

Amplifiers • DC Amplifiers • Distribution Audio Amplifiers • Distribution Video Amplifiers • FM Amplifiers
 Antenna Remote Indicators • Antenna RF Current Controllers • Antenna Sampling Systems • Antenn
 System • Antenna Tuning Units • Antenna Systems • Antenna Systems • Rebuilt
 Build • Video • R. Auto • Transmitters • Transmitter Logging
 Machine / Generator • Battery • Charger • ENI • Battery Packs • Blowers and
 Stabilizers • Color TV Studio Cameras • ENG TV Cameras • Single Deck Cartridge
 Machines • Cartridge (not including Series) • Cartridge Recording
 Compensators • Cable Connectors • AM and FM • FM/Audio Console
 Frequency Timers • Hybrid Couplers • Quartz Crystals • Custom Control Systems • Delay
 Delay Measuring Sets • Video Delay Units • Bulk Tape Demagnetizers • Down Termin
 Up Terminal Earth Stations • Edit Code Generators • Quad Encoding Systems • Color Vide
 Channel Stereo Encoders • Tone Encoders • Vertical Aperture Equalizers • Vide
 Exciters • FM Exciters • SCA Exciters • Audio Filters • Noise Filters • Passive Filter
 Generators • Convergence Generators • Cross Pulse Generators • Signal Pulse Generato
 Generators • Broadcast Monitoring Headphones • Mono Headphones • Stereo Headphon
 Isolators • Antenna Base Insulators • Guy Strain Insulators • Stage and Studio Replaceme
 Broadcast Equipment • Lens Repair Services • Lightning Protection Systems • HMI Ball
 Lights • Portable, Battery and AC Lights • Antenna Base Meters • Antenna Impedanc
 Phase Meters • AM and FM Field Strength Meters • Video Level Meters • Video Noi
 HM Meters • VU Meters • Microphone Stands and Booms • Boom Microphones • De
 Floor Microphones • Hand Held Microphones • Lavalier Microphones • Parabolic and Shotgr
 Wireless Microphones • Directional Antenna Monitors • Frequency Monitors • Modulatio
 Monitor • Power Monitors • Audio Program Monitors • RF Level Monitors • Video B&W
 Video Monitors • Video Pulse Cross Monitors • Waveform Monitors • FM M
 Systems • Dual Trace Oscilloscopes • Rack Type Oscilloscopes • Triggered Sweep Oscill
 Oscilloscopes • Oscilloscopes with Plug-ins • AC Power Supplies • Pre
 Power Supplies • Audio Preamplifiers • Limiter-Compressor Pr
 or Processors • Programmed Music • Programmed
 Projector Lamps • Film Projectors • TV
 Proof Workbook (For FCC
 Receivers • HF Re
 Controls

UPSTAR
 R.H. STRUL
 MDNA-FM
 PO BOX 330069
 MIAMI
 FL 33133

1978 Buyers' Guide Issue

The broadcast industry's comprehensive product directory



That's entertainment!

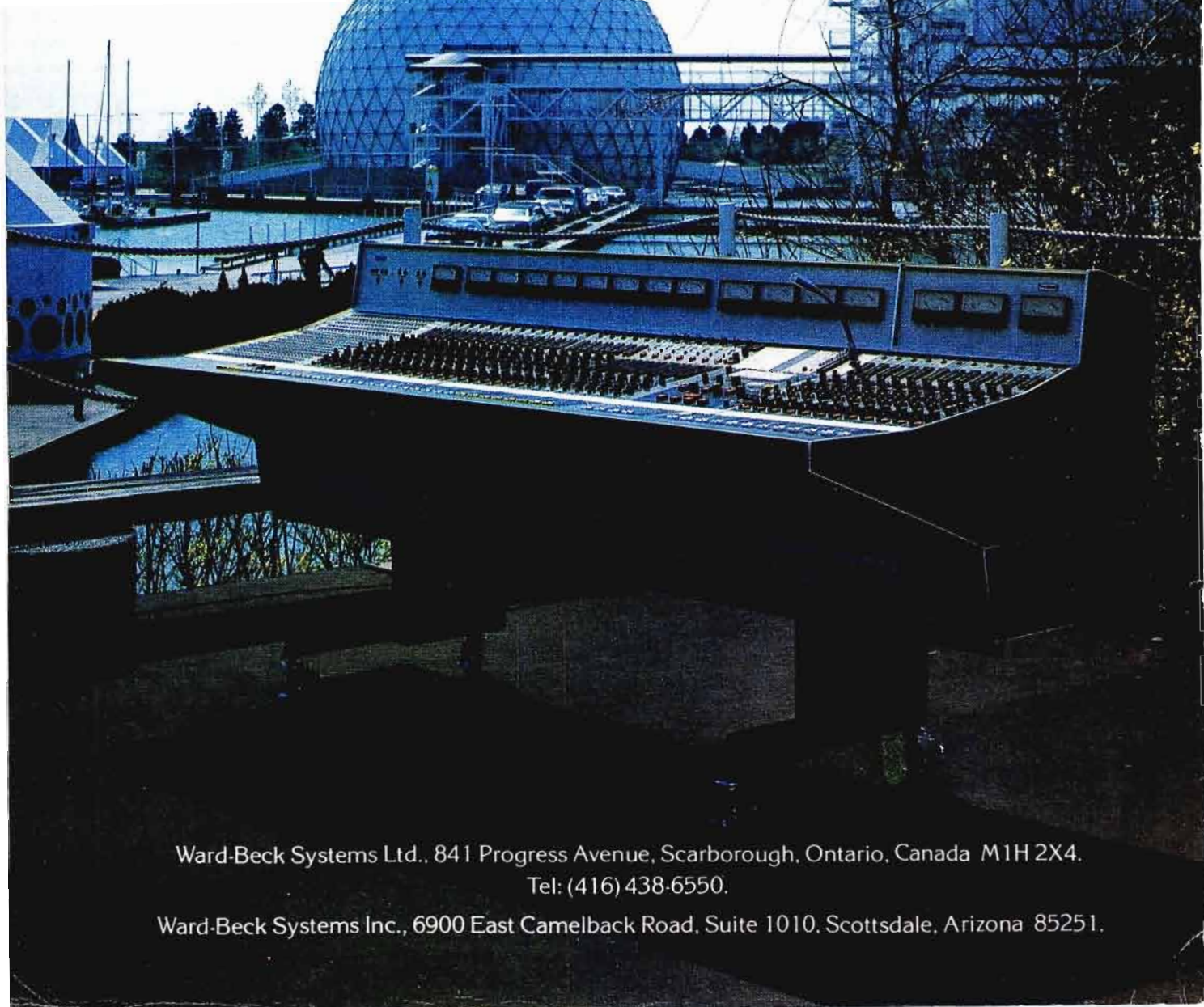
Few places in the world succeed in presenting a parade of great show business names comparable to those featured at Ontario Place.

Every day, throughout the season, internationally acclaimed artists perform at the Forum. And, to ensure that their talents are fully expressed, Ontario Place has installed this new custom Ward-Beck Audio Console.

That's entertainment!



First by Design.



Ward-Beck Systems Ltd., 841 Progress Avenue, Scarborough, Ontario, Canada M1H 2X4.

Tel: (416) 438-6550.

Ward-Beck Systems Inc., 6900 East Camelback Road, Suite 1010, Scottsdale, Arizona 85251.

Videomax Introduces

MEGAMITE

**The new tip material that
makes master heads last a
long, long time.**

At Videomax, we've discovered the secret of long life for master heads. It's called MEGAMITE™, a new material for head tips that stands up to hour after hour of tape wear—without any special care.

After extensive field tests, we are confident that MEGAMITE will outlast every other tip material we've come across. We're so sure of it,

we're using MEGAMITE tips in every RCA "XM" Series Master Quality Head Assembly we make. And guaranteeing each head for 500 hours—regardless of operating and environmental conditions.

So if you're fed up with master heads that never seem to last, call Videomax. We discovered the secret of long life. And guarantee it.

Videomax

A Division of Orrox Corporation
3303 Scott Boulevard
Santa Clara, CA 95050
(408) 988-2000 Telex 910-338-0554

Sales and Service
New York: (212) 947-8031
Los Angeles: (213) 980-7927
Atlanta: (404) 992-4490



Circle (3) on Reply Card

MEGAMITE™ is a proprietary development of Videomax.

BROADCAST[®] ENGINEERING

The journal of the broadcast-communications industry

September, 1978 / Volume 20 / No. 9

BROADCAST ENGINEERING ANNUAL BUYERS' GUIDE

121 Product Directory

223 Manufacturers and Suppliers

4 FCC update	22 Meetings, events & seminars
8 Publisher's note	26 Business news
10 Industry news	36 People in the news

44 A unique approach to increasing the high frequency response of AM stations. *By Lawrence I. Morton.*

54 Directional antennas. *By Robert A. Jones.*

72 Maximizing subcarrier deviation during simultaneous stereo transmission. *By James L. Tonne.*

82 Methods to increase power grid tube life in FM broadcast transmitters. *By Warren Shulz.*

88 The importance of time code in computer assisted editing systems. *By Arthur Schneider.*

110 Most popular TV channel frequencies. *By Stu Rauch and Jens Simonsen.*

202 Results of the FM signal processing survey. *By Dennis Ciapura.*

236 Becoming a certified broadcast engineer. *By Jim Wulliman.*

239 Routing switcher roundup.

STATION-TO-STATION

- 184 Metal foil sensor triggers alarm at end of tape. *By Cliff Graff, WSGW/WIOG-FM, Saginaw, MI.*
- 188 Relay circuit alerts operator of transmitter outage. *By Randy Schell, chief engineer, KRGA-FM, Lake Charles, LA.*
- 190 DA modification reduces gain, allows higher input. *By Herbert Dean, Maine Public Broadcasting Network, University of Maine.*
- 192 Remote control/timer for several cart machines. *By John E. Shepler, chief engineer, WROK/WZOK, Rockford, IL.*
- 194 Circuit mod cures video monitor picture problem. *By John A. Bredesen, director of engineering, University of Wisconsin.*
- 194 Event indicator for TCR-100s is inexpensive. *By Daniel L. Woods, engineering supervisor, WJXT-TV, Jacksonville, FL.*
- 198 Revox remote control indicators. *By Allen H. Burdick, KXTX-TV, Dallas, TX.*

DEPARTMENTS

Association News	
SBE	208
ASTVC	213
Blue Bananas	217
New Literature	220
New Products	242
Advertisers' Index	263
Classified Ads	267

THE COVER

Our Buyers' Guide this year has entailed an extensive review of the broadcasting industry's equipment and its sources. Because of the growth in this industry, we could not capture its breadth in a single photo as typically presented on our covers. Consequently, we conceived the cover portraying in the background a running list of components and systems faced daily by broadcast engineers, managers, and purchasing agents in operating, designing, and maintaining the world's finest communications systems.

Editorial, advertising and circulation correspondence should be addressed to: 9221 Quivira Road, P.O. Box 12901, Overland Park, KS 66212 (a suburb of Kansas City, MO), (913) 888-4664.

EDITORIAL

Bill Rhodes, *Editorial Director*
Cindy Nelson, *Managing Editor*
JoAnn Vella, *Editorial Assistant*
Beth Brugman, *Editorial Assistant*
Pat Fox, *Directory Editor*
Dudley Rose, *Art Director*

TECHNICAL CONSULTANTS

Howard T. Head, *FCC Rules*
Harold L. Kassens, *FCC Rules*
John Willisowski, *Video*
Carl Babcoke, *Technical*
Donald L. Markley, *Facilities*

CORRESPONDING ASSOCIATIONS

Society of Broadcast Engineers
American Society of Television
Cameramen

CIRCULATION

John C. Arnst, *Director*
Evelyn Rogers, *Manager*

ADMINISTRATION

George H. Seferovich, *President*
George Laughead, *Publisher*

ADVERTISING SALES

Jan Winters, *Production*

Regional advertising sales offices listed near the Advertiser's Index.



Member,
American Business Press



Member,
Business Publications
Audit of Circulation

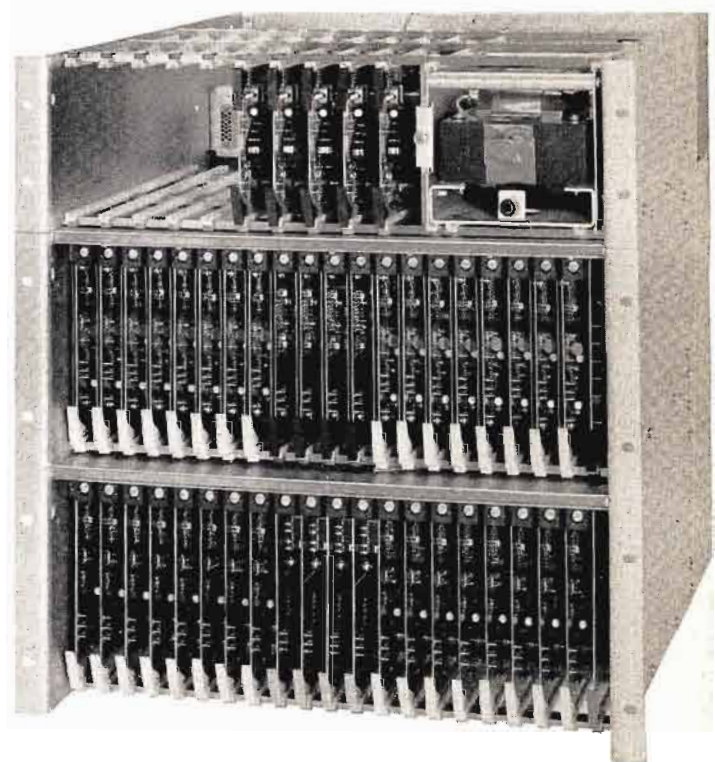
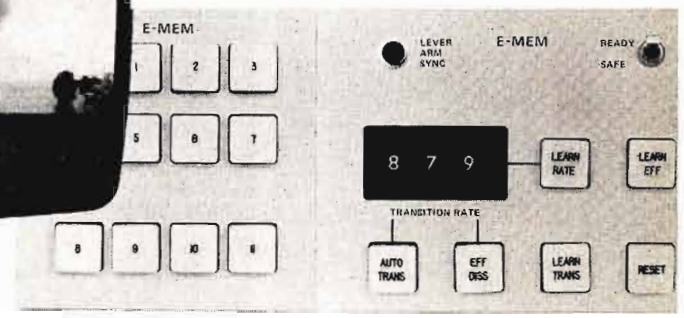
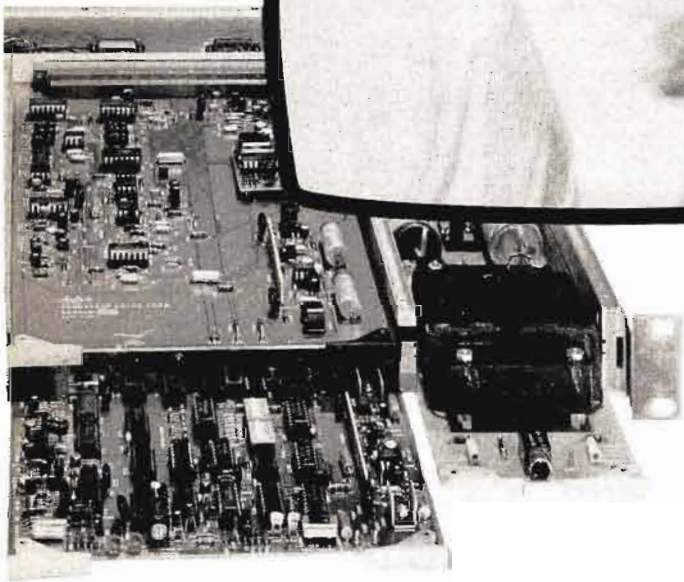
BROADCAST ENGINEERING is published monthly by Intertec Publishing Corporation, 9221 Quivira Road, P.O. Box 12901, Overland Park, KS 66212. **BROADCAST ENGINEERING** is edited for corporate management, engineers/technicians and other station management personnel at commercial and educational radio and TV stations, teleproduction studios, recording studios, CATV and CCTV facilities, and government agencies. Qualified persons also include consulting engineers and dealer/distributors of broadcast equipment.

SUBSCRIPTIONS: BROADCAST ENGINEERING is mailed free to qualified persons in occupations described above. Non-qualified persons may subscribe at the following rates: U.S., one year, \$20; all other countries, one year, \$26. Back issue rates, \$3, except for the September Buyers' Guide issue, which is \$10. Rates include postage. Adjustments necessitated by subscription termination at single copy rate. Allow 6-8 weeks for new subscriptions or for change of address. Controlled circulation postage paid at Kansas City, MO.



INTERTEC PUBLISHING CORP.

GRASS VALLEY GROUP ®
QUALITY
TERMINAL
EQUIPMENT



Grass Valley Group's range of television terminal equipment is the broadest in the industry, from distribution amplifiers, sync generators and video processors to large production switchers and audio/video assignment matrices.

Since Grass Valley Group manufactures a *complete* range of products, customers can be confident that equipment will perform in a system as well as on an individual basis.

All Grass Valley Group products are supported by a worldwide two-year warranty.

THE GRASS VALLEY GROUP, INC.
A TEKTRONIX COMPANY

Grass Valley Group Field Offices: WEST; 4419 Van Nuys Blvd Ste 307, Sherman Oaks, CA 91403 (213) 990-6172 • SOUTHEAST; 1644 Tullie Cir NE, Atlanta, GA 33029 (404) 321-4318 • NORTH CENTRAL; 810 W Bristol St, Elkhart, IN 46514 (219) 264-0931 • NEW ENGLAND & MID ATLANTIC; Station Plaza East, Great Neck, NY 11021 (516) 487-1311 • SOUTHWEST; 2639 Walnut Hill Ln Ste 143, Dallas, TX 75229 (214) 358-4229 • MIDWEST; 3585 N Lexington Ave Ste 374, Arden Hills, MN 55112 (612) 483-2594

FCC update



September, 1978/By Howard T. Head and Harold L. Kassens

UHF-TV receiver noise figure

On May 19, 1978 the FCC decided to lower the noise figure for UHF-TV receivers. In a burst of speed, it released on August 4th the report and order setting forth its final decision. The reduction is from 18 dB to 14 dB for all new models submitted for certification after October 1, 1979 and all sets manufactured after October 1, 1981. A further reduction from 14 dB to 12 dB was ordered on all new models submitted for certification after October 1, 1982 and all sets manufactured after October 1, 1984.

The latter requirement was hedged to the extent that, if experience warranted, the dates might be moved up and the second stage reduction to 12 dB could even be decreased to 10 dB. The commission also said that "it believed that lowering the noise figure to 14 dB could be done without imperiling its ability to reduce the UHF 'taboos' and without causing cost inefficiencies or other serious adverse impacts to the public interest such as inhibiting the use of electronic (push-button) tuners."

It also indicated that it would open new proceedings to improve other aspects of UHF-TV set performance which influence the quality of reception. The commission would consider the labeling of sets, ancillary service, grading of antennas and lead-in wires as well as transmitter operations. A petition for reconsideration of the 12 dB noise figure is assured.

Land mobile directional antennas

Because of severe interference to land mobile operations in the San Diego area due to the use of land mobile operations from high elevation sites in the Los Angeles area--particularly Mount Wilson, Mount Lukens and Santiago Peak--the FCC has issued a notice of inquiry and proposed rule making looking into requiring directional antennas for stations with such interference potentiality.

continued on page 6

TFT TELESCAN® PIONEERS...



THE NEW ERA

IN FULL CAPABILITY DIGITAL REMOTE CONTROL

Never before has the broadcast industry been able to exercise more total control over remote operations. TFT Telescan now brings computerized digital control of up to 120 channels of remote functions with instantaneous accuracy.

THE MODEL 400E CRT DATA TERMINAL is the heart of the Telescan System. It provides complete interaction between the operator and remote functions via a standard typewriter keyboard. Complete status and logging information is displayed on a 15-inch CRT in groups of 30 channels per page.

THE MODEL 7640C CENTRAL PROCESSOR UNIT (CPU) provides the control link between the Data Terminal and the remote site. Four tolerance limits per channel and built-in alerting features provide full visual and aural alarms.

THE MODEL 7640R REMOTE SCANNER converts dc inputs to digital data and transmits such vital in-

formation as temperatures, power, voltages, VSWR currents and contact closures to the CPU via built-in data modems.

THE MODEL 43 PRINTER provides the operator with a permanent record of all remote operations. Up to 20 columns of data of automatic pre-scheduled print-outs or manual command print-outs include programmed format, column headings and "out-of-tolerance" and "alarm condition" information.

CUSTOM SOFTWARE is also available with the Telescan System. Socket-mounted nonvolatile memory EPROM may be replaced by factory order at any time with those containing customized software.

Get the full facts now, on the most important breakthrough in remote control in this decade. Call TFT for all the details on the total capability provided by Telescan.

TFT TIME AND FREQUENCY TECHNOLOGY, INC.
3090 OAKMEAD VILLAGE DR., SANTA CLARA, CA. 95051 (408)246-6365 TWX 910-338-0584

Circle (4) on Reply Card

FCC update

continued from page 4

The FCC observed that the situation is unique to the Southern California area and is mainly the result of the topography and the radio propagation characteristics along the coast. Mexican radio broadcasters in Baja California have been complaining about a similar situation in FM for years.

AM stereo - FM quad up-date

The commission scheduled a discussion of AM stereo and FM quad for July 27th. Subsequently, the date was shifted to August 8th. At the request of the chief engineer, there was an additional postponement to September 13.

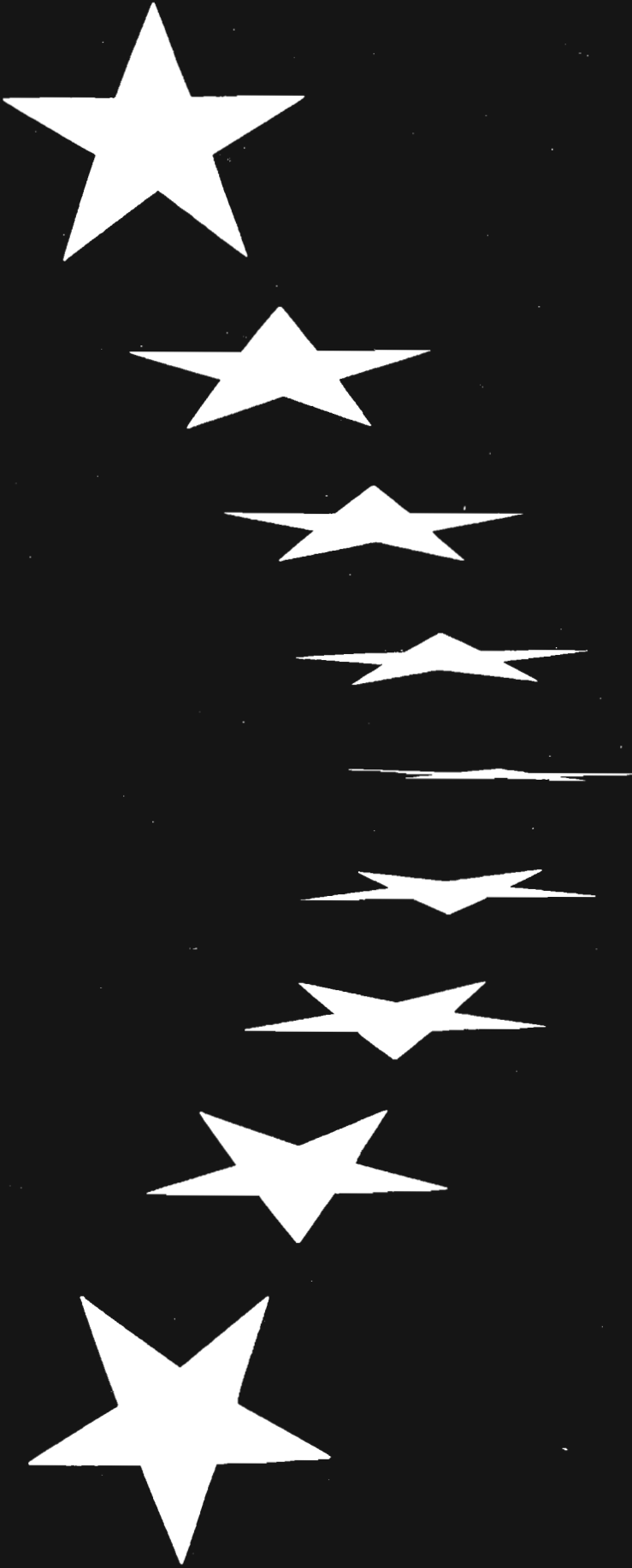
We understand that the broadcast bureau has a notice of proposed rule making prepared on both subjects. But some staff members still are concerned about technical aspects such as frequency response, adjacent-channel interference and skywave propagation. The office of chief engineer continues to raise the questions of 8 kHz or 9 kHz channel frequency separation in the AM band and 100 kHz separations in FM.

