single syst.</td>
<td>8mm spl 250 Sup 8 proc. 12.5K</td>
<td>Sup 8 proj &amp; Aper. corr. $5K</td>
<td>18.2K</td>
<td>Fair to good qual depending on light and processing, loss of immediacy low cost easy for 1 man, less qual than 16</td>
</tr>
</tbody>
</table>

The AKAI camera/VTR combo is low-cost route that WCBD-TV, Charleston, S.C., and many other stations have taken to ENG.
WKY-TV at the game in Oklahoma.
Bowling Green State University, the

The Marconi Mark VIII-B Camera is in widespread use in the U.S. and around the world. Marconi, innovators in camera technology since ‘Day One.’ First with automatics—complete line up—even a self-diagnostic check-out facility.

BEST PERFORMER
WBGU-TV programming at Mark VIII-B Camera wins every time.

- World's first fully automatic color camera
- Super-Sensitive. Saving studio energy by operating at f/4.0 in 75 f.c. Or operating on remotes when others quit
- Small and lightweight, using 1/2-inch cable
- Always making 'Big-Picture' pictures

Automatically

And now, Mark VIII Quality in a portable!
How To Match Turntables To The Format—And The Pocketbook

Recently three classes of turntables have taken shape on the broadcast market. Each can work well in the right setting.

Time was when there were two classes of turntables for broadcasters—good and bad. In a sampling of users undertaken for this article, BM/E found, as was to be expected, that you can still get plenty of opinions for putting the available turntables into those old categories. The only trouble is that the engineers surveyed did not agree on which were which. With a sample of several hundred it would probably work, but ours was necessarily much smaller.

What did have the weight of consensus and logic was a currently emerging assignment of classes of turntables related to classes of use. This division could not get started until a few years ago because before that one of the main classes did not exist. The movement is still in its early stages—but the outlines look firm.

What we might call the ‘standard’ table, and referring particularly to the brands that have survived on the market over the years, is a rugged, long-lived, highly reliable table, with a high-torque motor for quick starts. Price is usually in the $200 to $500 span. The second class is the new direct-drive turntable, which has won a special, if still very small, niche on the broadcast market: prices $300 to $600. The third is the thousand-dollar-plus super-performance machine, also with a definite but obviously limited market.

Taking the second class first: the direct-drive table has a motor that turns at the turntable speed, and the table fixed directly to the motor shaft. With such a slow-turning motor "external" speed control becomes crucial and this is usually accomplished with a servo system: the table acts as a generator-tachometer, developing an error signal through comparison with some standard. The error signal can be fed into the motor drive to correct the speed.

The slow-turning, low-torque drive means very low vibration; the servo system means extremely low flutter and wow. The disadvantage is the comparatively slow start.

The direct-drive table came along as pressure built up on certain classes of stations for ever better sound, making the table’s particular qualities highly desirable. The FM or AM station for which the quality of sound is an important competitive element has had to upgrade that quality steadily over the last few years. "Hi-fi consciousness" has spread through the audience, and home receiving equipment used by such listeners keeps going up in quality.

There is nothing presumptive about this trend; a number of stations have felt it directly expressed in listener dissatisfactions, as described in previous articles in BM/E. It applies not only to "classical" music stations, but also to purveyors of MOR, or "beautiful music," or any other format if the station puts heavy emphasis on the quality of the sound, and wins the allegiance of a substantial number of listeners who are "turned on" to high-grade sound.
In Chicago, MOR station WYEN shifted to the direct-drive Panasonic SP-10's to reduce turntable flutter and rumble. Disc jockey Gary Meier cues up one at his right; another is to his left, in the background.

An example noted in the October, 1974 issue of BM/E is veteran classical music station WQXR in New York. About three years ago the station had a sizeable listener revolt on its hands because of alleged high turntable rumble. Basic in this is the spread of medium-priced home playback equipment with extended bass response. The listener who hears a walloping 50 or 60 Hz from his own records, without any audible interference from his turntable, will not stand for a subway-style noise along with his broadcast music. A broadcaster should have professional equipment, presumably superior to the home grade; it is a really serious blow to the "professional" image if the broadcaster's record playing equipment is audibly inferior.

WQXR solved the problem with the Panasonic SP-10, one of the new breed of direct-drive turntables. A few of the others with similar experiences and the same solution are WCLV, in Cleveland; WTMI, in Miami; WCRB, in Boston. In Chicago, MOR station WYEN went on the air with Panasonic SP-10's because the management puts its money on a very clean sound (among other elements) for survival in the fiercely competitive Chicago radio market (BM/E, May, 1972). The approach has worked out; WYEN is surviving quite healthily.

The extremely good speed stability—low wow and flutter—of the servo controlled tables becomes important when the program includes a lot of slow piano, organ or violin music, again intended for fairly sophisticated listeners. (Note: jazz buffs are likely to be just as high on "hi fi" as classical listeners.)
Creation of the new Calibration Standard filled a need... the acceptance of Stanton's 681 TRIPLE-E is unprecedented!

It was no accident!
The Recording industry needed a new calibration standard because it had been cutting discs with higher accuracy to achieve greater definition and sound quality.

So, the engineers turned to Stanton for a cartridge of excellence to serve as a primary calibration standard in recording system check-outs.

The result: the new calibration standard, The Stanton 681 TRIPLE-E.

The rest is history!
Major recording studios adopted it... as did many of the smaller producers. Radio stations across the world put the 681 TRIPLE-E on all of their turntables, both for on-the-air broadcasting and for disc-to-tape transfer.

And, audiophiles by their purchases have voted it the outstanding stereo cartridge available.

The Stanton 681 TRIPLE-E offers improved tracking at all frequencies. It achieves perfectly flat frequency response beyond 20 kHz. Its ultra miniaturized stylus assembly has substantially less mass than previously, yet it possesses even greater durability than had been previously thought possible to achieve.

Each 681 TRIPLE-E is guaranteed to meet its specifications within exacting limits and each one boasts the most meaningful warranty possible. An individually calibrated test result is packed with each unit.

As Julian D. Hirsch of Hirsch-Houck Labs wrote in Popular Electronics Magazine in April, 1975: “When we used the cartridge to play the best records we had through the best speaker systems at our disposal, the results were spectacular”.

Whether your usage involves recording, broadcasting, or home entertainment, your choice should be the choice of the professionals... the STANTON 681 TRIPLE-E.

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The Technics SP-10II.

Direct-Drive System
Every broadcast engineer wants to get rid of rumble, wow and flutter. That’s why many radio stations, including the country’s largest classical music station, WQXR-FM, use a Technics direct-drive turntable. Now, Technics introduces the SP-10 II. A new professional direct-drive turntable, with something else every engineer wants. Abundant torque.

Abundant Torque
At 33rpm, the SP-10 II will reach its exact playing speed within one-half revolution. This fast start-up speed is due to Technics’ manganese-aluminum permanent magnet.

No Audible Rumble
The SP-10 II completely eliminates audible rumble because it’s driven by a brushless DC motor that spins at exactly 33 or 45 rpm. This slow speed introduces so little vibration into the system that any rumble remains a silent –70 dB (DIN B).

No Audible Wow & Flutter
The SP-10 II has no belts, idlers or gears to produce variations in speed. The only moving part is the motor. And, since the platter is actually a part of the motor (an extension of the rotor shaft), the SP-10 II has less than 0.03% wow and flutter (WRMS). What’s more, it’ll stay less than 0.03% regardless of AC line voltage, because the motor is electronically controlled by an analog feedback system.

Direct-Drive Reliability
The SP-10 II is designed for the grueling work of a broadcast turntable. You can stop the platter with your hand for hours without the danger of stretched belts or damaged idlers. And the SP-10 II will maintain its high level of performance for years.

So if you’d like to improve the quality of your station’s signal without spending a fortune, move up to the Technics SP-10 II.
Sony has announced a new direct-drive table, the PS-8750, on sale in Japan for about $580, to come here soon. Crystal-controlled drive gives claimed speed accuracy of 99.997%.

Current top-of-the-line Sony direct-drive table, PS2251, claims flutter of 0.04%, has price of about $430.00.

Sansui Electronics has announced a new direct-drive table, SR-525, above, with controlled dc motor. Price, about $280.

Another turntable with direct drive that has done well in a number of broadcast stations is the Sony TTS-3000. That makes highly interesting the announcement by Sony, at the NAB show in Las Vegas, that a new direct-drive Sony table, with fantastically good speed stability claimed, is just going on sale in Japan. It will reach this country in the near future—Sony will not yet say when.

Also adding impetus to the swing to the direct-drive table are models from Sansui Electronics Corporation. Originally concentrating on the hi-fi market for turntables, Sansui is now actively marketing the machines to broadcasters as well. The firm has announced a new model, due soon, the SR-525, with a claimed flutter figure of 0.03%. Price will be about $280.00.

U.S. Pioneer Electronics Corporation is another firm with a turntable on the way aimed at "hi-fi" performance for broadcasters. It uses a novel motor based on Hall Effect elements, which form a brushless dc servo-controlled drive. Price will be in the $250-$300 range. So broadcasters with a need for this kind of turntable are rapidly getting a wider choice.

It's not for everybody

But the direct-drive turntable is not for everybody. For example, the Top-40 station that is running a flock of 3-minute tunes every hour in a tightly knit pattern of DJ patter and commercials must have a table that starts on the instant, with plenty of torque right at the beginning. With so many starts in the course of a day, a rugged, simple mechanical construction becomes highly desirable.

Highly admired in a large number of stations (with a wide variety of formats) for ruggedness, quick starts, long-term reliability are these "standards": Harris (Gates QRK, RCA Russco. As one engineer said about his Gates CB500, "two drops of oil a year is all I've ever done for it;" and the same sort of evaluation turned up in BM/E's survey for the others, too. At a guess, there are several hundred tables of this kind out there for everyone of the new direct-drive tables.

Over one grand—the super-machine

The third class of turntable is currently represented mainly by one brand—the imported EMT (from Gotham Audio in New York). It's price of around $1500 implies extreme mechanical sophistication, and that is what a number of broadcasters want. Very long term reliability is acknowledged, and a number of users particularly like the cueing method, with a standard cue lead laid out and a muting relay that "waits" for the cue lead to pass. (See box for further description.)

One engineer likened his EMT's to high performance sports cars that need occasional expert tune-ups for their top performance—which is "top" indeed.

Another, in contrast to all the others, did not like the reaction of the table to the cueing methods used in his station. Although no careful analysis of this complaint was possible, it does suggest that the prospective purchaser of a turntable try out on it the cueing procedures used in his station, or imposed by his format. Evidently these vary considerable from station to station—or even, as BM/E was told about one station, among different on-air men and engineers.

BM/E

* Other brands with wide acceptance include Microtrak, Sparta, LPB; most of these have generally been made, under a "private label" arrangement, by Russco or QRK.
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The industry's only verified guide of broadcast equipment manufacturers

- REPS AND DISTRIBUTORS BY STATE
- MANUFACTURER'S FIELD OFFICES
- PRODUCT LINES HANDLED
- PHONE NUMBERS
- INSTANT SOURCE LOCATOR
- VERIFIED INFORMATION
Instant Source Locator

1. Audio
2. Components/Hardware/Systems
3. Video
4. Film
5. Lighting/SET Design
6. RF/Transmitters
7. Antennas
8. Measuring/Monitoring
9. Cable TV

Audio Equipment

Audio Amplifiers
- Altec 5,6,7* American Data 1,2,3,5* Audio Designs 1-3* Audio techniques 5-7* Automated Proc. 1-6* Autogram 2,5,6* Be-thany Intl 1* BE 1,3,5* Burwen 3* Collins 2,3* Cetec 1* Channelmatic 1* Crown 3,5,6* Dunlap-Clarke 6* Dyma 1 Dyar 3,5* Datatek 1* Elec. Sound 3,6* Fairchild 1,6* Gotham 4* Harp 2,3,5,8 Heath 5,7* Int. Nuclear 1,2,3,5* Johnson 1-3,5,7* LPB 1,3* Marconi 1-3,5* Modular Audio 1-8* McMartin 5,7* McCurdy 1-3,5,7* Microtrak 3* Marti 2,5* NEC 1-3,5,6* Neve 1,2* Neff 1,2,5,6* Oamp Labs 1-6* Orange Co. 5 Pacific Recorders 1-3,5* Pulse Dynamics 2,7* Phillips Audio 1-3,5,7* QRK 3-5* Quad 3,5,6* ROH 1,3,6,8* Ramko 1,3,5,6* RCA 1-3,5,6* Revox 6* 7* Russo 3,5,6* Spectra Sonics 1-3,5,7* Sphere 2-3,6 Shinton 1* Sescom 2,3,5* Sontec 2-4* Shure 2-3,6,7* Sony 2,3,6* Sparta 2,3,5* SMC 1-5,6* Sansui 3,6,7* Sequerra 3,6* Stanton 3* Telextronix 2-5* Telematon 1* Telex 3,6,7* Thomson-CSF Labs 1* UREI 2-3* Vamco 1* Varian 3,5* VIF 2-4* Ward-Beck 1,2*5* Wilkin-son 1-3,5*

Audio Controls
- Audio Designs 1* Auto. Proc. 1* Cetec 2,3* Crown 2* Control Design 2* Fairchild 1,3* Gately 1* Gotham 1,3* Hervic 1* Mcgraw-Edison 1* McMartin 3* Microtrak 3* NEC 3* Oamp Labs 1-3* QRK 3* Quad 8* 1,3* ROH 1,3,6,8* RCA 1-3,5,6* Sparta 2,3,5* Shinton 3* Supercore 3* Shure 2,3* Sony 3* Sparta 3* TEAC 3* Tech Labs 1* Telematon 3* Texcan 1,2* UREI 2* Waters 1*

Audio Disc Cutting Equipment
- Gotham*

Audio Processing Equipment
- Allison 2 Altec 2* Audio Designs 3* Audio/Tek 2* Audio Techniques 3* Auto. Proc. 2,3* Audionics 3* BE 2,5* Burwen 3* CBS 6* Collins 2* Cetec 2* DDX 2* Eventide 2* Fairchild 1,3,7* Garron 4* Gotham 1-3* Harris 1,2,5* Inovox 1,2* Lexicon 5* LPB 2* Marconi 3* Modular Audio 1-3* McMartin 2* McCurdy 1-3* Marti 2* NEC 1-3* Neff 1,2 Orange Co. 2* Orbanic 3* Oamp Labs 1-3* Pacific Recorders 2,5* Quad 8* 2,3* ROH 2,3* RCA 1-3,5* SpectraSonics 2,3* Sphere 3 Sescom 3* Sontec 2,3* Shure 1,3* Sony 6* Sparta 3* SMC 1* Sansui 6* Systems Eng 3 Thomson-CSF Labs 1-3* UREI 2,3* Wilkinson 1*

Automation
- Aiken 1* Ampro 1* Audio Services 1,8* Autogram 8* B&K 6* BE 2* Control Design 1-8* Fairchild 6* Harris 1-8* IGM 1,2,4,8* ITC 2-3* LB 1,2,4 McCurdy 3,5* Neff 6* Otari 3* Quad Eight 1* RCA 1-4,7,8* Revox 3,5,6* Rowe 3* Sparta 1-3,5,8* SMC 1,2,4-8* Schafer 1-8* Scully/Metro 3,5* Tapethon 1-3,7* Telex 3* VIF 1,3*

Consoles
- Aiken 1* Audio Design 1-4* Audio Techniques 2,4* Auto. Proc. 1-4* Audionics 1-4* Autogram 1,2* Aiken 1* BE 1,2* Collins 1,2,3* Cetec 1-4* Crossroads 1,4* Dipol 1* Dyma 1,2 Fairchild 1-4* Gotham 2,4* Harris 1-4* KMS 1* LB 1,2,4* Magna Sync/Moviola 1-2 Marconi 1,3* McMartin 1-4* McCurdy 1-4* Microtrak 1-2,4* NEC 3,4* Neve 1-4* Oamp Labs 1-4* Pacific Recorders 1-3* QRK 1,2* Quad Eight 1* Ramko 1,2* RCA 1-4* Revox 2,4* Russo 1,2* Spectra Sonics 1-3* Sphere 1,2 Shure 1* Sparta 1-4* Studer 2 Systems Eng 1,2 Ultra Audio 1-4* UREI 1,2 Ward-Beck 3* Wilkinson 1*

Headsets
- Audio-Technica* Audiontronic* Koss* Panasonic* Philips Audio* RCA* Revox* Supercore* Sharo Sennheiser* Sony* Stanton* Sansui* Telephonics Telex* TEA* US Pioneer*

Intercom Systems
- Clear Com* Comrex* Dyma Heath* Marcon* McMartin* McCurdy* NEC* Philips Audio* RCA* Telemation* Telex* TEA* Video Aids*

Microphones
- Atlas 1 Audio Techniques 7,8* Audiontronic 1,6* Altec 1,2,3* B&K 2* Collins 1,6* condenser 1,3,5,6* Gotham 2,6* Group 128 3* Sennheiser 1,3,6* Microtrak 3* NEC 3* Microtrak 3* NEV 3* Otari 3* Philips Audio (AKG) 1-3,5,7* RCA 1-3,5,7* Revox 1,2* Revox 6* Revenge 1,6* Sennheiser 1,3,6* Superscope 1-3* Sennheiser 1-6* Shure 1,3,6* Sony 1-4,6,7* Sparta 1-4,6,7* Studer 2* Telemation 1,4* Telex* Teleprod- ucts 7* Transend 6* Turner 1,6 U.S. Pioneer 3* Vega 4*

Music Synthesizers
- Arp, Ion, Electroscoomp Moog

Noise Reduction Systems
- Burwen* DBX* Dolby* Quad Eight* Systems

*The asterisk denotes that manufacturers so identified have verified that the products mentioned are in regular production. Current data on these products are on file with BME.

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- Harris
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- Ward-Beck

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- Fairchild
- Gotham
- Horizon
- Micmix
- McCurdy
- Omamp Labs
- Orban
- Philips
- Audio
- (AKG)
- Quad Eight
- Shure
- Sansui

**Special Effects**
1. phasers
2. tone synthesizers
3. delay lines
4. stereo synthesizer

**Tape, Audio**
1. reels
2. cartridge
3. cassettes
4. test tape
5. tape cleaning & evaluating
   - Advent 2
   - Ampex 4
   - Agfa-Gevaert 1.3,4
   - Ampex 1.4
   - Aristocart 2
   - BASF 1-3
   - Capitol Magnetics 1-3
   - Fidelipac 2,1.2,4
   - Fuji 1-3
   - Harris 2.4,5
   - Maxell 1-3
   - Memorex 1-3,5
   - 3M 1-3
   - McCurdy 1,2,4,5
   - Nortronics 4
   - Pentagon 3
   - Philips 4
   - QRB 2
   - RCA 1-4
   - Revox 3
   - Studio Tape Exchange 1.5
   - Superscope 1-3
   - Sharp 3
   - Sony 1-3,5
   - Standard Tape 4
   - Sansui 3
   - Taber 4
   - TDK 1-4
   - Telex 2
   - Wabash 1

**Tape Accessories**
1. empty reels
2. tension gauge
3. tension control
4. loader
5. splicers
6. splice finders
7. splicers, automatic
8. tape timer
9. tape cleaner
10. tape evaluators

**Tape Heads**
1. replacement heads
2. alignment gauge

**Head Cleaning**
- Crown
- Fidelipac
- Fairchild
- Memorex
- M. Miller-Stephenson
- Magnetics
- Nortronics
- RegnoData
- Revox
- Sony
- TMC
- TeXwipe
- TDK
- VIF

**Editing Equipment**
- Cent.
- Dynamics
- Elec.
- Sound.
- Elpa
- EECO
- Kaltions
- Nortronics
- Revox

**Recorders**
1. portable
2. studio
3. tape decks
4. tape delay units

**Cartridge Equipment**
1. single
2. dual
3. triple

**Duplilicators**
- Audio
- Tek
- Ampex
- Celec
- Elec.
- Sound
- Garner
- Otari
- Pentagon
- Telex
- Visual

**Erasers**
- Fidelipac
- Fairchild
- Garner
- Harris
- ITC
- Nortronics
- RCA
- Senstorei
- Sony
- Sparta
- Taber

**Storage Racks**
- BE
- Dyma
- Fidelipac
- Harris
- Memorex
- Microtrak
- Neumade
- Sparta
- Storeel
- Simpac

**Turntables, Accessories**
1. turntables
2. arms
3. cartridge stereo
4. cartridge quad
5. stylus

**Speakers**
- Acoustic Res.
- Advent
- Altec
- Audio
- Techniques
- CETEC
- Crown
- Electro Voice
- Gotham
- Heath
- Orange Co.
- Philips
- Audio
- RCA
- Russco
- Superscope
- Sparta
- H.H. Scott

**Synchronization Equipment**
1. time code gen
2. tape machine synchronizer

**Meters**
- Audio
- Designs
- 1
- Harris
- 1
- 1
- Mosco-Edison
- 1
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**Other Audio Accessories**
1. custom switches
2. connectors
3. record cleaners

**Studio Furniture Assemblies**
- Dyma
- LPB
- Microtrak
- McCurdy

**COMPONENTS/HARDWARE/SYSTEMS**

**Batteries**
- Calvert
- Elec.
- Globe
- Battery
- Gould
- Yardney

**Cabinets, enclosures, shipping cases**
- AMCO
- Borg Ingersoll
- Draco
- Dyma
- Fidelipac
- Modular Audio
- Microtrak
- Neumade
- Optima
- RCA
- Shinnor
- Shure
- Schafer
- Storeel
- Thermodyne

**Computer Business Services**
1. Broadcasting
2. Cable TV

**Connectors**
- also see Cable TV

**Delay Lines**
- WMA Anderson
- ESC
- McGraw-Edison
- TEA

**Emergency Power**
- Consolidated Caterpillar
- Onan Sawyer

**Mobile Vans**
- AF Associates
- Ampex
- Editei
- RCA

**Power Tubes**
- Calvert
- Elec.
- EIMAC
- Elec.
- Gen'l
- Electri
- RCA
- Thomson-CSF
- Varian

**Rectifiers**
- Calvert
- Elec.
- Eng
- Elec.
- IRC
- RCA
- Varian

**Surge Protectors**
- MSI
- Sintron
- Theta

**Wire & Cable**
- B&W
- Brand
- Rex
- Calvert
- Elec.
- Cablewave
- Gen'l
- Cable
- ITT
- Superman
- Mohawk
- Philips
- Res
- Preformed
- Plastoid
- Sitco

**RF Inductors**
- Delta
- Mutronics

**Transformers**
- Modular Audio
- Gotham

**Torque Motors**
- UMC

**RFI Gasket**
- Chromatics

**Quartz Crystals**
- ITT

**Vacuum Capacitor**
- ITT

**Tools**
- Xcelite

*The asterisk denotes that manufacturers so identified have verified that the products mentioned are in regular production. Current data on these products are on file with BM/E.*
### Video Equipment

**Cameras, TV, Color Studio**
- **1. over $50,000**
- **2. $25-50,000**
- **3. below $25,000**

<table>
<thead>
<tr>
<th>Product</th>
<th>Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film Telecine</td>
<td>Amsco 1* Cohu 2.3* CEI 2* Ferns 1.2* GBC 3 Harris 1.3* Hitachi 2.3* Ikegami 1.2* JVC 3* Magnavox 3* NEC 1.2* Panasonic 2.3* Philips Broadcast 1.2* Philips Video 3* RCA 1.2* Sharp 3* Sony 3* Sanyo 3* Thomson-CSF 1.3*</td>
</tr>
<tr>
<td>Color Correctors</td>
<td>Amphi 1* Akai 1* Asaca 1* B&amp;L 1* Canon 1* Cusque 1*</td>
</tr>
<tr>
<td>Color Encoders</td>
<td>Amphi 1* Akai 1* Asaca 1* B&amp;L 1* Canon 1* Cusque 1*</td>
</tr>
<tr>
<td>Dropout Compensators</td>
<td>Echo 1* 3M 1* NEC 1* RCA 1*</td>
</tr>
<tr>
<td>Film Telecine Equipment</td>
<td>Amsco 1* Cohu 2.3* CEI 2* Ferns 1.2* GBC 3 Harris 1.3* Hitachi 2.3* Ikegami 1.2* JVC 3* Magnavox 3* NEC 1.2* Panasonic 2.3* Philips Broadcast 1.2* Philips Video 3* RCA 1.2* Sharp 3* Sony 3* Sanyo 3* Thomson-CSF 1.3*</td>
</tr>
<tr>
<td>Image Enhancers</td>
<td>Cusque 1* Ferns 1* GA Electronics 1* IVE 1* JVC 1* Panasonic 1* Sony 1* Thomson-CSF 1*</td>
</tr>
<tr>
<td>Monitors, picture</td>
<td>Amphi 1* Akai 1* Ball 1.2* Barco 1.2* BE 1* Conrac 1.2* Electrohome 1.2* Ferns 1.2* Hitachi 1.2* Javelin 1.2* JVC 1* Panasonic 1.2* Sanyo 1* Thomson-CSF 1.3*</td>
</tr>
<tr>
<td>Time Base Converters</td>
<td>Ferns 1* Int. Nuclear 1* Marconi 1* NEC 1* OSL 1* RCA 1* Teletronix 1* Thomson-CSF 1*</td>
</tr>
<tr>
<td>Video tape</td>
<td>Amphi 1* Fuji 1* Hitachi 1* Iris 1* Javelin 1* Karex 1* Memorex 1* 3M 1* NEC 1* Panasonic 1* RCA 1* Studio Tape Exchange 1.2* Sony 1* TDK 1* Video tape Co. 1.3*</td>
</tr>
</tbody>
</table>

*The asterisk denotes that manufacturers so identified have verified that the products mentioned are in regular production. Current data on these products are on file with BM/E.*
| RF TRANSMITTING/RECEIVING EQUIPMENT | | |
|-------------------------------------|-------------------------------|
| **Demodulators**                    | Belar* Catel* Comark* Conrac* Dynair* Farnon* GT Enkurt* Harris* Jerrold* NEC* Philips Inst* RCA EIE* R&S* RHG* Scientific-Atlanta* Telemet* Wilkinson* |
| **Diplexers**                       | Alford CCA Collins* Comark* Cont Elec* Dielectric* Harris* Marconi* NEC* RCA* R&S* Sparta* Tel Tech Varian* Wideband* Wilkinson* |
| **Exciters**                        | AEL* CCA Collins* Dynair* Harris* Marconi* McMartin* NEC* RCA* RHG* Sparta* Siretico* Varian* Wilkinson* |
| **Modulators**                      | Catel* Dynair* Fung GT Enkurt* Harris* Jerrold* NEC* Philips Inst* RCA CATV* RHG* R&S* Scientific- Atlanta* Sparta* Telemet* Tocon* Varian* |
| **Microwave Equipment**             | Alford 1,2 Andrew 1,2 Collins 1,2* Comm Carrier 1,2 Comark 4* Comrex 1* Dielectric 5,6* Emcee 1,2 Farnon 1-3* GT Enkurt 1,2* Hitachi 1* Innovative TV 7* Moseley 1,2* McMartin 1* Microwave Ass 1-4* Marti 1,2* NEC 1-4 Nudat 4* Raytheon 1,2* RCA 1,4* RF Systems 1,2 RHG 1-4* Sparta 1* Soladyne 1,2 Terracom 1-4* Thomson 1* Varian 1,2* Wilkinson 1* |
| **Remote Control Systems**          | Alpha* Audio Services* CCA Delta* GTE Lenkurt Harris* Mardi* Moseley* NEC* RCA* Rust Sparta* |
| **Receivers, Comm & Monitor**       | Belar* Catel* Conrac* Fixtune* Heath* McMartin* NEC* RHG* HH Scott* Sequerra* TFT* Unimedia* Varian* |
| **RF Amplifiers**                   | Acrodyn* AEL* Belar* CATV* Comark* Cont Elec* Harris Jerrold* Johnson* Kay* McMartin* Microwave Power* Moseley* Mu-Del* Mardi* NEC* Rodelco RCA RHG* Sparta* Tel Tech* Tocon* Trompeter* Varian* Wideband* Wilkinson* |
| **RF Loads**                        | Alford Bird Cont. Elec*. Dielectric* Elec Impulse Marconi* RCA* Rex Rheostat* R&S* Sparta* Varian* Wideband* |
| **RF Switches**                     | Alford Bird Collins* Comark* Cont Elec* Dielectric* Dynair* Farnon* Harris* ITT Jennings* Jerrold* Marconi* Mufitronics* RCA* Sparta* Wideband* |
| **Satellite Earth Stations**        | Collins 1,2* Marconi 1,2* Scientific-Atlanta 1,2* NEC 1,2* Varian 1,2* |
| **SCA Equipment**                   | Belar* CCA Collins* Harris* Johnson* Moseley* Mardi* Norver* Parmadyne RCA Sparta* |
| **Translators, AM**                 | AEL* CCA Collins* Cont Elec* CSI Harris* LPB* Marconi* McMartin* NEC* RCA* Sparta* Siretico* Varian* Wilkinson* |
| **Transmitters, AM**                | AEL* CCA Collins* CSI Harris* LPB* Marconi* McMartin* NEC* RCA* RHG* Sparta* Siretico* Varian* Wilkinson* |
| **Transmitters, TV**                | Acrodyn* CCA Emcee Harris* Marconi* NEC* RCA* Rodelco Thomson-CSF* Varian* |

*The asterisk denotes that manufacturers so identified have verified that the products mentioned are in regular production. Current data on these products are on file with BME.