Unless some of the insiders become obstreperous, a decision on AM stereo by the time of the NAB convention in Dallas in March, 1979, is a good possibility. The date for an FM quad decision is anybody's guess.

Short Circuits

In spite of issuing the wrong press release, the FCC really did amend its rules to prohibit the marketing of linear amplifiers capable of operating on any frequency from 24 to 35 MHz and to require type-acceptance of all equipment marketed for use in the Amateur Radio Service...The processing line at the FCC will have all applications for major AM changes studied for acceptance and be on a current basis by September 1, 1978. The delay in processing applications for minor AM changes has now grown to a minimum of six months...The Texas Pawnbrokers Association, representing 255 pawnbroker shops, was turned down in its request to the FCC for an extension of the January 1, 1978 date after which the sale of 23-channel CB units has been made illegal. It seems they may be left with somewhere between 5100 and 6375 units at an average value of \$40 each.

INTRODUCING KEFEX



KEFEX expands the creative effects capability of any switching system or frame synchronizer.

Provides creative effects at a cost much less than that of typical frame synchronizer technology.

Transforms any television image source to a key or wire pattern which may be spun, zoomed, inverted, or sized vertically and horizontally.

KEFEX – from *American Data*, the innovative leader in production switcher design.



American Data
A North American Philips Company
Research Park • P.O. Box 5228
Huntsville, Alabama 35805
Telephone (205) 837-5180
TVX 810 726-2125

- | | |
|---|--|
| ADC NORTHEAST
Box 452
New Hartford, CT 06057
(203) 379-7840 | ADC MID-ATLANTIC
5504 Waterway
Rockville, MD 20853
(301) 460-1454 |
| ADC WEST
3760 Cahuenga Blvd.
North Hollywood, CA 91604
(213) 760-3221 | ADC NORTHWEST
P.O. Box 23
Mercer Island, WA 98040
(206) 232-3550 |
| ADC SOUTHEAST
2219 Dakawana Rd., N.E.
Atlanta, GA 30345
(404) 633-2100 | ADC MIDWEST
P.O. Box 27324
Indianapolis, IN 46227
(317) 784-3000 |

Publisher's Note:

New editorial director named for Broadcast Engineering

Broadcast Engineering features with this issue a new name on the masthead. Bill Rhodes, former editor of *Electro-Technology*, a magazine previously owned by Industrial Research, Inc., and absorbed by Dun-Donnelley Publishing Corporation. Rhodes brings to **Broadcast Engineering**, as editorial director, a broad background in RF communications, radio wave propagation and technical journalism.

Rhodes holds a MS degree in physics with an emphasis in solid-state electronics and wave propagation. His undergraduate work was in both physics and mathematics. His career, in addition to his experience in technical publishing, has encompassed virtually every facet of communications and includes the development of an all solid-state mobile broadcast system.

Organizations and companies that Rhodes has worked for include B&K Instruments, International Rectifier, Indiana University, Midwest Research Institute and Boeing Aircraft. Rhodes has been involved in engineering and research in various areas, including computers, minicomputers and microprocessors; the selection of servomotors and servo systems; and the evolution of recorders, oscilloscopes and counters.

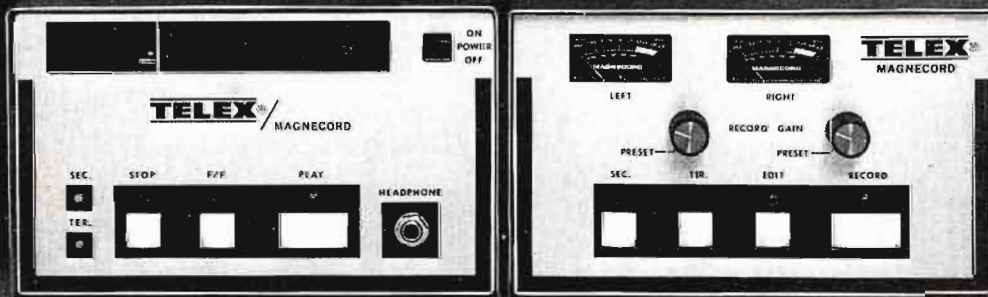
In addition, he has conducted pioneering studies on the magnetic properties of ferrite materials. Rhodes also developed the first application of the LASER in the area of cryogenic research.

If Bill can be of any help, contact him directly. He will be covering the SMPTE conference in October, so introduce yourself if you are there.

Finally, please note our added Business News department, a new name for Howard Head and Harold Kassen's exclusive column "FCC Update," and our redesigned table of contents. **Broadcast Engineering** continues to be the technology magazine for the broadcast industry.

Gerje Langford

At Last, a Cart Machine that Keeps its Cool



Telex/Magnecord broadcast cart machines run cool and steady. So cool no ventilation is required, so steady not even voltage or frequency fluctuations will alter their speed. Thanks to our dc servo flutter-filter drive.

The MC series offers broadcasters a host of options, including field convertability from mono to stereo or play to record and, of course, end of message, secondary/tertiary cue tones. Designed for type A or B carts, the MC series meets all NAB specifications, offers full immunity to EMI and RFI, is remote controllable and automation compatible with CMOS digital logic. Audio muting, air damped low voltage

dc solenoid and fast forward are standard features on every MC unit.

Four broadcast cart machines to choose from in the Telex/Magnecord MC series. Running cool and steady. With a pleasant surprise—they're affordable.

For detailed information please write:

PRODUCTS OF SOUND RESEARCH
TELEX
COMMUNICATIONS, INC.

9600 ALDRICH AVE. SO. • MINNEAPOLIS, MINN. 55420 U.S.A.
Europe: 22 rue de la Legion-d'honneur, 93200 St. Denis, France
Canada: Telak Electronics, Ltd., Scarborough, Ontario

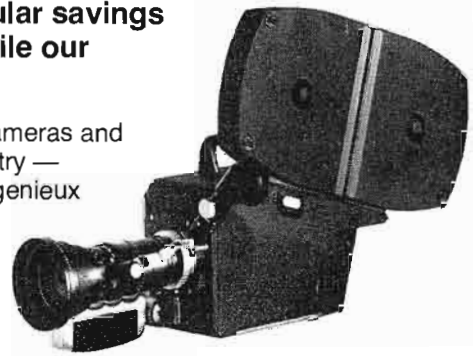
Circle (6) on Reply Card

CP-16/A Cameras and Angenieux Zoom Lenses... Winning Combinations at Unbeatable Prices!

Put a lid on ever-escalating equipment costs with spectacular savings on camera/lens combinations from Cinema Products... while our supplies of *specialty priced lenses* last!

Upgrade your TV-newsfilm operation. Retire your antiquated 16mm cameras and lenses (whatever their condition), and trade up to the standard of the industry — CP-16/A news/documentary cameras, with a choice of four of the finest Angenieux lenses available:

- 1** Angenieux 9.5-57mm AV30 zoom lens. The lightweight, ultra-fast (T1.9), wide-angle 6×1 zoom lens permits close focusing at 24" from the film plane.
- 2** Angenieux 12-240mm AV30 zoom lens. The ideal 20×1 zoom lens for any situation requiring wide-angle as well as telephoto coverage, such as sports events, political gatherings, etc.
- 3** Angenieux 12-120mm AV30 DA zoom lens. The outstanding 10×1 zoom lens with Automatic Iris Control.
- 4** Angenieux 12-120mm AV30 zoom lens. The "workhorse" of the television news gathering industry.



Free 3XL-IAZ Magnetic Head

All CP-16/A cameras (with built-in Crystasound amplifier) included in this offer are supplied with a 3XL-IAZ magnetic record head — featuring individual record and playback azimuth adjustment — *at no extra charge.*

**Trade-in any 16mm camera and lens
for the following CP-16/A camera/zoom lens packages:**

1 CP-16/A (Code 1C272)
with 3XL-IAZ
Magnetic Head
and Angenieux 9.5-57mm
AV30 Zoom Lens

LIST: **\$10045**
SAVE: **2320**
PAY: **\$ 7725**

2 CP-16/A (Code 1C272)
with 3XL-IAZ
Magnetic Head
and Angenieux 12-240mm
AV30 Zoom Lens

LIST: **\$14370**
SAVE: **3770**
PAY: **\$10600**

3 CP-16/A (Code 1C272)
with 3XL-IAZ
Magnetic Head
and Angenieux 12-120mm
AV30 DA Zoom Lens
(Automatic Iris Control)

SOLD OUT!

4 CP-16/A (Code 1C272)
with 3XL-IAZ
Magnetic Head
and Angenieux 12-120mm
AV30 Zoom Lens

LIST: **\$9420**
SAVE: **1445**
PAY: **\$7975**

Also Available

Trade-in any 16mm camera (no matter how old), and move up to a brand new CP-16/A for the incredibly low price of \$4650. You'll save \$1120 off list!

Please call your local CP-16 dealer for special trade-in prices and savings on standard CP-16 camera/zoom lens combinations.



Special Two-Year Warranty and Free "Loaner"

This special offer is covered by an extended two-year factory warranty on all mechanical and electronic components when you purchase your camera from your authorized local CP-16 dealer.

Your local dealer will also provide you with a free CP-16 "loaner" for any down time on a warranty-covered repair.

Offer Good Through Dec. 31, 1978

These "special purchase" lenses are available in limited quantities only. So, don't wait. See your local CP-16 dealer now. And save!

Cinema E products
CORPORATION

Technology In The Service Of Creativity

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

STL PRECISION TEST TAPES

WIDEST VARIETY—HIGHEST QUALITY

Do not accept lesser quality—Insist that the STANDARD TAPE LABORATORY name is on the label.

We will ship to any Radio or TV station in the U.S.A. on open account. Write or phone for fast delivery. Also available through select dealers throughout the world.

BROADCAST CARTRIDGE TEST TAPES

Specify—Aristocart, Audiopak, Fidelipac 350, or Mastercart cartridge

CATALOG #			DESCRIPTION	PRICE (EACH) (FOB HAYWARD, CA)
Mono	Stereo	Mono/Stereo Compatible		
34-1	34-2	34	Reproduce Alignment — NAB 1976 $\infty/50\mu\text{sec}$ 160nW/m level, voice an- nounced frequencies from 50-16000 Hz, 12.5 kHz azimuth, 1 kHz level set.	\$40.00
P-34-1	P-34-2	P-34	Pink Noise —20-20000Hz, $\infty/50\mu\text{sec}$. For stereo phase check, and fre- quency alignment when used with a $\frac{1}{2}$ octave analyzer.	35.00
F-34-1	F-34-2	F-34	Sweep —700 to 15000 Hz, 100 ms log sweep re- peated for 4 minutes with a dead section between sweeps to facilitate scope synchronization—Useful for fast response checks	35.00
—	—	L-34	Level Set —1kHz, 160 nW/m, 1½ min.	25.00
—	—	A-34	Azimuth —12.5 kHz, 1½ min.	25.00
—	—	35	Flutter & Speed — 1½ min. 3150 Hz, tape accuracy —.03% RMS Flutter— 0.1% Speed at 74°F.	25.00
—	—	36	Flutter & Speed — 1½ min. 3000 Hz, tape accuracy .03% RMS Flutter— 0.1% Speed at 74°F.	25.00
—	—	Q-34	Q Track Test —Upper and lower limit frequencies, upper and lower limit levels, long and short duration, on and off at zero crossings. Voice announced.	35.00

STANDARD TAPE MANUAL

Recently announced, this data book is a must for the audio tape recordist, engineer, and designer—priced at \$45.00.

FREE CATALOG

For a full description of the manual and a complete listing of all cassette and reel to reel test tapes please send for our latest catalog.

STL STANDARD TAPE LABORATORY, Inc.
26120 Eden Landing Road / #5 / Hayward, CA 94545
(415) 786-3546

Circle (7) on Reply Card

industry news

FCC Commissioner attacks rewrite

FCC Commissioner Tyrone Brown issued a sharp attack on the broadcast provisions of a bill (H.R. 13015) which would replace the Communications Act of 1934. Testifying before the House Subcommittee on Communications, Brown said that adoption of the bill would make the broadcast license "A license to print money with few if any public responsibilities attached."

Taking sharp issue with the general approach of the bill's broadcasting sections, Brown said "the problem with H.R. 13015 is that it would completely abandon the public interest standard. The bill would permit broadcasters to totally ignore discussion of controversial issues in their programming."

He took particularly strong exception to the bill's proposal to relieve the FCC or its successor of jurisdiction "to demand of broadcasters the kind of affirmative equal employment efforts the FCC has insisted upon since 1967."

"Because of the physical limitations of the broadcast spectrum, and given the many applicants for its use, government must be involved in its allocation. Those who are granted the opportunity to use this national resource—to the exclusion of all other claimants—receive a valuable privilege. It is not unreasonable to require that use of this public resource for private gain shall be conditioned on operation consistent with the public interest," Brown said.

NRBA meets on Act rewrite

In a recent meeting, members of the NRBA board of directors and chairman Van Deerlin of the House Subcommittee on Communications discussed and analyzed the proposed Act of 1978 (H.R. 13015).

A caucus of the NRBA directors indicated almost unanimous approval that a recommendation be made to the NRBA board to actively support the radio portion of the rewrite.

NRBA has campaigned for the total deregulation of radio and believes that H.R. 13015 can achieve this with benefits for the public as well as for the radio industry.

NRBA feels that the proposed spectrum or leasing fee should be a fixed amount protected from future escalation and that the number of stations permitted per owner or market should be different than presently proposed.

Common carrier title

Testifying before the House Communications Subcommittee on Title III of House bill H.R. 13015, FCC Chairman Charles D. Ferris emphasized five major areas of agreement with its provisions for

continued on page 12

So you think you know all the answers?

OK. Take up your pencil, write your name at the top of your paper (ten additional points) and try to answer these questions.

Name/Title _____
Company _____
Address _____
City State Zip _____ Tel. () _____ ext. _____

CMX SYSTEMS TEST/Editing Fundamentals

Circle correct answer.

1. CMX systems make
 - a. editing systems.
 - b. master time code generators.
 - c. portable time code generators.
 - d. time code reader displays
 2. CMX products make
 - a. dollars.
 - b. sense.
 - c. happy clients.
 - d. happy editors.
 - e. happy directors.
 - f. happy producers.
 - g. happy production managers.
 - h. happy program managers.
 - i. happy general managers.
 3. CMX systems are (fill in the blank) computer assisted editing systems in the world.
 - a. the most widely used
 - b. used to produce more prime time video tape programming than any other
 - c. the most flexible
 - d. the most expandable
 - e. the most proven
 - f. the most powerful
 - g. the most efficient
 - h. the most cost effective
 - i. interfaced with more different VTRs, ATRs, and switchers than any other
 - j. the industry standard for
 4. CMX equipment is used by
 - a. all United States networks.
 - b. all major United States post production facilities.
 5. CMX equipment is in daily use in
 - a. the United States.
 - b. Canada.
 - c. Australia.
 - d. Japan.
 - e. Latin America.
 - f. Europe and the United Kingdom.
 6. CMX systems is
 - a. editing.
- Any further questions?
- Then please complete the following section, tear out and mail your test to CMX Systems for grading at 3303 Scott Boulevard, Santa Clara CA 95050. Or call us (408) 988-2000 and tell us your score.
- I would like to
 - a. order a CMX System. Please find my check enclosed.
 - b. have a CMX salesman call on me.
 - c. receive more information.

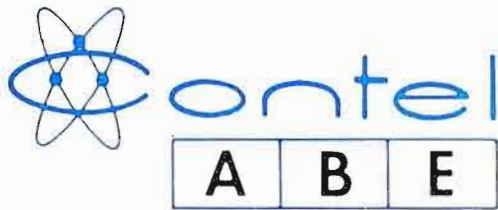
cmx systems

ORFROX

To the multiple choices of editing systems, the right answer is always CMX.

3303 Scott Boulevard, Santa Clara CA 95050 Tel. (408)988-2000 Telex 910-338-0550
Circle (8) on Reply Card

1)abcd 2) abcdefghi
3) abcdefghij 4) ab
5) abcdef 6) a



**Advanced Broadcast Equipment
at a price you can afford**



**CONTEL model CT101R-B
cartridge tape
recorder-reproducer**



**CONTEL model CT101P-B
cartridge tape
reproducer**

FEATURES

- 100% solid state
- Exceeds NAB specifications
- Built in remote control facilities
- Economically priced
- All silicon transistors
- Premium core, metal faced hyperbolic heads
- Electronic tone cueing
- Optimum electromagnetic shielding
- Optional auxiliary trip cue
- Compact and modern design

—PREFERRED BY PROFESSIONALS—

CONTEL MANUFACTURING

A Division of
Continental Electronic Wholesale Corporation
1620 W. 32nd Place — P. O. Box 206 — Hialeah, Fla. 33012
Telephone: (305) 822-1421 — Cable: Contelco

Circle (9) on Reply Card

Industry news

continued from page 10

domestic and international common carrier regulation.

- H.R. 13015 would provide a clear Congressional mandate that competition in telecommunications should be the rule and monopoly the exception.
- The bill provides the regulatory agency with a clear option not to use available regulatory tools when reliance on market forces would adequately protect the public.
- The bill includes a reassessment for the commission's current inventory of regulatory tools, especially its certification and tariffing powers.
- The bill properly includes legislative resolution of certain critical questions regarding industry structure.
- The bill recognizes the growing importance and complexity of international communications issues.

Ferris, however, disagreed with provisions curtailing or eliminating FCC regulatory powers. Instead, he argued for increased regulatory options for the FCC.

NAB membership climbs

Membership in the National Association of Broadcasters during the past year increased by 507 for an all-time high of 5,727.

Radio membership is up 340 (146 AM; 194 FM) for a total of 4,579 (2,611 AM; 1,968 FM), television from 547 to 558 and associate membership from 434 to 590.

Control interface committee formed

The Society of Motion Picture and Television Engineers has organized a committee titled Working Group on Control for Interface of Television Broadcast Studio Equipment.

An optional control interface for videotape recorders, film chains, character generators, still stores, audiotape decks, audio consoles, video switchers, frame synchronizers, time base correctors, noise reducers, digital effects, etc., will be made available to the industry by the committee.

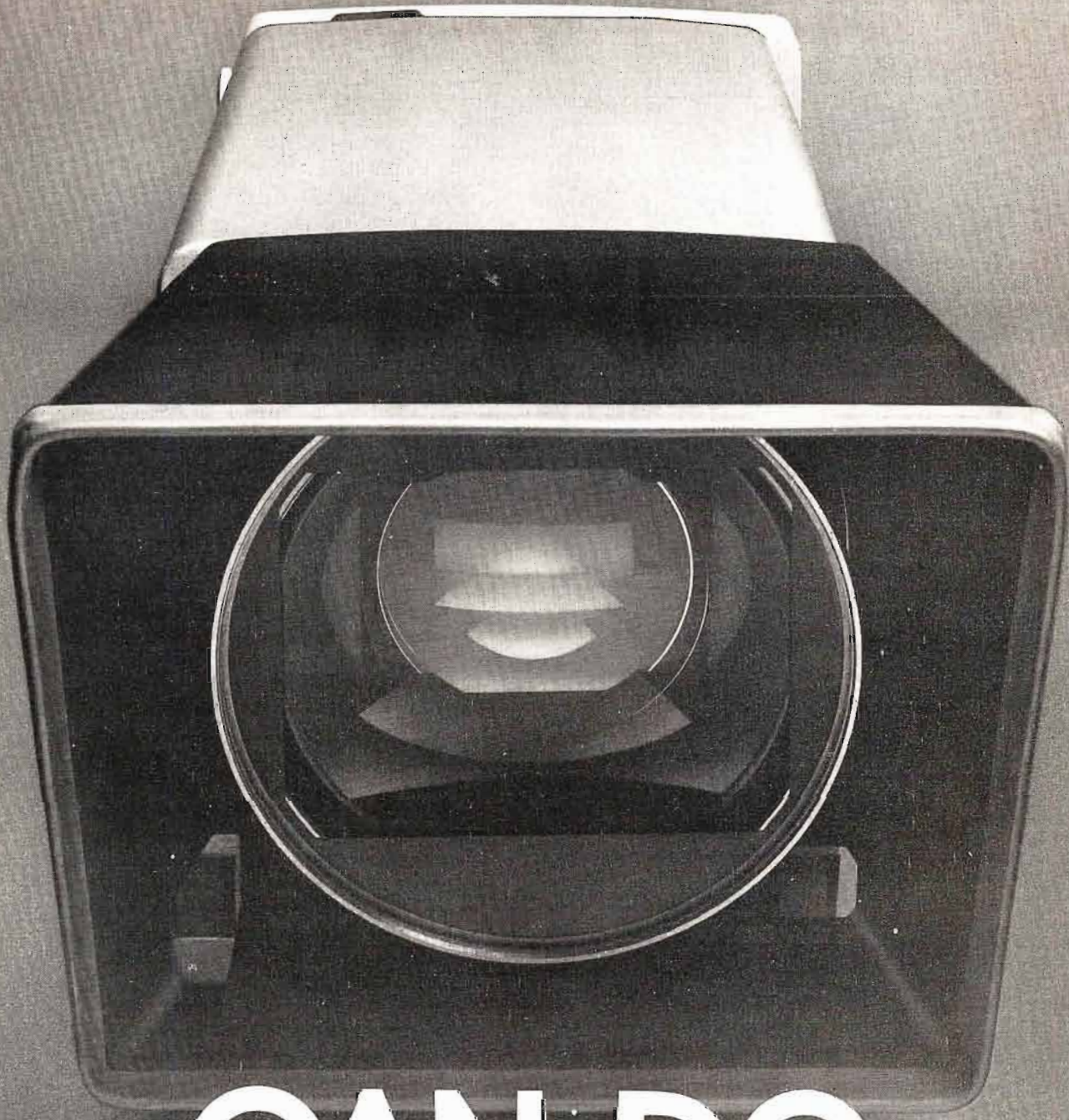
The committee hopes to have the industry reach agreement on the style, protocol, format and language of a digital communications scheme to permit all equipment (optionally) in the industry to talk, listen and command, if necessary.

SMPTE awards announced

The Society of Motion Picture and Television Engineers will present the 1978 Journal award to Eugene Leonard of Da Vinci Systems Group at the 120th Technical Conference in New York. The award is for his paper entitled *Implications of Digital Video Graphics*, published in the October 1977 SMPTE *Journal*.

Honorable mention goes to K. Staes, Agfa-Gevaert

continued on page 14



CAN DO.

And do it all! All the wide variety of tasks needed to meet today's increased production demands. The new 18X zoom by Canon has the capability and versatility you need in the studio, as well as the field. With its short MOD and wider wide angle, it hasn't met a problem it couldn't handle.

And when you consider its two built-in range extenders*, auto iris compensation, and unique built-in diascope for complete compatibility with the new micro-processor cameras, it's easy to see why this is the lens that has developed the reputation for *getting more* out of quality studio and field cameras. So it lets you *do more*, in or out of the studio, than you've ever done before.

Impressed? Contact us for a demonstration and you'll be amazed—at all the Canon 18X can do!

Canon®

*One range extender with built-in diascope.

Canon U.S.A. Inc. Head Office, 10 Nevada Drive, Lake Success, N.Y. 11040 (516) 488-6700 • 140 Industrial Drive, Elmhurst, Ill. 60126 (312) 893-3070
123 Paulirino Avenue East, Costa Mesa, Ca. 92626 (714) 979-6000
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

Circle (10) on Reply Card



ILS

Lighting Control System of the Future

The ILS (Intelligent Lighting System), is a unique, fresh approach to lighting control for theatre and television. It represents a harmonious blending of the demanding requirements of production lighting control, with the latest technology available from the computer industry.

The operation of ILS was purposely kept simple, because it had to perform complex functions according to the requirements of the production. ILS is designed to communicate in ordinary production language.

We created a system which will not only perform the required functions of a show, but it will also handle many of the bookkeeping functions which used to take lighting directors, their assistants and the board operators hours to write out. Since ILS is truly an "Intelligent Lighting System," it will never belittle the operator.

You won't see a large console filled with levers, switches and lights. That's not needed with ILS. Instead, you sit in front of a terminal. In addition to the usual alpha and numeric keys found on these keyboards, we have added our own special function keys.

The CRT displays information you need to know during the show and often you respond to questions asked by the computer. It's a self-teaching system and will not let you enter an incorrect command.

It's an exciting concept in lighting control and we are sure you'll see why when you take command of an ILS Control System.

The Innovation Company

**ELECTRO
CONTROLS**  **INC.**

2975 South 300 West Salt Lake City, Utah • 84115
Tel: (801) 487-9861 Telex: 388-395

Circle (11) on Reply Card

Industry news

continued from page 12

N.V. for his paper entitled *Light Sources as an Integral Part of the Color Photographic System*, published in the August 1977 SMPTE Journal.

The David Sarnoff Gold Medal award will be presented to Masahiko Morizono, general manager, Sony Corporation's Video Products Division.

The award is for his leadership and engineering achievements in the development of television electronic news gathering equipment, especially in the development of portable helical-scan VTR systems with associated versatile editing capabilities.

Robert E. Gottschalk, president and chief executive officer of Panavision, will be awarded the Progress Medal in recognition of his engineering contributions to the design, development and production of the Panaflex professional motion picture camera, various improved photographic optics and numerous other equipment innovations.

Roderick T. Ryan, Eastman Kodak Company, will receive the Herbert T. Kalmus Memorial Award for his continuing contributions to color film printing and processing systems.

John A. Maurer, retired founder of J. A. Maurer, Incorporated and Optronics, will be awarded the Honorary Membership Award for his seminal contributions to the theory, design and development of 16mm motion picture equipment and related systems.

Four men will receive Special Commendation Awards for 1978. The honorees are:

Julius Barnathan, president, broadcast operations and engineering, American Broadcasting Company, for contributing to engineering progress in all phases of television—broadcasting research, design of equipment and facilities.

Dr. Georges Broussard, director of research, Thomson-CSF, for having pioneered the development of the videodisc system since 1969.

Linwood G. Dunn, president, Film Effects of Hollywood, for his innovations in the creation of special optical effects in motion picture and television production.

David W. Samuelson, director, Samuelson Film Service, Ltd., in recognition of his lifelong achievements as cameraman and producer, who has filmed newsreels and documentaries covering aviation and motor sports in over 40 countries.

Committee studies blanking

An ad-hoc committee of broadcasters has been formed to investigate the complex problems relating to the variations in picture blanking widths throughout the television broadcast industry.

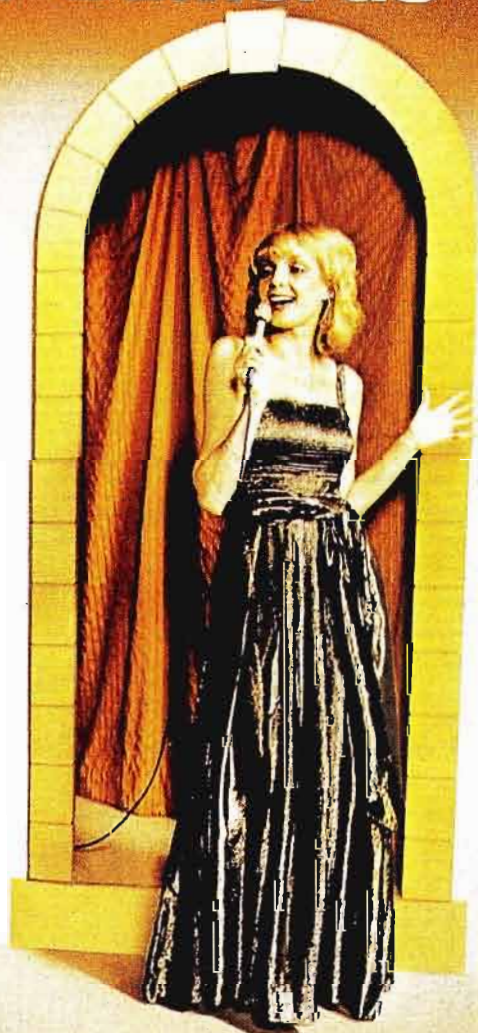
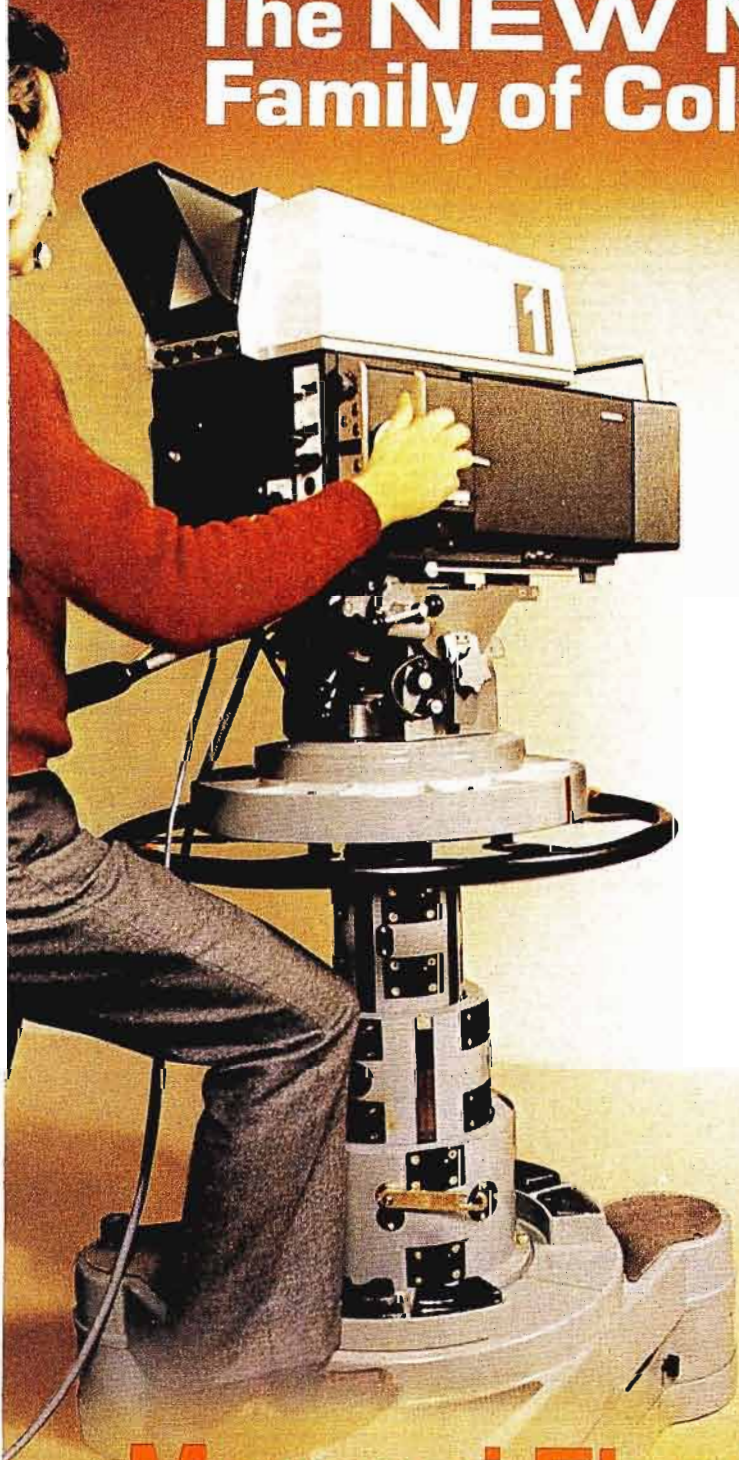
The committee, under the chairmanship of Thomas Keller, director of engineering, WGBH-TV, Boston, is composed of the commercial networks, public television, major group broadcasters, and the NAB.

Specifically, the committee will be examining

continued on page 16

IT'S GOING TO SPOIL YOU!

The **NEW MARK IX** Family of Color Cameras



- Studio/Remote/Portable • Multiple Configurations • Standard or Triax Cable • Low Power Consumption (400 Watts) • 110/220 VAC or 24 VDC
- Manual or Automatic Registration/Operation • Over ½ mile with Standard Cable, up to 1 mile with Triax • Compact, Lightweight CCU • Select from choice of view finders 1", 3" or 7" • Selection of pick-up tubes includes Bias Light and HOP
- Remote Control Operation up to 500 ft. . . . and much more!

Marconi Electronics, Inc.

100 Stonehurst Court Northvale, New Jersey 07647 (201) 767-7250

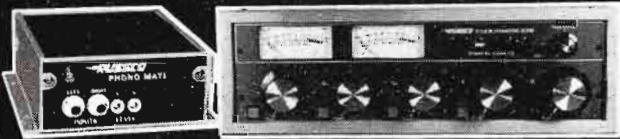
RUSSCO SOUNDS GOOD!!

If you're looking for professional audio products that will reduce down-time, increase efficiency and ease of operation and save a few bucks, come to RUSSCO! Once you get the RUSSCO story, you'll agree...RUSSCO SOUNDS GOOD!



STUDIO-PRO turntable: Rugged & simple, only 3 rotating parts, oilite bronze bearings, heavy-duty motor, no-slip starting, built-in 33/45 adapter. The Industry's Standard.

FIDELITY-PRO phone pre-amps: Self contained power supply, more head-room (+18 dBm), easy-access enclosure, 8 models: stereo or mono, balanced or unbalanced.



PHONO-MATE: NEW! lowest priced pre-amp for use with external power supply for reduced hum & noise. Straight RIAA equalization, RFI proofed against interference. Stereo or mono, balanced or unbalanced.

STUDIO-MASTER 505S stereo audio mixer: 5 channels, 5th channel accepts 5 input lines for 9 channels total. Push-button switching, plug-in pre-amps, cue amp & speaker included, Mod Pots, LED indicators, Monoaural available.



MONITOR-MASTER 260 stereo amp: Long life and dependable service. 60 Watts RMS per channel. Clean solid-state sound with built-in power sensor protects against overload.

DISCO 421: NEW! Portable (5½ lbs.) 4 channel audio mixer for disco, remote, home recording. 1 channel: mono mike, 2 channels stereo, 1 hi-level input for tape. 3 band equalization. Inexpensive!

• Write us for our brochures

RUSSCO

ELECTRONICS INCORPORATED
5690 E. SHIELDS AVE., FRESNO, CA 93727 • PHONE (209) 291-5591

Circle (13) on Reply Card

Industry news

continued from page 14

operating practices throughout the industry, working with manufacturers and industry organizations to identify problem areas and to recommend corrective action.

NAB urges efficient spectrum use

In comments filed with the FCC, the NAB opposed a proposal by Searle Radiographics to permit increased radiation and more spectrum space for transmission of medical data from a hospital room to a central location on unused VHF television channels.

Under present FCC rules, a telemetering device may operate in the 174-216 MHz band, provided that it is used for transmission of biomedical data, emissions are confined to a 200 kHz bandwidth, and the field strength of emissions does not exceed 150 uV/m at 30 meters from the device.

The NAB said it supports technological advances in the medical profession, but "this proposal appears to be yet another illustration of the classic case of using radio spectrum for a small convenience or cost savings when alternative means are available."

Teletext system functioning

KSL-TV, Salt Lake City, has begun broadcasting its teletext signal, the first use in the United States of a teletext information system transmitted over a TV broadcast station.

KSL-TV received permission from the BBC and the FCC to broadcast the ancillary signals on a test basis.

Viewers can select regular programming, the information service or both, using a simple push-button selector. There is no charge for the service.

The information service consists of colored words and graphics printed on the television screen in much the same manner as sports scores are shown now.

The viewer can select from up to 800 "pages" of information which are transmitted sequentially and are constantly updated. The information can be called out at any time the set is tuned to KSL-TV, Channel 5.

Other features of the Teletext System include news bulletins to overprint the picture, six-color graphic display maps and charts, a button to reveal "hidden answers" for educational use, an update button and a time addressing button.

Wireless microphone use

The FCC has warned that the operation of a wireless microphone on an unauthorized frequency makes the user liable for operation of an unlicensed transmitter in violation of Section 301 of the Communications Act of 1934.

Frequencies that may be used for a wireless microphone operating under Part 15 without an individual license include bands 10-490 kHz, 500-16

continued on page 20

Check Harris for all your broadcast equipment needs.

- Amplifier - AM, RF
- Antennas, Receiving FM
- Antennas, Transmitting
- Audio Connectors, Terminal Blocks
- Audio DAs, Monitor Amplifiers
- Audio Effects Generators
- Audio Noise Reduction Systems
- Audio Patch Panels, Patch Cords
- Audio Consoles
- Audio Portable Consoles, Mixers
- Audio Reverberation Units
- Audio Tape Recorders/Reproducers - Reel to Reel
- Audio Tape Reproducers - Cartridge
- Audio Test Equipment
- Automation Systems
- Cameras
- Camera Lens
- Camera Tripods, Dollys, Pedestals
- Cartridges - Tape
- Clocks
- Converters, Power Phase
- Demodulator, TV Video - Demodulator, Aural, Noise Meter
- Diplexers, Combiners - TV (VHF/UHF)
- Dummy Loads - AM, FM/TV
- EBS Systems
- Filters, Optical; Test Patterns; Test Slides
- FM Isocouplers, Combiners, Diplexers
- Generators, Engine - Emergency Power
- Generators, Sync; Proc. Amps; Video DAs; Terminal Equipment
- Headsets
- Land-Mobile Communications
- Lights, Studio
- Lights, Studio Warning
- Lights, Tower - Light Controls, Isolation Transformers
- Meters, Field Intensity - Phase Monitors - Impedance Bridges
- Microphones
- Microphone, Audio Cable
- Microphone Stands
- Microwave - TV
- Monitors, Picture
- Monitors, Waveform, Vectorscope
- Multiplexers, Optical
- Printers, Loggers, Terminals
- Projectors, Film/Accessories (Television)
- Projectors, Slide/Accessories (Television)
- Rack Cabinets, Tape Storage Cabinets
- Regulators, Primary Power
- Remote Broadcast
- Remote Control
- SCA Receivers
- Speakers, Loud: Baffles/Accessories
- Studio, Transmitter Links
- Switches, Coax - Manual & Motorized
- Switches, Video
- Tape Cartridge Machines
- Tape, Cartridges, Test Tapes
- Tape Splicers, Erasers
- Tone Arms
- Towers, Tower Erection
- Transmission Line, AM-FM-TV
- Transmitters, AM-FM-TV
- Turntables
- Water Stills

For complete information on any of the products listed contact: Harris Corporation, Broadcast Products Division, Quincy, Illinois 62301.



HARRIS
COMMUNICATIONS AND
INFORMATION HANDLING

...and what have we done for you lately?

*14 years ago we delivered the original
30mm Plumbicon® camera tube
that revolutionized TV broadcasting...*

*9 years ago we introduced the 1-inch
Plumbicon tube that permitted
the design of more compact
broadcast cameras...*

*4 years ago — the 2/3-inch Plumbicon
tube brought broadcast quality to
portable cameras and gave us ENG...*

*Today, we bring you two of these
popular pickup tubes with further
improvements in performance.*

Ever since the original Plumbicon tube won the Emmy Award for having revolutionized color TV broadcasting, we've been keenly aware of the importance of the name Plumbicon to the TV industry which has come to depend on it as its assurance of consistent performance and quality. There's no disputing the fact that contemporary Plumbicon tubes outperform their original versions by a wide margin.

Two of the most recent improvements in the Plumbicon pickup tube line, (the 30mm XQ1410 and the 2/3-inch XQ1427) are described here. These tubes, like all Plumbicon TV camera tubes, offer unmatched resolution and sensitivity, superior color rendition . . . excellent highlight handling . . . low and steady dark current . . . high signal-to-noise ratio . . . minimal lag . . . stable operation over a wide temperature range . . . and long life.



Type XQ1427: Offers significantly higher resolution than earlier versions; modulation depth is 60% typical at 320 TV lines giving sharper, clearer pictures and allowing operation at lower light levels. New gun design and 1500-line mesh construction result in improved registration and geometry, reduction of flare by a factor of 3 and reduced beam landing error.



Type XQ1410: The XQ1410 gained immediate acceptance by the television industry as a significant advance over all previous 30mm tubes. This recognition is based on the XQ1410's dramatic reduction in lag (typically 37% below that of our XQ1020.) The XQ1410 ends color-fringing, greatly reduces picture-smear and gives better dynamic resolution — even under poor lighting conditions. With its internal bias lighting, all three channels can now be balanced for identical lag characteristics. New gun construction gives improved resolution, (60% typical modulation depth at 400 TV lines). New mesh construction results in better geometry and registration and significantly reduces microphony.

Make no mistake — these are vitally important improvements on vitally important camera pickup tubes . . . but these developments are only part of the answer to — "What have we done for you lately?"

*...and now the next generation
of Plumbicon TV camera tubes:
with them begins the age of Electronic Cinematography.*



"Cinematography" once meant the creation of motion pictures on film, and film alone. But no more.

The next generation of Amperex Plumbicon TV pickup tubes, in combination with recent advances in new camera design and videotaping systems, is destined one day to reduce to near-zero the use of film in broadcast cinematography and in motion picture production. Now, indeed, begins a new era... and a new art form: Electronic Cinematography. All-electronic production will offer a technically superior product, and will permit shorter lead times between production and broadcast... and it allows motion picture directors to combine the creative aspects of single-camera film production with the immediacy of live-on-tape TV techniques.

All this has been no accident, of course. We, for instance, have been working toward this moment for fourteen years, ever since the introduction of the original Plumbicon tube... right through the advent of ENG, first brought to reality by our 2/3-inch version of the Plumbicon tube.

This steady stream of advances in TV pickup tube technology now culminates in a new generation of Plumbicon tubes that offers major advances in resolution and lag performance... advances that were prerequisite to the dawn of the age of Electronic Cinematography.

Type S45XQ: Developed for use in new studio cameras that will accept 30mm tubes, has limiting resolution of 1600 TV lines, with modulation depth of 95% at 400 TV lines and 40% at 1000 TV lines. Nothing like it has ever been offered in a broadcast quality tube. The S45XQ provides for external bias lighting; but decay lag, even without bias light, is typically only 7% after 50 milliseconds.

Type S73XQ: Physically interchangeable with conventional 1-inch broadcast Plumbicon tubes, can be used in existing studio and field production cameras with only minor circuit modifications. Typical limiting resolution of the S73XQ is 1000 TV lines, with modulation depth of 65% at 400 TV lines. Overall signal-to-noise ratio can be maximized in the S73XQ by a low-capacitance target contact. A revolutionary gun design in the S73XQ reduces lag; decay lag is typically 2% at 50 msec. with bias lighting.

Both of these new-generation tubes inherit all the finer qualities of the original Plumbicon pickup tube: near-zero dark current... high sensitivity... resistance to burn-in, even in highlights... precise geometry and registration... and long life. You can expect from them what you have learned to expect from Amperex Plumbicon tubes; performance at the edge of tomorrow.

For more information, contact: Amperex Electronic Corporation, Slatersville Division, Slatersville, Rhode Island 02876. Telephone: 401-762-3800.

Amperex®

TOMORROW'S THINKING IN TODAY'S PRODUCTS

A NORTH AMERICAN PHILIPS COMPANY

Circle (15) on Reply Card

PHILLYSTRAN®

The Tough Guys

Far surpassing steel guys in strength and durability, PHILLYSTRAN is manufactured from impregnated KEVLAR* and polyurethane. Completely non-metallic, PHILLYSTRAN eliminates electrical problems and the usual problems of RFI.

- **Non-interference**
Outstanding dielectric properties
- **Minimum Stretch**
New designs substantially reduce creep
- **Corrosion Proof**
Non-metallic construction: polyurethane jacket
- **Non-Conducting**
Outstanding insulation properties

PHILLYSTRAN . . . The Tough Guys in more ways than one.

®PHILLYSTRAN . . . proprietary resin impregnation process of Philadelphia Resins Corp.

*duPont registered trademark



manufacturers of Chockfast®, Phillybond®, Phillyclad® and Phillystran®

PHILLYSTRAN® ROPES AND CABLES

PHILADELPHIA RESINS CORPORATION
20 Commerce Drive, Montgomeryville, Pa. 18936, U.S.A.
215/855-8450 • Telex: 84-6342 • Cable: PHILRES MMLL

Circle (16) on Reply Card

Industry news

continued from page 16

kHz, 26.97-27.27 MHz, 49.82-49.90 MHz, and 88-108 MHz.

A wireless microphone that operates on any other frequency must be licensed.

Limitations on aural licenses

(Open letter to **Broadcast Engineering** readers)

One thing that we have noticed in our travels around the country on inspection tours is the apparent lack of understanding of Part 74 in regards to the licensing of aural (900MC) STLs. As you know, aural STLs or studio-to-transmitter links provide clean, reliable service between the studio transmitter at many broadcast facilities. They are applied for and licensed by the FCC, use low power transmitters and highly directional antenna systems.