**Source Locator**

**RF/TRANSMITTING/RECEIVING EQUIPMENT**

**Demodulators**
- Belar* Catel* Comark* Conrac* Dynair* Farnon* GT Enkurt* Harris* Jerrold* NEC* Philips Inst* RCA EIE* R&S* RHG* Scientific-Atlanta* Telemet* Wilkinson*

**Diplexers**
- Alford CCA Collins* Comark* Cont Elec* Dielectric* Harris* Marconi* NEC* RCA* R&S* Sparta* Tel Tech Varian* Wideband* Wilkinson*

**Exciters**
- AEL* CCA Collins* Dynair* Harris* Marconi* McMartin* NEC* RCA* RHG* Sparta* Siretico* Varian* Wilkinson*

**Modulators**
- Catel* Dynair* Fung GT Enkurt* Harris* Jerrold* NEC* Philips Inst* RCA CATV* RHG* R&S* Scientific-Atlantic* Sparta* Telemet* Tocon* Varian*

**Microwave Equipment**
- Alford 1,2 Andrew 1,2 Collins 1,2* Comm Carrier 1,2 Comark 4* Comrex 1* Dielectric 5,6* Emcee 1,2 Farnon 1-3* GT Enkurt 1,2* Hitachi 1* Innovative TV 7* Moseley 1,2* McMartin 1* Microwave Ass 1-4* Marti 1,2* NEC 1-4 Nudat 4* Raytheon 1,2* RCA 1,4* RF Systems 1,2 RHG 1-4* Sparta 1* Soladyne 1,2 Terracom 1-4* Thomson 1* Varian 1,2* Wilkinson 1*

**Remote Control Systems**
- Alpha* Audio Services* CCA Delta* GTE Lenkurt Harris* Mardi* Moseley* NEC* RCA* Rust Sparta*

**Receivers, Comm & Monitor**
- Belar* Catel* Conrac* Fixtune* Heath* McMartin* NEC* RHG* HH Scott* Sequerra* TFT* Unimedia* Varian*

**RF Amplifiers**
- Acrodyn* AEL* Belar* CATV* Comark* Cont Elec* Harris Jerrold* Johnson* Kay* McMartin* Microwave Power* Moseley* Mu-Del* Mardi* NEC* Rodelco RCA RHG* Sparta* Tel Tech* Tocon* Trompeter* Varian* Wideband* Wilkinson*

**RF Loads**

**RF Switches**
- Alford Bird Collins* Comark* Cont Elec* Dielectric* Dynair* Farnon* Harris* ITT Jennings* Jerrold* Marconi* Mufitronics* RCA* Sparta* Wideband*

**Satellite Earth Stations**
- Collins 1,2* Marconi 1,2* Scientific-Atlanta 1,2* NEC 1,2* Varian 1,2*

**SCA Equipment**
- Belar* CCA Collins* Harris* Johnson* Moseley* Mardi* Norver* Parmadyne RCA Sparta*

**Translators, AM**
- AEL* CCA Collins* Cont Elec* CSI Harris* LPB* Marconi* McMartin* NEC* RCA* Sparta* Siretico* Varian* Wilkinson*

**Transmitters, AM**
- AEL* CCA Collins* CSI Harris* LPB* Marconi* McMartin* NEC* RCA* RHG* Sparta* Siretico* Varian* Wilkinson*

**Transmitters, TV**
- Acrodyn* CCA Emcee Harris* Marconi* NEC* RCA* Rodelco Thomson-CSF* Varian*

**Misc. RF Equipment**
- program subcarrier
- carrier current
- phasing network
- RF attenuators
- facsimile
- TV combiners
- RF cables
- RF filters
- RF filter couplers
- FM processors
- tubes
- trans. color
- phase equalizer
- connectors
- converters

**Antennas/Towers/Transmission Lines**

**Antennas, AM**
- Allied Tower* Collins* Cont Elec* Harris* Jampol* Marconi* Micro Communications Multronics* NEC* RCA* Stainless Utility Tower*

**Antennas, FM**
- Alford Blonder-T* CCA Collins* Harris* Jampol* Marconi* Micro Communications Multronics* NEC* Philips-Dodge* RCA Stellar Shiveley Sitco* Sparta* Utility Tower*

**Antennas, Microwave**
- Alford Andrew Corp* Ant for Comm* Bogner Cablewave* NEC* Nudat* Prodetin* RCA* Scientific-Atlantic* Utility Tower*

**Antennas, TV**
- Alford Andrew* Blonder-T* Bogner Harris* Jampol* Jerrold* Marconi* Micro Communications NEC* Nudat* RCA* Shiveley Sitco* Utility Tower*

**Towers**
- Allied Tower* Andrew* Fort Worth Grass Jampol* Jerrold* NEC* RCA* Rohn Sitco* Sparta* Stainless Utility Tower*

**Tower Hardware & Construction Equip.**
- Air Space* Allied Tower* Andrew* Cont Elec* Jampol* NEC* Philips Resins* Preformed* Rohn Sitco* Sparta* Stainless Utility Tower*

**Tower Lighting**
- Andrew Dielectric* Flash Tech* Hughey Phillips LLC Jampol* Rohn Sparta* Stainless Utility Tower*

**Transmission Line & Connectors**
- Alford Andrew Corp* Cont Elec* Cablewave* Dielectric* Harris* Jampol* Jerrold* Multronics* NEC* Philips-Dodge* Prodetin* RCA* Scientific-Atlantic* Sitco* Sparta* SWC Trompeter*

**Measuring/Monitoring/Timing/Logging Equipment**

**Antenna Monitors**
- Delta* Dyma Harris* Potomac* RCA* Sparta*

**Clocks, Time Systems**
- digital clocks
- master clocks
- slave clocks
- timers
- time distribution system

**Chart Recorders**
- Gotham* Heath* Philips Inst* Simpson*

**Demodulators**
- CCA Comark* Dynair* Marconi* Philips Inst* RCA* R&S* Scientific-Atlantic*
Collins announces the next generation of FM transmitters.
The Generation 4 line.

They're here now. Nine new FM transmitters from Collins. Named Generation 4™ because they're a full generation ahead of anything else on the market. And because every feature is the product of 4 decades of Collins broadcast experience.

At the heart of everything is Collins' new, field-proven Phase 4™ Exciter. The best FM exciter available today at any price. Just one part of a system designed to meet the requirements of today's new generation of radio audiophiles... with discrete quad compatibility and stringent specifications on all the things that count, like intermod distortion.

Choices? Everything from the big 40-KW 831D-2, the 22½-KW 831G-2B, and 2½-KW 831D-2, to the 10-watt 831A-2. And five more models in between. And they're available right now at prices that are going to be a pleasant surprise. With the same superior Collins quality you've come to expect. Backed with the same unequaled 24-hour parts and field service.

Act now, while we're still able to hold our current pricing. Contact your local Collins Broadcast salesman. Or Broadcast Marketing, Collins Radio Group, Rockwell International, Dallas, Texas 75207. Phone 214-690-5574 or 214-590-5219.
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<th>SOURCE LOCATOR</th>
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<td><strong>Field Intensity</strong></td>
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<td><strong>Colorado Video</strong></td>
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### CABLE TV EQUIPMENT

#### Amplifiers
- **1. trunk**
  - Amplifier Design 2
  - AVA Elec. 2,3
  - C-Cor 1-3
- **2. distribution**
  - Coral 1-3 Delta Benno Cascade 1-3
  - Echo (Arvin) 3
  - GTE Sullivania 1-3
  - Jerrold 1-3
  - Linsdasy 1-3
  - Magnavox 1-3
  - Oak 1-2
  - RCA 1-3
  - ThetaCom 1-3
  - Scientific Atlanta 1-3
  - Tocom 1-3

#### Antennas, Receiving
- **Blonder-T**
  - Cadco Cushi Craft Jerrold* JFD
  - Lindsay Nurad $ \text{Systems Scala} $* Siteco* Scientific Atlanta Weingard

#### Cable
- **1. distribution**
  - Belden 2**
  - CCS Comm Prod 1-2
  - Cerro 1,2
  - Comm/Scope 1,2
  - Essex 1-2
  - Gen 1 Cable
  - Plastoid 2
  - Philips Dodeg 2 Systems
- **2. drop**
  - Wire 1-2
  - Times Wire 1-2

#### Connectors
- **AVA Elec.**
  - Amer Tech
  - AMP Blonder-T
  - Cambridge Gamo Gilbert Eng*
  - IIT Can-
  - on
  - IRT Gernar Jerrold* Kings* LRC
  - Phelps Dodeg* Pyramid* Siteco
  - ThetaCom* Termpster

#### Converters
- **1. standard**
  - AVC Comm 1,2
  - Booncon Hamlin Jerrold 1,2
  - Lindsay Magnavox 1
  - Oak 1,2
  - Summit 2

#### Distribution Accessory
- **AEL Comm**
  - Amero Amer Tech
  - AVA Biddle Blonder-T
  - B&K Cerro
  - C-Cor
  - Comsonics D&S Corley Delta Dynascan Echo Gamo GTE Sylvania Jerrold
  - Lindsay Magnavox RMS Theta Com

#### Head End Processors
- **Ameco AVA Elec.**
  - Blonder-T
  - Catel
  - Dynair
  - Jerrold
  - Oak
  - Phasecom
  - RCA
  - CATV
  - Scientific Atlantic Telemet
  - ThetaCom
  - Tocom
  - Topaz

#### Information Systems, News, etc.
- **Avtel Ameco**
  - CACO Channelismic Metro
  - Data Laird
  - Kansas State Network Metro
  - Data MSI Phasecom
  - Summit Systematic
  - System Concept Telemation
  - United Press
  - Video Data

#### Microwave Equipment
- **Allford Andert Catel**
  - Communication Carrier
  - Farinon
  - Gen
  - Electric
  - GTE Lankurt
  - Jerrold
  - Microwave Assoc
  - Nurad
  - RCA
  - Terracom
  - Texcan
  - ThetaCom
  - Varian

#### Non-duplication Switchers
- **Dynair**
  - Fung Jerrold
  - Phasecom

#### Power Supplies
- **AEL Comm**
  - Blonder-T
  - Gentlyro Globine Globi GTE Sylvania
  - Lindsay Sinsky
  - Sifco
  - Sawyer
  - Sola Teledyne
  - ThetaCom
  - Tocom
  - Topaz

#### Test Equipment CATV
- **AEL Comm**
  - Ameco Avantek Biddle Blonder-T
  - B&K Comsonics D&S Corley Dynascan Echo Intech H-P
  - Jerrold
  - Lampkin Marconi
  - Mid State Comm
  - Phillips Sadelco Tecnic Al
  - Tecom
  - Texcan
  - Vtek Wavetek

#### Construction Accessories
- **Aberdeen 5-6\**
  - Anixter Pruan-2 2-6 Chrisy
  - Contender 4
  - Copperweld 2-6
  - Danville 1,2
  - Electrovert 1,2
  - Ferra Flux 1,2
  - Hampl 1,2
  - Hunt Pierce 1,2
  - Imperial 1,2
  - Jerrold 1,2
  - Lindsay 1,2
  - Magnavox 1,2
  - Oak 1,2
  - RCA 1,2
  - Soller 1,2
  - Sony 1,2
  - Tektronix 1,2
  - Wavetek

#### Services
- **Atele Comm**
  - 1-3
  - Bumpus Sims 2
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  - Cable Conversion 2,3
  - GTE Sylvania 3
  - Jackson 3
  - Jerrold 2-4
  - Network Analysis 2
  - OAK 3-4
  - RCA 2
  - ThetaCom 3-4
  - TOCOM 1-3

**SEPTEMBER, 1975-BM/E**
Discover Single System Sound Super-8 Movies with the New Beaulieu "5008S"

For the last 10 years, Super-8 film has been "silent". Without sound, your Super-8 movies were "incomplete".

Today, there is "Ektasound" film, a revolutionary film which provides the means to record sound (directly on the film) as you're filming. You, therefore, can shoot "complete" movies.

With the new Beaulieu movie camera, you will go even further in Super-8. The "5008S" benefits from the advanced technology provided by Beaulieu: an image with a professional touch, and now sound with a high quality level.

Professional Sound Quality

Pop in a new Super-8 sound ("Ektasound") film cartridge. Focus. Then, plug in the mike. That's all the preparation you need. With the Beaulieu "5008S", you're now ready to start filming professional quality Super-8 single system sound movies.

An amplifier is built into the camera which records the sound directly onto the magnetic stripe of your sound film. The camera records high fidelity sound, both in treble as well as bass (frequency response: 50-12,000 Hz ± 1.5 dB; distortion: less than 0.75%; signal-to-noise ratio: 57 dB; wow and flutter, attenuated peak: less than 0.4%).

The "5008S" modulates the single system sound recording automatically. However, there is also a "manual" setting so that you can modulate the sound as you are filming (by using the VU meter).

"XL" (Existing Light) Filming Capability

The "5008S" has "XL" (Existing Light) filming capability which is provided by: a super-fast lens (f1.2, 6-80mm Angenieux zoom), a longer exposure time for the image (1/40 second), and a through-the-lens metering system that sends 100% of the available light to the film.

Since many of your sound movies will be filmed indoors, this feature will enable you to shoot films in the available light of your scene (whether that "light" is bright or not).

From the "Widest" Wide Angle Shot . . . To the "Closest" Close-Up

For the lens, Beaulieu turned to the professional and technical "know how" of Angenieux (which supplies NASA for all their space missions).

Angenieux succeeded in creating a new zoom lens that covers all the focal lengths from 6-80mm (a 13.3 to 1 zoom ratio).

Imagine such a lens in 35mm still photography. It would go from a 35mm wide angle to a 500mm tele.

In addition, the lens opens to f1.2 (an unprecedented feature on a zoom lens with such a wide focal length range).

New Dolly Shot Style

The power zoom of the Beaulieu "5008S" is continuously variable. You can travel the full focal length range in 4 seconds, or 12 seconds (for any speed in between).

Macrocinematography — Without Touching the Subject

To film macrocinematography with the "5008S", just zoom to 80mm and focus. At the minimum focusing distance of 2 feet, 8 inches, you get all the light available since the lens doesn't actually touch the subject. For example, at this distance, a postage stamp (1½" x 1-1/5" in size) completely fills the viewfinder (and consequently, the screen—when projecting).

Forget the Exposure

With the "5008S", you can concentrate totally on framing and sound recording. The diaphragm operates automatically and stops instantly at the right aperture. (This feature has "Manual Override".)

Lens Interchangeability

The "5008S" is the only single system sound camera with an interchangeable lens. It accepts 35mm still photography lenses (by means of an adapter), as well as all 16mm "C" mount lenses.

The choice is yours. You can interchange an unlimited amount of different lenses in order to create a certain "feeling" or effect in your films.

For full information on the new Beaulieu "5008S" Super-8 Single System Sound Camera, please write to:

HERVIC CORPORATION
14225 Ventura Boulevard
Sherman Oaks, California 91403

The Beaulieu "5008S" Sound Movie Camera

SEPTEMBER, 1975—BINE

Circle 225 on Reader Service Card
DELTA ELECTRONICS
THE AM BROADCASTER'S SINGLE SOURCE FOR . . .

- DIGITAL ANTENNA MONITORING
- TRANSMITTER/ANTENNA CONTROL
- MEASUREMENT/TEST INSTRUMENTS

Digital Antenna Monitoring

DAM-1 DIGITAL ANTENNA MONITOR — FCC type approved. Provides digital readout of amplitude, ratio and phase. Also available: DAMA-1 Base Current Adapter for remote digital readout of antenna base currents; DAMA-2 Analog Converter to Interface DAM-1 Monitor with existing analog remote control systems; DAMX-1 to extend capacity of DAM-1 to arrays up to 12 towers.

Transmitter/Antenna Remote Control

TMCS-1 TRANSMITTER/ANTENNA REMOTE CONTROL SYSTEM — Provides digital readout and control of the DAM-1 and transmitter over a single voice channel. Other systems available: DAMR-1/DAML-1 for digital readout and control of the DAM-1 only; DAMH-1 for use where the remote control point is close enough to the monitor to permit hardwired inter-connection.

Measurement/Test Instruments

OIB-1 OPERATING IMPEDANCE BRIDGE — For antenna system measurements under transmitter power. May also be used as a conventional bridge.

RG-1 RECEIVER/GENERATOR — Two-watt signal generator with a tracking detector. Built-in rechargeable battery power supply for full portability in making low power impedance measurements. For use with OIB-1 or other RF bridges.

CPB-1 COMMON POINT IMPEDANCE BRIDGE — Monitors common point impedance continuously. Designed for permanent installation.

FSM-1 FIELD STRENGTH METER — Single frequency meter for simple, error-free, economical field strength measurements. Plug in modules for multi-frequency and harmonic measurements.

Other Products

TCT-1 TOROIDAL CURRENT TRANSFORMER — Provides accurate, stable R.F. samples for phase and amplitude measurements. Available in three sensitivities. Also available: TCTR-1 Compensated Rectifier Circuit to provide DC voltage for remote current measurement when used with TCT-1.

MJ-50 METER JACK — A make-before-break in line jack assembly that permits “hot” insertion of OIB-1 Bridge or Ammeters.
Broadcast Equipment Manufacturers Including Manufacturers of Cable TV equipment

The manufacturers in the Source directory—covering 9 major categories—received an extensive BM/E form to complete, indicating which equipment or products are in regular production. Manufacturers were also asked to supply supporting product bulletins or catalogs as verification that the product is indeed bona fide and readily available. The VS designation following the product description indicates that such verification was forwarded and is on file with BM/E.

Distributors that are nationwide exclusive sources for equipment are included in this manufacturer’s section. Non-exclusive distributors are in the rep/distributor section. Field offices are given only for those companies which are advertising this issue. Advertisements are also cross referenced under corresponding reps/distributors except for those cases where the advertiser elected not to supply this data.
Bellow into it, sweat over it, man-handle it. Practically jam it into the bell of a trumpet. Without overloading. Without distorting.

This AKG D-140E is a super-tough single element, cardioid dynamic microphone that's sensitive enough for top studios or concert halls.

Frequency range: 30 to 15,000 Hz. SPL for 0.5% THD: at 1000 Hz is 129dB. Its front to back discrimination exceeds 18dB at 1000 Hz at a sound incidence angle of 180°.

The D-140E can be boom mounted or hand held. There are no grills or openings on the shaft to cause feedback or alter response when hand held.

The compact size of the D-140E works on stage or TV too. While it delivers all the high quality audio a program produces, it's so small it can't hide anybody's video.

The D-140E lets music sound life-like, without any coloration of its own. There's a 12dB bass roll-off filter switch recessed into the handle to let you reduce the proximity effect. Or retain it, as the needs of a session dictate.

The D-140E's transducer is internally suspended and encapsulated by a wire mesh/urethane foam windscreen/shield. So handling noise, dust, wind and popping won't interfere with your work.

See your professional equipment dealer for the D-140E or write to us. Before the pressure builds up.

AKG MICROPHONES • HEADPHONES
distributed by
PHILIPS AUDIO VIDEO SYSTEMS CORP.
AUDIO DIVISION
91 McKee Drive, Mahwah, New Jersey 07430
A North American Philips Company

For the pressure of your company.
(At 129dB, distortion is less than 1%.)

SEPTEMBER, 1975—BM/E
### B

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<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>BACH AURICON INC 6950 ROMAINE ST</td>
<td>HOLLYWOOD CA 90038</td>
<td>213 426-0931</td>
</tr>
<tr>
<td>BALLANTINE LABORATORIES INC PO BOX</td>
<td>97 BOONTON NJ</td>
<td>07005</td>
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<td>BACHWOLD MCALISTER INC 12164</td>
<td>SQUIRMAY WAY NORTH HOLLYWOOD</td>
<td>213 843-1200</td>
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<td>BARCO US DIV KALLMAN ASSOC INC</td>
<td>2525 HYPERION AVE LOS ANGELES</td>
<td>90038</td>
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<td>BARKER &amp; WILLIAMSON INC CANAL ST</td>
<td>BRISTOL PA 19007</td>
<td>215 227-5581</td>
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<tr>
<td>BASIC CORP CROSBY DR BEDFORD MA</td>
<td>01730</td>
<td>317 966-6661</td>
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<td>BASHOW S M GOLDSTEIN INC</td>
<td>BAY AREA CALIFORNIA</td>
<td>617 237-1488</td>
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<td>BELAR ELECTRONICS LABORATORY INC</td>
<td>BOX 826 DEVON PA 19333</td>
<td>215 687-5550</td>
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<td>BELL &amp; HOWELL (AV PRODUCTS DIV)</td>
<td>7100 MCCORMICK RD CHICAGO IL</td>
<td>713 362-4400</td>
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<td>BELL P/A PRODUCTS CORP 1209 N</td>
<td>FIFTH F COLUMBUS OH</td>
<td>43201</td>
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<td>BENJAMIN ELECTRONIC SOUND CORP</td>
<td>SMITH ST FARMINGDALE NY</td>
<td>713 362-4400</td>
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<td>BERKEY COLORTRAN INC 1015</td>
<td>CHESTNUT ST BURBANK CA</td>
<td>213 843-1200</td>
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<td>BEST ELECTRONICS 9024 W 51 ST</td>
<td>TERRACE SHAWNEE KS</td>
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<td>BETA TECHNOLOGY INC 94 VERDI ST</td>
<td>FARMINGDALE NY 11375</td>
<td>516 293-4313</td>
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<tr>
<td>BIDDLE JAMES G CO TOWSHIP LINE</td>
<td>JOLLY RDS PLUMINGTON MT</td>
<td>215 645-9200</td>
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<td>BIRD ELECTRONIC CORP 30303 AURORA</td>
<td>RD CLEVELAND (SOLON) OH</td>
<td>44135</td>
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<td>BIRNS SAWYER INC 1026 NO HIGHLAND</td>
<td>AVE LOS ANGELES CA 90304</td>
<td>213 466-8211</td>
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<tr>
<td>BIRNUP &amp; SIMS PO BOX 2401 WEST</td>
<td>PALM BEACH FL 33401</td>
<td>305 683-8311</td>
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<td>B&amp;K INSTRUMENTS INC 5111 W 16TH ST</td>
<td>CLEVELAND OH 44142</td>
<td>216 267-4800</td>
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<td>BLOUNDER-TONGUE LABORATORIES INC</td>
<td>ONE JAKE BROWN RD OLD BRIDGE</td>
<td>215 695-1411</td>
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<td>BOGNER BROADCAST EQUIP CORP 99 W</td>
<td>HAWTHORNE AVE VALLEY STREAM NY</td>
<td>516 561-9130</td>
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<td>BOOTH ELECTRONICS CORP RTE 287</td>
<td>AT SMITH RD PARSIPPANY NJ</td>
<td>210 877-5110</td>
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<td>BORREGO INGERSOLL PRODUCTS DIV</td>
<td>TOM WIRE SYSTEMS</td>
<td>210 877-5110</td>
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<td>BOSTON INSULATED WIRE &amp; CABLE CO</td>
<td>65 BAY ST BOSTON MA</td>
<td>617 746-7650</td>
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<td>BOSTON INSTRUMENTS INC 4891</td>
<td>WILLIMANTIC CT</td>
<td>218 423-7771</td>
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<td>BROAD ELECTRONICS INC 8810</td>
<td>BROOKVILLE RD SILVER SPRING MD</td>
<td>301 588-4983</td>
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<td>BRC INC 8600 WEST SUNNYSIDE AVE</td>
<td>WOODSIDE NY 11377</td>
<td>312 625-0265</td>
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<td>BULOH OPTICAL 1009 BEECH AVE</td>
<td>PITTSBURGH PA 15233</td>
<td>412 321-0766</td>
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<tr>
<td>BURVEN LABORATORIES 209</td>
<td>MIDDLESEX TP BURLINGTON MA</td>
<td>617 237-1488</td>
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<tr>
<td>CANON USA INC 10904, OHOKA CITY</td>
<td>731118</td>
<td>403 681-5377</td>
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<td>CANON SCOPIC 10 NEVADA DR LAKE</td>
<td>SUCCESS NY 11040</td>
<td>516 488-6700</td>
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<tr>
<td>CANON USA INC 10 NEVADA DR LAKE</td>
<td>SUCCESS NY 11040</td>
<td>516 488-6700</td>
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The VS designation following the description of a company's products indicates that the manufacturer verified to BM/E in July of 1975 that these products are in regular production and data on the product/equipment is on file with BM/E.
Clean, precise, consistent—EEV Leddicon® camera tubes are made to last. They can be used as replacements for Plumbicon® and Vistacon tubes. Hundreds of stations in the USA and throughout the world use Leddicons to down costs and up quality.

From the same one-stop source you can also specify EEV Image Orthicons—we’re the world’s biggest makers—and Vicicons. All EEV tubes are available for immediate delivery with fast service back-up. Contact us now for type lists and prices.

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Circle 128 on Reader Service Card
THE SOURCE '75

CETEC AUDIO (DIV. OF CETEC INC) 1305 SATICOY ST HOLLYWOOD CA 91605 213 875-1900 audio amplifiers, controls; consoles, mixers; tape duplicate & feeders

CHANNELED ELECTRONICS 1234 ANOBE LN EL CAJON CA 92021 714 448-6298 automated videotape cassette programmer; a-v switchers, routing switchers, distribution amplifiers

CHARLES MACHINE WORKS INC (SEE DITCH WITCH) 75207 214 990-5574 FM transmitters, AM transmitters, antenna systems, audio control consoles, microwave equipment; frequency monitors; audio controllers & processors, full line consoles, microphones; dist of other lines

CERRO CATV DIV OF CERRO CORP use; motion picture accessories wide-angle lenses for 16mm & 35mm cine

CINEMA BEAULIEU DIV HERVIC CORP GRANVILLE AVE LOS ANGELES CA 90025 213 478-0711 16mm film cameras; lenses for 16mm cameras; camera tripods, cases, accessories, camera sound recording systems & accessories; audio & location lights, light stands, accessories

COMMUNICATIONARTSINC BOX 478 MAUDE AVE SUNNYVALE CA 94086 408 245-8450 videotape editing equipment

COMMUNICATIONS CARRIERS INC 33 COMM/SCOPE CO PO BOX 2406 MAUDE AVE SUNNYVALE CA 94086 408 245-8450 videotape editing equipment

COMMUNICATIONSCORP2037 GRANVILLE AVE LOS ANGELES CA 90025 213 478-0711 16mm film cameras; lenses for 16mm cameras; camera tripods, cases, accessories, camera sound recording systems & accessories; audio & location lights, light stands, accessories

CLEAR-COM (DIV OF LUMIERE PROD INC) 759 HARRISON ST SAN FRANCISCO CA 94107 415 989-1130 portable intercom systems

COMM/SCOPE CO PO BOX 2406 704 328-5271 drop and distribution coaxial cable for CATV

COMMUNICATIONS CARRIERS INC 33 RIVER RD GREENWICH CT 06834 203 661-7556 RF amplifiers; RF switchers; transmission line & connectors; demodulators

COMMERCIAL ELECTRONICS INC 890 75207 214 990-5574 audio & location lights, light stands, accessories

COMMUNICATIONS TECHNOLOGY CORP 2237 COLBY AVE LOS ANGELES CA 90025 213 478-0711 16mm film cameras; lenses for 16mm cameras; camera tripods, cases, accessories, camera sound recording systems & accessories; audio & location lights, light stands, accessories

COMMUNICATIONS TECHNOLOGY CORP 2237 COLBY AVE LOS ANGELES CA 90025 213 478-0561 CATV splicing, materials, fittings

COMMUNICATIONS TECHNOLOGY INC 3070 LEEMAN FERRY RD HUNTINGTON ST 35801 205 863-7370 audio switchers, remote routing switchers

COMMUNITY INFORMATION SYSTEMS JONATHAN VILLAGE CENTER CHASKA MN 55318 612 448-4800 two-way diplex filters for CATV

COMPQIUINC 366 S MAPLE GLENROCK NJ 07452 201 443-3800 mfg of fixed lens adapters for TV: distributor of lenses & filter equip; stands, dollies; video animation aids

COMPUT/NET INC 8616 LA TIJERA BLVD LOS ANGELES CA 90045 213 442-2211 automated business services for radio & TV continued on page 57
THE ADC

900

A distribution switching system for those who demand the finest performance available today.

The 900 is the ONLY system to feature a "developed for television" Integrated Circuit Crosspoint to discretely switch video-audio-tally, all with superb specifications.

While designed for computer control, the system is supplied with the facilities to accommodate any conventional or non-conventional control scheme.

The 900 is the most flexible, versatile and superior system available today.
Mention the name Amperex
and what comes to mind?
Plumbicon * TV Camera Tubes, of course.

That's fine, but we'd like
to remind you that Amperex
is your one stop source
for all these broadcast components, too!
RF Power Triodes and Tetrodes
for AM and FM Transmitters, VHF Power Tetrodes
and Cavities, Variable Vacuum Capacitors,
UHF Klystrons, UHF-TV Triodes,
Coaxial Circulators, High Voltage Rectifier
Stacks and Tubes.

For complete information on Amperex Replacement Tubes and Components for:
- Radio & TV Broadcast Equipment
- RF Communications Transmitters
- Industrial Power Supplies & Oscillators
- Microwave Ovens & Commercial Radar Equipment
- Scientific Instruments...
contact Bob Norris, Distributor Sales Operation.
Telephone: 516 931 6210.

Amperex
TOMORROW'S THINKING IN TODAY'S PRODUCTS
A NORTH AMERICAN PHILIPS COMPANY

* Registered trademark of N. V. Philips of the Netherlands
THE SOURCE '75

SEPTEMBER, 1975-BM/E

COMPUTER IMAGE CORP 2475 W 2ND AVE DENVER CO 80223 303 934-5801 animation equip; small & large production switchers, routing switchers; chroma keyers, downstream merger modules VS

See ad pg. 11—ref to rep/dist section

COMPUTER MAGNETICS CORP 125 W PROVIDENCE AVE BURBANK CA 91502 213 849-2356 refurbished VTR heads

COMREX CORP PO BOX 269 SUDSBURY MA 01776 617 358-4042 wireless & mic systems for news gathering, intercom systems; CVE systems

See ad pg. 138

COMSONICS INC PO BOX 1106 HARRISONBURG VA 22801 703 434-2404 remote switching equip for CATV

CONCORD COMMUNICATIONS SYSTEMS 790 PARK AVE HUNTINGTON NY 11743 516 673-8000 CCTV cameras, surveillance systems; cartridge & cassette VTR's, video switchers

CONVERGENCE CORP 1000 MONONGAHELA AVE ST ALexANDRIA VA 22304 703 751-5650 time code generator, digital clocks, master & pulse distribution amplifiers, video color & pulse distribution amplifiers, video color phase equalizers & waveform correctors video sweep generators; video test equip; audio processing amplifiers

See ad pg. 75—ref to rep/dist section

DATATRON INC 1562 REYNOLDS AVE SANTA ANA CA 92711 714 627-7877 yagi antennas for CATV

The VS designation following the description of a company's products indicates that the manufacturer verified to BM/E in July of 1975 that these products are in regular production and data on the product/equipment is on file with BM/E.

DAVIS MANUFACTURING DIV OF J.J. CASE PO BOX 1801 WICHITA KN 67213 316 265-6251 trenchers for direct cable burial; line layers VS

DBX INC 296 NEWTON ST WALTHAM MA 02154 617 899-8090 tape recorder noise reduction systems, dynamic expanders, noise reduction modules, gain control modules

See ad pg. 82

DELTA-BENO-CASCADE LTD 124 BELFIELD RD REXDALE ON CANADA M9W 1G1 416 241-2651 headend, triband amplifiers, distribution amplifiers for CATV

DELTA ELECTRONICS INC 5534 PORT ROYAL RD SPRINGFIELD VA 22151 703 321-9845 antenna/transmitter control systems, antenna monitors, field strength meters, impedance bridges, listen meters, monitoring & test accessories

See ad pg. 48

DICTAPHONE CORP 120 OL POS RD RYE NY 10580 914 967-6211 telephone answering equip

DIELECTRIC COMMUNICATIONS DIV OF SOLA BASIC RTE 121 RAYMOND ME 04071 207 655-4555 strobe beacons, rf watt meters, coaxial cable, waveguide & accessories

DIGITAL COMMUNICATIONS INC 310 14TH AVE SOUTH ST PETERSBURG FL 33701 813 895-3214 pay-TV systems & equipment

DIPOL ELECTRONICS INC 1970 ELLESMORE RD SEARBOROUGH ON CANADA MIH 2 W 416 438-5135 studio consoles for broadcasters

DITCH-WITCH TRENCHERS PO BOX 66 PERRY OK 73077 405 336-4404 trenchers; vibratory plow; earth saw; backhoe; hydraulic breaker

Contact main headquarters for local office.

DIX HILLS ELECTRONICS INC 25 N MALL PLAINVIEW NY 11803 516 420-1166 cross modulation, intermodulation & distortion measurement equip for CATV

DOLBY LABORATORIES INC 1113 AVE OF THE AMERICAS NEW YORK NY 10036 212 489-6652 noise reduction systems; audio processing amplifiers; magnetic recording accessories

See ad pg. 121—ref to rep/dist section VS

DOWNE COMPUTER SERVICE INC 112 TENTH ST DES MOINES IA 50309 515 282-2686 subscriber billing services for CATV TV

DRACON INDUSTRIES 9541 MASON AVE CHATSWORTH CA 91311 213 882-8595 aluminum relay racks

DUNLAP CLARK ELECTRONICS 230 CALVARY ST WALT WHAM MA 02154 617 547-0638 audio power amplifiers

DURNELL ENGINEERING INC HIGHWAY 4 PERRY OK 73077 515 758-2686 remote switching equip for CATV

See ad pg. 48

DYMA ENGINEERING INC RT 1 BOX 51 TAOS NM 87571 575 758-2666 custom audio consoles for broadcasters VS

DYNALECTRIC INC 6360 continued on page 58
THE SOURCE '75

FEDERAL BLVD SAN DIEGO CA 92114 714 582-9211 video pulse & distribution amplifiers, routing & production switches, sync generators, spec effects generators, modulators, demodulators, chroma keyers, equalizers, exciter, diplexers, sideband analyzers, audio preamps, audio monitor amps, audio switchers, rf switchers
See ad pg. 124
Company products available from all major video distributors throughout the world

DYNASCAN CORP B&K DIV 1801 W BELLE PLAINE AVE CHICAGO IL 60613 312 327-7270 CATV test equip

DYNASCIENTES VIDEO PRODUCTS TOWNSHIP LINE RD BLUE BELL PA 19422 215 643-0250 videotape editing equip; automatic program controllers; image enhancers, processing amplifiers, production switchers, pulse & distribution amplifiers, routing switchers, colorizers, sync generators, special effects
generators
See ad pg. 96—refer to rep/dist section

EASTMAN KODAK CO MOTION PICTURE & AUDIOVISUAL MARKETS DIV 343 STATE ST ROCHESTER NY 14650 716 325-2000 motion picture cameras, motion picture film; projectors for TV; film processors
See ad pg. 9

Calif Kodak PO Box 38939, Hollywood 90038 213 454-0131
Kodak PO Box 3145, Rincon Annex, San Francisco 94110 415 776-5055
Ga Kodak PO Box 4778 (Fed. Annex) Atlanta 30302 404 351-6910
Haw Kodak PO Box 17007, Honolulu 96817 808 833-1651
Il Kodak 1901 W 22 St, Oak Brook 60521 312 654-5300
NY Kodak 1133 Ave of the Americas New York 10036 212 262-7100
Kodak 1187 Ridge Road West Rochester 14690 716 254-1300
Texas Kodak 6300 Cedar Springs Rd Dallas 75235 214 351-3221
DC Kodak 505-12th St, SW 20024 202 554-9300
Can Kodak 3500 Eglinton Ave W Toronto M4M 1V3 416 786-8233

ECHO SCIENCE CORP 485 E MIDDLEFIELD RD MOUNTAIN VIEW CA 94040 415 961-7145 portable video tape recorder/record/playback

ECLAIR CORP AMERICA 62 WEST 45TH ST NEW YORK NY 10036 212 869-0490 professional motion picture cameras, lenses; tripods, cases/accessories for cameras

EDCOR DIV OF P.A.C. 3030 RED HILL AVE COSTA MESA CA 92626 714 556-2740 wireless microphones, dynamic & lavalier; wireless sound systems

EDISON ELECTRONICS See MCGRAW-EDISON

EDITEL COMMUNICATIONS LTD 5610 CHEMIN BOIS FRANC MONTREAL QUEBEC H4M 1A5 514 331-2951 portable TV cameras; custom-built mobile video units; custom built video design & installation

ESEE 1441 E CHESTNUT ST SANTA ANA CA 92701 714 935-6000 (SEE AMPLEX) audio & video tape editing equip; character generators

EFRATON CALIF INC 3303 HARBOR BLV E COSTA MESA CA 92626 714 556-1620 rubidium freq standard

EGG INC ELECTRO MECHANICAL DIV MOULTON ST GEORGETOWN MA 01833 617 352-6200 cable connectors

EIMAC, DIV OF VARIAN 301 INDUSTRIAL WAY SAN CARLOS CA 94070 415 592-1221 complete line of broadcast quality power grid tubes (triodes, tetrodes, pentodes)
See ad cover Ill

Anf Varian 717 Third Ave., Scottsdale 85251 602 947-5461
Calif Varian 4940 El Camino Real Los Altos 94022 415 968-7630
Calif Varian 2901 Whipple Blvd Santa Monica 90403 213 826-5588
Fla Varian 314 S. Missouri Clearwater 33756 813 446-6513
Ga Varian 6650 Power Ferry Rd, N W Atlanta 30339 404 252-0045
III Varian 205 W Touhy Ave Park Ridge 00068 312 825-6666
Md Varian 4701 Lydall Rd Cheverly 20781 301 773-7010
Mass Varian 400 Totton Pond Rd Waltham 02154 617 890-4560
NJ Varian 306 Fellowship Rd Mount Laurel 08057 509 235-6800
NJ Varian 25 Route 22 Springfield 07081 201 376-6600
NY Varian 115 Twin Oaks Dr Syracuse 13206 315 437-2568
Ohio Varian 10 Southmoor Circle Dayton 45429 513 268-7318
Texas Varian PO Box 789 Richardson 75080 214 235-2385

EIP INC 3130 ALFRED ST SANTA CLARA CA 95050 408 244-7975 microwave frequency counters

ELECTROCOMP ELECTRONIC MUSIC LAB INC VERNON CT 06066 203 875-0752 music synthesizers

ELECTRONIC INTERFACE SYSTEMS INC 2409 S BROADWAY SANTA ANA CA 92707 714 797-0033 automated video cassette controller (random access)
See ad pg. 135

ELECTRIC IMPULSE INC 116 CHESTNUT ST RED BANK NJ 07701 201 741-0404 dry tv loads

ELETRONERING INC PO BOX 85 SELMA NC 27576 919 284-2102 digital timers

ELECTRO-INDUSTRIAL ENGINEERS See RCA Community Antenna Systems

ELECTRONICS DIVERSIFIED 1675 NW 216TH ST HILLSBORO OR 97123 503 645-5533 studio light controls; patch panels

ELECTRONICS MISSILES COMMUNICATIONS INC PO BOX 116 WHITE HAVEN PA 18661 717 443-9575 low power TV transmitters for broadcast; TV transmitters for ITFS and MJS; TV translators; TV antennas

ELECTRO SOUND INC 160 SAN GABRIEL SUNNYVALE CA 94086 408 245-6600 audio tape recorders/players; portable mixers; tape duplicating systems, open-reel, cartridge, cassettes; automatic tape winders, splicers, power amplifiers; theatre sound systems; magnetic film duplicators; video cassette winders

continued on page 60
As even a casual look at this book will convince you, there's hardly a shortage of video equipment on the market—much of it with advanced features and special capabilities. So choosing the right equipment for your needs should be easy.

Trouble is, it's just as easy to make costly mistakes. Because the gear you get to fill your present needs lacks special features you'll want later. Or isn't compatible with equipment you'll be adding. Or won't be versatile enough for future applications.

At Camera Mart, we have a "systems" approach to video that can help you get the most for your dollar today, without putting you in a bind tomorrow. By carefully selecting the right equipment now—in most cases, by actually trying it out on our premises first. We'll even let you have your cake and eat it too—with rental and leasing plans that give you the equipment now, when you need it—plus the flexibility of purchasing whatever and whenever you want.

Talk to us. Or better yet, visit. With all the money you're investing in video, it pays to invest a little time with us.
Now you can economically edit on helicals and automatically transfer in minutes to quads

The importance of Jam-Sync.

Our exclusive jam-sync eliminates the need to pre-lay-down the SMPTE edit code on an entire length of fresh tape being used to assemble a show from other tapes. Instead, during pre-roll, the system time code generator is automatically set and synced so that time picks up exactly where it left off — to the frame. This saves quad head wear. Tape wear, too. And is also a great time saver on stop-and-go live production by generating a continuous uninterrupted elapsed time on the tape.

Save your expensive quads for other jobs.

The block diagram tells the story. You can edit on-line or off-line. Do time consuming edits on low cost helicals. Event times are stored in the computer and a punched tape prepared. Using this tape, a precisely edited show can be automatically transferred to quads in minutes.

Your quads have never had it so good. Or your pocketbook either. We'd like to tell you the whole story of our Editor-in-Chief. Why not write or phone today.

datatron, inc.

EDITING SYSTEMS DIVISION
1562 Reynolds Ave., Santa Ana, California 92705 (714) 540-9330 • TWX 910-595-1589
Mailing Address: P.O. Box 11427, Santa Ana, California 92711

Circle 133 on Reader Service Card
CD25G 25 Hz TONE GENERATOR
For production studio use to insert the standard 25 Hz automation actuating tone. Starts tape transport and actuates muting to eliminate bias pops and other start-up noises. Tone button applies 25 Hz tone and stops transport at end of tone.

CD25S 25 Hz TONE SENSOR
Senses the presence of pre-recorded 25 Hz tones on audio material and provides automation control functions. Features tone removal filter, adjustable delayed stop contacts, and fixed tone alarm for automatic tape rewind.

CD60T TIME ANNOUNCE CONTROL UNIT
Adds versatility to your automation system by using two cartridge machines or reel-to-reel transports for automatic time announcements. Contains its own internal IC clock. Power failure interlock disables time announcement until clock reset.

CD28AS SEQUENCER
Low cost way to start automation with easy and economic expansion at a later date. Uses keyboard entry for simplicity of programming. Eighty events of pre-programming provide ample storage for most formats.

CD12C TIME PROGRAM CONTROLLER
Provides 10 programmable exact time points per hour for real time control of CD28AS and CD28 APM plus digital clock display. 8 relay function outputs for time announcements, transmitter on/off control and other functions. Crystal time base and battery backup.

CD24R MULTIPLE CARTRIDGE MACHINE
The CD24R cartridge machine (shown above) is simple and reliable – so reliable it is used by the U.S. Government for flight training. Provides six second access to any one of 24 cartridges.

CD28APM AUDIO CONTROLLER AND PROGRAMMER
The CD28 family of audio controllers is perfect for your new automation system, or for use with present audio sources. Features 2000 pre-programmed events (expandable to 8000) 12 audio sources (expandable to 96), full random select for 9 multiple cartridge players. Accessories include remote control, logging and computer interfaces.

Control Design provides the total modular approach to AM, FM and Short Wave program automation. Our individual modules may be used alone, assembled into complete automation systems, or used with existing equipment to update and expand automatic programming. All Control Design equipment is manufactured to the highest standards for excellent reliability and easy maintenance. Easily obtained solid state devices are used with printed circuit construction, socket mounted integrated circuits and quick disconnect interface connectors. All equipment is covered by a one year full warranty.

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Circle 134 on Reader Service Card
For the cleanest cart sound your station can broadcast, Master Cart is the answer. Engineered to use natural tape flow patterns that eliminate erratic tape behavior and assure repeatability both from cartridge to cartridge and usage to usage. Provides that added edge in stereo performance that conventional cartridges can't deliver. Fewer parts for simpler maintenance... and greater reliability.

For detailed information, contact your Fidelipac Distributor or

FIDELIPAC®

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(609) 235-3511

Guaranteed
Stereo Performance to within 00 degrees of 0 phase
at 12,500 Hz

Circle 135 on Reader Service Card
Remember!
When it comes to computer editing...

If you haven't spoken to CDL, you're getting less than half the story.

We have a 13 minute color video cassette which shows you what is being done every day with CDL Computer Editing Systems in production and post production facilities... and what you could be doing.

If you would like to see it, write to us on your company letterhead; c/o Sales Dept. BM/E, or give us a call. Or, ask for our Computer Editing Brochures.

CENTRAL DYNAMICS LTD
Canada: 147 Hymus Blvd., Montreal, Que., H9R-1G1  514-697-3811
U.S.A. 230 Livingston Street, Northvale, N.J. 07647  201-767-1300

Circle 136 on Reader Service Card

remote pickup broadcast systems

Delivering 40 watts continuous output power in the 148-172 MHz remote pickup broadcast band, the B-1100T FM transmitter, combined with the TBM-1100R FM receiver, affords today's broadcaster the highest-quality program relay system he can buy. On-the-spot originations, ranging from symphony music to emergency news-break coverage, puts the broadcaster "where it's at" quickly, economically and reliably.

Circle 137 on Reader Service Card

McMartin.

4500 South 76th Street  Omaha, Nebraska 68127  (402) 331-2000  telex 048-485

Circle 137 on Reader Service Card

SEPTEMBER, 1975—BM/E
In 1965, 3M introduced a quadruplex color drop-out compensator that has since become the standard of the industry. Today, all three networks and thousands of television stations across the country rely on 3M Brand color DOC's to bring viewers better picture quality. But what have we done for you lately?

See us at Video Expo, booth 601

Watch 3M's Bicentennial television series “From Sea to Shining Sea” Consult local listing for time and channel.
We don't quit when we're ahead.

Introducing five new video products for broadcast, educational and industrial uses.

We could have rested on our laurels after developing our quad color DOC. But we didn't. Instead, we've developed five new low-cost products to help you produce the very best professional-quality video with your existing equipment.

3M Mini Processing Amplifier

This unit, designated P-50, has an important exclusive feature: A built-in pulse-cross generator with automatic brightening that allows the use of any inexpensive monitor to examine the critical head switch area for tracking and skew adjustments during on-line operation through an auxiliary monitor output. Other features include front panel controls for six video signal parameters; horizontal and vertical blanking generator for precise timing, plus a reconstituted sync system to allow stable operation with random interlaced video; operation with both color and monochrome inputs; Burst or chroma can be switched out to accommodate unacceptably noisy color recordings; and input clamping for excellent low frequency and 60-cycle hum rejection.
3M Bridging Video Switcher

This is a broadcast-quality unit. It is a highly-sophisticated 10-input switcher with momentary-contact illuminated buttons. There is an audio D. A. to eliminate loading, and this unit also provides remote capability.

3M Digital Video AGC

This digital unit is a new concept. There is none other like it. It can be used in any application where sudden and undesirable signal level changes occur without incurring the unacceptable effects usually associated with AGC circuitry. There is no overshoot with large duty cycles. And calibration/setup is simple and straightforward. Other important features include a peak white or VIR reference signal; fade-to-black recognition circuit for gain memory; selectable attack and release time; and a total AGC range of 15 db, with unity gain under no-input conditions. Suitable for broadcast, industrial, educational and cable TV applications.

3M Color Bar and Sync Generator

Now your studio can have a color reference for a surprisingly modest cost. This unit produces an NTSC 8-bar pattern and all sync signals just like the very expensive units used in professional broadcasting studios.

3M Video Distribution Amplifiers

This complete line of products suitable for any video application includes a Pulse D. A. that reforms distorted incoming sync pulses, and if your application requires, will accept composite video and separate and distribute sync as needed. Then mate this unit with our Subcarrier D.A. that has four independently phase-able outputs, and our totally reliable four-output Analog D.A. with cable equalization.

Turn the page for six more 3M professional-quality products.
Quadruplex Color DOC

The 3M dropout compensator is the industry standard for broadcast VTR use. It replaces color dropouts in videotape recordings with the correct color video, avoiding the problems of other types of signal compensation.

Helical DC C and Processing Amplifier

Our 3M DP-100 is a complete video processing system designed to clean up, correct and stabilize helical scan VTR signals for any VTR format. Corrects for high or low contrast, inaccurate or washed-out colors, picture jump and roll.

Video Source Identifier

The VSI inserts a preselected, 8-character identification code into any 525/625 composite video signal which appears on your picture monitors to help keep your switching straight and locate video path failures.

Special Effects Generator and Program Switcher

This 3M SEG 672 performs vertical interval program switching, dissolves and wipes between six video inputs. The key and mat key feature can be used to produce many imaginative special effects. Joy-stick positioner. Many features of more expensive units.

Dropout Profile Recorder

The DPR evaluates video dropout rate and annoyance factor during normal on-line playback, and provides a permanent strip chart of the resulting profile. The logical companion to the 3M dropout compensator.

Color Video Encoder

This supplies a standard NTSC color signal from either a three or four-channel camera source, and is compatible with live color cameras and film chains. The resulting signal meets all applicable EIA and NTSC specifications.

We don't quit when we're ahead.

Your dealer is:

Mincom Division
3M Company
350 South Lewis Rd., Camarillo, Calif. 93010

Please send me more detailed information, including technical specifications, about your video products. I am interested in ______ applications.

Name
Title
Address
City
State Zip
Phone number (______) Area Code

B-103 M
The Source '75

wire-wrapping equip; connector pressers; pliers; wire cutters, strippers

Olean Case Corp 322 Hooughton Ave
Olean NY 14760...
716 372-0700 vulcanized fibre & wood covered case for audio & video equipment; film shipping

Oan Div Oan Corp 1400 73rd Ave NE
Minneapolis MN 55432...
612 574-5000 emergency stand-by power generators

Opamp Labs Inc 1033 S Ycasmore Ave
Los Angeles CA 90036...
213 934-3566 production consoles; portable mixers; operational amplifiers; audio components; basic amplifier kits

Optima Enclosures Div
Scientific-Atlanta 2166 Mountain Industrial Blvd Tucker GA 30084...
404 939-6340 racks, equip enclosures

Orange County Corp. 1079
Autumnwood Dr Winnepeg Manitoba R2J 1C6 Canada...
204 475-1026 monitor amplifiers and speakers, audio switchers, audio processors

Orban Broadcasting 271 Columbia Ave San Francisco 94133...
415 421-3894 FM modulation controller

Otar CORPORATION 981 Industrial Rd
San Carlos CA 94070...
415 593-1648 reel-to-reel audio tape recorder/reproducer, tape duplicators

Packaged Lighting Services Inc PO Box 285 Walden NY 12586...
914 778-3515 portable quartz lighting system for CCTV

Pacific Recorders & Engineering Corp 1760 Sorrento Valley Rd
San Diego CA 92121...
714 453-3255 variable-speed motor drive amplifier; compressor/limiter; digital timing systems; custom audio consoles; preamps; line & distribution amplifiers

Paillard Inc 1900 Lower Road
Linden NJ 07036...
201 381-5600 16 mm cameras/projectors

Pacoo KO Films Inc 6300 Olson Memorial
Hwy Minneapolis MN 55410...
612 540-6611 film processing

Palmer (WAI) Films Inc 611 Howard St
San Francisco CA 94105...
415 986-5961 motion picture film projectors; color TV film recorders (video to film transfer)

Panasonic Video Systems Matsushita Electric Corp of America
One Panasonic Way Secaucus NJ 07094...
201 348-7000 complete line of cameras color and mono (portable and studio); videotape recorders; tape duplicators; studio equipment including telecommunications

See ads pgs. 22, 23—refer to rep/dist section

Panasonic Video Systems Matsushita Electric Corp of America
One Panasonic Way Secaucus NJ 07094...
201 348-7000 complete line of cameras color and mono (portable and studio); videotape recorders; tape duplicators; studio equipment including telecommunications

Panasonic Technics One Panasonic Way Secaucus NJ 07094...
201 348-7000 tumtables, audio components

See ad pg. 35

Bogner Antennas
Low VHF
High VHF
UHF

Omnidirectional and directional, high gain rugged slot and dipole arrays. Available in 9 standard horizontal patterns...with power gains to over 100 and power ratings of 3 kW, 10 kW, or 30 kW. Hundreds of Bogner Antennas have been providing continuous service in urban and remote areas since 1965. Write for free catalog and price list, including all required electrical mechanical and structural data.