It is a simple procedure to apply for and receive a license, buy a transmitter, two antennae and a receiver (contact your consultant for details) set it up and go. What more could the average chief want? Redundancy of course! Thus, many chiefs wrote the manufacturer of their original rig and ordered the identical system again, installed it, and now sit content with two transmitters, two receivers, four antennae and one license. Right? Wrong!

Contrary to what 74.4511 (Part A-1) might indicate, 74.551 Equipment Changes stipulates the following (in part):

(a) Prior Commission approval, upon appropriate application (FCC Form 313), therefore, is required for any of the following changes:

(1) A change in the transmitter as a whole (except replacement with an identical transmitter), or a change in power output.

The use of an identical system as a backup does not obviate the need for an alternate main or auxiliary license at any STL or RPU installation, aural or visual. Thus, the possibility of citation for operating an unlicensed transmitter (a fairly serious gig) might be just as close as your STL rack. Send a Form 313 in for that alternate or auxiliary-transmitter; it won't hurt your piece of mind.

Paul Flint

*Engineering Department
Frazier, Gross & Clay*

NAB stand on format change policy

In a brief filed on behalf of the FCC, the NAB told the U.S. Court of Appeals for the District of Columbia Circuit that radio format changes should

continued on page 218

BROADCAST ENGINEERING

angēnieux

The Trusted Name in Quality Lenses for every application, for every budget

10x

FOR THE STUDIO
the most widely used lens in the world.

15x

FOR THE STUDIO AND OB
for demanding studio work and ob.

42x

FOR THE STUDIO AND OB
for ultimate flexibility.

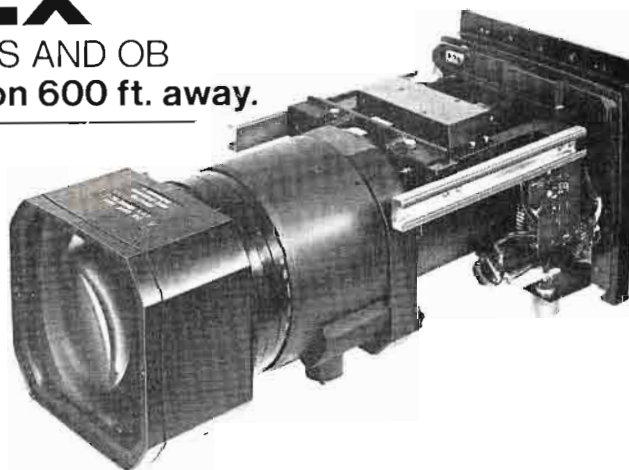
12x

FOR THE STUDIO
for outstanding optical quality.

TELE

42x

FOR SPORTS AND OB
full screen a person 600 ft. away.



angēnieux corporation of america

1500 OCEAN AVE., BOHEMIA, NEW YORK 11716 • (516) 567-1800
13381 BEACH AVE., VENICE, CALIFORNIA 90291 • (213) 821-5080
4 HAVEN HILL SQ., AGINCOURT, ONT. M1V1M4 • (416) 291-2363

meetings, events & seminars

.....

October 17-19—*Video Expo/New York*, the largest professional video exposition, will be held in the Rotunda and Felt Forum of New York's Madison Square Garden. The conference, sponsored by Knowledge Industry Publications is designed to provide users with guidelines for effective video communications.

Registration for Video Expo/New York is \$4.00 by advance mail and \$5.00 at the door.

For more information, contact: Sheila Frank, Dept. BE, Knowledge Industry Publications, 2 Corporate Park Drive, White Plains, NY 10604.

October 19-21—The Distributor Products Division of the *Electronic Industries Association* will hold its 1978 annual meeting at Del Webb's Newporter Inn, Newport Beach, CA. The program will feature two morning seminars followed by organized recreation. Each day's activities will conclude with a reception and banquet for all participants.

For more information, contact: EIA/DPD, Dept. BE, 2001 Eye Street, N.W., Washington, D.C. 20006.

October 20-21—The *1978 Film and Video Tape*

Seminar will be held at the Marriott O'Hare in Chicago.

Topics to be discussed range from animation and special effects to multi-image presentations. Two keynote speakers will be featured, one to mark the opening of the seminar on Friday evening, and one to close the event on Saturday afternoon.

For more information, contact: Bennett Grossman, Dept. BE, c/o Edit/Chicago, Prudential Plaza Suite 3010, Chicago, IL 60601, (312) 787-9100.

October 24-27—A four-day course, entitled *Data Communications: Digital Techniques and System Design*, will be offered by *Integrated Computer Systems* in New York. The course is designed for engineers, scientists and system designers who are involved in the planning, design or implementation of all types of digital communications systems.

It will be offered also in Boston, November 14-17; Los Angeles, December 12-15; Dallas, January 23-26; Chicago, February 6-9 and Washington, D.C., March 13-16.

For more information, contact: Kim D. Sanson,
continued on page 24

A Winning Combination In Routing Switchers

Best Performance

Whether you're looking at published specs or as-installed performance, you'll see us best our competitors—all of them—hands down.

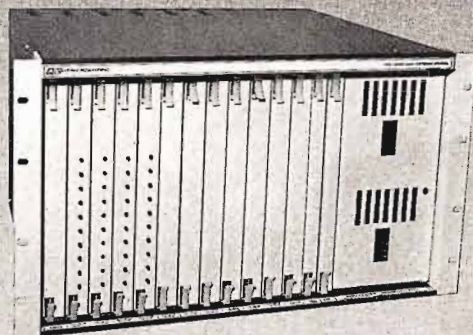
Our Diff \emptyset , Diff Gain, Video Noise, Audio Distortion, Audio Output Level and Audio Hum and Noise specs are the industry's best . . . and any of you that saw our demonstrations at the Las Vegas NAB show know that we can beat our own specs by wide margins.

Broadest Product Line

With 15 separate matrix designs and 21 different control panels, we can offer the most efficient package to fit your needs for any size switching system.

Lowest Prices

Ask us for a quote and see if you don't agree.



USJ UTAH SCIENTIFIC
2276 SOUTH 2700 WEST
SALT LAKE CITY, UTAH 84119
PHONE (801) 973-6840

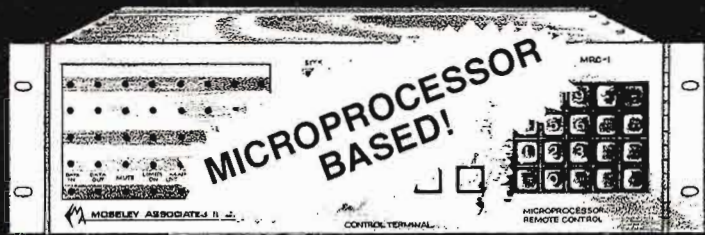
Circle (18) on Reply Card

NEW! FROM MOSELEY ASSOCIATES!

Model MRC-1 Microprocessor Remote Control

From Moseley Associates — the proven leader in broadcast transmitter remote control — now the technology of microprocessor-based systems! The Model MRC-1 Microprocessor Remote Control System offers 32 channels of programmable control, telemetry and status. Standard features in-

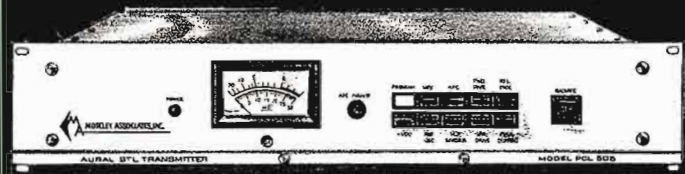
clude: Keyboard calibration of linear and power-log scale parameters; random assignment of control; telemetry and status channel mixes; momentary or latching control and status functions; full limits checking and aural alarm. Automatic logging is also available.



Model PCL-505 Aural Studio- Transmitter Link "THE STL"

Moseley brings you uncompromising performance for FM quadrasonic, FM stereo, AM stereo and monaural services. Standard features include all solid-state construction with on-frequency final RF amplification in all frequency bands. *Wideband composite or discrete channel systems — both*

Moseley firsts! Models PCL-505/C, PCL-505 and PCL-101 provide extensive multimetering and serviceability. Models TPT-2 and TPR-2 Automatic Transfer Panels afford complete standby redundancy. A complete line of proven accessories and antenna systems is also available.



Model TFL-280 Audio Limiter FM Loudness and Clarity

Get loudness and clarity without compromise! FM monaural, stereo, quadrasonic, FM SCA, TV aural are all expertly processed. This frequency-conscious limiter cleanly solves the problems associated with the transmission of pre-emphasized audio, including the ringing (overmodulation) pro-

duced by low-pass audio filters. A combination of the Model TFL-280 Audio Limiter; SCG-9 Stereo Generator; and PCL-505C Composite Aural Studio-Transmitter Link provides maximum modulation capability with clarity for the remote FM stereo broadcast operator.



OTHER MOSELEY SYSTEMS

Model TRC-15A Analog Remote Control System. Provides 15 analog telemetry channels and 30 control functions. Allows subaudible (20-30 Hz) telemetry return for simultaneous AM and programmed FM SCA broadcast carrier telemetry return.

Models TCS-1 and TCS-2 Telecontrol Systems. Eight control, status and telemetry channels packaged for efficient and reliable operation. Two TCS-1 and/or TCS-2 systems can be stacked over a common 3 kHz interconnect circuit.

SEE US AT BOOTHS 120 and 121 — NRBA CONVENTION AT SAN FRANCISCO

MOSELEY ASSOCIATES, INC.

A FLOW GENERAL COMPANY

SANTA BARBARA RESEARCH PARK, 111 CASTILIAN DRIVE • GOLETA, CA 93017
(805) 968-9621 • CABLE: MOSELEY • TELEX: 658-448



Meetings, events & seminars

continued from page 22

program manager, Integrated Computer Systems, Dept. BE, 3304 Pico Boulevard, P.O. Box 5339, Santa Monica, CA 90405.

October 25-26—The 11th Annual Connector Symposium, under the direction of the *Electronic Connector Study Group*, will be held at the Cherry Hill Hyatt House in Cherry Hill, New Jersey. Engineers and scientists concerned with electrical connectors and interconnections will present results of their technical investigations, new developments and technology to representatives of connector users and manufacturers.

Topics to be covered include leadless packaging, printed wiring/backpanel connector systems, contact theory and design, EMC/EMP/coax connectors, fiber optics, and cabling cable connectors.

The \$25 registration fee covers admission to 40 technical sessions, a copy of the proceedings, a copy of the Index of the Electronic Connector Study Group papers, two lunches, a cocktail party and a banquet.

For more information, contact: Electronic Connector Study Group, Dept. BE, Box 1428, Camden, NJ 08101.

October 29-November 2—The 120th Technical Conference and Equipment Exhibit of the *Society of*

Motion Picture and Television Engineers (SMPTE) will be held at the Americana Hotel in New York City.

The conference will feature four days of presentations of different aspects of motion-picture and television technology. The television subjects include satellites, video processing, video production, video transfers and video special effects and editing.

The exhibit will feature leading manufacturers and suppliers of television equipment. More than 6000 film and television professionals are expected to attend.

For more information, contact: Irwin Young, Dept. BE, SMPTE, 862 Scarsdale Avenue, Scarsdale, NY 10583, (914) 472-6606.

October 29-November 2—The *1978 NAEB Convention* will be held in Washington, D.C. This year's convention features equipment theme shows, demonstrations, hospitality suites, and a video fair.

The video fair will feature the largest exhibition of video software ever assembled for public broadcasting. NAEB anticipates over 50 small theater areas for program preview.

Separate meeting rooms will house software and hardware theme shows featuring textbook publishers for broadcast education sessions; microphone manufacturers for radio engineering seminars and portable video equipment for producers, among others.

For more information, contact: NAEB, Dept. BE, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036. □

btx
presents
15-track
TV audio

The btx 4500 SMPTE interlocking system expands your video production capacity to include outboard multi-track audio recorders. Any recorder of any speed or format with or without servo capstan drive may be precisely locked to any VTR to enhance your TV audio production flexibility. Now you can sweeten, overdub, rerecord, edit and recombine to a time base accuracy within 50 microseconds of absolute mechanical lock. The btx 4500 synchronizer is an economical, ultra-reliable micro-processor-based system using standard SMPTE time code. For complete information, call: The btx Corporation, 438 Boston Post Road Weston, Massachusetts 02193 (617) 891-1239

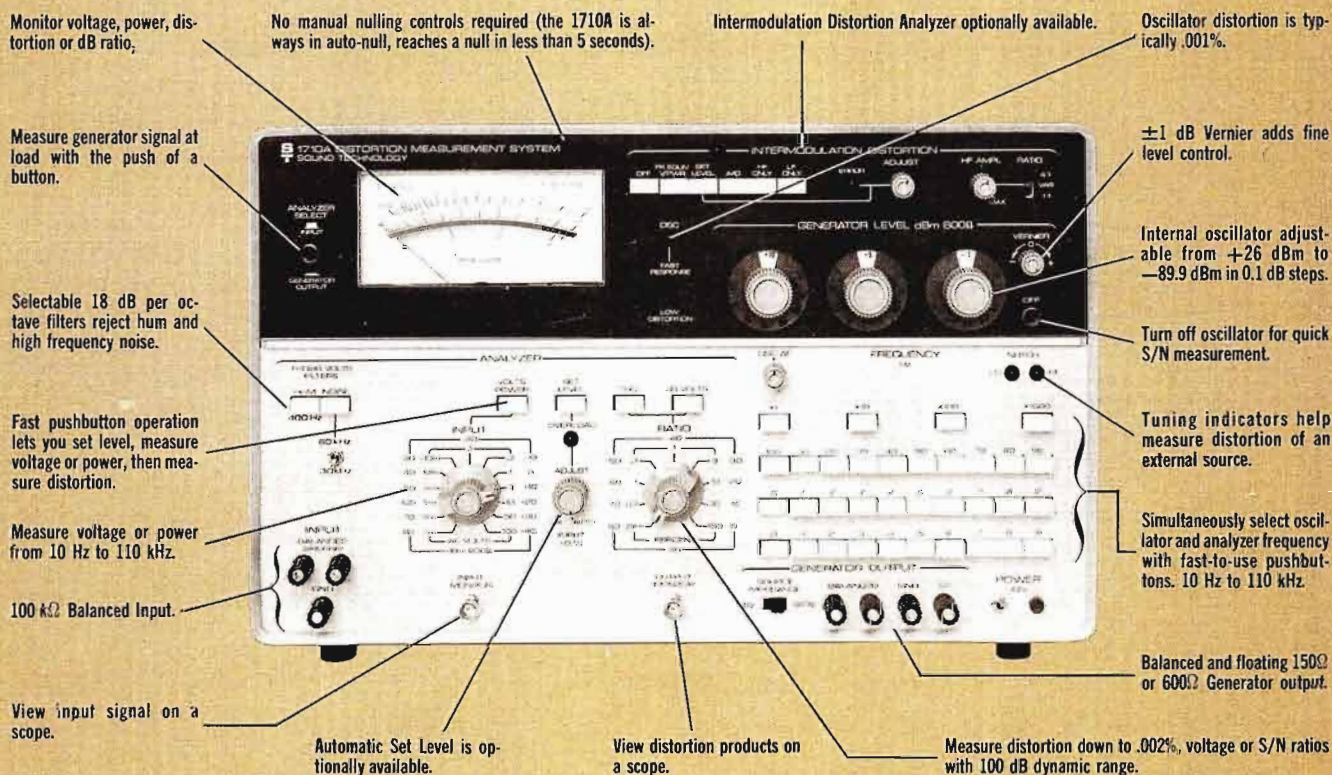


btx
THE btx CORPORATION
SOFT CODE SYNCHRONIZER MODEL 4500

MASTER CODE SLAVE CODE FRAME MODE SYNC MODE
MASTER OUT SLAVE OUT
FRAME MODE SYNC MODE
ENABLE BYPASS REMOTE
SYNC MODE OFFSET
REC FRAME MODE OFFSET

Circle (20) on Reply Card

Here's how useful a distortion analyzer can be



Two of the above features are so outstandingly valuable that we especially invite your attention to them.

One is the fast, easy measuring you get with pushbutton-selected distortion-measuring circuits (signal source and measuring circuits are simultaneously selected with the **same** pushbuttons). Pushbuttons make it so simple to measure quickly and to repeat measurements.

Secondly, you can drive virtually any type of circuit from the signal source output—whether

balanced, unbalanced, off-ground or whatever. That's because the signal source output circuit is fully **isolated and balanced**.

There is no output transformer to introduce noise or distortion.

Besides these outstanding conveniences, you can have the Sound Tech 1710A with an option that enables you to measure **intermodulation distortion**.

Call Mike Hogue/Larry Maguire to get full information on an instrument recognized everywhere as the standard of the audio field.



SOUND TECHNOLOGY

1400 DELL AVENUE
CAMPBELL, CALIFORNIA 95008
(408) 378-6540

Circle (21) on Reply Card

Hitachi makes major SK-80 sale

The largest single camera order in the history of Hitachi Denshi America was made recently to Corinthian Broadcasting Corporation, a subsidiary of Dun and Bradstreet.

Corinthian purchased 36 Hitachi SK-80 broadcast color cameras, bringing the total to 51 Hitachi SK-80's owned by the corporation. The self-contained cameras are used for ENG and EFP applications in the news and production departments of the group's five TV outlets and the TVS Television Network.

RCA announces sell

London Weekend Television, which produces programs for the independent television network in the United Kingdom, is expanding its production and post-production capabilities with RCA videotape recorders and editing systems valued at more than \$800,000.

Seven TR-600 quadruplex videotape recorders will be installed in the company's production center, Kent House in London. The machines will be equipped with RCA AE-600 built-in editing systems for editing tape. The new recorders will join RCA TR-70 machines that have been in service since 1969.

Sony telephone hot line

In order to provide owners of Sony professional equipment with quick, accurate parts and servicing information, Sony Corporation of America has established a 24-hour, seven-day-a-week telephone hot line.

It enables owners of professional video equipment to get immediate answers to technical questions, order emergency parts, find out about the latest Sony training classes and order technical manuals.

Hot line numbers are: eastern region (New York) (212) 361-0014, central region (Chicago) (312) 647-9596, western region (Los Angeles) (213) 635-6322.

Nurad enters new area

Nurad has entered the microwave TV systems business. Chiefly because of new capabilities provided by the services of Vincent Rocco, formerly of CBS, Nurad can design, supply and install complete microwave systems for TV broadcasters.

Rocco, director of microwave television systems, joined Nurad in March of this year with 30 years of experience in RF communications, the past 15 of which he served as director of relay systems for CBS. His achievements at CBS (including the design of TV systems to cover the NASA launches and astronauts'

continued on page 28

Through market research,
innovative engineering,
and
quality controlled manufacturing...

Pacific Recorders and Engineering
audio products

have become
the uncontested leaders
in the
Broadcast Industry...

BMX Mixer
System One Console
Multilimiter • Multimax
Digitimer Clock Family

11100 ROSELLE ST., SAN DIEGO, CALIFORNIA 92121
TELEPHONE 714/453-3255 TELEX 695 008

Circle (22) on Reply Card

Last year, 42 U.S. broadcasters made the biggest decisions of their careers. And the smartest. They chose RCA TV transmitters.

Purchasing a TV transmitter is probably one of the biggest single equipment decisions you'll ever make!

We know it. You know it.

But the real measure of any transmitter investment isn't how much you spend. It's what you get for your dollar.

In a word, it's value. Value that translates into performance. Long-term, reliable, trouble-free performance.

It's what's inside a transmitter that counts.

And in some cases, what's left out is just as important.

Inside RCA transmitters, for example, you'll find fewer tubes, fewer blowers, fewer linear amplifiers.

But you'll find more solid state circuitry, and more features that increase reliability and decrease the need for adjustments.

In part, these features explain why year after year, more U.S. broadcasters choose RCA TV transmitters than any other.

And it's who's behind a transmitter that counts.

A transmitter is a long-term investment.

And the longer the term, the better.

With RCA Tech Alert support, you get technical information and assistance any time around the clock.

RCA's staff of field experts service RCA transmitters worldwide. And there is real comfort in the knowledge that parts will be available from RCA whenever, wherever, you need them.

Which is one more reason why, today, there are more RCA TV transmitters out there performing than any other brand.

Cost-effectiveness was never clearer.

Consider your initial investment, repair and service costs, and length of operating service. Then decide on RCA.

RCA TV transmitters and RCA service have been providing reliable performance—and long-term cost-effectiveness—for many years.

Find out for yourself what RCA quality can mean to you. Contact your RCA Representative or write directly to us. RCA Broadcast Systems, Front & Cooper Streets, Bldg. 2-2, Camden, NJ 08102.

We sell more TV transmitters in the U.S. than anybody else. With more in operation than anybody else. Now, you know some of the reasons why.



RCA

Watch what we can do for you now...

with our new models and our faster delivery.



As manufacturers of solid state video equipment, Electrohome has gained worldwide acceptance with reliable, high-performance 9", 11", 14", 17", 23" monochrome, 19" and 25" color monitors. Built to NTSC and PAL standards, these monitors are specifically designed for broadcast, educational, industrial, commercial, medical, security and data applications.

Now, we have added the new 2000 Series to our product range. Developed to meet high standards of the broadcast industry, the 2000 Series color monitor is modular for easy adaptability to RGB/NTSC/PAL encoded signals. Available in 19" case and rack and 25" case, the 2000 Series maintains Electrohome's high standard of engineering.

In addition to an expanded line, Electrohome has a new west coast distributor network to provide fast delivery. For complete information on all our video equipment, contact Electrohome Limited at one of these offices:

Electro-Visual Corporation of America

3617 West Macarthur Blvd., Suite 508, Santa Ana, Calif. 92704
(714) 545-6991

Electrohome (U.S.A.) Limited

182 Wales Ave., Tonawanda, N.Y. 14150
(716) 694-3332

Electrohome Limited

809 Wellington St. N., Kitchener, Ontario, Canada N2G 4J6
(519) 744-7111
Telex: 069-5449

ELECTROHOME

... an extra degree of excellence in video equipment for every application.

Business news

continued from page 26

splash-downs, the freedom marchers' activities and CBS sports events from the Goodyear blimp) provide the base from which Nurad can help in overall broadcast systems planning and design as well as contract for producing turnkey microwave TV systems.

Video imports up

First quarter 1978 imports of audio and video electronics products totaled \$938 million, a 9% increase over first quarter 1977, but less than the previous year-to-year first quarter growth of 32%. Video-tape machine imports increased to 40% in quantity and 159% in value to \$65.1 million. Monochrome TV imports increased 15% in quantity; tape recorders/players, phonographs, and auto radios each increased by less than 4%.

Iran orders transmitters

Harris Corporation's broadcast products division has received a \$6.75 million order from Iran's national broadcasting system for 144 FM radio transmitters.

The transmitters will be installed at 24 different sites by the National Iranian Radio and Television agency to provide FM radio reception throughout the country.

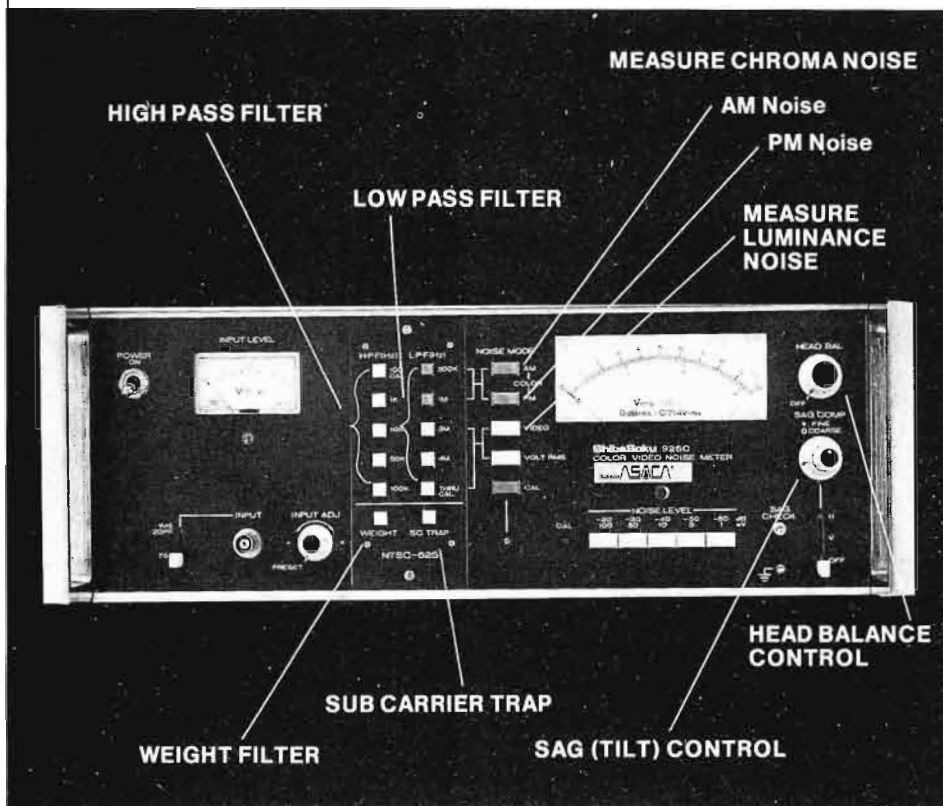
Overseas appointment

The electronics division of Singer Products Company has been appointed export marketing distributors of Blonder-Tongue Laboratories, designers and manufacturers of products for the reception enhancement of all types of TV systems.

In addition to Blonder-Tongue, the Singer Products Electronics Division represents manufacturers of electronic components, instruments and test equipment for DC through microwave frequencies for commercial, industrial, military and aerospace applications; audio and TV entertainment products; security systems; and wire and cable.

continued on page 30

MEASURES CHROMA NOISE AND LUMINANCE NOISE



World's first Instrument to Measure Chroma Noise Generated In Color and Black and White Television Transmission Equipment, TV Cameras, VTRs, Video Disc Units, Digital Image Processors.

Measure the value of this unique instrument*, Model 925C Video Noise Meter, and you'll see why it has been purchased by a major USA network. It measures chroma band noise with a single color signal of desired level that contains both a sync signal and a color burst signal. Chroma noise can even be split into AM and PM components which can be measured separately. Unbalanced 2 head of VTR can be corrected for proper measurement.

A must for every station and production house in TV. Write for information.

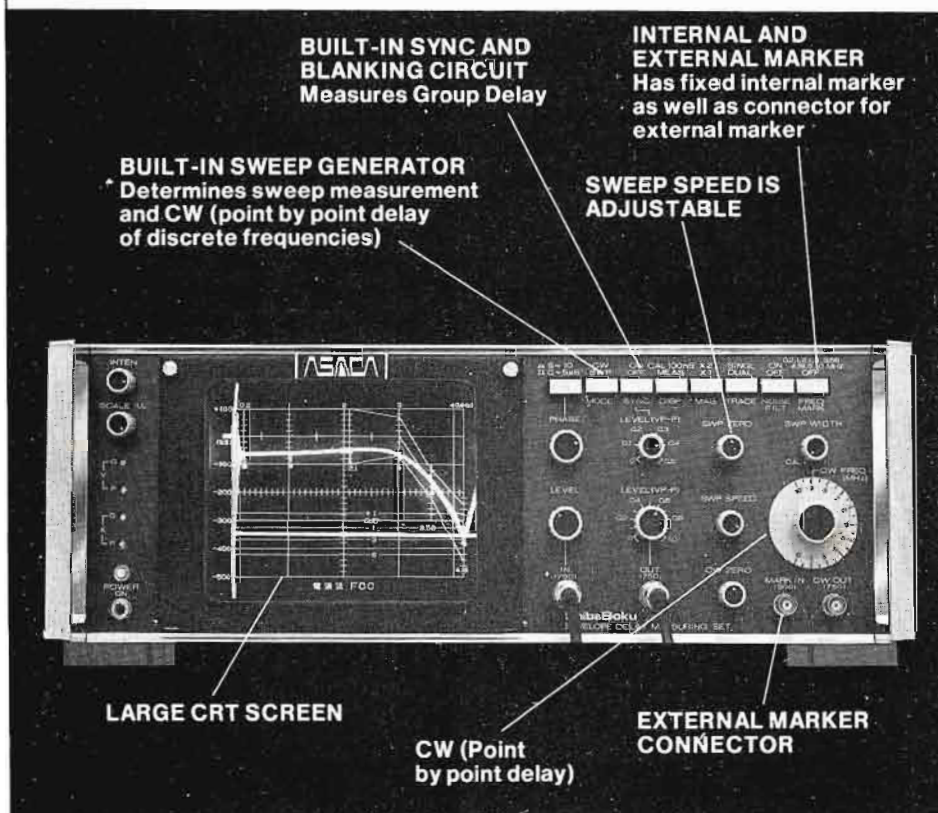
We create change



ASACA CORPORATION OF AMERICA
1289 Rand Road, Des Plaines, Ill. 60016
Phone (312) 298-4380

*Product of SHIBASOKU—sister company of ASACA

MEASURES GROUP DELAY IN TRANSMISSION SYSTEMS & LINES



At last! The Envelope Delay Measuring Set You've Always Wanted—But Which Technology Couldn't Develop Until now! Compare Performance With Equipment Selling For \$14,000.00. Our Price—Only \$6,500.00!

Our envelope Delay Measuring Instruments* feature large CRT screens, built-in sweep generators and allow spot frequency delay measurements from 200 KHz to 10 MHz. Check out Models 763 NA and the new 201-1. Both are NTSC or PAL compatible. The 201-1 adds a built-in sync generator and blanking mixer.

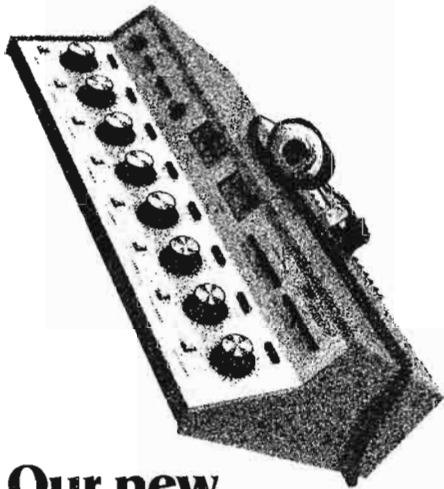
Don't you delay in getting full information. Write.

We create change



ASACA CORPORATION OF AMERICA
1289 Rand Road, Des Plaines, Ill. 60016
Phone (312) 298-4380

*Product of SHIBASOKU—sister company of ASACA



Our new stereo console does everything but cost like one.

It's the new Rockwell-Collins Mark 8 Stereo Console. You get outstanding performance at about half the cost of many ten-channel models.

Mark 8 features all plug-in construction, including switches, PC boards, attenuators and amplifiers. Plus a host of maintenance aids.

Additional features? Performance that equals consoles costing several times as much. 22 dB of head room. ± 1 -dB frequency response. $\frac{1}{4}\%$ harmonic and intermod distortion. Big 25-W monitor amps. 5-W headphone amps. Optional machine control functions for ease of operation.

The remarkable new Mark 8 Stereo Console. It looks like we just priced ourselves right into your radio station. Contact your local Rockwell-Collins man. Or Collins Broadcast Marketing, Commercial Telecommunications Group, Rockwell International, Dallas, Texas 75207. Phone 214/996-5574 or 5424.



Rockwell International

...where science gets down to business

Circle (26) on Reply Card

Business news

continued from page 28

ADC sells system

American Data Corporation has announced the sale of a multi-stage audio and video distribution switching system to the Christian Broadcasting Network in Virginia Beach, Virginia.

The 900 system, the largest ever built by the company, will employ three stage switching techniques utilizing a micro-processor based computer control interface. A CRT terminal will provide intermediate X/Y switching and maintenance control for the video and dual audio channels, along with command status monitoring for all stages.

New Farinon group

Farinon Corporation announced the formation of the Farinon Transmission Group. The group combines Farinon Electric, Farinon Video and Farinon Satellite Systems.

Edward E. Nolan and Thomas A. Combellick will become the group vice presidents. Nolan, who is a director and executive vice president will also assume the presidency of the Farinon Satellite Systems Division of the transmission group.

Rockwell retirement

W. F. Rockwell, Jr., chairman of the board of Rockwell International Corporation announced his intention to retire as an officer of the company next April.

He will continue as a director and as chairman until February, 1980. It is expected he will be succeeded as chairman by Robert Anderson, president and chief executive officer.

IVC Malaysia contract

International Video Corporation has been awarded a contract by the ministry of information of Malaysia to supply six studio color cameras, IVC7000, and two handheld broadcast cameras, IVC7000P.

The IVC color cameras are part of Malaysia's colorization project.

The eight cameras will be used in two outside broadcast vans.

RCA expands service

RCA American Communications announced that its earth station near Atlanta will be expanded to offer private line services between the southeast and other parts of the country by mid-year 1979.

The station is located less than 10 miles from the downtown business district. The central office will be co-located with the communications terminal and will become a key link in RCA Americom's network now serving major U.S. business centers via satellite.

Burwen name change

The tradename used on all Burwen products will be changed to KLH Burwen Research. Scott L. Davis, president of KLH Research and Development Corporation announced the change as part of the plan to integrate Burwen Research, KLH's subsidiary, into its overall marketing efforts.

Thailand orders LDK 5's

The Thailand government controlled television network has placed an order with Pye TVT for two LDK 5 color television cameras.

In addition to the cameras, three LDK 4210 signal processing amplifiers have been ordered for use in OB vehicles.

Dolby adds stations

Dolby Laboratories has announced that three additional FM stations have begun full time broadcasting with the Dolby FM process.

WCRB, Waltham, is the Boston area's commercial classical station, while WBUR, operated by Boston University, broadcasts a varied classical jazz format. KUSC, operated by the University of Southern California, broadcasts a mostly classical format.

Gaylord re-equips

Gaylord Broadcasting Company has announced the purchase of 26 new Philips color TV cameras from Philips Broadcast Equipment

continued on page 32

We interrupt this magazine

One call is all it takes to get anything and everything you need in broadcast equipment — from turntables to AM and FM transmitters.

Choose from Rockwell-Collins equipment plus that of close to a hundred different manufacturers. It's one-stop shopping with fourfold advantages:

1. Quality products. Our transmitters and consoles are the result of our technical excellence and single-minded dedication exclusively to the radio broadcaster for over 40 years. We've never once deviated from our goal: to make our name synonymous with quality, reliability and long life . . . for your benefit.

2. Broad choice of products. In addition to our own Generation 4[™] FM transmitters and our all-new Power Rock 5-kW AM transmitters (the cleanest,

to bring you all you need in broadcast equipment.

brightest, loudest AM in town), we carry products from the largest team of respected specialty vendors available anywhere from a single source — from ADC to UREI, with nearly a hundred other such leaders in between. If we don't have what you want, chances are we can get it for you. Fast.

3. Flexible financing arrangements. If it's under \$1000, you can use your own or your company's Master Charge. For larger orders, take your choice of time-purchase (up to 5 years) or lease plans.

4. Unbeatable customer support. Your emergency is our emergency. We're ready to respond — without delay — 24 hours a day, 365 days a year.

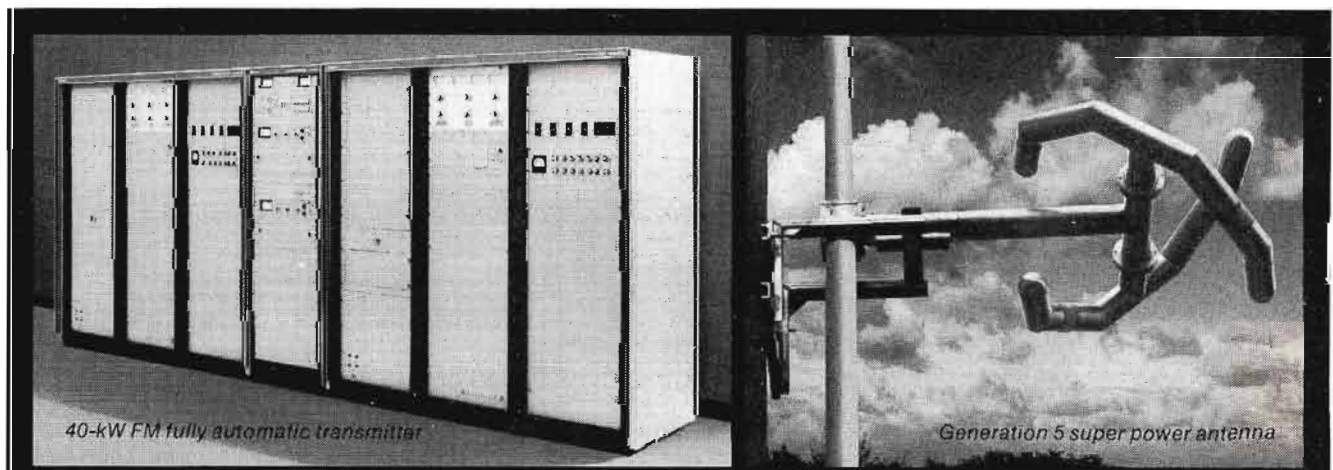
See the cities listed below for the representative nearest you — and call him for one-stop shopping, Rockwell-Collins style. Ask him for a copy of our new brochure, or contact: Collins Broadcast Marketing, Commercial Telecommunications Group, Rockwell International, Dallas, Texas 75207. Phone: 214/996-5424.



Rockwell International

...where science gets down to business

Easthampton, Mass. (413) 527-4430 • Newton, N.J. (201) 383-8797 • Knoxville, Tenn. (615) 573-9717 • Birmingham, Ala. (205) 822-1078
Ft. Wayne, Ind. (219) 485-8354 • Minneapolis, Minn. (612) 479-2633 • Kansas City, Mo. (816) 443-2080 • Yuma, Ariz. (602) 783-6380
Portland, Ore. (503) 254-2818



40-kW FM fully automatic transmitter

Generation 5 super power antenna

The latest words in communications: Rockwell-Collins.

Brussels 242-4048 • Cairo 801525 • Frankfurt (Rodgau 6 Weiskirchen) (0) 6106-4093 • Hong Kong 5-274-321 • Kuala Lumpur 27283 • London 01-759 9911 • Manila 829-2742 • Mexico City (905) 533-1846
Melbourne (Lilydale) (03) 726-0766 • Paris (Rungis Principal) 687-31-02 • Rio de Janeiro (021) 246-3276 • Riyadh 69060 or 68324 • Rome (0) 6-862-415 • Seoul 74-9276 or 793-5206 • Tehran 685-180
Tokyo 478-1278 or 478-1279 • Toronto (416) 252-3761

Circle (27) on Reply Card

Business news

continued from page 30

Corporation. The sale of 18 LDK-25 studio cameras, four LDK-15L production portable and studio cameras, and four LDK-14 ENG/EFP cameras is in excess of \$2 million.

Gaylord Broadcasting Company is headquartered in Oklahoma City, and has seven television stations and five radio stations in major markets throughout the country.

Olympic satellite service

COMSAT has signed an agreement with the European Broadcasting Union (EBU) to provide direct satellite services to the EBU for European television coverage of the Winter Olympic Games in Lake Placid, New York from February 6 through 25, 1980.

Under the agreement, COMSAT will install and operate an earth station near Lake Placid. EBU's television signals will be sent through the COMSAT earth station directly to an INTELSAT satellite over the Atlantic Ocean for reception at European earth stations designated by the EBU.

Outlet acquires station

Outlet Company closed its acquisition of radio station KIQQ-FM, Los Angeles, August 1, 1978. The station, also known as K-100, will retain its present music format, which is directed at a young adult audience. The station will be operated as part of Outlet Company's broadcasting division.

Outlet Company agreed January 3, 1978, to purchase the independent station from Cosmic Communications for \$4.5 million.

TV facilities upgraded

Nationwide Communications is upgrading the technical facilities of its three television stations with RCA studio and transmitting equipment valued at approximately \$1.2 million. Two TV transmitters, a new broadcast antenna tower and associated equipment are included in the order, along with a TK-76 portable camera.

There are few things in life

Take any one of our Audio Recording Instruments.



as dependable as a Scully.

The quality of sound is extraordinary... the rugged design is built to last. The performance is classic.

Built by Scully... one of the first names in broadcast history. Equipment you can trust, by a company you've come to depend on.

For complete details, write or call Scully Recording Instruments, Division of Dictaphone Corp., 475 Ellis Street, Mountain View, California 94043 (415) 968-8389. TLX 34-5524

▶ **Scully**

Recording Instruments

For classic performance.

Circle (28) on Reply Card



A new 785-foot tower for WXEX-TV will be erected at the present antenna site of WCVE-TV, Richmond. The new tower facility will accommodate the broadcast antennas for WXEX-TV, WCVE-TV and WCWV.

Ampex price increase

Ampex Corporation has raised prices 7% to 8% on most professional and industrial magnetic tape products. Instrumentation tape prices, which were increased 8% in June, were not increased again. The company's new magnetic media business products as well as its 1/2-inch Betaformat videocassettes remain unaffected by the general increase.

Earth stations

Construction to install 10-meter satellite earth receiving dishes in Atlanta (WANX-TV), Dallas (KXTX-TV) and Boston (WXNE-TV) through Continental Satellite Corporation, a subsidiary of the Christian Broadcasting Network, has begun.

The earth stations are expected to be in full operation by October 1.

RCA price increases

RCA Broadcast Systems has announced price increases. Averaging 8.1%, the increase affects all RCA-manufactured radio and television broadcast equipment.

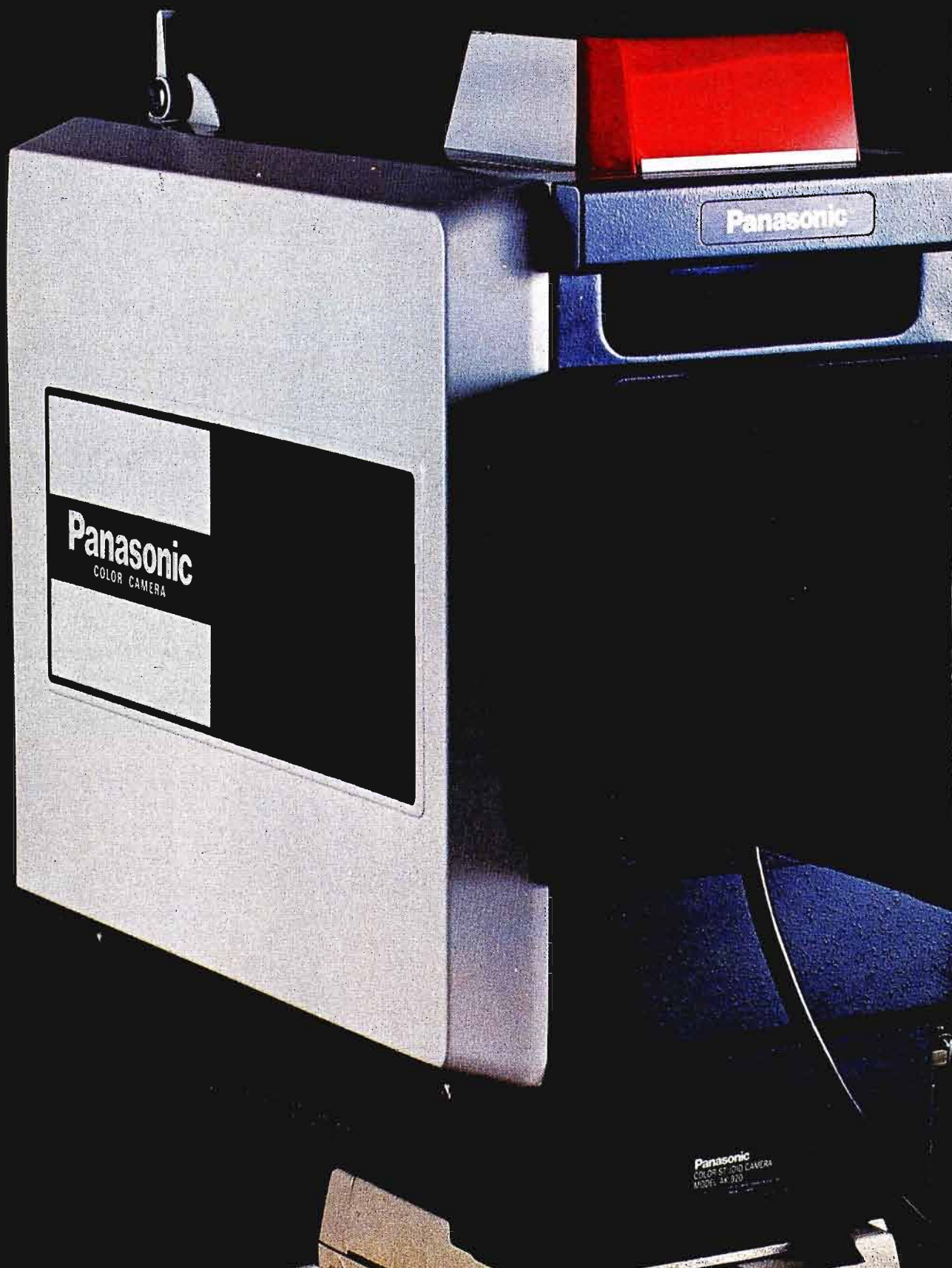
Harris reports gains

Harris Corporation reports earnings gain of 30% in the fiscal year ended June 30. Sales increased 35% over fiscal 1977. Net earnings totaled \$52,169,000 or \$4.22 per share and sales totaled \$872,249,000, compared with \$646,268,000 and net earnings of \$40,059,000 or \$3.26 per share the year before.

Comsat quarter report

Communications Satellite Corporation reports a net income of \$7,742,000 for the second quarter of 1978, or 97 cents per share. This compares with the net income of \$7,968,000 for the second quarter of 1977, or 80 cents per share. □

**How to get TV station quality
even if you're not a TV station.**



Introducing the Panasonic AK-920.

There are many ways of getting TV station quality from a Plumbicon® color camera. You can either own a TV station. Own a lot of money. Or better yet, own Panasonic's new Plumbicon color camera, the AK-920.

Not only does it give you TV station quality in the studio, it gives you TV station quality almost everywhere else. That's because it's fully self-contained, with the YI/Q encoder and the RS-170 sync generator built into the camera head.