THE SOURCE '75

Bogner Broadcast Equipment
Corp. 156 Haven Ave.
Port Washington, N.Y.
(516) 883-2811

Circle 138 on Reader Service Card

THE SOURCE '75

Bogner Broadcast Equipment
Corp. 156 Haven Ave.
Port Washington, N.Y.
(516) 883-2811

Circle 138 on Reader Service Card

SEPTEMBER, 1975—BM/E
Fewer parts... fewer problems with audiopak A-2 broadcast cartridge

Ribs are molded into the flange — no pencil leads to break and jam.

Try one free
In the broadcast cartridge world, the simpler the better. That's why the design of the audiopak A-2 eliminates parts that can give you trouble.

The lessons learned from our years of experience developing the world's leading 8-track cartridge have been applied to our audiopak A-2. The result is a more durable, more reliable broadcast cartridge. And because we manufacture the entire product — from tape to packaging — we can assure you of the highest possible quality control.

We're so sure we have the best product on the market, we want to prove it... at no cost to you. For your free sample and more information on the audiopak A-2 broadcast cartridge, write on your company letterhead to: Capitol Magnetic Products, Division of Capitol Records, Inc., 1750 North Vine St., Los Angeles, Calif. 90028. Attention: Marketing Manager, Professional Products.

No top wire. 
Reloading's easier.

Tape guide is an integral part of the cartridge base — not glued in — to insure accurate azimuth control.
Finally... an EBS encoder/decoder in a compact package at an affordable price!

The SOURCE '75

VHF & UHF antennas, flexible & rigid transmission line; transmission line connectors, microwave antennas, reflectors, waveguides

PROFIT RECOVERY SYSTEMS PO BOX 25 LEICESTER NY 14461 716 382-3223

W. NUTIEN AVE PASSAIC NJ 07055 201 473-0100 TV projection systems (Amphicon)

PSC TECHNOLOGY INC 120 GRAND CENTRAL AVE GLENDALE CA 91201 213 245-8424

Acme optical printers for super 8 & 16mm with special effects; black-and-white projector

PULSE DYNAMICS MFG CORP PO BOX 355 COLCHESTER IL 62236 309 775-4544 remote broadcast originating consoles & equip; portable public address systems; PA loudspeakers

PYRAMID INDUSTRIES INC 2612 W ENCANTO BLVD PHOENIX AZ 85009 602 269-2319 coaxial cable; cable tools; cable connector's VS

Q

Q-E MANUFACTURING CO NEW BERLIN PA 17855 717 966-1617 cable stringing blocks & aerial construction tools for coaxial cable

GRK ELECTRONIC PRODUCTS DIV OF CCA 1568 N SONORA VISTA FRESNO CA 93703 209 251-4213 studio turntables; pre-amplifiers; audio controls; consoles; tape decks; tape cartridge equip

See ads pgs. 136, 139

QSI SYSTEMS INC 993 WATERTOWN ST W NEWTON MA 02165 617 969-7118 video sequential switcher, TV cameras (mono); time elapses VTR; time date generator

Q-TV/TELESYNC 342 W 40TH ST NEW YORK NY 10018 212 695-277S TV prompter systems

QUAD EIGHT ELECTRONICS CORP 11929 VOSE ST N HOLLYWOOD CA 91605 213 769-1516 audio preamps, line & power amplifiers, equalizers, audio controls; audio consoles & mixers; reverberation units; db meters; noise gates; audio digital delay unit; compressors; attenuators; tone oscillators; cabinets; racks

QUAKER ELECTRONICS INC PO BOX 215 HUNLOCK CREEK PA 18621 717 256-3477 quartz crystals

QUICK-SET INC 3550 WOODHEAD DR NORTHBRIDGE IL 60062 312 498-0700 tripods; stands; mounts; dollies for TV VS

R

RANK PRECISION IND INC 411 JARVIS AVE DES PLAINES IL 60018 312 257-7720 video camera lenses

RADIANT CORP 8220 N AUSTIN MORTON GROVE IL 60053 312 966-4200 front projection screen

RADIO CONSTRUCTION 1830 YORK RD TIMMONIUM MD 21093 301 252-2880 antenna towers; tower erection

RAMKO RESEARCH 3516-C LA GRANDE BLVD SACRAMENTO CA 95823 916 392-2100

The VS designation following the description of a company's products indicates that the manufacturer verified to BM/E in July of 1975 that these products are in regular production and data on the product/equipment is on file with BM/E.

VS distribution amplifiers, preamplifiers, mic/line amplifiers, monitor amplifiers; controllers; cartridge & cassette loaders; consoles

Rapid Q (See also GARRON) See ad pg. 84

Raven Screen Corp 124 E 124TH ST NEW YORK NY 10035 212 534-8408 front & rear projection screens

RAYCHEM CORP 300 CONSTITUTION DR MENLO PARK CA 94025 415 329-3333 Thermofit sleeving & covers; waterproofing products for cable plant; molded parts

RAYTHEON DATA SYSTEMS PROVIDENCE TNPK NORWOOD MA 02062 617 762-6700 microwave communications equip

RCA Corp Broadcast Systems Front & Cooper St Bldg 2-5 CAMDEN NJ 08102 609 963-8000 audio line, power; distribution amplifiers; radio automation equip; consoles, mixers; automatic tape cartridge recorder/players, audio & video; headsets, intercom systems, microphones; patch panels, audio tape recorder/players; tape erasers; turntables, arms, pickups, loudspeakers; video automation equipment; video camera, studio & portable: ENG systems; camera heads, mounts, dollies; quad VTRs character generators, chopper generators, close-up drop-out compensators, color encoders; telephone chains; production & routing switches; pulse distribution amplifiers, processing amplifiers, sync generators, special effect generators; videotape recorder/players; motion picture cameras, tripods, projectors, AM, FM & TV transmitters; modulators, demodulators, diplexers, exciters; remote control, remote pickup & STL links; RF amplifiers, loads, switches, SCA equip; AM, FM & TV antennas; antenna towers & lighting; transmission line, antenna monitors, modulation monitors, field intensity meters, audio generators, video picture monitors; phase meters, signal analyzers, rf watt meters, mobile TV vans

See ad pg. 14-15

Fla RCA Corp Broadcast Systems 215 Chief Justice Abbe Rd Suite 5 West Palm Beach 33410 561 801-1100

Fla RCA Corp Broadcast Systems 6660 SW 40TH St Miami 33155 305 667-1200

Fla RCA Corp Broadcast Systems 1901 NW 36TH St Miami 33142 305 764-0282

N.Y RCA Corp Broadcast Systems 520 W 49TH St New York 10019 212 265-4500

RCA Corp Broadcast Systems 2880 N 30TH St Washington 20008 202 331-3000

RCA Corp Broadcast Systems 222 East 42ND St New York 10017 212 695-2775

Ramko Research 3516-C La GranDE Blvd Sacramento CA 95823 916 392-2100

Circle 140 on Reader Service Card
if your T.V. Transmitter is not approaching this performance

...you need a

**Datatek D-701**

waveform corrector and
transmitter phase equalizer system

![Datatek D-701](image)

Now used by many
leading stations

Other Advanced Datatek Products:
- Differential Phase & Gain Measuring
- Video Sweep Generators
- Envelope Delay Measuring Sets
- Video Waveform Equalizers
- Video-Audio Routing Switchers
- Video, Audio & Pulse D.A.S

Unique features provide superior color picture quality...
- Direct waveform correction by incremental time method
- Phase and amplitude equalizing
- Corrects errors left by existing phase equalizers
- Removes smearing, streaking, antenna reflections
- On Air adjustments using VITS

![Datatek Logo](image)

1200 W. Chestnut St.
Union, N.J. 07083 (201) 964-3656

Circle 141 on Reader Service Card

SEPTEMBER, 1975-BM/E

continued on page 76
does your audio console, or the
one you're talking about purchasing,
have all these standard features:

<table>
<thead>
<tr>
<th>Feature</th>
<th>AMPRO</th>
<th>YOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every input channel equipped with preamp</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>4 transformer coupled inputs per channel</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Remote start contacts on all high level inputs</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Modular plug-in amplifiers</td>
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<tr>
<td>2 location cue/intercom system with remote talkback</td>
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<tr>
<td>4 selectable monitor inputs</td>
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<tr>
<td>4 programmable speaker muting outputs</td>
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<tr>
<td>Step fader faders with cue on all channels</td>
<td>✔</td>
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<tr>
<td>15 watt rms protected monitor amp</td>
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<tr>
<td>4 selectable headphone inputs plus stereo cue</td>
<td>✔</td>
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<tr>
<td>+ 18dBm transformer coupled outputs</td>
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<tr>
<td>Telephone grade lever keys</td>
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<tr>
<td>Shielded PC board mixing bus for extra RF immunity</td>
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<tr>
<td>Engraved panel markings</td>
<td>✔</td>
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<tr>
<td>Extra cost hidden options</td>
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<tr>
<td>High purchase price</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Ampro audio consoles are available in 6, 8, 10 and 12 channel rotary or slide fader versions in mono, dual mono, stereo or dual stereo/simulcast configurations. Priced from $1,995.00 to $5,275.00. Ampro also produces a comprehensive line of broadcast tape cartridge equipment. For complete details, call collect today or write.

AMPRO CORPORATION
850 PENNSYLVANIA BLVD., FEASTERVILLE, PA 19047 • (215) 322-5100
Professional Equipment for Broadcasting Professionals

See us at Booth #1, NAFMB, Atlanta
Circle 142 on Reader Service Card

SEPTEMBER, 1975—BM/E
SCIENTIFIC-ATLANTA INC \Box 13654 ATLANTA GA 30324 \ 404 938-2930 CATV systems; headend modulators, demodulators, signal processors; satellite ground stations; microwave antennas, transmission line, CATV trunk, distribution amplifiers; CATV antennas; cabinets, racks
SCOTT HH INC 111 POWDERMILL RD MAYNARD MA 01754 \ 617 897-8801 loudspeakers; digital FM tuner
SCOTT INSTRUMENTS LABORATORIES 533 MAIN ST ACTON MA 01720 \ 203 368-2332 sound level meters
SCULLY/METROTECH (DIV OF DICTAPHONE) 475 ELLIS ST MOUNTAIN VIEW CA 94043 \ 415 968-8389 tape recorders/payers (reel-to-reel), potable, studio); playback equip for automation, time code for loggers, loggers, underground cable locators
SENCORE INC 3200 SENCORE DR SIOUX FALLS SD 57107 \ 605 339-0100 field strength meters; sweep generators for VHF, UHF, FM, & chroma; field effect meters, dual-trace oscilloscopes, AM/FM stereo analyzer
SHARP ELECTRONICS CORP 10 37TH ST NEW YORK NY 11435 \ 212 297-5000 audio amplifiers; audio equalizers
SIMPSON ELECTRIC CO 853 DUNBEE RD EVANSTON IL 60204 \ 312 679-5830 gas-filled surge voltage lightning protectors
SHINTRON CO INC 144 ROGERS ST NEW PROVIDENCE NJ 07971 \ 201 265-5600 picture monitors, sync generators, waveform monitors, phase shifters
SIMPAC INTERNATIONAL INC 369 SAN MIGUEL DR SUITE 365 NEWPORT BEACH CA 92660 \ 714 644-6857 storage systems for racks
SH POTENTIAL INC 186 WOOD AVE S ISelin NJ 08830 \ 201 494-1000 gas-filled surge voltage lighting protectors for cable amplifiers & powers supplies
SIMPSON ELECTRIC CO 853 DUNBEE AVE ELGIN IL 60120 \ 312 697-2260 analog & digital voltmeters & multimeters; oscilloscopes
SINGER EDUCATION SYSTEMS 3750 SARTAIN AVENUE MANSFIELD OH 44902 \ 216 792-7000 lenses; lens accessories
SHINGLETON INC 449 WATSON AVE EVANSTON IL 60204 \ 312 655-3844 rf loads; coaxial switches, power combiners
SHEFFIELD (See HITACHI SHEFFIELD) 474-644-1123 for cable amplifiers & powers supplies
α-RAFT inc. 844-5222 quartz lamps
The seventeen and one-half pound CAT-KIT Quartz Location Lighting Kit

The CAT-KIT is ideal for CATV and for all on-location filming requiring an extremely compact and ultra-lightweight lighting kit.

For further information, please write to:

Cinema Products
2037 Granville Avenue, Los Angeles, California 90025
Telephone (213) 478-0711  Telex 69-1339  Cable, Cinedevco

The CAT-KIT, which weighs only 17 lbs., 8 oz., includes: three non-focusing fill lights (miniature broads); three 10 ft. long three-wire cables (with in-line switches and parallel blade U-ground plugs); three "POP" light stands (made of aluminum), and a sturdy carrying case, measuring only 5 3/4" x 9 1/2" x 27". The CAT-KIT operates at 120-volts AC/DC with 650-watt double-ended quartz lamps.

For further information, please write to:

Cinema Products
2037 Granville Avenue, Los Angeles, California 90025
Telephone (213) 478-0711  Telex 69-1339  Cable, Cinedevco

Circle 143 on Reader Service Card

SEPTERMBER, 1975-BM/E

The seventeen and one-half pound CAT-KIT Quartz Location Lighting Kit

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Cinema Products
2037 Granville Avenue, Los Angeles, California 90025
Telephone (213) 478-0711  Telex 69-1339  Cable, Cinedevco
THE SOURCE '75

MONROE AVE ROCHESTER NY 14603 . . . . 716 586-2000
16mm TV program & lights; transmission lines, antenna monitors; field intensity meters, frequency counters, signal generators, distortion meters, modulation monitors; status & alarm indicators, loggers; cabinets, cable, connectors

SINGER INSTRUMENTATION 5240 ALLA RD LOS ANGELES CA 90066 . . . . 213 822-3681
field intensity stu, up

SINTRONIC CORP 705 HAVERTOWN RD BRYN MAWR PA 19010 . . . . 215 525-3700
am & fm broadcast transmitters; excitors; line surge protectors

SITG ANTENNA CO 10330 NE MARX ST PORTLAND OR 97220 . . . . 503 253-2000
cable tv antennas, antenna preampilliers; antenna towers & accessories; wired cable; connectors

SKIRPM LIGHTING CONTROL CORP 41-43 24TH ST LONG ISLAND CITY NY 11101 . . . . 212 937-1444
studio lights, light systems, solid state dimmers, light accessories

SMITH-VICTOR CORP 301 N COLFAX ST GRIFFITH IN 46320 . . . . 219 768-1625
lighting systems VS

SOD-MASTER DIV JACOBSEN MFG CO 3456 N WASH AVE MINNEAPOLIS, MN 55412 . . . . 612 529-9556
oscillating plows for cable burial

SOLA ELECTRIC 1717 BUSS RD ELK GROVE VILLAGE IL 60007 . . . . 214 339-2800
CATV power supplies; CATV transmitters

SOLADYNE INTERNATIONAL INC 7455 CONVOY CT SAN DIEGO CA 92111 . . . . 714 279-7872
microwave communications equip

SOLL INC 311 E 72 ST NEW YORK NY 10021 . . . . 212 249-2031
rf switching systems

SONEX INTERNATIONAL 4001 WALAMEDA BLVD BURLINGTON WA 98233 . . . . 206 847-7487
chroma keys; luminance keys VS

SONTEC CORPORATION 10210 MARBLE COURT COCKEYSVILLE MD 21030 . . . . 301 628-2282
audio line amplifiers, preamps; audio limiter/compressors; equalizes VS

SONY CORP OF AMERICA 9 W 57TH ST NEW YORK NY 10019 . . . . 212 371-5000
video cassettes, video cassette recorder/players; videotape recorder/players; audio preamps & power amplifiers; quad matrix equip; headsets; microphones; audio tape; audio cars & cassette tape, accessories; audio tape recorders, turntables; phonos; video cameras; video switchers; sync generators; special effects generators; videotape editing equip

See ad Cover II

Calif . . . . . 230 W Hill Place Crocker Ind Park
Brisbane 94005 . . . . 415 467-4900
700 W Artesia Blvd Compton . . . . 310 227-5000
90200 . . . . 213 537-4300
Ga . . . . . 20 Perimeter Park Suite 109 Atlanta
20234 . . . . 404 451-7501
III . . . . . 6801 W Jarvis St Niles
60648 . . . . 312 792-3000
Md . . . . . 15840 Haffner Lane Langley Park
20783 . . . . 301 439-3500
Mich . . . . . 10610 Galaxie Ave Ferndale
49220 . . . . 313 548-9325
NY . . . . . 47-47 Van Dam St Long Island City
11101 . . . . 212 361-8600
Texas . . . . . 9004 Ambassador Row Dallas
75247 . . . . 214 631-3431

SOUND TECHNOLOGY 1400 DELL AVE CAMPBELL CA 95008 . . . . 408 378-6540
audio generators; rf generators; harmonic distortion meters

SPARTA ELECTRONICS CORP 5851 FLORIN-PERKINS RD SACRAMENTO CA 95828 . . . . 916 383-5353
radio automation systems; audio amplifiers; audio cartridges, cassettes; audio consoles & mixers; microphones & microphone accessories; tape cartridge recorder/players; tape erasers; turntables; arm, monitor speakers; AM & FM transmitters; diplexers, excitors; remote control equip; remote pickup & STL systems, SCA equip; FM antennas, antenna towers; lights; spine of plows for cable burial

STudios on AIR LIGHT
brilliant red lettering on jet black background can be seen even in the brightest ambient light conditions. $29.95

SPECTRA SONICS 770 WALL AVE OGDEN UT 84404 . . . . 801 392-7531
audio consoles, audio preampilliers; line, mixing, power amplifiers; compressor/limiters; variable equalizers; electronic crossover filters; audio attenuators & accessories

See ad pg. 137

TEXAS 9004 Ambassador Row Dallas
75247 . . . . 214 631-3431

FIDELIPAC®
ACCESSORIES & CARTRIDGES

CART-A-ROUND CARTRIDGE STORAGE RACKS
Each WR-25 Modular Rack holds 25 Type A Cartridges... eight can be mounted on our Mobile Carrousal Base to make up the MR-200
WR-25 $13.25
MR-200 $145.95

TABLE TOP CARTRIDGE RACK
Model TR-96 holds 9 Type A cartridges
Model TR-48 holds 48
TR-96 $73.85
TR-48 $39.55

STUDIO ON AIR LIGHT
brilliant red lettering on jet black background can be seen even in the brightest ambient light conditions. $29.95

CART-E-RASE DEMAGNETIZER
can be used for erasing cartridges, reel-to-reel tape, film sound stripping, etc. $34.50

ALIGNMENT PROBLEM?
Keep your cart equipment in perfect working order with:
- 350 STA Alignment Cartridge $38.50
- 350 STF Wow and Flutter Cartridge $24.50
- 350 STG Cue Test Cartridge $35.00
- Head Insertion Gage $3.35
- Height Gage $12.95
- Right Angle Zenith Gage $21.75

CONTACT YOUR Fidelipac DISTRIBUTOR or
FIDELIPAC®
109 Gaither Drive, Mt. Laurel, NJ 08057
(609) 235-3511

* Trademark
LENCO

THE NAME THAT MEANS QUALITY

FOR:

VIDEO TEST GENERATORS
GEN-LOC SYNC GENERATORS
NTSC ENCODERS
DISTRIBUTION AMPLIFIERS
BLACK AND WHITE CAMERAS

Quality With Reliability At A Reasonable Price.

Lenco offers a two year warranty, parts and labor, including surface transportation to and from the factory.

LENCO, INC., ELECTRONICS DIVISION
319 W. Main St., Jackson, Mo. 63755
(314) 243-3147 or (314) 243-2394

Circle 146 on Reader Service Card

And now the weather...

Get your weather forecasts via a teleprinter from RCA. Teleprinter, including maintenance, on a lease basis — just $64 per month on 1-year lease, slightly higher for 90-day lease. Also available on outright purchase.

The teleprinter prints out the weather forecast automatically, and we make sure it keeps running reliably. Maintenance is prescheduled and automatic.

Installation and service are fast, because RCA data communications specialists are based in over 140 cities, and our warehouse network is nationwide.

The weather changes, but RCA reliability stays constant.

Call us at (609) 779-5087.

RCA Service Company, A Division of RCA
Technical Services, Bldg. 204-2, Camden, N.J. 08101
WE GIVE YOU MORE OF WHAT YOU'RE LOOKING FOR.

Circle 147 on Reader Service Card
Monroe Electronics' New DUAL-TONE EMERGENCY BROADCAST SYSTEMS MONITOR

Wall Mounted Enclosure

New System Designed To Meet New FCC Regulations

- Dual Tone Input
- Wide Dynamic Input Range
- Immune to Voice and Music
- Built-in Audible Alarm
- Relay Closure Output

This monitor is tailored to FCC regulations covering the new Dual Tone Alert system. The unit accepts a dual tone input from any radio receiver or audio cable and provides an audible alarm and relay closure output when activated.

The Monroe unit is housed in a metal cabinet suitable for wall or panel mounting. It is furnished complete with power cord and internal audible alarm.

The EBS Monitor occupies 6½” x 4” x 2½”, and weighs 2 pounds. Plug-in circuit cards, and ready access to test terminals make servicing fast and effective. A one year full warranty is furnished by the manufacturer. Parts availability and factory service exceeds 10 years.

Phone or write for full details.

MONROE ELECTRONICS, INC.
100 HOUSEL AVENUE, LYNDONVILLe, NEW YORK 14098

Area Code 716 765-2254

Circle 148 on Reader Service Card
Within TeleMation's "525 Series" audio and video terminal product line, certain units are designated precision as distinguished from their broadcast counterparts. The precision designation is much more than a simple "marketing label". Precision is a demarcation assigned through TeleMation R&D that puts a particular product into a separate, unique attention category, from design concept through manufacture and quality-assurance verification. All this to assure the buyer that the product not only meets or surpasses all known competitive products in its performance parameters, but also that it is designed to operate for months and even years without need for periodic adjustment or any other routine maintenance. This philosophy and practice, then, take the precision units in the 525 Series terminal equipment into a quality/stability/reliability realm that is usually associated with instrumentation electronics.

TeleMation has used a number of design techniques in accomplishing the high performance and stability achieved by these products. For example, one-percent-tolerance resistors having a temperature coefficient of 20PPM/°C are generally used as gain-determining elements and wherever drift would affect stability. They provide both freedom from temperature drift and freedom from the effects of aging that are common to the less expensive resistors normally used in video products. Junction matching — each PN junction being matched with an NP junction to cancel the characteristic 2.2mV/°C drift of silicon junctions — is also employed to improve stability and prevent offset drift in DC-coupled outputs.

Feedback is extensively used in precision grade units as a means of insulating performance characteristics from the effects of component variables. Audio amplifiers are typically high-gain op-amps inside 100-dB feedback loops, while video amplifiers are typically transistor pairs inside 40-dB feedback loops. In these applications, a 2:1 change in the gain characteristic of any active component will have negligible effects on overall circuit performance.

The advantages of push-pull, cascode, and complementary symmetry circuits are exploited to provide low distortion, wide bandwidth, and high signal-handling capability. Current-sourcing techniques are also employed as a means of minimizing distortion that otherwise can result from operating semiconduction junctions over wide current ranges.

TeleMation engineers also have successfully coped with capacitor leakage (another source of long-term drift) in the precision series designs. Capacitors are either operated with minimum DC voltage drop or the effects of increased leakage with age are otherwise eliminated, as in the TVA-524 and TVA-525 video distribution amplifiers where the capacitance of a small capacitor having extremely low leakage current is "amplified" by a high-gain op amp; the result — longer time constant, less tilt, and greatly improved long-term stability.

Our TVA-525 video distribution amplifier, whose performance characteristics are listed below, is a representative application of the quality and stability factors inherent in the precision series product.

<table>
<thead>
<tr>
<th>TVA-525 PERFORMANCE SPECIFICATIONS</th>
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<td>Typical</td>
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<tr>
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<td>Differential Gain @ 3.58 or 4.43MHz</td>
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<td>Frequency Response to 5.5MHz</td>
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<td>Distortion, 50Hz Squarewave DC Mode</td>
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<td>Squarewave AC Mode</td>
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<tr>
<td>Common Mode Rejection, 60Hz</td>
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<td>Common Mode Rejection, 5MHz</td>
</tr>
</tbody>
</table>

A functional schematic of this amplifier along with a product description is available on request. We suggest you compare this circuit to that of any competitive product. We feel you will agree that the stability and long-term quality performance intrinsic to our precision design will justify whatever small additional initial cost might be involved through including such quality electronic devices in your broadcast system.
WITH 30 DB NOISE REDUCTION AND 10 DB EXTRA HEADROOM

With dbx Model 142 noise reduction in the rack, you can:

- Nearly double the usable signal-to-noise ratio of your cartridge chain, studio master recorder, line and program amps, full-frequency land lines, and microwave links.
- Make original tapes completely free of hiss or background noise on open reel, cartridge, or cassette format.
- Duplicate tape through three or more generations without audible noise build-up.

dbx noise reduction linearly compresses audio signals by a 2:1 ratio at the front end and produces an exact mirror image 1:2 expansion at the terminus of the audio chain.

True RMS level sensing circuitry insures perfect encode/decode tracking over a dynamic range well in excess of 100 dB irrespective of phase shifts in the transmission or storage medium. There is no breathing, pumping, or other coloration of the sound with dbx noise reduction, and there are no pilot tones or calibration levels to worry about.

dbx Model 142 provides two channels of broad-band audio noise reduction in excess of 30 dB coupled with an additional 10 dB increase in headroom for all components and lines included within the noise reduction loop.

For complete product information and list of demonstrating dbx dealers, circle reader service number or contact:
PLC-4 Magazine
The most advanced design in 16mm 400 ft. magazines.

FEATURES:
- The PLC-4 magazine is made of extremely lightweight, glass-filled Lexan®, a material with greater impact strength than magnesium.
- Hinged magazine doors provide quick access for fast loading and unloading.
- Two thumb-activated latches on each magazine door guarantee positive safe closure.
- Compartment-type magazine design permits the use of either 200 ft. or 400 ft. darkroom cores or daylight-loading spools.
- The relatively square configuration of the compartment makes it easy to remove a daylight-load spool.
- Magazine may be fastened to the camera by conventional screwdown methods or the unique Cinema Products snap-latch technique.
- The molded plastic PLC-4 magazine completely eliminates the problem of film spotting caused by particles of magnesium adhering to the emulsion and then reacting in the developing bath.
- The PLC-4 magazine is extremely silent in operation.

PLC-4 Magazine shown mounted on a CP-16R Reflex camera.

PLC-4 Magazine shown mounted on an Auricon CineVoice Camera (400 ft. Conversion model).

MAGAZINE COMPATIBILITY
PLC-4 MAGAZINES ARE COMPATIBLE WITH ALL 16MM CAMERA SYSTEMS WHICH ACCEPT STANDARD 400 FT. MITCHELL-TYPE MAGAZINES.

For further information, please write to:
2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 Telex 69-1339 Cable: Cinedevco

Circle 151 on Reader Service Card
Finally there's a microphone that follows the news wherever it goes—to the end of a mile-long parade or to the center of a championship golf course. The new Shure SM82 super-rugged microphone—with its own built-in, line-level amplifier—is the long-distance hotline designed for broadcasting. Used with a telephone line or voice coupler, the SM82 becomes a complete remote amplifier/microphone with line-level output and a self-contained peak limiter to prevent overloading. All in the new Shure SM82, the long hotline for the short deadline.