But perhaps the best part about the AK-920 is the technology that has been put into it. Like a new color-trap circuit in the encoder and level-dependent circuit for reduced color noise, which is particularly important under low-light conditions. And for excellent edge detail and high frequency

response, there's an adjustable horizontal aperture circuit built into the camera head.

And since the AK-920 is a Plumbicon camera, you get performance that's hard to beat. Like low noise, low dark current and lag, high sensitivity, as well as the capability to reproduce high brightness details without burn-in or blooming.

The result of all this very impressive technology is equally impressive performance. Like horizontal resolution of more than 500 lines at center. A S/N ratio of 48 dB with recommended illumination of 150 footcandles at F/4. And a +6 dB gain switch for minimum illumination of just 15 footcandles at F/1.8.

You also get precise stability of alignment as well as the reliability that you expect from Panasonic. Because the prismatic optical system, the three one-inch pickup tubes, and the deflection coils are mounted on an aluminum die-cast chassis.

Also included are removable camera head side panels for easy maintenance. A self-contained, multi-function viewfinder. Color bar generator. And focus-wobble and saw-tooth-generator test circuits. Plus some rather impressive options. Starting with the AK-9220 remote control unit. To a 10:1 zoom lens with built-in 1.67X and 2.5X lens extenders for versatility in location shooting. To a vertical aperture corrector, AK-9620. To the AK-9720 cable equalizer for the RBG signals.

There are also three different versions to choose from. The AK-920ST with studio-grade Plumbicon tubes. The AK-920IT with industrial grade Plumbicon tubes. And the AK-920 with-out tubes.

So before you buy any color camera, audition the AK-920. It's Panasonic's way of giving you TV station quality, even if you're not a TV station.

For more information, write: Panasonic Company, Video Systems Division, One Panasonic Way, Secaucus, N.J. 07094.

In Canada, contact Panasonic Video Systems Department, 40 Ronson Drive, Rexdale, Ontario M9W 1B5.

Plumbicon is a registered trademark of N.V. Philips of Holland for TV camera tubes.

Panasonic
just slightly ahead of our time.

Circle (29) on Reply Card

people in the news

.....

Radio/Television

John B. Frykman has been named vice president of network communications by the Mutual Broadcasting System. A veteran of 30 years in advertising, Frykman joined Mutual in December of 1977.

New western regional manager for station relations of the Mutual Broadcasting System is **Richard T. Wartell**. Before joining Mutual, Wartell was a regional manager of the National Association of Broadcasters.

Frank J. Murphy III has been promoted from director of station relations to vice president of station relations for the Mutual Broadcasting System. Murphy will be responsible for both MBS and Mutual Southwest Radio Network station relations.

Frederick J. Moore has been appointed chief engineer for both WNEW and WNEW-FM in New York. Moore was chief engineer at WWSH in Philadelphia.

Bob Smith, staff engineer for WRKO and WROR in Boston since 1976 was recently appointed chief engineer for the two radio stations. He came to WRKO/WROR from WTRY/WHSH in Albany, New

York where he was chief engineer and consulting engineer for the Scott Broadcasting Corporation.

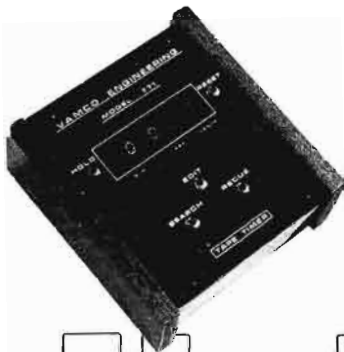
Buford Television announced the appointment of **John F. Swanson** as director of engineering/broadcast operations. Swanson comes to Buford from the position of vice president and director of engineering for WTVF-TV in Nashville.

Agencies/Associations

Thomas E. Bolger, president, WMTV-TV, Madison, Wisconsin, was elected chairman of the television board of directors of the National Association of Broadcasters. For the past year he has served as vice chairman.

The FCC announced that **Arthur L. Ginsburg** has been named chief of the broadcast bureau's complaints and compliance division. Ginsburg has been with the commission since 1961, most recently as assistant chief of the division.

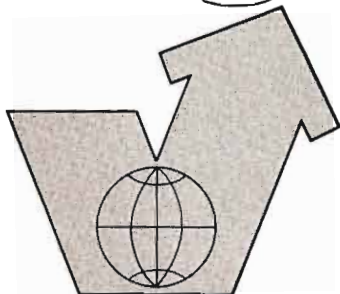
The United States Senate has confirmed President Carter's appointment of **R. Peter Straus** as associate
continued on page 38



MODEL 771 VIDEO CASSETTE TAPE TIMER

The Model 771 timer is designed to be installed in minutes without tape machine modification on the SONY VO-2850, VO-2850A, VO-2860 and the BVU-200. The Model 771 enables precise times to be monitored for viewing, **editing**, and pre-roll cueing.

digital timers



**VAMCO
ENGINEERING**
A DYTEK COMPANY

MODEL 734 VIDEO TAPE TIMER

The model 734 fits all 2" Quad videotape and 2" audio machines. The VAMCO 734 provides the ultimate in tape timing accuracy and eliminates the mechanical problems of the traditional timer.

CUSTOM TIMERS, Custom units can be designed to customer specifications.

11104 E. 56TH ST. • TULSA, OKLAHOMA 74145 • 918/252-5448



DT 1/278



LEDDICONS

The image standard for quality camera tubes.

Leddicon[®] vidicon and transmitting tubes.

EEV, Inc., 7 Westchester Plaza, Elmsford, NY 10523. 914-592-6050

EEV Canada Ltd., 67 Westmore Drive, Rexdale, Ont. M9V 3Y6. 416-745-9494

English Electric Valve Co. Ltd., Chelmsford, England CM1 2QU.

Your Image Is Our Business



Members of the GEC-English Electric Groups of Companies
Circle (243) on Reply Card

people in the news

.....
continued from page 36

director (broadcasting) of the International Communication Agency. Straus will continue to head the Voice of America, ICA's worldwide radio network.

Tom E. Paro was elected president of the Association of Maximum Service Telecasters. Paro has served as executive vice president of AMST since September 1977.

Federal Communications Commission Chairman Charles D. Ferris announced he has chosen **William B. Ginsberg** of New York as his economic assistant. Since October 1973, Ginsberg has been a securities analyst specializing in telecommunications with Blumenthal & Company.

Leon A. Wortman has joined The Michael Thomas Corporation, general management consultants, as vice president/senior consultant. He formerly headed his own consulting firm, LAW Associates.

Dr. Russell McKennan has joined the National Association of Broadcasters as assistant to the vice president and director of research. He also held that position in NAB's New York City office from June, 1968 until August, 1976.

Hunter Low, a director of advertising and promotion in Eastman Kodak's motion picture and audiovisual markets division, has been elected by the Broadcasters Promotion Association (BPA) to serve a one-year term as an associate member of the group's board of directors.

Manufacturers/Distributors

Daniel M. Zinn has been named president of Magnasync/Moviola Corporation, a subsidiary of Craig Corporation. Zinn joined the firm from the Anaconda Company where he was group executive for their electronics operations.

Recent appointments at Lenco include **Paul J. Leonard** as chairman of the board; **Andrew E. Perrin** as president and **Max K. Prill** as executive vice president.

SC Electronics has announced two major changes. **William S. Sadler** has been elected president and chief operating officer. He founded Miratel Corporation, which he managed until 1975. **P. L. Peterson**, a

continued on page 40

VAN LADDER INTRODUCES THE MODEL 2913 BC BROADCASTING UNIT



Are you plagued with costly interruptions, time consuming searches for clear transmission paths and set-up, and lost shots?

Modern broadcasting demands the finest most reliable equipment available. Signal interruptions and equipment malfunctions are costly in viewer and sponsor satisfaction.

With the VanLadder Broadcast Unit you can extend the reliability of your mobile Electronics News Gathering to your station system. Raising your microwave dish 30 feet allows transmission over trees, buildings, passing traffic and other line-of-sight objects. Increase the range of on-the-spot transmissions to as many as 30 miles.

The VanLadder Model 2913 BC Unit mounts on all styles and sizes of Electronic News Gathering vans with virtually no interior obstructions.



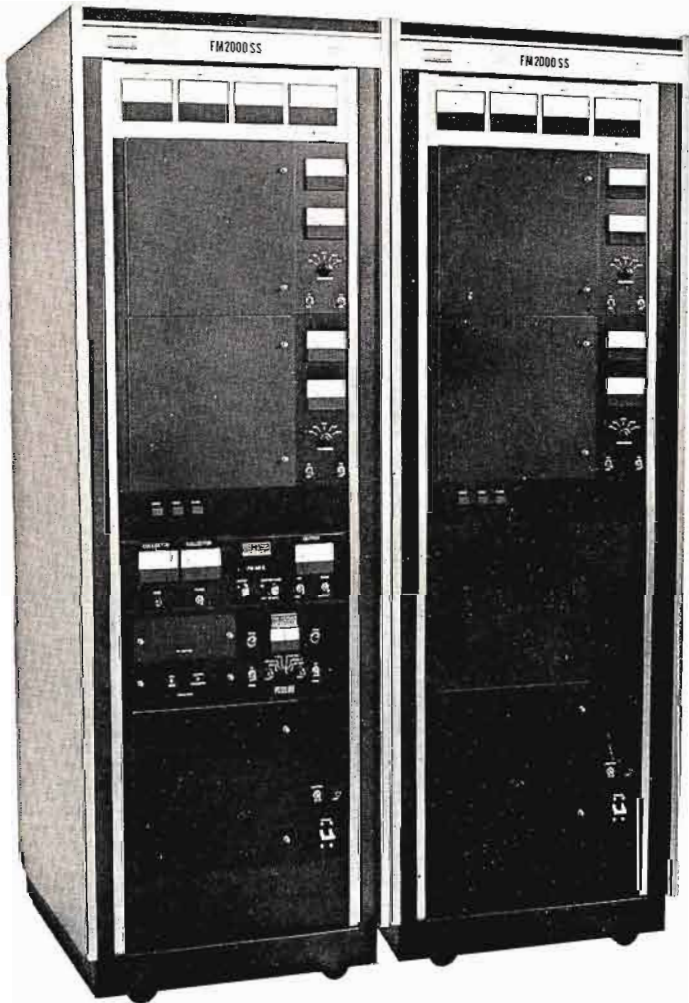
VanLadder, Inc.
Box 709
Spencer, Iowa 51301
800-831-5051

VAN  LADDER WILL MAKE THE DIFFERENCE

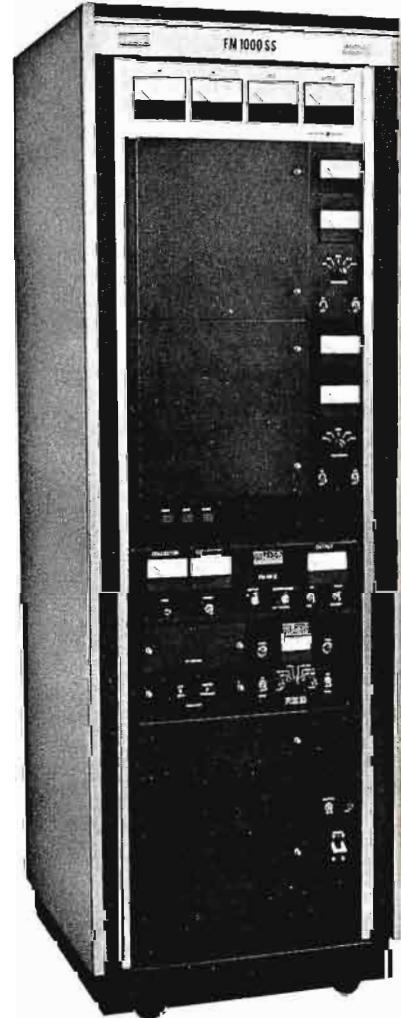
Circle (31) on Reply Card

WILKINSON ELECTRONICS, INC.

FM 2000 SS 2KW SOLID STATE FM TRANSMITTERS



FM 500 SS/FM 1000 SS .5/1KW SOLID STATE FM TRANSMITTER



FEATURES

Absolute Reliability With Multiple Amplifiers and Power Supplies

Low Operating Cost - No Tubes - No Filament Power - High Efficiency

An Incomparable Exciter

So Drift Free it Requires No Oven
Noiseless -70db below 100% Modulation
Distortionless .2% 20 to 15000 Hz
Response 1/2db 30 Hz 350 KHz

Proven Solid State IPA — Over 100 in Service

Solid — Solid State 500 Watt Power Amplifier Modules

Broad-banded Power Amplifiers So Stable Requires No External Tuning Controls

VSWR Protected With Automatic Power Reduction

Individual Power Supplies For Each Section

Unique Heat Exchanger Cooling Operates in Nearly Any Ambient Temperature or Altitude

Circulator Combining For Low Loss and Reliability

Circle (32) on Reply Card

people in the news

.....
continued from page 38

veteran member of the division, has been elected vice president, finance.

Gordon Cook, Rank Optics lens designer, has been made a Fellow of the United Kingdom's Royal Television Society. Cook, who played a vital role in designing Rank's Varotal and Cooke lenses for television and motion pictures, was granted a fellowship in recognition of his design of zoom lenses for television and for services to the Society for thirty years.



Chiu

Lemoine

Moore

Donald Chiu, senior engineer, memory products division, and **Maurice Lemoine**, senior staff engineer, audio-video systems division, have been named

winners of the Alexander M. Poniatoff award for technical achievement for fiscal year 1978 by Ampex Corporation.

Loral Corporation has elected **George W. Deskin** president of Conic Corporation and a corporate vice president. Deskin joins the firm from the applied technology division of Itek Corporation where he was president.

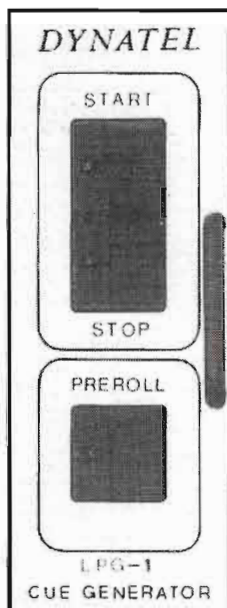
J. Kenneth Moore has been appointed vice president and general manager of the CBS Technology Center. Moore, a physicist who joined CBS in 1957, comes to the post after serving as director of advanced television technology at the center.

Frank M. Drendel has been elected vice chairman and chief executive officer of Valtec Corporation. Drendel was president and chief executive officer of Valtec's subsidiary, the Comm/Scope Company.

John B. Gantt has been promoted to vice president and general counsel of COMSAT General Corporation. He has been general counsel since July 1977 as well as secretary of the corporation.

continued on page 42

DYNATEL COUNTDOWN GENERATOR



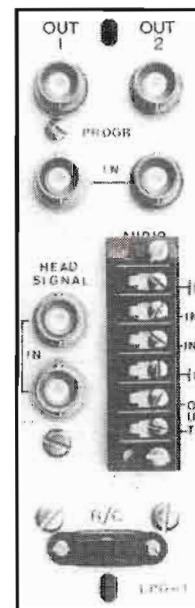
Complete Automatic VTR Leader Format

- Provides automatic switching from color bars to countdown to incoming program
- Large countdown characters
- 400 Hz tone burst meets ASA 98.9
- VTR pre-roll facility
- Maintains color sync during entire leader sequence
- Looping inputs — dual outputs
- Full remote control

Adcom Communications Inc.



26 Whipoorwill Road,
Bethel, Connecticut 06801
(203) 792-5491



Transmission Line Reliability

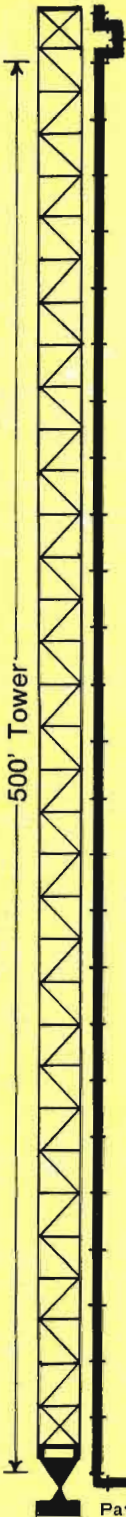
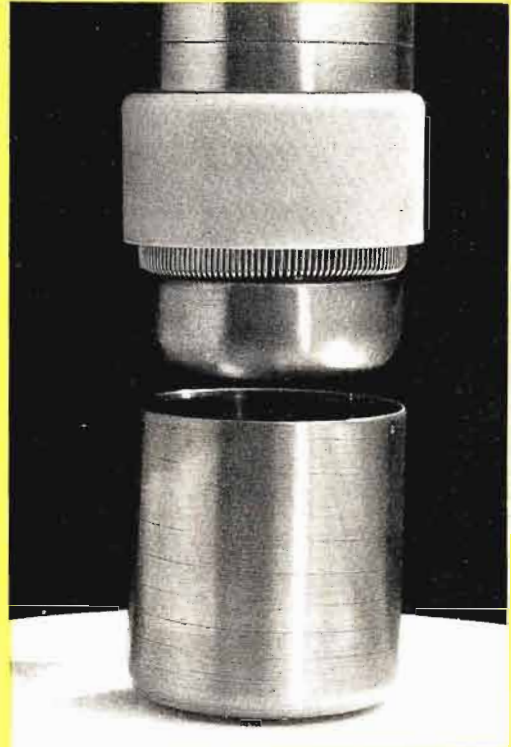
We have replaced every major coax manufacturer's line and never had a breakdown or burn-out.

LUCK? No. We just build the most reliable transmission line you can buy.

Most TV & FM stations replace or make major repairs on their Coax System about every ten years. There are exceptions, ranging from 5 to 18 years, depending on the power & frequency of the station. Some Broadcasters believe this is the normal life cycle or bad luck. The fact is they buy the same type line that gave them the problems to begin with. One with the finger connector.

Transmission line is like a chain. **Weak links** cause failure and the **More Links** you have the less reliability. **Our transmission line alone** has no fingers to make poor contact or split. We are the **only manufacturer** to give you **one** contact joint per section of line. **All others give two.** (½ the links). Our wrist band connector makes contact at each segment of its spring giving it excellent surface contact (The finger connector has as little as one high point per finger times eight fingers per connector). Our inner conductors are made with heavy wall copper for better heat transfer and are less susceptible to installation damage than thin wall line. The thick wall also allows a generous taper on the female cup eliminating the knife edge common on thin wall line. Unlike the back to back finger connector that allows metallic dust to fall on its own insulator below causing the line to self-destruct, our connector captures all dust generated during its daily expansion cycle allowing it to maintain peak performance. After 15 years instead of replacing contaminated line or \$100 connectors, simply slip on a \$20 wrist band spring (leave the dust where it's at) and go on for another 15 years.

The chart below shows standard off the shelf 6 1/8 coax. The unshaded area indicates what we consider desirable in a premium line for reliability.



68
CONTACT JOINTS
RCA
PRODELIN
PHELPS DODGE

34
CONTACT JOINTS
SWR

Patent No. 3,818,421

Manufacturer	S.W.R., Inc.	R.C.A.	Prodelin	Phelps Dodge
No. of contact joints each section of inner	One	Two	Two	Two
Types of contact at each section of coax line	Wrist Band Spring	Finger Connector Also Wrist Band Spring	Finger Connector Also Finger Connector	Finger Connector Also Finger Connector
Standard wall thickness of inner offered	Heavy .040	Thin .025	Heavy .040	Heavy .040
Has design to capture wear	Yes	Yes	No	No
Seals lower end of inner to prevent mfg. dust from falling out	Yes	No	No	No
Years of warranty by mfg.	Two	One	One	One

SWR INC.

Systems with Reliability
P. O. BOX 215
GOFFSTOWN, N. H. 03045
603-497-3000
Circle (34) on Reply Card

Luck? No. **RELIABILITY? YES!**

NEW SYSTEM

A system that will perform like new after 15, 30, even 45 years. We fabricate all components in 3 1/8, 4, 6 1/8 and 9" line. Our engineering Dept. will assist you with any installation planning.

OLD SYSTEM

We at SWR can fabricate inner conductors with our patented connector for replacement of your existing line giving you a better line than you purchased originally at a considerable savings over the cost of new line.

Besides transmission line call or write for information on Gas Barriers, Coax Switches, and our complete line of T.V. Antennas both horizontal and circular-polarized.

people in the news

.....
continued from page 40

Inova has announced the appointment of **James R. Goldberg** as vice president and director of new program development. Goldberg was most recently director of Design Communications.

Technology for Communications International has announced the election of **Gerald E. Solberg** as vice president. In this position, he will be responsible for structural engineering, manufacturing and antenna erection activities. Solberg has been with the firm since 1968, most recently as chief mechanical engineer.

Richard H. Bohnet has been named division vice president and general manager of the video products division of Fairchild Camera and Instrument Corporation. Bohnet joined Fairchild in 1968 and most recently was director of international marketing for consumer products.

The newly elected vice president of RCA's "Selcta-Vision" VideoDisc Project is **Richard W. Sonnenfeldt**. He has served the firm in various capacities including staff vice president of systems development and staff vice president of new business programs. In addition

to holding over thirty U.S. patents, he has published many technical papers and articles.

Wally Brisco has been appointed vice president of Gardiner Communications and will be responsible for the satellite earth station segment of the firm's activities. Before joining the firm, Brisco was senior vice president, operator services, for the National Cable Television Association.

The switch division of Oak Industries has announced the appointment of **David B. McFadden** as vice president, product engineering. McFadden will coordinate product engineering functions.

David M. Stern has been appointed executive vice president of L-W International where he most recently served as vice president for engineering and manufacturing.

Arch C. Luther has been appointed to the post of chief engineer of the RCA Commercial Communications Systems division. Chief engineer of Broadcast Systems since 1971, Luther will supervise and coordinate activities in the division's four business units. □

At Whirlwind We Use Quality to Build Quality



When it comes to Quality Components Whirlwind puts them all together...

Whirlwind Music—Manufactures only the highest quality cable and cable systems available today: the famous Cobra™ & Snake™ guitar cords, the amazing Medusa™ & Multi Cables (from 6 to full 24 channel P.A. & recording snakes). And for your own creations: complete MK & SK replacement mike cables, speaker cables, and bulk wire with the finest professional quality plugs of all types. Plus custom P.A. snakes available.

Whirlwind Audio—Produces the Gale™ Monitor System. You will never hear a better speaker system for on stage and small P.A. applications. We build them with only JBL and ALTEC components. If you want to build the largest system in the business, you want Whirlwind's 4560 type P.A. bins.

Whirlwind Music

P.O. Box 1075, Rochester, N.Y. 14603, 716/663-8820

Whirlwind Audio

P.O. Box 1981, Rochester, N.Y. 14603, 716/663-8829

Circle (35) on Reply Card

An **AUDIO-VIDEO** routing switcher for
today—tomorrow—or 10 years from now

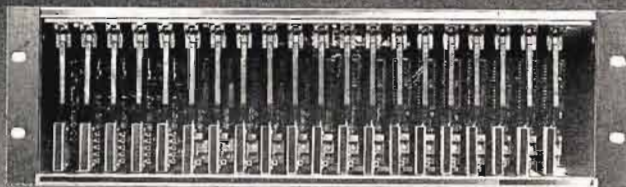
Do not **OUTDATE** yourself so quickly

Buy **di-tech**—here's why

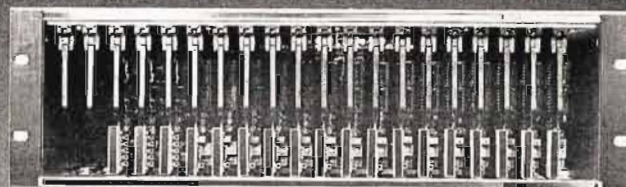
- Expandable inputs/outputs
- 3 audio channels
- Outputs are destination orientated—20 x 1 crosspoint modules
- 20 x 15 AFV matrix in 10½" rack space
- Separate audio and video assemblies
- Numerical readouts on 20 x 1 modules for crosspoint status
- Differential inputs, D.C. restorer, sync adding
- BCD control
- Vertical interval switching

MODEL 5800 SERIES

20 x 15 AFV ILLUSTRATED



MODEL 5801 VIDEO ASSEMBLY



MODEL 5802 AUDIO ASSEMBLY

ADDRESS: 311 Wyandanch Ave., North Babylon, N.Y. 11704 • TEL. NO. (516) 643-4040

Circle (36) on Reply Card

Increasing the high frequency response of AM stations

By Lawrence L. Morton, consulting engineer in Anaheim, California

Over the past few years much has been written about ways to increase loudness and quality of broadcast signals. There are literally dozens of manufacturers building "little black boxes" that claim to—among other things—increase your average modulation and quality, boost your highs, and add presence to your signal.

I have encountered stations using no less than five different audio processors simultaneously, all the while the P.D. keeps yelling at the C.E. about the dull, mushy sound! It seems ironic that in this craving for quality audio one of the most important parts of the overall system is ignored: the bandwidth of the antenna matching network.

Not nearly enough emphasis is placed on the impedance that the transmitter has to work into, particularly at the sideband frequencies. Up to now a matching network was considered to be properly adjusted if, at operating frequency, the impedance the transmitter sees is the characteristic Z of the transmission line. Little or no value was given to the sideband impedances. This would be fine if we all listened to DC or if the laws of physics didn't require the formation of sidebands to carry intelligible information.

Unfortunately though, this is not the case.

In AM transmission, the sideband frequencies are directly related to the modulation frequency. If a 10-kHz tone modulates a carrier, then sidebands appear 10 kHz above and below the carrier frequency. If the transmission system is expected to pass this tone without excessive attenuation and distortion, then the load presented to the transmitter at these sideband frequencies must be considered.

The importance of this point was noted in the late 1940s by W.H. Doherty¹ and J.B. Bishop, the latter being head of a development group of Bell Telephone Labs studying this subject. It appears that since then, very little effort has been given to this important consideration. If the resistance of the load rolls off significantly at sideband frequencies then the transmitter cannot be expected to modulate properly with high frequencies. The net result is a loss of highs and increased high-frequency distortion.

If equalizers are used to boost the upper end, the effect is that of an overall reduction in average modulation, completely defeating the audio processor's purpose. I've seen stations boosting the 5-10 kHz range

by as much as 15 dB and wondering why they still have no brilliance. This article provides a cost-effective solution to the limited bandwidth offered by conventional matching networks.

If the impedance of an antenna or power divider in a directional array is measured at carrier, upper and lower sideband frequencies, it can be shown that for any given matching network configuration, three different networks would be required to match these measured impedances to the transmitter. (In this article I'm considering modulating frequencies out to 10 kHz or a 20 kHz matching network bandwidth.)

What is needed are elements in the matching networks that track the frequency and produce the same Z to the transmitter at all sideband frequencies. If this could be realized, then the load would appear as a constant resistance to the transmitter. It is possible to construct a network that approaches this ideal. (This point will become clearer in the examples to follow. A simple 'L' network is used for the examples to simplify calculations and explanations.)

In the first example, the station is
continued on page 47

WHAT TO DO DURING YOUR NEXT OBSCENE PHONE CALL.

Order Eventide's BD-955 Broadcast Delay Line. It will delete your obscenities & tape loops. And more.

When Eventide — the world's foremost manufacturer of digital delay equipment* — decided to build a better time delay system for obscenity deletion, it went digital.

The result is the BD-955, a RAM based DDL providing up to 6.4 seconds of delay.

Substitute the BD-955 for the tape machine you're now loading, monitoring and changing tapes on. The BD-955 will allow plenty of time for either the engineer, announcer — or both — to hit removable DUMP buttons.

The BD-955 cancels the objectionable program material; its rear-panel terminals allow automatic control of the phone and/or auxiliary equipment.

**According to Billboard Magazine's latest U.S. Equipment Brands Usage Survey, 44.9% of major U.S. recording studios use Eventide delay equipment vs. only 6.0% for the nearest competitive digital.*

THE BD-955's EXCLUSIVE CATCH-UP MODE:

Here's where the BD-955 really shows its stuff — and makes the switch to Eventide obscenity deletion as much a programming decision as a technical one —

When the DUMP button is hit, programming instantly returns to real-time. Here you have a choice — use The BD-955 merely to substitute for your old Tape delay & insert a profanity-fill cart, or *let it automatically build a new delay margin, digitally.* In its exclusive "Catch-Up" mode, the BD-955 can eliminate the need for a profanity-fill cart; the BD-955 automatically builds up delay after a deletion by increasing delay during pauses in the program. LEDs indicate the margin of protection afforded at any moment. Stay alert and the show can continue — in delay — almost immediately. Sound like magic? We've manipulated time like this for over five years.

When it's not being used for obscenity deletion, the BD-955 serves double-duty as a production tool. It allows front-panel selection of delays from 6.5 milliseconds up through the full delay available, for musical and segue effects — including vocal doubling

and automatic double tracking (the audible illusion through which a single voice or instrument is made to sound like two) and digitally-clean slapback echo.

Other significant features about the BD-955 Broadcast Delay Line:

1. Full 15 kHz response and 90 dB dynamic range equals the specs of the best music recording delay lines; 7.5 kHz response, perfect for telephone talk shows *at lower cost.*
2. Full digital Random Access Memory. Like the Eventide 1745M music recording DDL, it runs cool, can take the mallet.
3. *It's available.* With more experience than any other manufacturer in building digital audio delay systems, the BD-955 is an extension of proven techniques. More than just a design: it's available now!

Pricing Information		FREQUENCY RESPONSE	
		7.5 kHz	15 kHz
DELAY	1.6 seconds	\$2300	\$2950
	3.2 seconds	\$2950	\$3900
	6.4 seconds	\$3900	\$6300

DUMP AND GO!



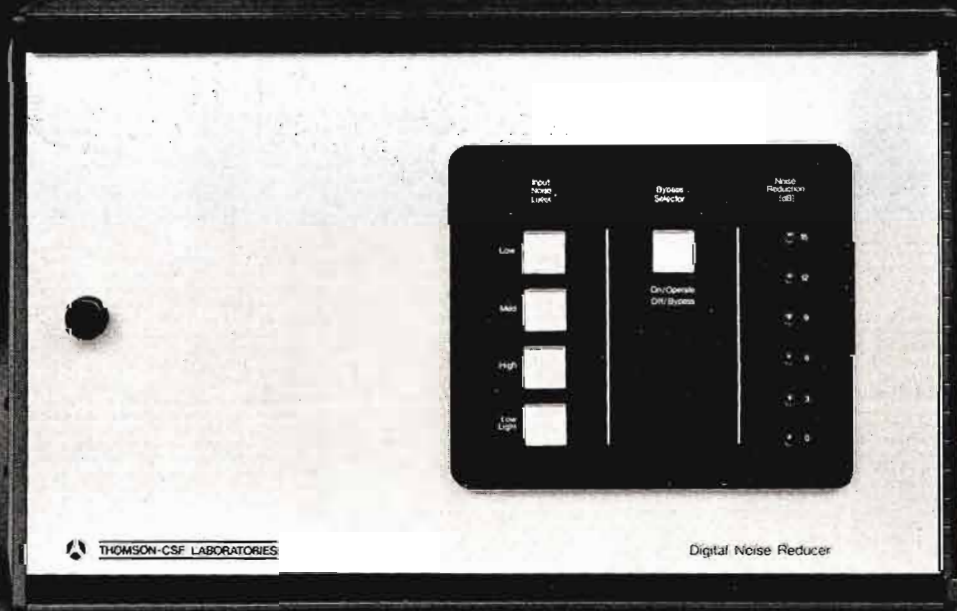
Eventide's BD-955 Broadcast Delay Line.

Available for immediate shipment:

THE KEN SCHAFER GROUP, INC.
10 East 49th Street • New York, N.Y. 10017 • (212) 371-2335

Circle (37) on Reply Card

NOISE NOISE NOISE NOISE



Video noise used to be a major problem for television engineers. Not anymore. Now it can be detected and eliminated with mathematical precision.

Thomson-CSF Laboratories introduces the Model 9000 Digital Noise Reducer.

By analyzing incoming video signals on an element by element basis, the Model 9000 Digital Noise Reducer achieves a 12 dB signal-to-noise ratio, with optimal correction upwards of 15 dB. Sounds amazing, and it is. That's the best in the industry!

It provides significant operational value where low-lighting or streaky chroma noise makes picture quality poor. With the Digital Noise Reducer, a marginal 40 dB input color television signal becomes a high quality 52 dB output signal. And no objectionable artifacts are introduced, if high quality video exists.

You'll discover dramatic improvements in both studio

and remote applications. 2" Multi-generation video tape, U-Matic Multi-generation, Studio Cameras - Electronic film production, Microwave transmission, CATV, Satellite transmission, Off-air reception, Telecine film grain reduction and Electronic Journalism at low light levels are some examples.

Brighten up your picture with the Model 9000 Digital Noise Reducer. From Thomson-CSF Laboratories.



THOMSON-CSF LABORATORIES, INC.

37 Brownhouse Road, Stamford, Connecticut 06902
(203) 327-7700/TWX (710) 474-3346

Circle (38) on Reply Card

The Digital Noise Reducer is quietly working for:

TV STATIONS

KCOP Los Angeles, Ca.
KNXT Los Angeles, Ca.
KVAL-TV Eugene, Ore.
WCBS-TV New York, N.Y.
WCIV Mt. Pleasant, S.C.
WCSC-TV Charleston, S.C.
WGBH-TV Boston, Mass.
WNET Newark, N.J.

PRODUCTION COMPANIES

AF Associates, Inc., Northvale, N.Y.
Adcom, Toronto, Canada
Armed Forces Radio and Television Services
Byron Motion Pictures, Washington, D.C.
Compact Video Systems, Burbank, Ca.
Crest Film Labs, Hollywood, Ca.
Devlin Productions, New York, N.Y.
EUE Screen Gems, New York, N.Y.
Exxon Corporation, Mountain Lake, N.J.
F.T. Video Cassette Dup. Corporation,
Leonia, N.J.
Goldmark Communications,
Stamford, Conn.
Korean Broadcasting System, Seoul, Korea
Location Video, Glen Cove, N.Y.
Motion Picture Video Corporation,
Toronto, Canada
NHK, Tokyo, Japan
Newsnet, Inc., Washington, D.C.
Nexus Productions, New York, N.Y.
Precision Video, New York, N.Y.
Producers Color Service, Detroit, Michigan
Rombex Production Corporation,
New York, N.Y.
Roscor Corporation, Morton Grove, Ill.
Ruxton Limited, Burbank, Ca.
Theta Cable of California, Santa Monica, Ca.
Teletronics-International, New York, N.Y.
Turner Engineering, Mountain Lakes, N.J.

NETWORKS

ABC New York, N.Y.
ABC Los Angeles, Ca.
CBS New York, N.Y.
CBS Los Angeles, Ca.
S.C. Educational TV, Columbia, S.C.

Partial list of units in service.

Shouldn't our Digital Noise Reducer be working for you?



THOMSON-CSF LABORATORIES, INC.

Circle (39) on Reply Card

September, 1978

High frequency

continued from page 44

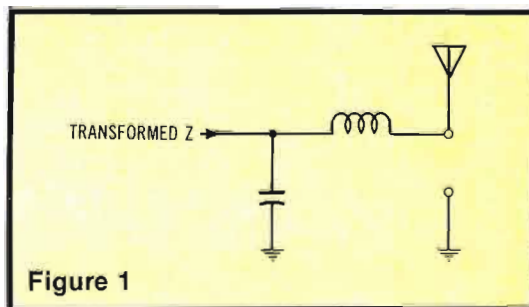


Figure 1

non-directional with a measure base impedance as follows:

$$\begin{aligned} F + 10 \text{ kHz (960 kHz)} &= 26.4 - j35.4 \\ F &= (950 \text{ kHz}) = 27.5 - j40.0 \\ F - 10 \text{ kHz (940 kHz)} &= 28.5 - j44.7 \end{aligned}$$

By using an optimized T-network (-92° phase shift) the resulting impedances are:

$$\begin{aligned} F + 10 \text{ kHz} &= 47.9 - j9.7 \\ F &= 50.0 + j0.0 \\ F - 10 \text{ kHz} &= 47.9 + j9.3 \end{aligned}$$

Not bad but too much reactance at the sidebands. By calculating the required values needed in order to use an L-network, it was found that the series element required could not be realized because its value needed to change with frequency at a percentage rate smaller than the rate of change of frequency. The whole concept of the scheme is based on the rate of a reactance with respect to frequency. It is not possible to obtain a reactance that changes at a rate smaller than the rate of change of frequency (i.e., a coil with a reactance of $j10$ at 1 MHz will have a reactance of $j20$ at 2 MHz and no configuration will produce a lesser change.)

It is possible, however, to create a configuration whose rate of change is greater than that of the frequency change. In the above example it was necessary to transform the antenna impedances to values that could be matched to a 50-ohm transmission line using realizable components. A variety of values were tried until a combination of a series 13.4 uh coil and a shunt 5600 pf capacitor were arrived at. This combination produced an impedance that could be matched at operating and sideband frequencies to the transmission line Z. (Figure 1).

The values required for an L-network to match this transformed Z into the line are shown in Table 1. It can be seen that the series and shunt reactances are becoming more

positive with an increase in frequency, indicating that these reactances are realizable. By combining a coil and cap in series or parallel (in this article series is used) a resulting reactance slope is obtained. Any two given components that produce a desired reactance at a particular frequency will have a different slope from any other combination of components giving the same reactance.

What this means is that two reactances (+j10 and -j30 in series, and +j1000 and -j1020 in series) will each give the same total reactance (-j20) at one frequency, but very different results at sideband frequencies. In the above example if the frequency was doubled, the first combination would produce +j5 and the second +j1490. What is needed are formulas giving the values of L and C necessary to produce the required slope. These formulas are:

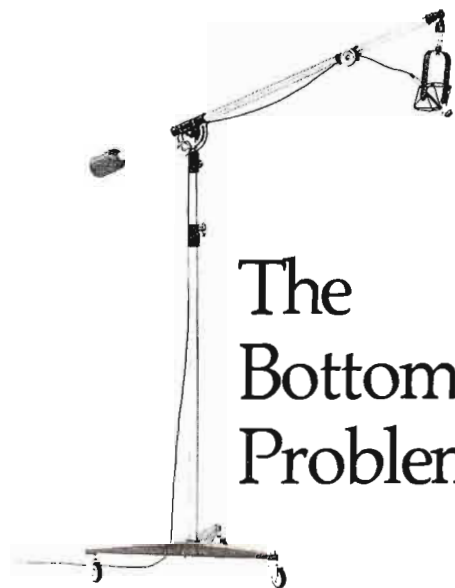
$$C = \frac{1 - \frac{(F_u)^2}{(F_l)^2}}{\left[2\pi \frac{(F_u)^2}{(F_l)^2} (X_1 F_l) - (X_u F_u) \right]}$$

$$L = \frac{1}{2\pi F_u} \left[X_u + \frac{1}{2\pi F_u C} \right]$$

Where:

- F_u = upper sideband frequency
- F_l = lower sideband frequency
- C = capacitance needed for slope combination
- L = inductance needed for slope combination
- X_u = reactance required at upper sideband frequency
- X_l = reactance required at lower sideband frequency

From these equations it is calculated
continued on page 48



The Bottom Line Problem-Solver

The Bottom Line

We're Audio Consultants. We solve problems; and there is no greater problem than that of high quality at low cost. In our industry, that's the "bottom line".

When a client needs a certain sound, we respond with more than just equipment. We respond with a system that's a problem-solver. And, our equipment must do the same.

That's why everything we produce functions within an area greater than its own . . . within the total system, the total solution to the problem.

Like our systems, our equipment must solve problems at the bottom line, delivering excellence at low cost.

The Problem-Solver

One of our problem-solvers is the **Starbird Microphone Boom**.

The standard of quality for the industry, the Starbird reduces costly set-up time dramatically and assures maximum safety for studio personnel.

Its design permits quick and precise "spotting", with maximum extension and height flexibility. The swivel clevis provides 360-degree facing, while the adapters accommodate any microphone you select. The counterweight balances the microphone properly; and ball bearing, rubber-tired casters assure easy and noiseless movement.

The Starbird is simply the best. Ask the countless studios where it is solving problems every day . . . at the bottom line. Or, ask us. We'd like to tell you more.



Accurate Sound Corporation

114 Fifth Avenue / Redwood City, California 94063 / (415) 365-2843 / TELEX: ASCQ 34-8327

"Because Sound Comes From A System"

High frequency

continued from page 47

ted that the capacitor and inductor for the series leg are:

$$C = 798.1 \text{ pF}$$

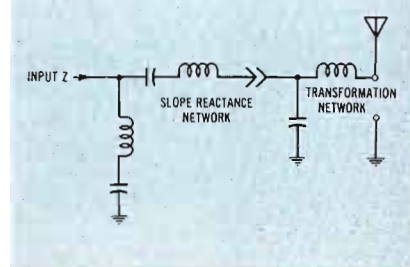
$$L = 45.91 \text{ uH}$$

The closest available capacitor is 820 pF, so we use it and recalculate the L which is 44.97 uH. For the shunt leg the values calculated are:

$$C = 408.1 \text{ pF}$$

$$L = 59.25 \text{ uH}$$

Figure 2



The values used are 390 pF and 62.43 uH. The resulting network appears in Figure 2. The calculated input impedances are:

$$F_U = 49.2 - j0.36$$

$$F_O = 48.3 - j1.07$$

$$F_1 = 50.2 + j0.32$$

As can be seen, a significant improvement across the band is realized, particularly the sideband reactances. The impedance at operating frequency is not exactly 50 ohms because in calculating the L and C values, we assumed a linear relationship for the required reactances between the upper and lower frequencies. In some cases this deviation in linearity is greater than in others.

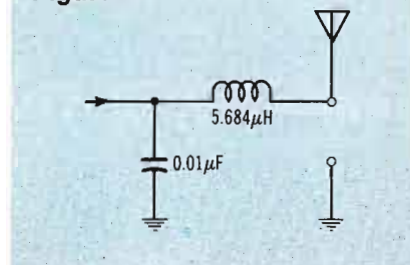
Another example, this time a directional array where the measured impedances into the power divider, were:

$$F_U (570 \text{ kHz}) = 35.0 + j28.0$$

$$F_O (560 \text{ Khz}) = 40.0 + j23.5$$

$$F_1 (550 \text{ kHz}) = 45.0 + j18.3$$

Figure 3



continued on page 52

Which recorder is right for you?

750 or 850?

The ITC 750 can handle many production schedules with ease. It is versatile, dependable, professional. 750 users say, "It's unquestionably the finest recorder in its price range."

The 850 costs more. And, for many, it's worth every dollar! When production is heavy and complex—with ex-

tensive editing and shuttling—850 features work magic. Smooth, gentle, quiet, effortless. Users say, "The 850 reads my mind!"

Which for you? Needs, preferences, budgets, all play a role. Call us. We'll help you make the right choice.

**CALL TOLL-FREE
800-447-0414**

Ask about our no-risk, 30-day trial order. Lease-purchase plans available. Generous trade-in allowances. Two-year warranty. In Illinois, Hawaii or Alaska call collect: (309) 828-1381.

INTERNATIONAL TAPETRONICS CORPORATION

Bloomington, Illinois 61701 Marketed exclusively in
Canada by McCurdy Radio Industries, Ltd., Toronto



750
\$2015 Mono
\$2320 Stereo

850
\$3050 Mono
\$3870 Stereo

Console cabinets,
stacking kits, cartridge
machine optional.



Circle (41) on Reply Card



The Sony BVE-500A. It's the best editing decision you'll ever make.

Announcing the professional automatic editing control unit professional editors have been waiting for. The Sony Broadcast BVE-500A.

Already, the earlier BVE-500 has been accepted as the state of the art in control track editing by broadcasters around the world. In the new BVE-500A, we've made substantial improvements that increase the speed, versatility, and convenience of the editing process.

Compare these editing advantages with existing equipment, and consider the added creative capabilities you get with the Sony Broadcast BVE-500A.

1. BIDIREX control. The big news in the BVE-500A is BIDIREX: two self-return search dials that take the place of ordinary pushbutton search controls. Many control instructions have been built into these BIDIREX dials to allow an operator to shuttle tape in forward and reverse direction at various speeds.

BIDIREX eliminates mode selection error. And it gives Sony U-matic editing a true "film" feeling ordinary editing systems can't match.

2. Decision Prompter. The new BVE-500A uses lamps to prompt the operator to the mode and progress of all editing decisions.

Function lamps blink until the edit commands are made, then go automatically to "steady on." Even in a busy newsroom, with many interruptions, an operator can tell at a

glance the status of his last instruction as the BVE-500A prompts him for the next command.

3. Automatic Entry. The BVE-500A saves valuable time with a feature that automatically enters the "IN" point when the preview button is engaged.

If the operator has already selected an "IN" point, this auto mode has no effect; the editor may preview without disturbing his pre-selected "IN" point.

4. New Full Time Counter. The BVE-500A counts control track pulses from -79 minutes through 0 to +79 minutes. An operator need not concern himself with the count when he initiates an editing sequence.

5. Short Pre-Roll. When used with external sync, pre-roll is reduced from five seconds to three seconds, a further time-saving advantage.

6. Cue Control. The BVE-500A features built-in cue record and erase. This 1kHz tone is recorded on Audio 1, and is useful for both auto control systems and pre-cueing the tape to air.

These are just a few of the new BVE-500A features.

Others include auto shut-off, external interface of control logic, manual edit capability, and more. You can see them all in action when you ask for a demonstration of this versatile new editing control unit. To do that, just contact your nearest Sony Broadcast office.

Sony Broadcast

Sony Corporation of America, 9 West 57 Street, New York, New York 10019
New York: (212) 371-5800 Chicago: (312) 792-3600 Los Angeles: (213) 537-4300 Canada: (416) 252-3581

Sony[®] is a registered trademark of Sony Corporation of America

Circle (42) on Reply Card

FACT!

Nobody can match the ...

Spotmaster®

3000 SERIES

Tape Cartridge Machines

The cart machines with features competitors can't match ...