Shure Brothers Inc.
222 Hartrey Ave., Evanston, IL 60204
In Canada: A. C. Simmonds & Sons Limited

Manufacturers of high fidelity components, microphones, sound systems and related circuitry.
How flat is each input on your console? What about distortion? Noise? Crosstalk?

Your answers to these and lots of other questions come easily with modern Spectrum Analysis. Quickly and effectively you can do your audio maintenance, testing and monitoring. Do your audio proofs of performance too, with a 5L4N Spectrum Analyzer and a few related instruments.

Transmitter maintenance, antenna testing and rf proofs are easily handled with the 7L12 Spectrum Analyzer.

Two new booklets describe FM/AM broadcast measurements using the 5L4N and 7L12 Spectrum Analyzers. Step-by-step instructions are included. Ask for your copies.

Write: Tektronix, Inc., Box 500A, Beaverton, Oregon 97077. In Europe, write: Tektronix Limited, P.O. Box 36, St. Peter Port, Guernsey, Channel Islands.

☐ Send me a copy of AM Broadcast Measurements.
☐ Send me a copy of FM Broadcast Measurements.
☐ Have a Field Engineer contact me.

NAME
TITLE
STATION OR COMPANY
ADDRESS
PHONE
CITY STATE ZIP

Circle 155 on Reader Service Card
THE VS designation following the description of a company's products indicates that the manufacturer verified to BM/E in July of 1975 that these products are in regular production and data on the product/equipment is on file with BM/E.

W

WARD BECK SYSTEMS LTD. 841 PROGRESS AVE SCARBOROUGH ONT M1H 2X4 416 438-6550 CATV video consoles; TV intercom VS See ad cover

WATERS MANUFACTURING INC LONGFELLOW CENTER WAYLAND MA 01778 617 358-2777 Audio attenuators & controls, rotary & slide WAVEC TR INDIANA INC 66 N FIRST AVE BEECH GROVE IN 46107 317 783-3221 CATV test equip; sweep/signal generators, RF detectors, function, signal, sweep generators; oscilloscopes, phase meters; transmission level test set; programmable waveform synthesizers; test accessories VS WABASH TAPE CORP 1720 DES PLAINES AVE DES PLAINES IL 60018 312 298-8585 helical-scan video magnetic tape, audio magnetic tape

WEAVER J A CO 8676 PENNELL DR ST LOUIS MO 63114 314 997-5555 Bonded copper ground rods, ground rod clamps; jumper clamps

WIDE BAND ENGINEERING CO INC PO BOX 21642 PHOENIX AZ 85036 602 254-1570 RF amplifiers, analyzers; impedance bridges; directional couplers; power dividers VS WILKINSON ELECTRONICS INC 701 CHESTNUT ST TRAINER (CHESTNUT) PA 19013 215 497-5100 AM & FM broadcast transmitters; audio consoles; audio compressor/limiters; distribution amplifiers, equalizers, line amplifiers; demodulators, excitors, RF amplifiers; modulation & frequency monitors see ad pg. 99—refer to rep/dist section VS WINEGARD CO 3000 KIRKWOOD ST BURLINGTON IA 52601 319 753-0121 CATV antennas, accessories, home system amplifiers

WORLD VIDEO INC PO BOX 117 BOYERTOWN PA 19512 215 367-6055 broadcast & CCTV one-gun (Trinitron) color monitors; demodulators; video tape VS See ad pg. 126—refer to rep/dist section

X

XCELITE INC 118 BANK ST ORCHARD PARK NY 14127 wire stripping tools, hardware

Y

YARDEEN ELECTRIC CORP 82 MECHANIC ST PAW CATUCK CT 02891 203 599-1100 Silver, zinc & cadmium batteries; chargers, high intensity lights VS

Z

ZEI-MARK CORP PO BOX 182 BROOKFIELD CENTER CT 06805 Optical multiplexer; neutral density wheel; telecine film chain with preview; film chain adapters for 16 mm & super-8 mm film projectors ZOOMAR INC 55 SEA A CLIFF AVE GLEN COVE NY 11542 516 676-1900 optics; optical instruments

Get a better Bang for your buck! Colortran Pro-kit IV a complete light kit for $695.
Independent Broadcast Reps/Distributors

Including cross reference to companies whose products are advertised

ALABAMA

ADAMS & ASSOCs
P.O. Box 26119
Birmingham 35226
Line: audio equip

BCS ASSOCs
3322 S. Memorial Pkwy.
Huntsville 35803
205-881-6220
Line: video products

TFT see ad p 138

CALHOUN CO. INC.
240 Oxmoor Circle Suite 102

Birmingham 35209
205-870-7620
Line: full line video equip
CVS see ad p 122
Lenco Electronics see ad p 79
Strand Century see ad p 102

JAMES W. CLARY CO.
1713 Second Ave. S.
Birmingham 35233
205-322-2466
Line: audio components

GRCE ELECTRONICS
3696 Airport Blvd.
Mobile 36608
Line: video equip
AKAI see ad p 13

LEE ASSOCs.
817 Wheeler Ave.
Huntsville 35801
205-533-5896
Line: test instruments
Marconi see ad p 119

THE MAZE CORP.
P.O. Box 6636
Birmingham 35210
205-591-4800
Line: full line broadcast (radio & TV)
& recording equip
Inovonics see ad p 134

POWELL ELECTRONICS
3906 Jackson Hwy.
P.O. Box 369

Sheffield 35660
205-383-3330
Line: video products
AKAI see ad p 13

PROFESSIONAL REPS
804 Floral Ave.
Opelika
205-745-2192
Line: audio and video products

SIGNAL ENGINEERING & SALES
P.O. Box 10167
Birmingham 35202
205-555-5855
Line: audio & video products
CVS see ad p 122
TeleMotion see ad p 81

JESS SWICEGOOD
P.O. Box 1741
Dothan 36302
205-794-7944
Line: audio equip; transmitters

ALASKA

HARRY J LANG & ASSOCs.
1406 W. 47th Ave.
Anchorage 99501
907-279-5741
Line: audio & video equip
McMartin Industries see ads pgs 18, 65, 90 & 135

NORTHERN VIDEO SYSTEMS INC.
4600 Business Park Blvd.
Anchorage 99503
907-279-5571
Line: full line audio & video equip
CVS see ad p 122
Lenco Electronics see ad p 79
TeleMotion see ad p 81

ARIZONA

MOXON ELECTRONICS
4210 N. Brown Ave.
Scottsdale 85251
602-945-3737
Line: test instruments

PACKER SALES CO.
855 E. Plaza Ave.
Scottsdale 85253
602-949-3443
Line: audio equip
AKG see ad p 51

POLARIS LABORATORIES
4446 N. 36th St.
Phoenix 85019
602-956-6281
Line: audio equip

PERSPECTIVE MEASUREMENTS
7244 E. Indian School Rd.
Scottsdale 85252
602-947-3860
Line: video systems

ROH'S INC.
4553 E. Broadway
Tuscon 85711
602-327-5929
Line: full line video equip, CCTV systems
AKAI see ad p 13
Lenco Electronics see ad p 79

SEPTEMBER, 1975—BM/E
ARKANSAS

ALLIED SOUND VISUAL ED. INC.
3520 W. 69th St. Suite 306
Little Rock 72209
501-368-2354
Line: full line video equip
CVS see ad p 122
Electronics see ad p 79

CARLTON BATES CO.
6821 South Hamilton Dr.
Little Rock 72209
501-562-9100
Line: audio and radio products

PAUL JAMESON
Magnolia
501-234-3778
Line: attenuators
Tech Labs see ad p 90

SUDBURY WHOLESALE CO.
P.O. Box 989
Blytheville 72315
501-762-2555
Line: audio components
Stanton Magnetics see ad p 34

CALIFORNIA

ACCURATE SOUND CO.
114 5th Ave.
Redwood City 94063
415-365-2843
Line: full line of audio equip
Innovonics see ad p 134

AIKEN COMMUNICATIONS
701 S. 10th St.
Tall 93268
209-765-5403
Line: audio components
Stanton Magnetics see ad p 34

AINXTER-PRUZAN
2228 S. Ritchey
Santa Ana 92705
714-556-6270
Line: Sony studio video equip, cable construction accessories, tools, headend, passive, test equip, power supplies

ARCAL SOUND & VIDEO
2001 El Camino Ave.
Sacramento 95821
916-927-4502
Line: audio components, lighting equip
Strand Century see ad p 102

AUDIO INDUSTRIES CORP.
1419 N. LaBrea Ave.
Hollywood 90028
Line: audio components, equip

AUDIO VIDEO CRAFT
7710 Melrose Ave.
Los Angeles 90046
213-852-3511
Line: a/v equip
AKAI see ad p 13

TOM AYE ASSOC.
766 The Dales
Sunnyvale 94087
408-738-1406
Line: audio components, full line radio equip

936 West Florence Ave.
Inglewood 90301
213-674-5995
Line: CCTV video systems

BRYANT W. ELLIS BROADCAST
CARTRIDGE SERVICE
1227 N. Vine St.
Hollywood 90038
213-464-5108
Line: broadcast cartridge services, re-loading, service
Aristocart see ad pg 103

B&L SALES
4312 Colfax Ave.
Studio City
Line: audio products

BROADCAST AUDIO ASSOCIATES
5805 Jurupa Suite A
Riverside 92504
714-435-3232
Line: full line of audio equip
Inovonics see ad p 134

BROADCAST COMMUNICATIONS
5526 E. La Palma Ave.
Anaheim 92807
714-269-2025
1850 Warburton Ave., Suite 203
Santa Clara 95050
408-848-6614
Line: full line audio & video equip
Computer Image see ad pg 11
Datek see ad p 75
Dolby see ad p 121
Stanton Magnetics see ad p 34
Thomson-CSF Labs see ad p 21
TFT see ad p 138

BROADCAST ENGINEERING
2519 Callens Rd.
Ventura 93003
Line: audio components
Stanton Magnetics see ad p 34

CAMEX
6362 Hollywood Blvd.
Hollywood 90028
213-464-0174
Line: full line of radio equip
Control Design see ad p 83

CMC TECHNOLOGY
733 Pastoria Ave.
Sunnyvale 94086
408-245-3345
Line: video equip

COAST RECORDING
6114 Santa Monica Blvd.
Hollywood 90038
213-462-6080
Line: audio equip
Inovonics see ad p 134

DOBBSTANFORD CORP.
569 Laurel St.
San Carlos 94070
415-592-5948
Line: sound systems

DYNAMIC ASSOC.
2500 S. La Cienga Blvd.
Los Angeles
213-837-9123
Line: measuring equip monitors, TBC char generators

EDUCATIONAL ELECTRONICS OF CALIFORNIA
Suite #6
90 Glen Way
Belmont 94004
415-592-5713
Line: CCTV video systems

EDUCATIONAL ELECTRONICS OF CALIFORNIA
936 West Florence Ave.
Inglewood 90301
213-674-5995
Line: CCTV video systems

EQUINOX SALES CO.
210 N. Richman Ave.
Fullerton 92632
714-876-3181
Line: audio equip
Stanton Magnetics see ad p 34

EVANS MARKETING CO.
1438 Rollins Rd.
Burlingame
415-432-3030
Line: audio equip

FAB/CECO OF CALIF.
7501 Santa Monica Blvd.
Hollywood 90038
213-466-0361
Line: cameras, lighting equip photo supplies

Film
1470 Rolling Rd.
714-991-1964
Line: audio & videography equip

HANK GABRIEL
600 18th St.
Oakland 94612
415-465-5381
Line: audio components, equip

ADOLPH GASSER INC.
182 Second St.
San Francisco 94105
Line: camera equip

GOLDEN STATE SOUND
P.O. Box 9128
Santa Rosa 95405
707-546-0750
Line: audio equip

GOVAN GORDON ENTERPRISES INC.
5362 N. Cahuenga Blvd.
Hollywood 90061
213-468-4010
Line: cameras, photo equip, lighting equip

HANNAH AUDIO CORP.
1710 N. LaBrea
Hollywood 90046
213-837-4447
Line: audio components
Stanton Magnetics see ad p 34

GRAVCO SALES INC.
3511 Sunset Blvd.
Los Angeles 90035
213-462-6618
Line: video amps, proc amps, switchers

HILL HAHN
3839 Wilmington Rd.
Fremont 94538
415-651-2553
Line: video proc amp switchers
Datavision see ad p 125

HOLD & MOLLARD INC.
P.O. Box 1589
Burlingame 94010
714-991-1964
Line: test instruments
Masco see ad p 119

MOUTHROP SALES INC.
1530 East 12 St.
Oakland 94606
415-368-2625
Line: audio components

MOXON ELECTRONICS
17001 B. Sky Park Circle Dr.
Irving 92077
714-556-6500
2376 Walsh Road
Santa Clara 95050
408-245-2491
7969 Engineer Road
San Diego 92111
714-292-6800
Line: test instruments

NEWCRAFT INC.
3823 Wilshire Blvd.
Beverly Hills 90211
213-655-1111
Line: full line of CCTV, video equip

PANASONIC INC.
3723 Haven
Menlo Park 94024
415-360-6244
Line: audio components

Rquire & Associates
8909 Artesian Ave.
Beverly Hills 90210
213-871-1964
Line: video equip & audio equip

SUNBURT WHOLESALE CO.
P.O. Box 5212
San Diego 92111
213-550-2591
Line: audio equip, sound systems
AKG see ad p 51

CHARLES MICHEL
P.O. Box 5218
Redwood City 94063
415-365-6263
Line: camera lenses, full line CCTV video equip, video camera accessories, video editors

THOMAS M. MORRIS ASSOCI.
1315 El Solio Ave.
Campbell 95008
408-367-6500
Line: audio components

SEPTEMBER, 1975—BM/E

89
the NEW McMartin FM TRANSMITTER • BF-3.5K

traditionally,
McMartin engineering has supplied the AM/FM broadcaster with the finest professional equipment. The new BF-3.5K is one of those products.

excellent efficiency for power output levels from 2000 to 3500 watts.
the high performance solid state 8-910 exciter,
is the heart of the system
superb bandwidth characteristics and operating stability
optimum stereo and SCA performance – zero bias, grounded grid PA – no neutralization . . .
no screen grid or bias voltage supplies are needed
standard features include illuminated pushbutton switch controls, output reflectometer, memory-type LED status indicators, built-in harmonic filter, remote control capability of metering and operating functions

McMartin:
McMartin Industries, Inc. 4500 South 76th Street, Omaha, Nebraska 68127 (402) 331-2000

Circle 157 on Reader Service Card

FREE
FROM
Tech Labs

INDUSTRY'S MOST COMPLETE TECHNICAL INFORMATION ON
• ROTARY SWITCHES
• PROGRAMMING SWITCHES
• THUMBWHEEL SWITCHES
• ATTENUATORS

Call or Write For Free Catalog
TECH LABORATORIES, INC
Bergen & Edsall Birds . Palisades Park, N.J. 07650
Tel. (201) 944-2221

Circle 158 on Reader Service Card
SEPTEMBER, 1975—BM/E
remote or studio?

JVC's complete color recording system...

On the spot video coverage or preparing a program in the studio... the JVC PV/GC 4800 system keeps you ready for any situation. Grab the camera and ½” EIAJ-1 recorder and go into the field with only 28 pounds of equipment and record audio and video in color under battery power.

Or use the same equipment to set up under the lights in your studio for program taping. Add the color camera adaptor provided and tape directly into a ¾” U video cassette recorder or other video equipment. Either way you'll have a complete system offering high resolution... low power consumption... and simple operation.

Call your video dealer for a demonstration.


PV/4800 EIAJ-1 tape deck for use with camera.
THE SOURCE ’75

Commerce City 80022
303-287-3497
Line: CATV equip
AKAI see ad p 13

COLORADO NASHVILLE INC.
322 Prairie Road
Colorado Springs 80909
363-473-1272
Line: audio equip

DENVER SOUND SPECIALISTS
5701 N. Logan
Denver 80216
303-573-5811
Line: full line of audio equip
Inovonics see ad p 134

GEMINI TELECOMMUNICATIONS
1776 S. Jackson St.
Denver 80210
303-758-8756
Line: audio equip

HIGHLAND ASSOC.
P.O. Box 99
1380 W. Midway Blvd.
Broomfield 80020
303-466-3851
Line: full line audio & video equip
Control Design see ad p 63
Thomson-CSF Labs see ad p 21

H.P. MARKETING
7342 S. Quinter St.
Englewood 80110
303-770-1158
Line: audio equip
UREI see ad p 131

PLS ASSOCIATES
7418 E. Princeton Ave.
Denver 80237
303-771-0140
Line: test instruments
Marconi see ad p 119

SATTER SALES CO., INC.
4100 Dahlia
Denver 80207
303-399-7493
Line: audio components
Superscope see ad p 117

CONNECTICUT

JOHN B. ANTHONY
992 High Ridge Rd.
Stamford 06905
203-322-9202
Line: full line audio equip
AKAI see ad p 13

AUDIOTECHNIQUES, INC.
142 Hamilton Ave.
Stamford 06902
203-359-7493
Line: audio components

BURNS ELECTRONIC SECURITY INC.
735 Route 5
S. Windsor 06074
203-283-2196
Line: full line audio & video equip
CVS see ad p 122

DYNASCIENTEES see ad p 96
Lenco Electronic see ad p 79
TeleMatsee see ad p 8

NELSON-BENNIT ASSOC.
Thomaston 06787
203-283-5569
Line: audio components
Tech Labs see ad p 90

VIDEOPALY INDUSTRIES
Kingbury Ave. Box 415
Rockville 06066
Line: lighting equip
Strand Century see ad p 102

DELAWARE

CLEARVIEW ELECTRONICS
P. O. Box 326
Newark 19711
302-368-4000
Line: TV systems

DISTRICT OF COLUMBIA

BRENNER CINE-SOUND
5215 Wisconsin Ave. N.W.
Washington 20015
Line: sound & film equip
Cinema Products see ad pgs 77, 83
Strand Century see ad p 102

CTL ELECTRONICS
6912 4th St. N.W.
Washington 20012
202-638-4381
Line: video equip
AKAI see ad p 13

EMCO INC.
1212 Connecticut Ave. N.W.
Washington 20015
202-628-6767
Line: audio equip

GLEN'S INDUSTRIAL COMPLEX
6200 Chillum Pl. N.W.
Washington 20012
202-723-1710
Line: video equip
AKAI see ad p 13

PROFESSIONAL PRODUCTS INC.
4964 Fairmont Ave.
Bengals 20014
301-303-3451
Line: full line video equip
Lenco Electronics see ad p 79

VIDEO ENGINEERING CO.
Washington 202-852-6131
Line: video systems

FLORIDA

BCC ASSOCIATES, INC.
940 N. Fern Creek Ave.
Orlando 32802
Line: measuring equip, monitors, audio & video equip
TFT see ad p 105

MAC R. BOUGERE ASSOCI.
8716 Palisades Dr.
Tampa 33615
813-886-8553
Line: audio components
Stanton Electronics see ad p 34

F.T. C. BREWER CO.
P. O. Box 8057
Town & Country Plaza
Pensacola 32508
904-433-7932
Line: audio equip, transmitters
Dolby Labs see ad p 121
Inovonics see ad p 134

BROADCAST AUTOMATION
5196 NE 12th Ave.
Ft. Lauderdale 33308
305-775-4762
Line: full line audio & video products
Stanton Magnetics see ad p 34

BROADCAST ENG. CO.
Box 14444
Fl. P. Pierce 33450
Line: audio products

CONTROLLED TECHNOLOGY INC.
2513 Tortugas Lane
Ft. Lauderdale 33312
305-657-2716
Line: full line audio & video equip
Control Design see ad p 63
Dolby see ad p 121
Roh see ad p 103

EXECUTION OF WEST CENTRAL FLORIDA
Box 7637
Tampa 33607
813-229-9311
Line: full line audio/video equip

FINE SALE CORP.
12790 N.W. 42nd Ave.
Opa Locka 33054
305-665-6431
Line: video equip
AKAI see ad p 103

FIRESTONE ASSOCI.
285 N.E. 185th St.
Hollywood 33021
305-351-3803
Line: audio components, test equip

FLAGLER RADIO CO.
1068 W. Flagler St.
Miami 33130
305-373-6514
Line: audio components, equip
Stanton Magnetics see ad p 34

FLORIDA ELECTRONICS
P. O. Box 15889
Orlando 32808
305-293-4804
Line: audio & video equip

Still the industry’s MOST WANTED

VIDEO TAPE TIMER

- Bright LED display
- Optional remote display
- Available for all 2-inch VTRs
- Free evaluation to qualified buyers

Still the lowest cost

RECORTEC, INC.
777 PALOMAR AVE. SUNNYVALE, CA. 94086 TEL: (408) 735-8821 TWX: 910 339 9367

Circle 160 on Reader Service Card

SEPTEMBER, 1975—BM/E
Still the industry's MOST USED

VIDEO TAPE RECORDER

R-MOD is the logical answer to your requirement for automating existing VTRs.

The field installable modification kit upgrades your existing VTR transport to achieve performance like that of the newer vacuum buffered drives.

RECORTEC, INC.
777 PALOMAR AVE. SUNNYVALE, CA. 94086 TEL: (408) 735-8821 TWX: 910 339 9367

SEPTEMBER, 1975—BM/E
Some day, somebody may imitate the Product...
...but nobody will ever duplicate the Service!

And in TV Broadcasting, it's the service behind the product...that keeps the product out front

On the way to selling more than 30,000 Plumbicon * TV camera tubes, we learned how important Service is to the broadcaster. The first thing we learned was about availability—No TV station, commercial or educational, can ever afford to shut down an operation while "waiting for parts." Plumbicon tubes are instantly available, at all times, through local franchised distributors and through Amperex factory sales representatives.

And we learned the importance of the name Plumbicon to TV stations who have come to depend on it as their assurance of consistent performance and quality. Because no product is ever "good enough," we taught ourselves to build smaller and smaller Plumbicon tubes that provide performance standards similar to the original (we're down to 3/8 inch tubes now,) and we learned to produce tubes with reduced comet tailing, with higher resolution and modulation depth, with extended-red response, and with minimum lag. Contemporary camera tubes outperform the original Plumbicon by a wide margin.

We learned that the TV camera user is concerned about the operation of his camera...not merely about the performance characteristics of our tubes. So we provide him with a wide range of expert and valuable information, in print and via our field engineers, to help him get the most out of his TV camera-system. Plumbicon users who are about to install a new camera need only give our field engineering staff a call and we'll have an expert there to help with the job.

Our franchised distributors, (your own local businessmen,) are carefully selected for their ability to support Plumbicon TV camera systems with on-the-spot customer support and service. We, in turn, support our distributors with two kinds of "seminars" for Plumbicon camera users. One is on video tape, the other is presented "live" by an Amperex field engineer. The purpose of both is to maximize the value of Plumbicon camera systems.

Finally, we learned that the best way to deal with warranty questions was to design the warranty for the customer's benefit—not to protect ourselves...and even then, to interpret the warranty in the customer's favor whenever possible. For example, a customer may return any Plumbicon tube for testing (even one that's technically out of warranty) and we'll subject it to a complete technical evaluation at our expense...and send the customer a detailed engineering report on the tube.

Yes, we've learned a lot about the importance of Service in the ten years, in the more than 30,000 tubes sold, in the 600-plus TV stations served, since the Plumbicon tube won the Emmy award. Little wonder, then, that the Plumbicon, after all this time, still offers the best all-around package of performance, price, reliability and service available. Little wonder, then, people keep on saying, "There's only one Plumbicon."

Electro-Optical Devices Division, Amperex Electronic Corporation, Slatersville, Rhode Island 02876, Telephone: 401-762-3800

Amperex®
A NORTH AMERICAN PHILIPS COMPANY

There is only one Plumbicon

* Reg. T.M. of N.V. Philips of the Netherlands

SEPTEMBER, 1975—BM/E

Circle 162 on Reader Service Card
THE SOURCE '75

World Video Sales see ad p 128
SYSTEMS ENGINEERING CO.
P.O. Box 49224
Atlanta 30329
404-482-2446
Line: audio components
TECHNICAL SYSTEMS REPS
2080 Peachtree Ct.
Chamblee 30341
404-457-0426
Line: audio equip
UREI see ad p 131
TELESYSTEMS MARKETING, INC.
2425 Wood Valley Dr.
Morrow 30260
404-363-4503
Line: audio components & equip
VISUAL SYSTEMS
3870 N. Peachtree Rd.
Atlanta 30341
404-457-1388
Line: video equip, charger

HAWAII

ATTCO
2855 Koapaka St.
Honolulu 96819
Line: lighting equip
Strand Century see ad p 102
BROADCAST SERVICES INC.
2877 Kalakaua Ave.
Honolulu 96815
808-533-3877
Line: full line audio equip; CCTV equip

JAMES CHANG
190 S. King St.
Honolulu
808-531-2165
Line: audio and video equip

ELECTRONIC SYSTEMS, INC.
875 Waimanalo St., Suite 500
Honolulu 96813
808-533-3848
Line: full line of audio/video equip

TeleMotion see ad p 81
HAWAII BROADCAST ASSOC.
P.O. Box 1344
Honolulu 96807
808-537-3991
Line: broadcast equip

Microwave Assocs see ad p 115
J.C. ELECTRONICS
190 S. King St.
Suite 976
Honolulu 96813
Line: audio equip
UREI see ad p 131

PACIFIC INSTRUMENTATION
5388 Papai St.
Honolulu 96821
Line: video & photographic products

Cinema Products see ads pgs 77, 83

GENE PIETY FACTORS INC.
861 Mapunapuna St.
P.O. Box 2903
Honolulu 96802
808-839-9059
Line: audio components

Superscope see ad p 117

IDaho

FUNLAND PRODUCTIONS

1900 Hill Road
Boise 83702
Line: audio components & equip

ILLINOIS

ADVANCED PHOTO/SOUND
495 S. Washington St.
Hinsdale 60521
312-323-7464
Line: video & photo equip

AKAI see ad p 13

J.D. ALLYN
419 S. Bruner St.
Hinsdale 60521
312-325-0495
Line: audio & broadcast equip

Modular Audio Products see ad p 120

A/V CENTER
6160 W. Oakton St.
Morton Grove 60053
Line: audio/video equip

Strand Century see ad p 102

B.W. ASSOCIATES
415 W. Fullerton Pkwy. Suite 701
Chicago 60614
312-353-4900
Line: audio components

UREI see ad p 131

CENTER VIDEO CENTER
5800 W. Fullerton Ave.
Chicago 60639
312-637-1600
Line: video equip

AKAI see ad p 13

CRIMSON ENGINEERING CO.
Glenview 60025
312-724-1780
Line: full line of audio equip

ATTCO
2855 Koapaka St.
Honolulu 96819
Line: lighting equip

Superscope see ad p 117

UREI see ad p 131

La Salle Audio
740 N. Rush St.
Chicago 60611
312-266-7500
Line: full line of audio equip

Other Proc Amp Works With Any Color or Black & White VTR...1/2"...3/4"...1"...2"...Quad...Helical Scan

Does yours? For more information, write or call:

DYNASCIENTES
TOWNSHIP LINE ROAD • BLUE BELL, PA 19422
Telephone: (215) 643-0250 Telex: 84-6358

Circle 163 on Reader Service Card

SEPTEMBER, 1975—BM/E
Never let it be said that you didn’t let Neve look at your console requirement.

This television console is but one of dozens of standard console designs for various applications. From the most modest studio to the largest of network facilities, Neve probably has a standard console to satisfy your Radio or TV requirement. If it doesn’t exactly match — we’ll modify. Of course, we also build many custom consoles. Call us.

You’ll be pleased with the prices and you’ll be buying the best.

Rupert Neve Incorporated, Berkshire Industrial Park, Bath, Connecticut 06801 Tel: (203) 744-6230, Telex: 969638

Rupert Neve Incorporated, Suite 614, 1800 N. Highland Ave., Hollywood, California 90028 Tel: (213) 465-4822

Rupert Neve of Canada, Ltd., 2717 Rene Road, Mississauga, Ontario L4T 3K1, Canada Tel: (416) 677-6617

Rupert Neve & Company Ltd., Cambridge House, Melbourn, Royston, Hertfordshire, SG8 6AU England, Tel: (0763) 60776

Rupert Neve GmbH, 6100 Darmstadt Bismarckstrasse 114 West Germany, Tel: (06151) 61764

Circle 164 on Reader Service Card

SEPTEMBER, 1975—BM/E
THE SOURCE '75

712-276-0404
Line: camera lenses, full line CCTV video equip, video camera accessories, video editors
Canon USA see ad p 101

WARREN RADIO CO.
1205 E. River Dr.
Davenport 52808
319-323-8051
Line: video products

KANSAS

BEAMS INC.
9416 W. 87th Terrace
Shawnee Mission 66212
913-541-7744
Line: audio equip
AKG see ad p 51

A.K. ELLIOTT CO.
P.O. Box 6129
Leawood
913-649-6540
Line: audio products

WILLIAM MENEZES & ASSOC.
5600 W. 95th St.
P.O. Box 7070
Overland Park 66207
Line: video equip
AKAI see ad p 13

STEVE SMITH CAMERAS INC.
623 Kansas Ave.
Topeka
913-225-3481
Line: video equip

KENTUCKY

BRUCE L. DAWSON
7105 Greenlawn Rd.
Louisville 40222
502-426-4022
Line: video equip, cameras, lenses
Canon USA see ad p 101
Shintron see ad p 111

ELECTRONIC LABORATORIES, INC.
Suite 2002 800 Bldg.
800 South 4th St.
Louisville 40203
Line: audio components & equip

SIGHT & SOUND INC.
Box 1644
Louisville 40201
502-584-5535
Line: audio & video equip, CCTV systems
Ultra Audio see ad p 133
World Video Inc see ad p 128

SONIC SERVICES
P.O. Box 5142
Louisville 40205
502-563-6863
Line: full line of audio equip
Inovonics see ad p 134

LOUISIANA

AUDIOMEDIA ASSOC.
P.O. Box 29264
New Orleans 70189
504-566-0140
Line: audio components
Stanton Magnetics see ad p 34

JASPER E. WING & SONS
1904 Poydras
New Orleans
Line: lighting equip

HCBC ELEC.
Towson 21204
301-929-9597
Line: measuring equip, monitors

INTERNATIONAL SOUND CORP.
7102 Milford Industrial Rd.
Pikesville 21208
Line: audio & video equip
Dynasciences see ad p 96

MAINE

R.G. HARRIS ASSOC., INC.
5 Portland Pier
Portland 04111
Line: CCTV systems

MARYLAND

ASSOCIATED SALES REPS.
8706 Wilson Ave.
Baltimore 21208
301-661-2888
Line: audio equip

DAVID BROTHERS & CO.
6302 Lilac Ave.
Baltimore 21209
201-764-7189/202-783-3480
Line: audio equip

CRAMER VIDEO SYSTEMS
Gaithersburg
301-948-6110
Line: video equip

ROYAL HAVLORSON
4000 Thornapple
Chevy Chase 20015
301-654-1680
Line: audio equip; audio tapes; transmitters

HAYDEN ASSOC.
16 Decatur Ave.
Annandale 2204
202-298-9704
Line: measuring equip, monitors

INTERNATIONAL SOUND CORP.
7102 Milford Industrial Rd.
Pikesville 21208
Line: audio & video equip
Dynasciences see ad p 96

Circle 165 on Reader Service Card

SEPTEMBER, 1975—BM/E
WORLD’S BEST STEREO GENERATOR
WILKINSON ELECTRONICS SG1E

POSITIVE PROOF
* 60 db separation .......................... 50 Hz-7500 Hz
* 55 db separation ......................... 7500 Hz-10000 Hz
* 50 db separation ......................... 10 KHz 15 KHz
* FM Noise – 75 db ...................... Cross Talk – 60 db

COMES COMPLETE WITH POWER SUPPLY
REQUIRES ONLY 3½” RACK SPACE
ONLY ONE FRONT PANEL ADJUSTMENT
REMOTE STEREO ON/OFF FUNCTION

WORLD’S BEST FM EXCITER
WILKINSON ELECTRONICS FME10

POSITIVE PROOF
* Frequency response ± ½ DB 15 HZ-350 KHz.
* FM Noise Level – 70 DB below 100% Mod.
* Distortion – 0.3%
* Modulation – Direct FM
* Power Output – Adjustable to 18 watts
* Stability 1 part in 100000
* Requires no oven and is not susceptible to rumble and microphonic effects

FCC TYPE ACCEPTED
POWER SUPPLY INCLUDED
REQUIRES 7’” VERT. SPACE
IMMEDIATELY USABLE IN ANY TRANSMITTER
SHIELDED BY BOTH STEEL & ALUMINUM
COMPLETELY METERED
ADJUSTMENT FREE

NO ONE CAN MATCH THIS COMBINATION

CHAS A. BERUBE CO.
P.O. Box 177
Westfield 01085
413-562-5660
Line: audio equip

MAC R. BOUGERE ASSOC.
125 Norwood Terrace
Holyoke 01040
413-533-2004
Line: CCTV systems

CRAMER ELECTRONICS
120 Hampton Ave.
Needham 02194
617-449-2100
Line: audio & video equip

MACMARTIN INDUSTRIES
24001 Southfield Rd. Suite 102
Southfield 48075
313-354-0270
Line: audio & video equip, transmitters

CLOVER ELECTRONICS
19353 Beech Daly Rd.

continued on page 100
The Great American Music Machine...

Meet the Schafer 902... The economical system with up to 2048 programmable events.

The Schafer 902 Switch Memory runs your sequential music format flawlessly, hour after hour. In addition, the 902's Random Access Memory provides 2000 events of commercial availability.

Because your commercials are programmed in the Random Access Memory separate from your music, the Schafer 902 can provide up to 50 percent more commercial storage capability than other systems with 2048 events.

Shop around. Compare. Before you choose, remember... The Schafer 902 can give you up to 50 percent more walkaway time without re-programming. That's just one of many things the 902 can do for you. If you'd like to find out for yourself why the Schafer 902 will give you more value for every dollar you invest, call or write for details today.

The Schafer 902. The Great American Music Machine... and much, much more.
IT'S TIME YOU CHANGED THE WAY YOU LOOK AT THINGS.

Broadcast people, you've changed. Over the last few years, you've effectively turned the industry on its ear with a determination to provide your public with more, and more effective coverage. Your resolve has brought about vast changes in camera technology— in size, weight, mobility and versatility.

We've been changing, too. While quietly supplying the broadcast industry with high-quality optics for the last two decades, we've been hard at work, developing a family of lenses to expand the capabilities of broadcast TV equipment... while keeping the economics under control.

You are our requirements. More than any other factor, Canon products are the result of user inputs. So it's no coincidence that we offer the widest, most customized range of optical products for the broadcast field—in terms of function and price. From the lightest-weight, most compact (and by the way, most popular) 10-120mm on the market to an enormously versatile 32-1070mm with continuous zoom and 1.8 meter minimum object distance. Your requirements also inspired our new budget-stretching Versatility Packages—a family of two-lens systems that give one camera the versatility of two at substantial savings. (And we're always listening for new ideas.)

We've invested in you. Because major optical advances don't happen without a lot of expensive thinking and heavy experimentation. While the dividends are visible in every Canon product (for example, for some years now, we've been pioneers in super spectral coating), they've also won us acclaim in the process. Like a special award from the Motion Picture Academy of Arts and Sciences. No less important, our sizeable investment in manufacture and quality control insures that the advances in our labs aren't diminished on the production line.

You make us look good. Service isn't just a matter of goodwill—it's good business. So we support what we sell with an extensive staff of factory-trained technicians, headquartered in New York, Chicago and Costa Mesa, California. Equipped with the finest, latest test equipment—much of it of our own design. To help insure the consistency of our standards... and facilitate the fastest possible turn-around time.

One demo is worth a thousand claims. We could spend a lot of time on awe-inspiring technical specs and case histories. But we'd rather let our lenses do their own talking. More information, or a demonstration are yours for the asking.

PV10 x 12B. Most popular lens for portable, hand-held professional TV cameras.

Canon U.S.A. Inc.
Head Office. 10 Nevada Drive, Lake Success, N.Y. 11040
457 Fullerton Avenue, Elmhurst, Illinois 60126
123 Paulairino Avenue East, Costa Mesa, Ca. 92626

Canon Optics & Business Machines
Canada, Ltd. 3245 American Drive, Mississauga, Ontario. L4V 1B8, Can.
Canon Amsterdam N.V.
Industrial Products Division
De Boelelaan 8
Amsterdam, Netherlands
* * N.V. Philips of Holland
Cool kits for hot camera crews.

Only famous laniro lighting fixtures, (the ones you get in Strand Century lighting kits), give you cool-to-touch fiber glass housings, for safe, comfortable handling at any time. And only Strand Century kits give you superbly rugged carrying cases for years of trouble-free use.

Strand Century kits offer the best kit value available anywhere. Light weight. Sturdy, durable stands. Easy to adjust during use. Smooth, even light distribution. Quick heat dissipation for fast pack up.

For use on location, and in the classroom, or wherever rugged portables are needed, insist on Strand Century lighting kits. Write for details to National Director of Television/Motion Picture Sales, Strand Century Inc, 20 Bushes Lane, Elmwood Park, N.J. 07407.

STRAND CENTURY INC
A COMPANY WITHIN THE RANK ORGANISATION

Circle 169 on Reader Service Card
Now you can convert any monitor to a cross-pulse monitor with VACC's new $345 model CPG-1 Cross Pulse Generator. Your monitor requires no modification. Fill out the coupon below for more information.

If a video monitor is needed, install a VACC Electro-optical Isolator in a Sony receiver. A engineer or electronic technician can install a model A-1 in a 12", 15" and 17" Sony receiver in less than an hour. Model A-1 should be installed in a KV1711, KV1722 and all 19 inch Sony receivers. You add only one-half pound to your receiver and your Sony can be used as a high quality monitor or retained as a receiver by merely flipping a switch. Isolation is far superior to heavy transformer isolated monitors and you can connect up to 20 monitors without troubleshooting ground loops if all monitors have VACC isolators.

by popular request

NEW DEMODULATOR KIT

NEED AUDIO/VIDEO-OUT TO RECORD OFF-THE-AIR? Order VACC's new model D1 or D1A optical Demodulator. Similar to, but smaller in size than the widely used VACC A1 or A1-A Optical Isolator, VACC's new optical demodulator kit is easy to install and has the same outstanding isolation and weight advantages. Use model D1 for Sony's KV1201, 1203, 1212, 1214, 1500, 1511, 1710 and CKV 171 and the D1-A for KV1711, 1722, 1910, 1922 receivers. Yes, you can install the A1 and D1 or A1-A and D1-A in the same Sony receiver to have a receiver monitor demodulator. Add VACC's Cross Pulse Generator and you can have all four functions using one CRT.
Harris MW-5 5kW AM transmitter has PDM* going for it.

Harris' MW-5 transmitter needs only two tubes for 5,000 watts—provides 125% positive peak modulation capability for a louder sound—has plate efficiency approaching 90% for lower operating cost. All this possible because of Harris' patented Pulse Duration Modulator* (PDM) also featured in our top-selling 50,000 watt MW-50 transmitter. For complete information write, Harris Corporation, Broadcast Products Division, 123 Hampshire Street, Quincy, Illinois 62301.
640 Series Digital TBC

Reliability of second generation digital design from the TBC pioneers

Simple front panel operation

Lowest cost full capacity digital TBC

Unique Features include:
- High speed bi-polar memory
- Standalone or 3.58 feedback heterodyne
- Optional plug-in DOC

Microtime, Inc.
1260 Blue Hills Avenue
Bloomfield, Connecticut 06002
(2C3) 242-4242  TWX 710-425-2390

Line: broadcast equip
Control Design see ad p 63
Wilkinson see ad p 99

NORTHEAST BROADCAST LABS.
15 Charles St.
South Glen Falls 12801
518-793-2181
Line: audio equip
McMartin Industries see ads pgs 18, 65, 90 & 135

P.M. ELECTRONICS
83 Russell Rd.
Garden City 11530
516-248-4858
Line: full line video equip
World Video see ad p 126

PROFESSIONAL ELECTRONICS
CO.
678 Troy-Schenectady Rd.
Latham 12110
518-785-1660
Line: audio video products
CVS see ad p 122
Dynaciences see ad p 96
Lenco Electronics see ad p 79

RONCO COMMUNICATIONS & ELECTRIC
595 Sheridan Drive
Tonawanda 14150
716-873-0760
Line: full line video products
Lenco Electronics see ad p 79

SAVAGE SALES
Box 95
Fayetteville 13066
315-682-2131
Line: test instruments
Marconi see ad p 119

SENECA COMMUNICATIONS
112 Killiwhale St.
Tonawanda 14150
716-693-8446
continued on page 108
HOW CAN WE CONVINCE YOU TO BUY A BETTER CAMERA WHEN YOU ALREADY HAVE THE BEST?

If you're in the news, documentary or industrial field, chances are you've already become attached to our camera. (After all, 8 out of 10 TV stations and literally thousands of producers and cameramen own them.) But now that the original Scoopic 16's performance and reliability have convinced you what a good camera it is, we'd like to un-convince you. With something better.

Meet the new Scoopic 16M...with all the good features and dependability of the original, and more. Starting with more lens, for greater versatility: a 12.5-75mm Macro Zoom that focuses as close as 3½". Rack focuses continuously to distant objects. And optically dollys forward and back, with constant field size.

To keep you in action longer, there's a more efficient battery/transport system that runs sixteen 100' rolls on a single, faster charge. Has even greater ruggedness (though some say that's impossible). And gives you greater comfort, too, with smoother operation and better balance.

All this is just the beginning. Because the new Scoopic 16M offers many features you'd expect in a $4,000 camera—at an under $2,000 price. But why take our word for it, when you can prove it to yourself—on-the-job and free. For a limited time, at participating Canon dealers, you can try a new Scoopic 16M for a week. With one tiny, friendly catch. Once you try our new camera, you'll want to make it your new camera, no matter how attached you've become to the one you're using. To make the deal even harder to resist, you'll find your Canon dealer eager to help, with a generous trade-in allowance on your Scoopic 16.

If that's no problem, send in the coupon for more information, or see your local Scoopic dealer...and let him spoil you for anything else.

*Participating dealers determine exact terms of trial offer and trade-ins, in your area.

Canon
Canon Professional Motion Picture Division
10 Nevada Drive. Lake Success, New York 11040
123 East Paulino Avenue. Costa Mesa. California 92626
Canon Optics & Business Machines Canada, Ltd.
3245 American Drive, Mississauga. Ontario
I'm interested. Please send me more information about the new Canon Scoopic 16M, as well as the name of the nearest dealer participating in your one-week free trial and trade-in program.

Name
Title
Company
Address
City State Zip
Offer ends September 30, 1975

TRY A BETTER SCOOPIC. FREE.
THE SOURCE '75

Line: audio & video products
CVS see ad p 122
TeleMation see ad p 81

SONOCRAFT CORP.
29 W. 36th St.
New York 10018
Line: audio & video equip
AKAI see ad p 13
CVS see ad p 122
TeleMation see ad p 81

SONOCRAFT CORP.
29 W. 36th St.
New York 10018
Line: audio & video equip
CVS see ad p 122
TeleMation see ad p 81

SOUND SYSTEMS INC.
42-12 28th St.
Long Island City 11101
212-786-4474
Line: full line of audio/video equip

TELECOM, INC.
1475 East Henrietta Rd.
Rochester 14623
716-442-7900
Line: CCTV systems

TELEMERICA INC.
25 W. 43rd St.
New York 10036
212-687-0370
Line: audio & broadcast products
CVS see ad p 122

TELEVISION EQUIPMENT ASSOCIATES
Box 1391
Baltimore 11709
516-628-8086
Line: audio & broadcast products
CVS see ad p 122

VIDEO COMPONENTS INC.
601 S. Main St.
Spring Valley 10977
914-356-3700
Line: camera lenses, full line CCTV systems

NORTH CAROLINA

APPLIED VIDEO CONCEPTS LTD.
3000 Mentor Dr.
Raleigh 27670
Line: video equip
Canon USA see ad p 101

NORTH DAKOTA

K&M ELECTRONICS
306 N. University Dr.
Fargo 58102
Line: full line of broadcast equip (audio & video)

COSMICAR

NOW AVAILABLE ......... COSMICAR ES SERIES LENSES, newly developed high sensitivity VIDICON LENSES with AUTOMATIC IRIS that operate for the ranges from 1.4 ft-c to 100,000 ft-c. SMALLEST in sizes, ECONOMICALLY priced and provide VERY WIDE APPLICATIONS.

NEW COSMICAR ES SERIES LENSES
F.L. 8.5mm f/1.5-ES for 2/3" cameras
F.L. 12.5mm f/1.4-ES for 2/3" & 1" cameras
F.L. 16mm f/1.6-ES for 2/3" cameras
F.L. 25mm f/1.4-ES for 2/3" & 1" cameras
F.L. 50mm f/1.8-ES for 2/3" & 1" cameras
The COHU 1550

Compare features of telecines available in today's market and you will quickly see why Cohu's 1550 "Performer" is proclaimed the standard in the industry and stands as a GIANT in terms of performance.

SMPTE slides look great on the 1550, but more importantly its superior performance can be verified by its ability to handle the typical everyday quality of program source material.

Technically, the 1550 gives you 700-line center and 600-line corner resolution, manual Instant Paint, automatic black and white color balance, response for 2 to 1 increase in light is 70 milliseconds to within 90% of final value with zero overshoot, gamma control continuously variable from 0.4 to 1, less than 1% geometric distortion. 52 dB minimum signal-to-noise ratio, unsurpassed colorimetry, and fully sealed electron beam coated optics.

Cohu's new color encoder/image enhancer/auto balance unit, the Model 9900, is standard equipment on the 1550. It provides automatic two-level horizontal and vertical detail enhancement and adjustable detail coring with both manual and automatic detail gain including remote control of level. The encoded color signal meets all applicable NTSC, EIA, and FCC specifications. Other user advantages are vertical interval reference insertion, full or split color bars, plus remote control of color burst, color bars and chroma.

Don't buy any telecine until you have seen the GIANT. Contact your local Cohu sales office or Cohu, Inc., Electronics Division, P.O. Box 623, San Diego, CA 92112. Telephone (714) 277-6700. TWX 910-335-1244.

YOU EXPECT MORE FROM ...AND YOU GET IT.
SERIES 2000
VERSA CONSOL E
CLE-500
SOUND BRITENER
TAPe CARTRIDGE MACHINES
SERIES 3000
50 SERIES MONO
CLE-FM SOUNd BRITENER
SERIES 4000
100/200 SERIES MONO AND STEREO
MULTI-DECKS
SLIDE-TYPE MONO AND STEREO
Audio Consoles
CLE-500 SOUNd BRITENER
CLE-FM SOUNd BRITENER
CLA 20/40A COMPRESSOR/LIMITER AMPLIFIER
BETMS-100/200 TURNTABLE PRE-AMPLIFIERS
Audio Amplifiers
Fault/Splice Detectors • Sequencers/Switchers • Remote Controls • Phase-Lok
Head Brackets • Distribution Amps • Monitor Amps • Telephone Answering
Systems • Tape • Tape Cartridges • Alignment Tapes • Test Tapes • Tape
Winders/Loaders • Delay Tape Cartridges • Rebuilding/Reconditioning Services
Maintenance Supplies/Cleaners • Heads • Demagnetizers • Erasers • Micro-
phones • Headphones • Turntables • Tape Cart Racks • Control Room Furni-
ture • Studio Clocks
ACCESSORIES
BROADCAST ELECTRONICS INC.
— A FILMWAYS COMPANY —
8810 BROOKVILLE ROAD • SILVER SPRING, MARYLAND, 20910
PHONE 301-588-4983 • TWX 710-825-0432
Circle 178 on Reader Service Card
THE SOURCE '75

OHIO

ABCOM SALES
1166 Chesapeake Ave.
Columbus 43212
614-486-9654
Line: audio components
Superscope see ad p 117

APPLIED VIDEO ELECTRONICS INC.
P.O. Box 25
Brunswick 44212
216-225-4443
Line: full line video equip
Lenco Electronics see ad p 79

AUDIO LOGIC
601 Rockwell
Cleveland 44114
216-771-1972
Line: audio equip

A/V MEDIA, INC.
3344 W. Broad St.
Columbus 43204
614-272-0014
Line: video and audio products

CENTRAL VIDEO SYSTEMS, INC.
7311 Valley View Dr.
Independence 44131
216-524-9696
Line: video products

DOUG COOK & ASSOC.
2185 Trent Rd.
Columbus 43229
614-471-4114
Line: audio & video equip, transmitters
McMartin Industries see ads pgs 18, 65, 90 & 135

DAYTON COMMUNICATIONS

CORP.
2971 Bluefield Ave.
Dayton 45414
513-278-7937
Line: video equip, CCTV systems
CVS see ad p 122
Viscount see ad p 98

ELECTRONIC PRODUCTS CORP.
16006 Waterloo
Cleveland 44110
Line: audio & video equip
CVS see ad p 122
Dynasciences see ad p 96
Strand Century see ad p 102
Telemation see ad p 81

GOSS COMMUNICATIONS
1450 E. 289th St.
Wickliffe 44092
216-944-0268
Line: video equip
AKG see ad p 13

KLOFF A/V CO.
3381 Successful Way
Dayton 45414
513-236-5300
Line: video equip
AKAI see ad p 13

MANDABACH ASSOCIATES
1350 Crestwood Ave.
Columbus 43227
614-235-0265
Line: audio components

McFADDEN SALES, INC.
150 E. Broad St.
Columbus 43215
614-221-3363
Line: audio components

DICK MURRAY
Box 222
Cincinnati 45215
216-449-1788
Line: audio components
Tech Labs see ad p 90

OKLAHOMA

HILL RADIO EQUIP. CO.
1931 S.E. Morrison St.
Portland 97214
503-233-2471
Line: audio components
Stanton Magnetics see ad p 34

OREGON

EARL & BROWN CO., INC.
P.O. Box 19406
Portland 97219
503-224-2283
Line: audio equip
AKG see ad p 51

OREGON A/V SYSTEMS, INC.
117 S.W. Front Ave.
Portland 97204
503-224-4313
Line: audio & video products
AKAI see ad p 13
CVS see ad p 122
Inovonics see ad p 134
Lenco Electronics see ad p 79
Telemation see ad p 81

REX RECORDING CO.
1931 S.E. Morrison St.
Portland 97214
503-233-2471
Line: audio components
Stanton Magnetics see ad p 34

PENNSYLVANIA

GEORGE M. CONNEEN CO., INC.
24 S. Newtown St. Rd.
Newtown Square 19073
Line: audio equip

PROFESSIONALS SPECIALIZE

MODEL 367
SMPTEmat Switcher
- Color Switcher
- Color NTSC Genlock Sync Generator
- SMPTEmat Edit Code Reader/Generator
- Interface Panel

MODEL 370
Special Effects Generator
- 10 Basic Wipe Patterns
- Dissolve to Effects
- Built-in Color Background Generator
- Over 1000 Units Sold

SHINTRON
Cambridge, MA 02142 (617)491-8700

Circle 179 on Reader Service Card

SEPTEMBER, 1975—BM/E

111
# Perfect Timing

## Programmer/Comparators and Network Joiners

Whether your station is based in New York, Honolulu or anywhere in between, perfect timing of station breaks and commercial time-outs is essential. To meet your exacting timing requirements ESE now offers two precision timing components.

To fulfill the needs of Network Broadcasters ESE has designed a complete line of Programmer/Comparators. Rugged thumbwheel programmers coupled with a reliable ESE clock or timer to provide a single pole contact closure (1 Amp contact rating) for the length of time program matches display. In addition ESE P/C's are available with a 10 second preroll cueing life.

Write, Wire or Call Today: 5051/2 Centinela Avenue

---

### South Carolina

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.L. Bryan Co.</td>
<td>P.O. Drawer 368</td>
<td>Columbia 29202</td>
<td>803-779-3560</td>
</tr>
<tr>
<td>Pennsylvania Educational Associates</td>
<td>Lincoln School</td>
<td>Columbia 29206</td>
<td>803-772-3179</td>
</tr>
<tr>
<td>Calhoun A/V Co.</td>
<td>1217 Broad River Rd.</td>
<td>Columbia 29210</td>
<td>803-772-3179</td>
</tr>
<tr>
<td>CVS</td>
<td>See ad p. 122</td>
<td></td>
<td></td>
</tr>
</tbody>
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### Tennessee

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<tr>
<th>Company Name</th>
<th>Address</th>
<th>Phone</th>
<th>Email</th>
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</thead>
<tbody>
<tr>
<td>Allied Sound-Vision Education Div.</td>
<td>2741 Nonconnah Blvd. S. Suite 320</td>
<td>Memphis 38132</td>
<td>901-396-4747</td>
</tr>
<tr>
<td>Willow Glen Production</td>
<td>122 Broadway</td>
<td>Nashville 37210</td>
<td>615-254-6473</td>
</tr>
<tr>
<td>CVS</td>
<td>See ad p. 122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Pennsylvania

<table>
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<tr>
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<th>Address</th>
<th>Phone</th>
<th>Email</th>
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<tbody>
<tr>
<td>D&amp;H Distributing Co.</td>
<td>2529 N. 7th St.</td>
<td>Harrisburg</td>
<td>215-865-3775</td>
</tr>
<tr>
<td>Eastern Telecom, Inc.</td>
<td>700 Seco Rd.</td>
<td>Monroeville 15146</td>
<td>412-373-2170</td>
</tr>
<tr>
<td>Milton Eshelman Co.</td>
<td>3002 Sycamore St.</td>
<td>Chambersburg 17201</td>
<td>301-564-2437</td>
</tr>
<tr>
<td>L&amp;M Assocs.</td>
<td>411 N. 11th St.</td>
<td>Philadelphia 19107</td>
<td>215-437-0607</td>
</tr>
<tr>
<td>Communications Miedias</td>
<td>P.O. Box 54</td>
<td>Media 19063</td>
<td></td>
</tr>
<tr>
<td>Lenco Electronics</td>
<td>614 Broad St.</td>
<td>Philadelphia 19132</td>
<td>215-223-8200</td>
</tr>
<tr>
<td>Marco Video Systems, Inc.</td>
<td>3125 N. Broad St.</td>
<td>Pittsburgh 15238</td>
<td>412-224-5205</td>
</tr>
<tr>
<td>RVG-TV Systems</td>
<td>614 North 28th St.</td>
<td>Philadelphia 19125</td>
<td>412-224-5205</td>
</tr>
<tr>
<td>Raphael Electronics</td>
<td>700 Seco Rd.</td>
<td>Milton 15146</td>
<td>700 Seco Rd.</td>
</tr>
<tr>
<td>Tactical Electronic Corp.</td>
<td>10 Park Bldg.</td>
<td>Philadelphia 19107</td>
<td>215-657-1414</td>
</tr>
<tr>
<td>TVC</td>
<td>215-224-5205</td>
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<td></td>
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### Rhode Island

<table>
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<tr>
<th>Company Name</th>
<th>Address</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRV Productions</td>
<td>5 Industrial Way</td>
<td>Riverside 02915</td>
<td>401-342-6272</td>
</tr>
<tr>
<td>Martin Instruments</td>
<td>615-254-6473</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stanton Magnetics</td>
<td>1229 Hunt Club La.</td>
<td>Psychiatry 02915</td>
<td>401-342-6272</td>
</tr>
</tbody>
</table>

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**Circle 180 on Reader Service Card**

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**September, 1975—BM/E**
Specialized products for the special needs of the broadcast industry.

Optek 1400 Transmitter Demodulator
A precision, low cost, no-nonsense television visual demodulator, the 1400 was designed to provide ideal detection and filter characteristics that allow monitoring and measurement of the transmitted visual signal. A sound notch is included that permits measurement without interference from the aural transmitter. The 1400 is perfectly suited for interface with Automatic Video Correctors in "closed-loop" transmitter pre-correction applications.

Optek 7400 Automatic Bulk Tape Degauser
Fully automatic, the 7400 provides "hands-off" operation and erasure to levels in excess of ~90dB. Audio and video reel sizes up to 16 inches, as well as quadruplex cassettes and cartridges, are quickly and easily accommodated. A unique Flux Pattern Selector assures maximum magnetic tape erasure, no matter what the recording format of the tape. The 7400 gives complete and automatic erasure of tape in less than one minute.

Optek 1010B Video Noise Meter
The 1010B permits rapid and accurate measurement of signal-to-noise ratio in any standard video waveform. A tangential measurement technique permits precise measurement without interrupting system operation. Stable design and built-in calibration insure accuracy to better than ±0.5 dB throughout the range 20 dB to 55 dB, with SNR shown directly on a large LED display.

Optek Stor-Mor® Storage Systems
Low cost Stor-Mor® mobile storage systems save valuable studio floor space while providing double the storage capacity for magnetic tape, instruments, etc., and faster, smoother, quieter access to any required item. These systems are custom-designed to fit into your existing facility without expensive remodeling. One moveable aisle goes where you want it to, effortlessly. Featuring all-steel construction, the shelving is mounted on moveable carriages that travel on 5" steel wheels along tracks that are completely flush with the finished floor. Each carriage, operating either mechanically or electrically, will handle up to 60,000 pounds and provides positive, effortless tracking. The floor is completely finished with attractive and durable 1/4-inch rubber-backed carpet.

Conventional Storage
Stor-Mor. Same Amount of Storage In About Half The Space.

Represented Elsewhere by:
Didier-Denver
Evergreen, Colorado 80439
(303) 674-6000

H. M. Dyer Electronics
Farmington Hills, Michigan 48024
(313) 478-2157

Glentronics, Ltd.
Don Mills, Ontario, Canada
(416) 444-8497

Landy Associates
Cherry Hill, New Jersey 08034
(609) 424-4660

Lew Radford Associates
Atlanta, Georgia 30319
(404) 237-6087

Sudduth Associates
Carrollton, Texas 75006
(214) 242-2690
THE SOURCE '75

BROADCAST DISTRIBUTORS
Bible Place
Cleveland 37311
615-472-8200
Line: audio components and equipment

BROADCAST EQUIPMENT & SUPPLY CO.
P.O. Box 3141
Bristol 37620
615-968-7342
Line: full line audio equip
Stanton Magnetics see ad p 34

CLW BROADCASTERS
2004 S. Orchard Knob Ave.
Chattanooga 37404
Line: full line of radio equip
Control Design see ad p 63

CONSOLIDATED ELECTRONIC SYSTEMS
Knoxville
615-947-2881
Line: audio and video products

CREATIVE EXPRESS
1905 Broadway
Nashville 37203
615-927-1573
Line: audio products

DELTRONICS
819 Woodland St.
Nashville 37206
615-282-3177
Line: video systems

LOFSTROM ELECTRONICS
Empire Bldg.
Glasseport 15045
412-461-2116
Line: video equip

AKAI see ad p 13
MISHA ASSOC.
P.O. Box 249
Franklin 37064
Line: full line radio equip
Control Design see ad p 63

MOTION PICTURE LABORATORIES, INC.
781 S. Main St.
Memphis 38102
Line: cameras & accessories
Cinema Products see ads pgs 77, 83

OPUS II ASSOC.
4264 Summer Ave.
Memphis 38122
Line: full line audio/video equip
Telemation see ad p 81

STUDIO SUPPLY CO.
P.O. Box 290
Nashville 37202
615-327-3075
Line: audio components, equip;
recording accessories
Inovonics see ad p 134

Texas

ACCURATE SOUND CORP.
1206 Euless Blvd. Suite 105
Euless 76039
817-267-3911
Line: full line of audio equip
Inovonics see ad p 134

BOB AMOR & ASSOC.
916 Green Hill Rd.
Dallas 75220
214-823-7820
Line: audio consoles, FM monitoring
equip, audio & video equip, transmitters
McMartin Industries see ads pgs 18, 65, 90 & 135
UREI see ad p 131

ARNOLD BARNES CO.
P.O. Box 9748
Austin 78766
512-454-4371
7616 LBJ Freeway, Suite 401
Dallas 75240
214-233-3855
3801 Kirby, Suite 834
Houston 77006
713-523-4333
802 Lingco
Richardson 75080
214-235-4553
Line: audio, video, broadcast products
AKAI see ad p 13
CVS see ad p 122

BRADENCO
2646 Andjon Drive
Dallas 75220
214-356-3813
Line: test instruments
Marconi see ad p 119

CROUSE-KIMZEY CO.
3507 W. Vickery Box 9330
Fl. Worth 76107
817-737-9911
Line: audio components
Stanton Magnetics see ad p 34

DAJ SALES COMPANY
2307 59 St.
Lubbock 79412
214-327-7311
Line: video proc & switches
Datavision see ad p 125

VICTOR DUNCAN INC.
2659 Fortney Ave.
Dallas 75206
Line: cameras & accessories
Cinema Products see ads pgs 77, 83

JOHN FITZGERALD
13844 Peyton Dr.
Dallas 75240
214-631-5470
Line: video equip: char generators

GEE-GIBSON ELECTRONIC ENT
4002 E. Houston Hwy.
Victoria 77901
512-578-4323
Line: audio, video products
Control Design see ad p 63
Stanton Magnetics see ad p 34

GRAVCO SALES INC.
Redbird Airport D
Dallas 75221
214-330-1245
Line: video processing equip.: switchers

GUARANTEE RADIO SUPPLY CORP.
1314 Ithurbide St.
Laredo 78040
512-722-3233
Line: audio components

INDUSTRIAL AV INC.
7315 Ashcroft # 116
Houston 77036
Line: video equip
CVS see ad p 122

BOB LANDINGHAM
2121 Santa Anne Blvd.
Dallas 75028
214-327-7311
Line: video proc & switches

DOUGLAS ASSOCIATES
214-237-7311
Line: video equip

LEE SALES CO.
5635 Yale Blvd.
Dallas 214-363-3831
Line: audio products

continued on page 116

Television Products Company
9016 Aviation Blvd. Inglewood, CA 90301

For years, most of the major network studios have considered anything but pneumatic pedestals obsolete. The tough requirements of day-to-day use has proven TVP Pedestals to be reliable, flexible and maintenance free.

Our superior pneumatic counterbalance system is used in all of these. With this, cameras float on telescoping columns that glide on ball-bearing races. Camera height can be raised or lowered at the touch of a finger smoothly.

And without lead weights, there’s less weight to have to push around.

The 360° steering is adjustable from crabbing to tracking at the touch of a foot pedal. This mechanism has been specially designed for quiet operation.

You won’t find 8-inch tires on most pedestals, but they’re standard equipment on ours. Bigger is better: not only do they roll easier, but they’ll transmit less vibration to the camera.

If you’re worried about maintenance, you’ll be glad to know that we’ve used sealed ball bearings wherever possible. The air system requires only one-point lubrication once a year. And everything is designed for easy access.

Compare these three with any other pedestals available—you’ll find them a very attractive combination of quality and price.

---

Circle 182 on Reader Service Card
More and more TV stations are bringing the excitement and drama of electronic news gathering (ENG) to their station's programming. And more of them are coming to us than to anyone else in the world.

We're Microwave Associates. And if it has anything to do with microwave video equipment, from miniature battery operated transmitters... to portable van models... to fixed location transmitter/receivers, we not only make it, we perform site surveys, install it and train your people to use it as well. And we've got service centers nationwide, so we're never very far away.

Microwave Associates is the only company making a complete line of microwave equipment for electronic news gathering. So if you're considering ENG, consider us. Making it easier for you is one reason Microwave Associates has become number one in ENG at TV stations coast-to-coast.


Circle 183 on Reader Service Card
The microcomputer Audio/Video Tape Editor for Commercial, Industrial and Educational Applications

The EDS-200 Automatic Editor and Synchronizer provides professional and economical assembly of master tapes. Utilizing its built-in SMPTE Time Code Reader, Microcomputer and program, the EDS-200 automatically locates, previews and records audio and video edits accurately... all to a single frame!

Single button scene location, entry and storage, audio and video synchronizing and switching (in all modes), automatic cueing, and simultaneous machine control lets the user edit the film and time of manual editing. The EDS-200’s modular design, multi-machine control and available options allow for easy and economical expansion to meet more demanding post-production requirements.

Other features include:
- Can control several Quad, Helical and Multi-Track Audio machines.
- Built-in, sensitive and accurate SMPTE Time Code Reader compensates for poorly recorded time code and can read in all modes.
- Performs Time Code duration calculations.
- Keyboard controls permit simple entry of new data, corrections or changes.
- Automatically stores scene locations from a single control.
- Audio & Video operations are selectively independent or combined.
- Fully compatible for all on-line and off-line editing operations... NTSC or PAL.

For the complete story on the EDS-200, Video Tape Editing and associated equipment, call or write today!

THE SOURCE ‘75

LYKES ELECTRONICS
P.O. Box 26816
Houston 77207
Line: audio & video equip
Dynasynchronies see ad p 96

MARTIN, ZIENKOSKY, BROWNE & ASSOC.
3801 Kirby, Suite 634
Houston 77006
713-523-4333
13731 Omega Rd.
Dallas 75240
214-233-5335
P.O. Box 9746
Austin 78766
512-454-4371
Line: full line of audio & video equip
Control Design see ad p 63
Thomson-CSF Labs see ad p 21
TFT see ad p 136

MILLER & ASSOC.
4504 Belvedere Pkwy N.
Dallas 75240
214-661-5002
Line: audio components
Superscope see ad p 117

NATIONAL BROADCAST EQUIP.
1401 S. Floyd Rd.
Richardson 75080
214-690-3131
Line: audio and video equipment

PHOTOGRAPHIC SUPPLIERS
800 Montana Ave.
El Paso 79902
915-533-9828
Line: video equip
AKAI see ad p 13

PROFESSIONAL AUDIO SERVICES
P.O. Box 1953
Fl. Worth 76101
817-536-6254
Line: audio components

Aristocart see ad p 136
Stanton Magnetics see ad p 34

SAVCO
P.O. Box 427
Richardson 75080
214-234-1841
Line: wide range of products for radio, TV & sound recording
Control Design see ad p 63
Wilkinson see ad p 99

J.V. SCHOONMAKER CO.
2995 Ladybird Lane
Dallas 75220
214-357-8481
Line: tape recorders, audio equip

SOUND IDEAS ASSOC.
6123 Spruce Forest
Houston 77018
5641 Yale Blvd.
Dallas
Line: video equip

Canon USA see ad p 101

SOUTHWEST ELECT.
Dallas 75230
214-233-9616
Houston 77035
713-729-1670
Line: audio components
Tech Labs see ad p 30

STUDIO SOUND SERVICE
1401 F. S. Floyd Rd.
Richardson 75080
214-690-3131
Line: audio components, equip
Stanton Magnetics see ad p 34

GENE SUDDETH
2809 Raintree Drive
Carrolton 75006
214-242-2690
Line: full line vide equip
Computer Image see ad p 11
Datatek see ad p 75
Datavision see ad p 125
Roh see ad p 123

Circle 184 on Reader Service Card

TAFT BROADCASTING CORP.
4808 San Felipe St.
Houston 77077
713-622-1010
Line: video equip
CVS see ad p 122
Lenco Electronics see ad p 79

TEXAS VIDEO SYSTEMS
10209 Piano Rd.
Dallas 75238
214-341-1771
Line: CCTV systems, video equip
Lenco Electronics see ad p 79

RUSSELL TREVIILLIAN
2905 Mulberry
Pasadena
713-941-7272
Line: video equip

American Data Corp see ad p 55

UNIVERSAL VIDEO
11929 Radium
San Antonio 78216
512-341-1492
Line: full line audio/video equip
TeleMation see ad p 81

VIDEO ELECTRONICS
3000 Carlisle St.
Dallas 75204
214-741-1440
Line: CCTV systems, audio & video equip
CVS see ad p 122
TeleMation see ad p 81

VIDEO SYSTEMS
2000 A Governors Circle
Houston 77018
713-886-9641
Line: video systems
Dynasynchronies see ad p 96

WHALIN’S PRO AUDIO SALES
2910 Buena Vista
Arlington 76010
817-261-8197
Line: full line audio & recording equip

Doby see ad p 121
Inovonics see ad p 134
Stanton Magnetics see ad p 34

WYBORN SALES CO.
6610 Shady Brook #.3169
Dallas 75206
214-691-6481
Line: audio & video equip

AKG see ad p 51

UTAH

BOB BACON
2536 Campus Dr.
Salt Lake City 84121
Line: video equip
CVS see ad p 122

B&B ELECTRONIC PRODUCTS
445 E. 2nd St. S.
Salt Lake City 84121
214-341-1771
Line: CCTV systems, audio & video equip

AKG see ad p 51

BROADCAST SERVICE INC.
145 Social Hall Ave.
Salt Lake City 84111
801-524-2500
Line: audio equip
AKG see ad p 51

Lenco Electronics see ad p 79

CARTER SUPPLY CO.
3208 Washington Blvd.
P.O. Box 9197
Salt Lake City 84101
801-691-6481
Line: video equip

Inovonics see ad p 134
Stanton Magnetics see ad p 34

THE SOURCE ‘75—continued on page 118

SEPTEMBER, 1975—BM/E
BEAT 'EM TO THE DRAW

Ready when you are. With the fastest news team in town. Superscope's rugged, pocket-sized C-106 Action-Corder with built-in condenser microphone. And the ingenious, optional Pistol Grip accessory that lets you stop and start the Action-Corder in the time it takes to pull the trigger switch.

Aim for the heart of the story—even if you have to go over the crowd to get it. The optional Pistol Grip gives you a full arm's reach and one free hand. No cords, microphone cables, plugs or worthless weight. You'll be wrapped up in the action—not in the wires.

Fire, flood or fuel shortage—one disaster is enough. You don't need risky erasures, fluffs or blank spots. With the Pistol Grip stop/start switch, you can edit as you go and integrate your own commentary when you're ready. Now that's good news!

Superscope C-105 Professional Three-Head Cassette Recorder features three heads for tape/source monitoring that allow instant comparison of program source to actual recording. A built-in condenser microphone that picks up any sound within earshot. And special features for taped discussions and professional interviews that include a special telephone pickup jack and a mechanical instant pause control. For more convenience, get the Superscope EC-3S hand-held condenser microphone with remote stop/start switch. When not in use, the microphone snaps into a unique slide holder on the shoulder strap to leave your hands free.

Superscope EC-12B Tie Clasp/Wand Electret Microphone engineered for use with any portable recorder or PA system. Telescopic wand extends to 17½" for hand-held or podium use. Uncrew the wand, and microphone instantly converts for tie clasp application. See the entire line of Superscope professional tape equipment, microphones and accessories at your nearest Superscope dealer.


Circle 185 on Reader Service Card
WILL THE TELEVISION CHARACTER GENERATOR THAT YOU ARE CONSIDERING INCLUDE THESE AS STANDARD FEATURES?

- Practical Character Size
- True Horizontal Edging
- 4 Page Elastic Memory
- Window Format Positioning
- 20 Auxiliary Control Keys
- 24 Flag Function Combinations
- Crawl on any Display Line
- Roll in any Display Segment

WILL THE SYSTEM PERMIT EXPANSION TO INCLUDE THESE IMPORTANT OPTIONS?

- Independent Edit Channel
- 3 Separate Output Displays
- 6 Individual Elastic Memories
- Color Billboard Display
- Color Flag Control-Function
- Up/Down Time Counter
- Time/Day/Date Generator
- Data Cassette Storage
- 9 x 14 Character Font
- Lower-Case Characters
- Foreign Language
- Math and Chemistry Symbols

THE LAIRD TELEMEDIA MODEL 3600 WILL!
Time was when highly trained transmission engineers had to waste their brains (and their time) watching a battery of waveforms and pictures — instead of concentrating on work more worthy of them. Now the TV monitoring scene has been transformed. For TF2914 Insertion Signal Analyser, TF2915 Data Selector together form THE FIRST COMMERCIALLY AVAILABLE AUTOMATIC TRANSMISSION MONITORING SYSTEM.

In conjunction with a test line signal generator and inserter (such as mi TF2913), it will automatically cycle through the measurement of all the important parameters of the test line signal from five separate inputs. Comparison with pre-selected limits is continuous, and an 'out of limits' fault can initiate executive action by automatic switching to standby, with remote alarm indication and simultaneous data transmission of fault location. Up to 16 parameters can also be measured manually by means of push-button selection and a self-contained digital voltmeter. Versions are available for all national and international standards. Systems are now operating in seven countries. Applications include broadcast monitoring, common carriers and satellite operations. Call mi and discuss your application.
From this...

- Audio Operational Amplifiers
  - Single Channel
  - Dual Channel
  - Booster

- PC Card Amplifiers
  - Microphone Preamplifiers
  - Tape and Phonograph Preamplifiers
  - Line Amplifiers
  - Mixer Amplifiers
  - Power Amplifiers
  - Power Supply Modules

- Panel Mounted Assemblies
  - Equalizers
  - Compressor - Limiter
  - Precision Test Oscillator
  - Stereo Broadcast Console
  - Input Modules
  - Recording Console Input Modules

- Rack Mounted Equipment
  - Graphic Equalizer
  - Studio Monitor
  - Power Supply

- Accessories
  - Mounting Racks for Card Amplifiers
  - Input and Output Transformers
  - Connectors and Sockets

...to this

MAP MODULAR AUDIO PRODUCTS, INC.
A UNIT OF MODULAR DEVICES, INC.
1385 Lakeland Ave., Airport International Plaza
Bohemia, New York 11716 516-567-9620
memorize the first time you came across Dolby FM in your listening experiences? Many stations have made the switch to Dolby FM and are finding it a welcomed improvement. If they use Dolby circuitry, a Dolby FM signal is transmitted instead of the conventional high frequency limiting normally required during transmission. The station gives the listener at home the opportunity of recovering the full frequency range and dynamics of the signal. Furthermore, depending on the amount of limiting previously used, many stations find that Dolby encoding permits them to increase their level – which is good for both the listeners and the station.

As of August 1975, over 100 US stations have purchased the Dolby Model 324 or 334 FM Broadcast Unit. The unit accurately compresses the signal in accordance with the Dolby B-Type characteristics and changes the effective transmission time-constant to 25 microseconds. This allows the station to reduce or eliminate any high frequency limiting required previously.

If these prospects excite you, we think you will soon be wanting to check out the new Dolby Model 334 FM Broadcast Unit. $1,350 and 13 inches of rack space are all you need to get moving with Dolby FM – an improvement we think both you and your listeners will appreciate.

Dolby FM offers a signal that is not only cleaner, but also improves the overall listening experience. However, some listeners find that the Dolby FM signal is not as warm as the conventional FM signal. This is because Dolby FM is designed to reduce the amount of limiting applied to the signal. While this can result in a more detailed and transparent sound, it can also lead to a loss of the warmth and richness that is often associated with FM radio.

Dolby Laboratories Inc

Dolby Laboratories Inc

Dolby is a registered trademark of Dolby Laboratories Inc.
THE SOURCE '75

Line: video equip
American Data Corp see ad p 55

NAT'L ELECTRONICS AGENCIES LTD.
2137 Commercial Drive
Vancouver, 12, BC
604-253-0811
Line: full line video equip
Lenco Electronics see ad p 79

NORTEC WEST LTD.
315 West 5th Ave.
Vancouver 10, B.C.
604-872-8525
Line: audio equip
PINEWAY ELECTRONICS LTD.
1875 Leslie Street Unit 3
Don Mills, Ont.
416-449-1343
Line: audio components, equip
QUEALE ELECTRONICS
1205 Quada St.
Victoria, British Columbia
604-873-3996
Line: video systems
SMMY SOUND EQUIP.
165 Industrial Park Rd.
Longueil, Quebec
Line: audio equip
UREI see ad p 131

TELE-TECH ELECTRONICS LTD.
5 McCullough Ave.
Rexdale, Toronto, Ont.
416-249-5645
Line: recording accessories, audio
Wilkinson see ad p 99

TELVICOM LTD.
822 Halpern Ave.
Donval Quebec H9P 1G6
514-631-9089

THE SOURCE '75

Line: full line of video equip
L.A. VARAH LTD.
2077 Alberta St.
Vancouver, B.C.
604-673-2211
Line: audio equipment
Aristocart see ad p 136

UNIVERSAL BROADCAST CONSULTANTS
4774 Blvd. St. Laurent
Montreal, PQ
Line: audio equipment
WELSH COMMUNICATIONS
43 Raiside Rd.
Don Mills, Ontario
416-445-5650
Line: video equip
Helima see ad p 24

BROADCAST ENGINEERED SYSTEMS
1466 Kalligan Court
Mississauga, Ont.
416-277-0277
Line: audio equip
Caldwell A/V Equip. Co.
1080 Bellamy Rd. N.
Scarborough, Ontario
416-438-6230
Line: full line audio & video equip
Roh see ad p 103
Thomson-CSF Labs see ad p 21

GLENTRONIX LTD.
160 Duncan Mills Rd.
Don Mills Ont.
416-444-8497
Line: audio equip
Telecommunications see ad p 129
Thomson-CSF Labs see ad p 21

J-MAR ELECTRONICS LTD.
254 Wildcat Rd.
Downsview Ont. M3J 2N5
416-661-4180
Line: transmitting and studio equip;

Circle 190 on Reader Service Card

equipment

remote sources, live remote news story integration and elimination of satellite transmission Doppler effects. Functional controls are designed to accommodate total system integration.

CVS 600-2 Electronic Video Compression Option: As an option to the CVS 600, it can affect real time reduction of an external signal to one-fourth its normal size and locate that picture in any position on the CRT. Remote control panel is included allowing operation with push-button ease.

Need more information? Contact CVS for informative literature and/or a personal demonstration.

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Empresas, J.L. S.A.
Juan De La Barra No. 113
Mexico 11, D.F.
Line: full line of radio equip

PUERTO RICO

ELECTRONICA FERNANDEZ
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Hato Rey 00919
809-765-3500
Line: audio components & equip

GUERRERO & BLACKBURN
18 La Rosa
Isla Verde 00913
Line: full line of radio equip

Control Design see ad p 63

GERMAN ORTIZ, INC.
Darlington Bldg.
Rio Piedras 00925
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Line: audio & video products

PHILLIPS ELECTRONICS
Center Commercial Villa Nevarez
Riopiedras 00927
809-765-4021
Line: audio & video products

UREI see ad p 131

SAN JUAN ELECTRONICS
San Juan
809-725-3342
Line: audio & video products

Need information about what digital video signal processing can do for you? Check the leader. CVS.
STEREO STUDIO-TRANSMITTER LINKS INTER-CITY RELAY
Stereo - Mono 950 MHZ FM - AM

The Stereo STL with "Built-in Backup."

Dual Channel System (Stereo) $4160.00
Single Channel System (Mono) $2290.00

Antenna or Transmission line cost not included.

FEATURES: • All Solid-State • Direct FM Modulator • Field Proven Varactor Final • Plug-in Modular Construction • Solid-State Ovens • Hi-Accuracy Crystals

Why STL?
1. No "lost air" time due to cut, wet or electrically charged telephone lines.
2. Better Sound Quality Than a Class AAA transmission system.
3. EVENTUAL COST REDUCTION in operating expense.
4. Complete control of entire broadcast system.
5. Less
6. Stereo Generator is away from Studio and
7. The Marti System Delivers Top Performance
8. Having a Dual-Channel STL is
9. Why Dual Channel?
1. A Dual-Channel costs less than a Composite.
3. Greater Channel Separation than a Composite.
4. Less Signal Drive Required to Receivers means additional system Fade Margin.
5. Less Test Equipment Necessary and more Positive System Diagnosis.
6. Stereo Generator is away from Studio and Unauthorized Tampering.
7. Stereo Generator and Broadcast Transmitter Compatibility without Interface.
8. Having a Dual-Channel STL is like having a Spare Link.
9. Two Remote Control and Two Sub-Carrier Capability.

Why MARTI?
1. Channel Separation more than 65 db.
2. Channel Response matched to 0.25 db.
3. Distortion less than 0.5%.
4. All Solid State.
5. A Simple, True Direct FM Plug-in Modulator.
6. Complete accessibility to modules without removal from rack.
7. The Marti System Delivers Top Performance with Transmitter manufacturer's Stereo Generator.
8. Marti STL Systems Log over TWO MILLION (2,000,000) Broadcast Hours each Year.
9. AVAILABLE FROM STOCK.

DIGITAL REMOTE CONTROL

The DRT-24 Transmitter Unit

 FEATURES: • Single Button, Direct Channel Select • Exceeds All FCC Requirements for Accuracy of Antenna System Data • Studio and Transmitter Units Phase Locked to Common Clock • Telemetry Accuracy 0.1% • Basic 8-Channel System Expandable to 16 or 24 Channels • Status/Tolerance Limit Alarm • Fully Digital for Radio Circuit or Wire-Line Operation • Plug-in Modules for FSK Frequency Change • Adaptable to Multiple Transmitter Control From Multiple Control Points • Status Indication (Optional)
• Compatible with Composite or Dual STL Systems

The Marti DRC-24 is a completely Digital Remote Control, Telemetry and status/alarm system, providing the ultimate in accuracy, simplicity, and speed of operation. Channel selection is accomplished simply by pressing a single button. The data for the selected channel is then read from the large digital panel display. Raise/Lower commands can be given for the selected channel by pressing the Raise or Lower button.

The integrity of the entire digital process is assured by validation of received data transmission by checking proper start, parity, and stop bits, a feature found in the most sophisticated data processing equipment. This advanced design feature virtually eliminates the possibility of error in channel selection, command and telemetry data.

RADIO REMOTE PICKUP
150 - 450 MHZ

 FEATURES: • All Solid-State • Direct FM Modulator • Broadcast Quality — Continuous Duty • Four Audio Mixing Channels • Plug-in Modular Construction • I.F. Crystal Filter • Taut Band Meters

Radio Remote Pickup Equipment is versatile, dependable and an entree to profitable radio broadcasting. That is the acclaim given to Marti RPU Equipment by American Radio Broadcasters. "How did we ever operate a radio station without it?", is the comment most often heard after equipment has been purchased and put into service.

The progressive minded, community spirited broadcaster, can find many uses for Remote Pickup Equipment. He will do many more remotes than he is presently doing, simply because the equipment is available at a moment's notice. To coin an old cliché, "It doesn't cost — it pays."

Add Color to Your Remotes...

PORTABLE BROADCAST REMOTE PICKUP TRANSMITTER

Model RPT-1
$495.00 (150 MHZ)

FEATURES: • Portable operation on internal rechargeable nickel-cadmium battery. Total weight only 5½ lbs. • All Solid-State • Built-in battery charger • Dual frequency operation (One crystal included) • Meter indicates battery condition and modulation • Whip antenna mounted directly on unit • Broadcast-quality Compressor/Limiter handles toughest remote pickup conditions • Two microphone inputs (one push-to-talk) and one Hi-Level input each with individual mixing gain control

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Circle 191 on Reader Service Card
26. An Inexpensive
Set-and-Forget Phone
Patch

J.H. Wiegman, Chief Engineer,
KWAL, Osburn, Idaho

Problem: To wire a telephone into a
radio station in such a way that distant
and local audio levels are nearly the
same. Do so without buying an auto-
matic gain controller. And wire it in
such a way that it is impossible for
anyone to forget to disconnect when
the call is done.

Solution: Many telephones (all
those made by Automatic Electric)
have a transformer circuit which
phases out the microphone at the ear-
phone. All you have to do is pick off
the audio for your programming at the
earphone. The outgoing signal (your
phone mike) is attenuated at this point,
so that even with a long distance call,
both the near and far voice will be
about the same level. In our situation,
this system has worked well, espe-
cially where we have been recording.
The usual vast difference in levels be-
tween the two sides of a phone con-
duction network, the buyer saves now and isn't
penalized later. High reliability solid-state audio
switching costs can be cut to as little as $10 per
crosspoint . . . significantly less than competitive
switching systems.

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6360 FEDERAL BLVD., SAN DIEGO, CA. 92114
PHONE: (714) 582-9211; TWX: (910) 335-2040

Circle 192 on Reader Service Card

SEPTEMBER, 1975—BM/E
some pumping and costs too much. But with this hookup, when you hang up the phone, the line hangs up as well. No need to disconnect your recorder or console from the line. Line isolation is provided by a scrapped radio audio output transformer. The high-impedance side goes to the earphone. No pad is needed, and clicks and pops are nil.

27. De-Hissing a Cart Machine
John E. Shepler, Chief Engineer, WACI-FM, Freeport, Ill.

Problem: To eliminate the noise (hiss) of cart machine amplifiers when they are not being used. Stations with multiple machines can find the combined noise output annoying at least, and perhaps strong enough to be the cause of a proof-of-performance failure, at worst.

Solution: The modification we are using at WACI pads the audio output of the cart machines when they are not in use. Some of the newer machines have this feature, but many now in service do not.

The process was automated with a relay and a couple of 10,000 ohm resistors (for stereo). As shown in the diagram, the resistor, one per channel, is installed after the output transformer, effectively padding the noise below audibility. When the Start button is pushed, voltage is applied to the relay, which has contacts to short the resistor and restore normal operation. When the cart stops, the relay drops out. Normal audio is loud enough to mask the hiss while a cart is playing. Use a miniature low-current relay. Connect it to the Start circuit. For Spotmaster-500 machines, one side of a 24-volt relay coil goes to K-1 Point 10 of the Spotmaster circuit board. The other side is wired to chassis ground.

continued on page 126

Datavision D-3000
Generates Characters
...Smoother on the Curves!

The most significant feature of any character generator is the quality of the characters it generates. Simple. Character quality shows in the smoothness of curved letters and numerals. An obvious "stair-step" tells you that the manufacturer skimped by using less elements in the matrix.

The Datavision D-3000 has 1120-element character resolution, as good as the most expensive equipment on the market, and at significant cost saving. Plus, the D-3000 is loaded with other features: two character sizes; two independent output channels; 3 speed roll and crawl; character edging; word flash; automatic centering; and optional D-4000 Random Access Storage System.

For all the facts, and a free on-site demonstration, phone (301) 948-0460 or write: Datavision Video Products, Mincom Division, 3M Company, 15932 Shady Grove Road, Gaithersburg, MD 20760.
Problem: To expand the capabilities of a single switcher which serves both air and production feeds. Since ours is a small station, the switcher Preview buss is often tied up as a VTR feed buss, so one operator handles both production and air functions simultaneously. When the switcher Preview buss is tied up, the only way the operator can monitor his pre rolls during a station break is by using a separate monitor tied into a nonsynchronous routing switcher. Problem is, this monitor must also serve as the incoming-network monitor, the control panel for the routing...
switcher is a long reach from the operator's normal position.

Solution: A small $4 \times 1$ switcher was placed downstream from the routing switcher in the line feeding the monitor. The switcher is designed to automatically switch the monitor to display the output of any of four VTRs whenever any given VTR is rolled from the operator’s remote control panel. After a set time the unit automatically switches back to whatever had been pre-selected on the routing switcher.

It was desired that the circuit only work from the remote position (to avoid miscellaneous switches while tapes were being cued), and to avoid modifications to the VTRs. We use an unconnected pair of normally-closed contacts available on each of the remote Play buttons to control the

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Fig. 2 Blackburn's downstream switcher.
GREAT IDEAS

swicher.
An input NAND gate is used on each input to provide a fast transition of the proper polarity to trigger its associated NE555 timer. Each timer in turn controls the length of time the monitor remains on the VTR output in question before returning to the source which has been selected on the routing switcher. Since KVIQ uses a six-second pre-roll, the timers are set for ten seconds, allowing the operator to monitor the preroll and the first four seconds of the spot before returning to the preset source, by which time the tape should have been placed on the air (or on the Preview buss during dubbing).

The timer is a NE555 wired as a one shot. Large values of R11 and C11 are chosen to give a wide—range of possible delays; they could be chosen to give a highly accurate fixed delay if desired. The output of the timer is used to control the switching transistor, Q11, which supplies current to the relay, see Fig. 2. A set of solid-state crosspoints could be substituted if desired.

Replace Those Dual Monochrome Monitors With:
The CDR 9900 Dual Rack Mount 9" Color Video Monitors

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World Video manufactures a complete line of broadcast and CCTV Color Monitors from 5" to 19" in size.

World Video, Inc.
Color TV camera is suited for use in industrial training facilities, CATV origination centers, schools, hospitals and production firms. The LDH-20 produces a color signal after 2 minutes of warm-up. One coax cable is needed to synchronize it to an existing system. The output encoded-color signal meets EIA, NTSC and FCC requirements. Some internal circuit features include dynamic focus correction, linear matrix coefficients, horizontal contours-out-of-green signal enhancement. PHILIPS AUDIO VIDEO SYSTEMS CORP. 300

RF directional wattmeter measures forward or reflected CW power with the additional feature of an RF sampling output for frequency analysis on a scope, spectrum analyzer or frequency counter. The Model 4527 wattmeter is designed for ±5% power measurement from 100mW to 1kW from 2 to 200MHZ and up to 500W from 200 to 512MHZ. Insertion VSWR is 1.05 max. $245. BIRD ELECTRONIC CORP. 301

TV broadcast production switcher, Model 7960, is a 4-bus switcher with re-entry and an independent preview output. The control panel is available in 3 standard configurations: 9, 15 or 21 inputs. Custom panels are available with up to 29 inputs, additional key, preview and program busses, machine control and audio breakaway. Some standard features include nine wipe patterns, wipe modulation and colorized wipe borders. Prices for the switcher begin at $13,385. TELEMET 302

Modular broadcast transmitter, Model 635, outputs 35kW FM. Features include VSWR protection, automatic power control, and a fault locator system. The final amplifier is the grounded-grid type. Maintenance access is provided through front and rear doors. Options include manual or automatic power switch-over, and Model 682 Stereo and Model 683 SCA generators. The base price is $38,500. SPARTA 304

Mixing consoles, the Alpha I and II, are equipped with 8 input channels. The Alpha I has stereo outputs and the Alpha II features 4 mixing busses. The Alpha series contain long-throw, conductive plastic faders, solo input, program echo & return, independent cue mix and program echo pan. SPHERE ELECTRONICS 305

Color video-tape recorder provides more than 60 minutes of color or monochrome recording and playback on 1/2-in. video tape. Features of the GV-215C include audio dubbing, stop action, edit control, and automatic level adjustment. GBC CLOSED CIRCUIT TV CORP. 306

Phono cartridge, Model M95ED, offers a thinner, uninterrupted pole piece. Biradial elliptical stylus tip is nude mounted. The cartridge tracks at between ¾ to 1½ grams. $59.95. SHURE BROTHERS 307

Mic mixer offers an 8 in/2 out configuration with two independent level controls, equalization, and a 30 dB variable pad on each input. Eight direct lo-Z microphone inputs are provided on the SM-8, along with two hi-Z lines. Forward and monitor signals may be mixed independently, and stereo mixing may be accomplished. $750. ASHLEY AUDIO 308

Four input, two output mixer, Model PML422 Series, incorporates input sensitivity preselection, separate low, mid and high frequency equalizers, echo send/return controls and adjustable output limiters. The PML424 has 8 input, quad/4 or 2 output, and the PML426 provides six input channels. All three mixers use quad pan faders in each input source channel. An operating manual will be sent to all interested parties, rather than literature, owing to mixer complexity. Price of the PML422 is $675; PML424 is $675; PML426 is $625. REVOX 309

Phonograph record vacuum, called Groovac, consists of an arm similar to a pick-up, and an acoustically isolated suction enclosure. The arm's nozzle contains fine cleaning hairs which penetrate to the bottom of the record grooves. Available from Research Instruments Ltd., Kernick Rd., Penryn, Cornwall TR10 9DQ, England. 310

Color monitor/receiver, Model JU-970W, is designed for studio applications, including direct off-air and general purpose monitoring. The monitor is equipped to accept RF or bridged direct TV video and audio line feed without the adapters needed by home TV sets. There is also a separate 75-ohm video output for direct off-air recording. RCA 311

VU meter is built with 7 LED's indicating volume level. The M-241 is ranged from -15 to +3VU in 3dB steps. Meter requires 12-15Vdc @ 30mA. Vertical or horizontal mounting is offered. PULSE DYNAMICS MANUFACTURING CORP. 313

Four accessories for the Revox A700: built-in track synchronizer, remote variable pitch control, remote controller, and portable rigid carrying case. The 'IN SYNC' accessory enables track one of a previously recorded tape to be heard through the top section of the record head, permitting a synchronized recording to be made on the lower section. Price: $229. The pitch control offers continuous sweep variation of tape speed over ±7 musical half tones. Price: $85. The remote control includes play, record, fast forward, rewind, stop, auto replay or record, pause and recap. Price: $125. The carry case comes lined and features compartments for spare reels, NAB hubs, etc. Price: $175. REVOX 312

Audio mixer offers 8 input, 4 output configuration. Each input channel of the TASCAM Model 5 features a low-impedance, balanced mic input, an LED overload indicator, two bands of selectable equalization, solo, a direct output and cue and echo send. $1499.50. TEAC 314

Video transmission system is for coaxial cable communications using frequency modulation. The VFMS-2000 uses a video FM modulator and demodulator. Where audio transmission is required, FM audio modulators and demodulators are available as complementary modules. Any frequency from 19 to 260MHZ is available, and input baseband bandwidth options are continued on page 130
from 10Hz to 500kHz minimum, 5MHz maximum. Channel bandwidth is 3 times the highest modulation frequency. CATEL

Portable two-channel reverberation unit, Model BX-10, is based on the torsion transmission line principle. Independent decay-time adjustment, high and low frequency equalization and reverberation/dry signal mixing are provided for each of the two electronically and acoustically separate channels. Dimensions are 17W x 12H x 19D inches. Price is $1400. AKG/PHILIPS

Battery pack, Model GRL/HL-33NC, and companion Model GRL/HL-33NCT single-channel charger, is available for Ikekami HL-33 or HL-35 cameras. Pack contains 24 D-size cells that provide 4AH. The single-channel charger has a built-in timer for auto charging battery pack in 3 hours or less. The GRL/HL-33NC costs $575; the charger is $812.50. GENERAL RESEARCH LABORATORIES

Audio tape splicer, Model TS250, semi-automatically shears ¼-in. tape. Stainless steel, self-sharpening shears cut both the tape and splicing tape. A hand-machined dove-tail groove in a hard aluminum block secures the tape. Mount holes and rubber base are provided. $49.95 + $1.50 postage & handling. NAGY RESEARCH PRODUCTS

Bi-polar power supply, with output current capability of ±4A, provides adjustable dc voltages from ±14 to ±16V. The Model 7000 has crowbar over-voltage protection, foldback current limiting, and interlocked output protection. Some other features include remote sensing, resettable power line circuit breaker, an overload indicator, and front panel voltage adjusting controls. MODULAR AUDIO PRODUCTS

Frequency comparator aids in calibrating crystal oscillators against television network atomic standards. Model 175 generates a vertical rainbow bar on the screen of a color TV receiver. The rate of color change of the bar indicates the phase difference between the crystal oscillator output and the network color subcarrier. The comparator accepts inputs of 2.5, 5, or 10 MHz while the Model 175 Mod. 1 accepts 1, 5, or 10 MHz. Price of the 175 is $99.95; the Mod. 1 sells for $109.95. DYNATRON

Room equalization filter set has 47½-octave active filters that each provide up to 15 dB of attenuation to adjust for a desired house curve. Frequencies are centered on standard ISO channels. Band-end, tunable-high-pass and low-pass filters attenuate 18 dB/octave. Gain is adjustable to +20 dB to make up for level lost in equal-
Power meter needs one head for 25-1000 MHz, 20 mW-320W, respectively. Model NAUS-80A has an accuracy of 4% of reading ±1% full scale; operating temperature range: -20 °C to +55 °C; battery operated for over 7000 hrs from one set of D cells. $750. RHODE & SCHWARZ.

Zoom lens, the 10X150, is an addition to the lens line for the TGX-16mm cine sound system. $2850. GENERAL CAMERA CORP.

Bonded-foil, 75 ohm drop cables are available in combinations of foil and braid (or drain wire) shield, dual and messengered versions in both RG/59 and RG/6 types. 50-ohm types in RG/58 and RG/8 sizes will soon be available. CERRO COMMUNICATION PRODUCTS.

Oscillator/phase shifter offers variable frequency, phase for wattmeters, phase meters and phase angle voltmeters. Two independently adjustable voltage outputs are provided by the RCD-709 over the range of 10-110kHz. Phase angle differences between the outputs over a 0-360V range can be dialled in. Available options include phase lock, high resolution vernier and 10 volt output amplifiers. $3995. OPTIMATION.

Single-sweep waveform monitor, the WM31, offers single-line/single-field display on a 3-in. CRT. User-adjustable trimmers permit establishing the lines and the fields sweep start-stop points individually to user preference. $695. ULTRA AUDIO PIXTEC.

Data logger, Model 4024, provides up to 72 analog or digital input channels. It is used in single or multi-station systems where the data is to be logged on magnetic tape or transmitted for computer processing. METRODATA.

Wireless system, Series WR420, remotely controls a/v projectors, audio and video tape equipment, and sound/lighting systems. Three models controlling from 22 to 44 functions are offered. Range of each is 250 ft. INTERNATIONAL VISUAL PRODUCTS.

Unlike other broadcast limiters that are factory-set automatic, our Model BL-40 MODULIMITER offers front panel adjustments and separate meters for output level, peak limiting and RMS limiting. No matter what your format, hard rock to classical, MODULIMITER is readily adjustable to maximize transmitter efficiency and extend coverage. Our patented electro-optical attenuator provides unobtrusive, smooth, true RMS limiting. An ultra-fast F.E.T. peak limiting section prevents unwanted overmodulation with no peak clipping. Our "Phase Optimizer" maintains most favorable signal polarity permitting up to 125% positive modulation without negative undershoot. The BL-40 MODULIMITER offers all state-of-the-art automatic features plus complete adjustability not available in others. UREI quality, of course.
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★ ROLLING TITLES — accepts typed, written or drawn “visuals” on standard 4x6 cards or adding-machine paper for continuous “crawl”.
★ REMOTE CONTROL — Forward, Reverse and crawl Speed are controllable at the TP2 or remotely.
★ MONEYSAVER — avoids dedicating costly studio camera and operator to titling activities, I.Ds, etc.

$438. JERROLD ELECTRONICS CORP. 329
Ultra Audio Pixtec
Push-pull, 2-way-capable internal distribution amplifier offers up to 35 channel capability. Designated Model IDA-45, the amp meets or exceeds FCC Rules Part 76. It is encased in a die cast aluminum housing. Output levels can be +4dBmV/channel in 35 channel system, or up to +54dBmV/channel in 12-channel systems. Cross modulation: -57dB; second order beat -68dB and triple beat -72dB. Plug-in and accessory modules are available, $438. JERROLD ELECTRONICS CORP. 329
Data modems for CATV networks, terrestrial microwave links and satellite communications ground stations feature standard data rates from 1200Bps to 230 4kBps. The modem operates on a point-to-point or multi-point dedicated basis and is capable of full duplex operation. Interchangeable interface options allow use of RS-232C, Bell 303 current or other special interface arrangements. Four LED status indicators provide visual monitoring of operational status and signal quality, $1950. INTECH 330
Dolby FM compensator provides the FM time-constant compensation needed for the reduced transmitter pre-emphasis in Dolby FM broadcasting. The compensator works with Dolbyized FM receivers and when playing Dolby-recorded tapes. Model 622P1 contains no amplification, power supply or power lead. $24.95. SWITCHCRAFT 331
Studio console has 20 inputs and 16 output-mix channels plus quad, stereo and mixdown, 4 echo and 2 cue channels. Patching system features closed-circuit ‘TV’, tape machine remotes, digital timer. SPHERE ELECTRONICS 332
Television title generator, the K128, superimposes standard typewriter alphabets on TV screen features include programmable line length and character size selection; expanded memory is optional. $3500. KNOX 333
Stereo tape cartridge, the A-2SP, is guaranteed for phasing, high-frequency output, tension and azimuth up to 12.5Hz. Cart is available in lengths from 20 sec. to 12 mins. CAPITOL 334
Random access controller (RAC) has 2048 events of keyboard addressable memory and interfaces with up to 19 multi-cartridge, single cart, or reel tape sources. Expandable to 4096 events, the RS-2000 has battery back-up for power failures. The RAC is compatible

Ultra Audio Pixtec

Circle 204 on Reader Service Card
with any automation controller.

**SPARTA**

**RF modulator**, RFM-26, transforms video source signal to tunable RF signal over TV channels 2-6. The modulator is equipped with RF and Video gain controls.

**UHF ASSOCIATES**

**CATV VHG/subchannel converter** is available with a double-balanced mixer circuit to permit VHF low-band to low-band conversions, mid-band conversions and high-band conversions. The Model XO-2b attenuates 70% of the spurious signals generated in single-ended mixers, and employs a built-in regulated power source. Gain is 18dB from VHF to subchannel and 13dB from subchannel to VHF or from VHF to VHF. Maximum input signal (for 0.5dB of sync compression) is 30,000µV.

**BLONDER-TONGUE LABORATORIES**

**Outdoor multi-tap** for CATV systems, the 3800, has 12 different tap values. Bandpass is 5-30MHz; return loss is 23dB max; 30dB tap-to-tap isolation. $6.25 each for two-tap models and $6.50 each for four-tap in small lots. Discounts are available.

**GTE SYLVANIA**

**Alphanumeric encoder/CRT video terminal** is installed in the newsroom for late news flashes, etc. The DT-1 can also be used for in-station paging or to summon personnel for messages. $1625 for the keyboard with one video terminal, $220 for each additional terminal.

**SYSTEMS MARKETING CORP.**

**EBS broadcast system**, Model 760, consists of two modules: a two-tone EBS generator which produces the required 853 and 960Hz ±0.25Hz tones simultaneously and a two-tone EBS decoder-receiver which can be either continuously-tunable, frequency synthesized or FM fixed-tuned. Additional features include auto program intercept, internal generator/decoder testing, a contact closure for external alarm and adaptability to remote control.

**TIME AND FREQUENCY TECHNOLOGY**

continued on page 134

---

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ES-302: Equivalent to ES-301 plus fast-set lever wheel programming. $238.00
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ES-510: Four digit sixty minute timer (59:59) with Start, Stop, Reset. $125.00
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PRODUCTS

Video assist may be attached to the CP-16R reflex camera. Cinevid-16 picks up the image directly from the CP-16R and electronically transmits it. Pickup measures 2¼ x 3¼ x 5-in., weighs 1 lb. 13 oz., and uses a ¾-in. silicon matrix tube. The CP-16R reflex optics system is not interfered with; the access cover on top of the camera is replaced with a relay lens and a quick-dissociate bayonet lock. Video image is rated at 400 TV lines min. Assist is powered from a 12Vdc battery or 120/
240Vac line. $3850. CINEMA PRODUCTS CORP. 341

Motor for the French Eclair NPR, the Beaula III, can be used with all international standards of speed and fre-

quency. It features ball bearings, electronic starting circuit, crystal oscillator and humidity protection. $2750. E-CAM Co. 342

Mixer-preamp for discos provides stereo output from phono, tape and microphone inputs. Individual slider fader controls on each input, full equalization, overall master volume control, pre-cue and talkover facilities are fea-

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PRODUCTS

and are 1¼ inches high. BLONDER-TONGUE LABORATORIES 348

Microwave relay system for ENG is available in any frequency band from 1.7 GHz to 15.3 GHz. The system consists of the TCM-3 series manpack microwave transmitter, TCM-6 series receiver, and TCM-6 transmitter. The tripod-mounted transmitter and receiver is available in various optional mounting configurations. Horn or dish antennas of any polarization are used interchangeably as desired. A built-in test tone enables antenna alignment and level and deviation of both video carrier and internal program channels. TERRA-COM 349

Fitting deters pay TV theft of service and removal of equipment. Called Security Shield, the fitting prevents removal of the converter inside the home, and discourages bypassing trap connection changes for pay TV service. In addition, the fitting also prevents disconnections of the matching transformer to cable and F-style connection removal. The shield is made of zinc-plated steel and is difficult to crush or distort. The fitting costs 16 to 24 cents, depending on quantity. A tool for installation and removal is also available and costs $6.50. LRC ELECTRONICS 350

Mini Portable oscilloscope, the model A1010, features Z-axis modulation. The Y preamp has 10 mV sensitivity, 10 MHz bandwidth, and can feed its output into the X amplifier to increase sensitivity, leaving direct access to the Y deflection amplifier. The unit measures 2¼ x 5¼ x 7¼-inches, and weighs 3¼ pounds. It is powered by rechargeable batteries. The synchronizing circuits lock on any waveform. The scope is available from Lawtronics Ltd., 139 High St., Edenbridge, Kent TN8 5AX, England. 351
For copies of these literature offerings, circle number for appropriate items on Reader Service Card.

General descriptions, specifications, application diagrams and pictures of broadcast products are available in a 44-page catalog. EECO. 250

“Tools and Equipment” is the name of a catalog which contains listings on over 2,000 items regularly stocked and commonly used by linemen, installers and technicians in the CATV, telephone and power industries. Anixter-Pruzan. 251

A six-page, illustrated equipment brochure covers “Broadcast Audio Transmission Systems,” equipment for terrestrial program channels and for satellite channels. Coascom 252

“The Music-Maker’s Manual of Microphone Mastery” offers tips in non-technical format from sound engineers on how to select and use microphones, plus guidelines for on-stage miking situations. Shure Bros. 253

Super 8 Sound is selling the manual for their Super 8 Sound Recorder. It also serves as a source of technical information about the various stages of production and post-production when working in sync Super 8, and with the Super 8 fullcoat. To obtain a copy, send $1 to Super 8 Sound, 95 Harvey St., Cambridge, Mass. 02140. 254

A color brochure describes the Telscreen system, a large-screen TV projection display system which produces theater-size pictures with high lumen output. Conrac. 255

A 16-page catalog of portable and bench test instruments for service, industry and education, including single- and dual-trace scopes, a digital multimeter, function generator, FET multimeters and a sweep and marker alignment generator, is available. Catalog 75CBA lists features, operating data and specifications. Hickok Electrical Instruments. 256

The 1976 “Engineering Manual & Purchasing Guide” is 228 pages of electronic parts and equipment from Allied Radio and other manufacturers. Available for $1, the catalog can be obtained by writing to Allied Electronics, Dept. 76, 401 East 8th St., Fort Worth, Texas 76102. 257

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- **Transmitter Model 26CTA**
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The "'79 Tube Caddy—Tube Substitution Guidebook" shows the correct tube substitutions for most domestic and foreign receiving tube types, CRT's, and industrial and commercial receiving and transmitting types. Over 7300 primary tubes and almost 34,000 substitutions are shown. Hayden.

258

The "Radio Operator's License Q & A Manual," by Milton Kaufman, offers FCC exam preparation for all classes and endorsements, and includes sample FCC-type exams for every element in this, the 8th, edition. The question-answer style is followed as in the previous editions, but this latest one anticipates future exams by adding a completely new group of transistor questions, and solid-state schematics and discussions to existing FCC-type questions. Hayden.

259

"AM-FM Broadcasting: Equipment, Operations, and Maintenance," by Harold E. Ennes, presents the engineering fundamentals needed by the chief engineer or maintenance technician, or trainee at an AM or FM broadcast station. The 800-page hardbound book is divided into 14 chapters with exercises included at the end of each. Answers to these exercises are given at the end of the book. Howard W. Sams.

260

A five-section catalog describes electrical and mechanical specifications, application information, curves and charts on test and measurement instruments. Detailed description sheets are also available on all 1500 instruments covered. Rohde & Schwarz.

261

Cable Handbook, 1975-76 has been published by Pubi-Cable, a non-profit national consortium of individuals and organizations trying to help cable develop in the public interest. The handbook consists of chapters by experts in many sectors of cable development, technical, economic, regulatory, etc., which offer detailed and extensive guidance to municipalities, as well as potential local users of cable, in planning and operating a successful cable system and getting maximum value from its use. The Handbook is available at $6.95 a copy plus 40¢ for postage from Communications Press, 1346 Conn. Ave, NW, Washington, DC 20036.

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Here are the simple rules:

Describe your construction or modernization briefly, including the logic of equipment selections or design layout choices. Focus on one section of your plant—transmitter, remote control, or studio control room layout, as examples—or describe the whole plant. Write as much, or as little as you need to tell the story clearly, but the upper limit is 1500 words. Include photos, block diagrams, schematics, floor plans as needed.

Remember—Get Your Story in by October 15th.

Send it to Best Station Award, BM/E, 274 Madison Ave., New York, NY 10016. For further information, write or call the Editor, BM/E, at the same address. Tel: (212) 685-5320.

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