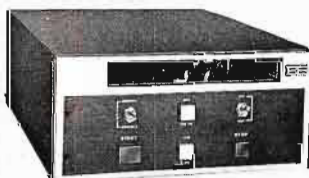
FEATURES

	SPOTMASTER 3000 SERIES	ITC RP SERIES	HARRIS CRIT. 90
Nortronics® Duracore™ Heads	YES	YES	No
Auto/Manual Fast Forward Option	YES	YES	No
Low-Voltage Current Regulated Solenoid	YES	No	No
Models for 1/3 and 1/2 Rack Widths	YES	No	No
Independent Azimuth Adjustment	YES	No	No
Cartridge Brand Interchangeability	YES	No	No
Headphone Jack for Maintenance	YES	No	No
Wider Record Input Range	-24 to +20	-20 to 0	*
Solid State Switching Logic	YES	No	No
Microphone Input Option	YES	No	No

* Not specified



Model 3100 Slim Line—the space saver for A size cartridges. Available in mono and stereo playback.



Model 3300 Standard—for A, B and C cartridges. Available in mono and stereo, record/playback and playback only.



Model 3200 Compact—for A and B cartridges. Available in mono and stereo, record/playback and playback only.

Professional in every way, Series 3000 are premium quality products with Spotmaster exclusives such as: Phase Lok III head bracket, premium Nortronic heads, advanced IC circuit/solid state design with exceptionally wide dynamic operating ranges.

For complete information call or write your local Spotmaster® distributor or contact:



a FILMWAY company

BROADCAST ELECTRONICS INC.

4100 NORTH 24th STREET, QUINCY, ILLINOIS 62301
TELEPHONE: (217) 224-9600 TELEX: 25-0142

Circle (43) on Reply Card

High frequency response

continued from page 48

The transformation network and impedances (Figure 3) are:

$$\begin{aligned} F_u &= 16.61 - j37.63 \\ F_o &= 17.68 - j35.09 \\ F_1 &= 17.89 - j32.52 \end{aligned}$$

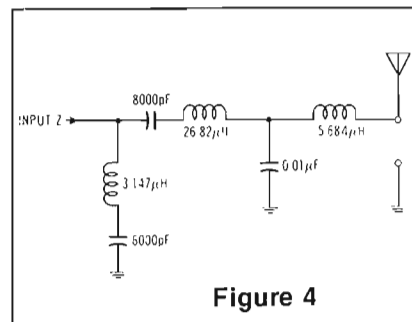


Figure 4

The slope network is shown in Figure 4.

The impedance seen by the transmitter is as follows:

$$\begin{aligned} F_u &= 49.9 + j0.0 \\ F_o &= 49.5 - j1.1 \\ F_1 &= 50.0 + j0.0 \end{aligned}$$

The optimized T-network (104° phase shift) would produce:

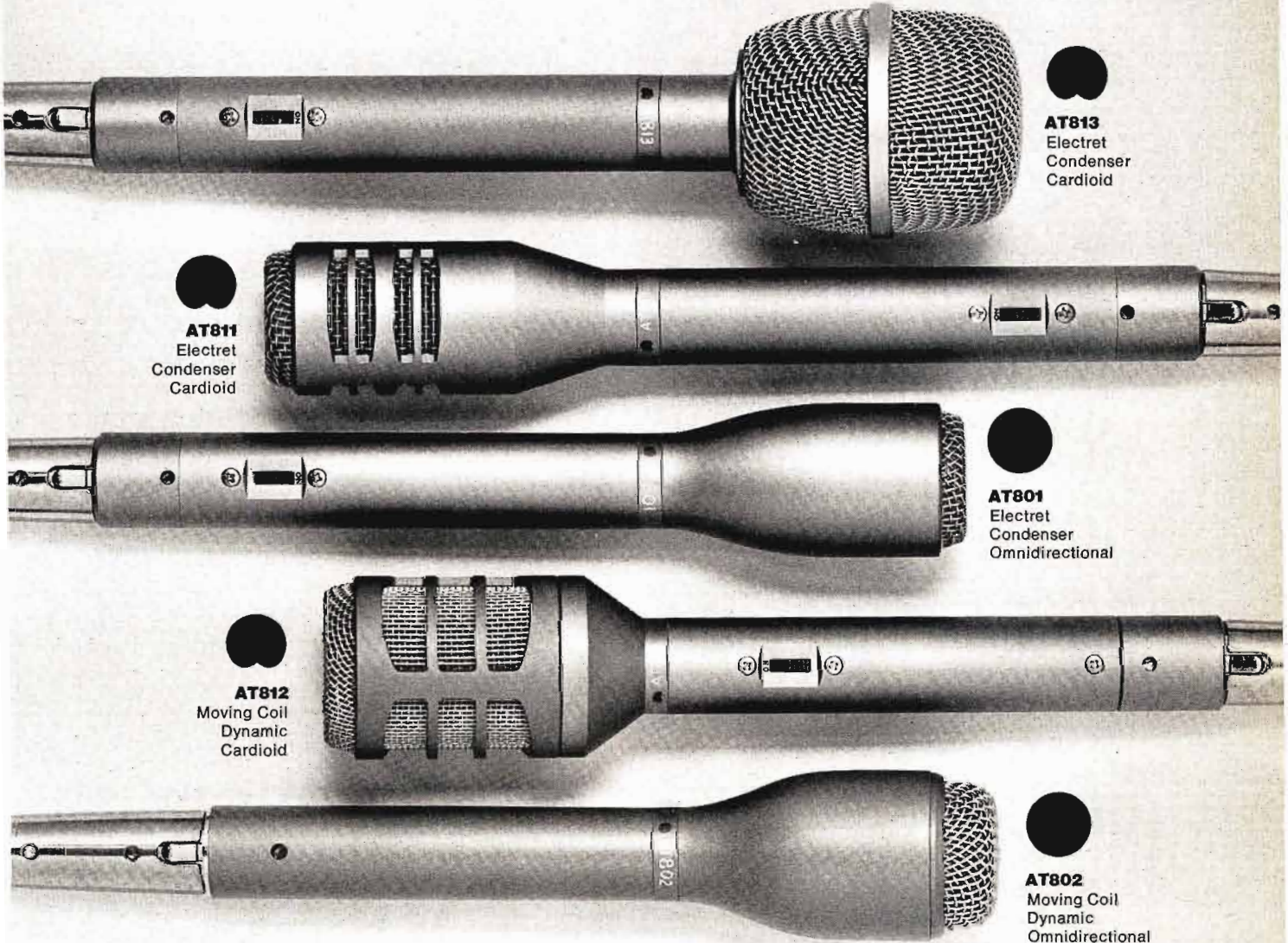
$$\begin{aligned} F_u &= 48.6 - j7.7 \\ F_o &= 50.0 + j0.0 \\ F_1 &= 48.7 + j7.0 \end{aligned}$$

In choosing transformation network components, it is necessary to try various values until a transformed impedance is found that can be matched to the line with realizable components. I use an HP-97 calculator to perform this task by letting it iterate until adequate values are obtained. By using a computer it would be possible to use T and Π networks to provide the match and/or transformation.

In an applied sense, it is necessary to pay particular attention to component layout as mutual coupling between components cannot be tolerated if proper operation is to result. That's where using a competent consultant to design, construct, and adjust the network really pays off.

Although more costly and time consuming to build than a conventional network would be, the improvement in high-frequency audio quality makes it a small price to pay, particularly when you add up what you've spent on compressors, limiters, and EQs in the last few years. □

Audio-Technica introduces five new microphones... and a pleasant surprise.



AT813
Electret
Condenser
Cardioid



AT811
Electret
Condenser
Cardioid



AT801
Electret
Condenser
Omnidirectional



AT812
Moving Coil
Dynamic
Cardioid



AT802
Moving Coil
Dynamic
Omnidirectional

Take a close look at these new Audio-Technica microphones. Three electret condensers and two dynamics. Plus two clip-on miniature electrets (not shown). All are superbly finished. Carefully thought out in every detail. With the right "heft" and feel. Professional A3M Switchcraft output connectors, of course.

Then listen in your studio. Full-range, peak-free, clean and crisp. With

no distortion even when used close-up to high-level performers. And the balanced, phased Lo-Z (600 Ohm) output matches pro and semi-pro mixers alike.

Now for the surprise. The price. Both omnis are nationally advertised at just \$60, for either dynamic or electret condenser element. The two basic cardioids are just \$80, while the AT813

electret condenser with integral wind-screen is pegged at \$95. All complete with full one-year warranty.

Once you've seen and tried these new Audio-Technica microphones we think you'll welcome them. Not just because they cost so little...but because they do so much. Available now from your Audio-Technica Professional Products dealer.

 **audio-technica.** *Great sound, right from the start!*

AUDIO-TECHNICA U.S., INC. Dept. 88BE, 33 Shiawassee Avenue, Fairlawn, Ohio 44313 • In Canada: Superior Electronics, Inc.

DIRECTIONAL ANTENNA BASICS

Part 6. Design of Five-Tower Systems

By Bob Jones, Consulting Engineer, La Grange, Illinois

Editor's Note: This is the final installment in a series of articles by Jones on antenna system configurations. References to previous articles in this series and Jones' book covering designs up to 12-tower systems will be found at the end of this article.

This article deals with five-tower directional systems. Although it may seem odd, six-tower systems are much more common than five-tower systems. The reason for this is the ability to achieve a greater variety of patterns with six than with five, plus there is some simplicity in the design mathematics.

Five towers

There are really only two five-tower configurations that can be employed. The most common is the in-line array, shown in Figure 1. The only other design is that of a box or rectangle wherein the fifth tower is at the mid-point of the other four. This is shown in Figure 2, and is really a "special case."

The in-line array can either be a two-tower system multiplied by a three-tower system, or four-tower system multiplied by themselves. A third possible way to look at this is to consider it as a four-tower parallelogram (in-line) with a fifth tower at the mid-point. These different basic concepts are shown in Figure 3.

The most common approach is that of Figure 3B. The following formula can be used (Equation 1):

$$E = Kf(\Theta) \left[\left(\frac{1+E_2^2}{2E_2} + \cos(\Psi_2 + S \cos \emptyset \cos \Theta) \right) \times \left(\frac{1+E_3^2}{2E_3} + \cos(\Psi_3 + S \cos \emptyset \cos \Theta) \right) \times \left(\frac{1+E_4^2}{2E_4} + \cos(\Psi_4 + S \cos \emptyset \cos \Theta) \right) \times \left(\frac{1+E_5^2}{2E_5} + \cos(\Psi_5 + S \cos \emptyset \cos \Theta) \right) \right]^{1/2}$$

A comparison between this formula and that of Equation 3 in Part 4 reveals the addition of a fourth and fifth term to the basic three-tower multiplication formula.

Keep in mind that the designer has the same two major advantages here that he had with the three-tower and the four-tower designs. These are the facts that the bearings of each pair of two-tower nulls can be individually controlled, and that the depth of each two-tower null can be filled as much or as little as desired.

The example is that of WIMS nighttime. The value selected for each pair is shown on Figure 4. Table 1 is a step-by-step calculation of this pattern. Keep in mind that, as with any in-line array, the designer only

continued on page 56

Figure 1 Diagram of one of two basic five-tower configurations

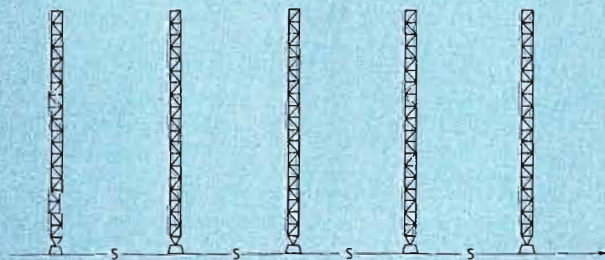
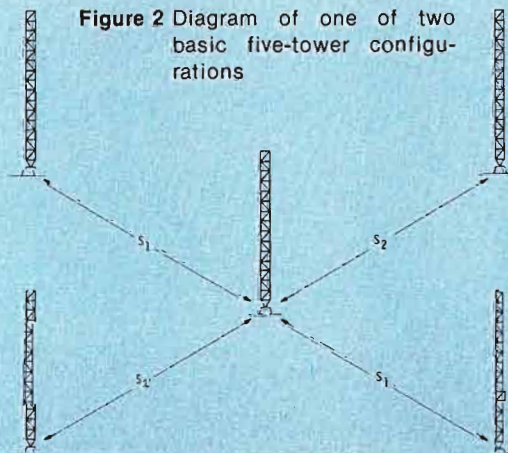


Figure 2 Diagram of one of two basic five-tower configurations





when cost is more important than price

Value conscious broadcasters specify the Studer B67 because it outperforms its competitors on the really significant broadcaster criteria:

- Studer state-of-the-art quality
- Long service life with low failure rate
- Speed and ease of user maintenance

If you're more concerned with *total* cost than just initial price, write to us for complete information on the superiority of the Studer B67 Broadcast Recorder/Reproducer. We'll show you why it's your best tape recorder investment.

STUDER



Studer Revox America, Inc., 1819 Broadway, Nashville, Tenn. 37203 / (615) 329-9576 • In Canada: Studer Revox Canada, Ltd.

Directional Antennas

continued from page 54

FIVE - TOWER CONFIGURATIONS

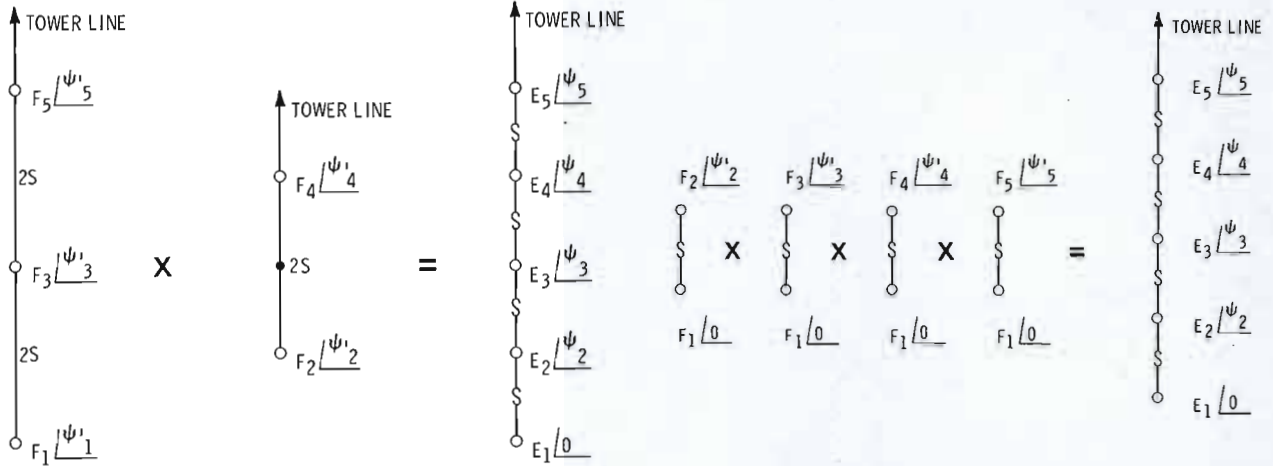


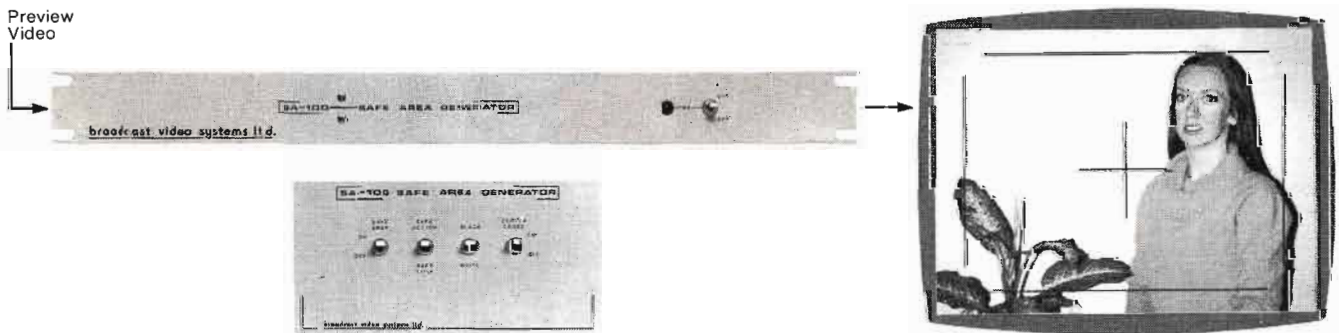
Figure 3A

Figure 3B

continued on page 58

AT LAST, A STATE-OF-THE-ART METHOD TO ENSURE CORRECT POSITIONING OF PICTURE INFORMATION REGARDLESS OF MONITOR SCAN.

THE SA-100 SAFE AREA GENERATOR*



The SA-100 eliminates the guesswork of where to position graphics and other important information in a television picture. Vertical and horizontal borders, 120 nanoseconds wide, are generated and non-additively mixed into the composite video connected to the SA-100 input. This "safe area" pattern, keyed into video, will appear at the SA-100 output for display on a picture monitor. The pattern can be remotely switched from Safe Title to Safe Action area substantially as specified in SMPTE Recommended Practice No. RP27.3.

Also included is a cross-hair pattern showing the exact picture center.

Both patterns can be switched on or off, black or white, from the remote panel included with the unit.

No external drives are required as all system timing is derived from program sync. This ensures that Safe Area is always correct, regardless of monitor scan adjustments.

A second output is provided which delivers a pattern signal only (not keyed into video) for in-house distribution.

* patent pending

broadcast video systems ltd.

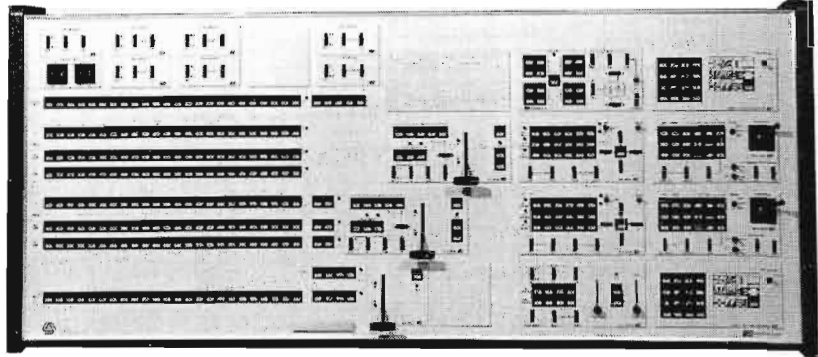
1050 McNicoll Ave., Agincourt, Ont., Canada
(416) 497-1020 Tlx. 065-25239

Circle (46) on Reply Card



Central Dynamics Creator of "the Smart Switcher"

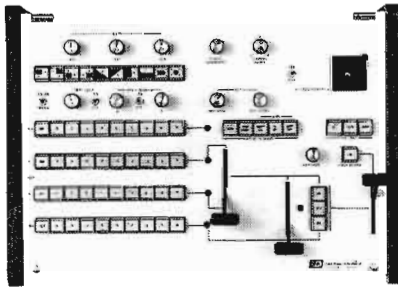
The super powerful CD-480 Video Switcher



Revolutionary modular switchers with unprecedented production power. They outperform the largest conventional switchers, yet are extremely simple to operate. Their power and ease of operation are due to CDL's new Sequential Effects (SFX) Amplifier, which can cut, mix or wipe between background sources and two separate key

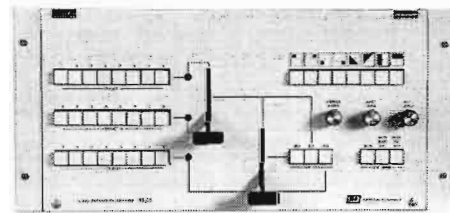
sources either individually or in any combination. Models with one or two SFX Amplifiers provide all the standard and optional features you need. A variety of modular accessories will continue to keep your switchers smarter than the rest as new technology develops.

The sophisticated VS-14



Sophisticated enough for large studio production, yet compact and inexpensive enough for small mobiles. Soft wipes and keys—even a Downstream keyer are standard. Self-contained and remote versions available.

The inexpensive VS-10



An inexpensive broadcast quality 8-input switcher that features flexibility and ease of operation. Self-contained electronics for rapid installation in ENG and other small mobiles.

Request our Short Form Catalog for a description of a complete line of video products.
Master Control Switchers • Video Tape Editors • System 100 Automation • SMPTE Time Code Generators and Readers • Video and Pulse Distribution Amplifiers • Chroma Keyers: RGB and Encoded • Processing Amplifiers • Audio/Video Routing Switchers • Pulse Assignment Systems • Machine Control Systems •

Circle (47) on Reply Card



CENTRAL DYNAMICS LTD

U.S.A.

Chicago

331 West Northwest Highway,
Palatine, IL 60067
Phone—312-991-4720
TWX—910 693 4805

New York City

230 Livingston Street,
Northvale, NJ 07647
Phone—201-767-1300
TWX—710 991 9753

Los Angeles

15130 Ventura Blvd.—Suite 307,
Sherman Oaks, CA 91403
Phone—213-789-0574
TWX—910 495 1713

CANADA

Montreal

147 Hymus Blvd.,
Montreal, Quebec H9R 1G1
Phone—514-697-0811
TWX—610 422 3906

Directional Antennas

continued from page 56

**TABLE 1
FIVE-TOWER MULTIPLICATION IN-LINE DESIGN**

$$E = K [E_1 + E_2 \angle \Psi_2 + S \cos \theta + E_3 \angle \Psi_3 + 2S \cos \theta + E_4 \angle \Psi_4 + 3S \cos \theta + E_5 \angle \Psi_5 + 4S \cos \theta]$$

Where: $E_1 = E_2 = E_3 = E_4 = 1.0$; $S = 90^\circ$, $\Psi_2 = 165^\circ$, $\Psi_3 = 170^\circ$, $\Psi_4 = 132.5^\circ$, $\Psi_5 = -90^\circ$, $E_5 = 0.582$

Substituting:**

$$E = K \left[(1 + S \cos \theta + \Psi_2) (1 + S \cos \theta + \Psi_3) (1 + S \cos \theta + \Psi_4) + \left(\frac{1 + 0.582^2}{2(0.582)} + S \cos \Psi_5 \right)^{1/2} \right]$$

A	B	C	D	E	F	G	H	I	J	K	L	M
θ	90 cos A	165+B	1+cos C	170+B	1+cos E	132.5-B	1+cos G	B-90	1.15+cos I	D+F+H+J	$K^{1/2}$	$L \times K^1$
0	90.0	255.0	.7411	260.0	.8264	-42.5	1.7373	0.0	2.1500	2.2676	1.5120	963.3 MV/M
10	88.6	253.6	.7078	258.6	.8023	-42.9	1.7205	-1.4	2.1490	2.1000	1.4490	923.1
20	84.5	251.6	.6487	254.5	.7328	-48.0	1.6691	-5.4	2.1450	1.7040	1.3050	831.4
30	77.9	242.9	.5444	247.9	.6238	-54.6	1.5793	-12.1	2.1290	1.1413	1.0680	680.4
40	68.9	233.9	.4108	238.9	.4835	-63.6	1.4446	-21.1	2.0830	.5976	.7730	492.5
50	57.8	222.8	.2662	227.8	.3283	-74.7	1.2638	-32.2	1.9960	.2203	.4690	298.8
60	45.0	210.0	.1339	215.0	.1808	-87.5	1.0436	-45.0	1.8570	.0469	.2165	137.9
70	30.8	195.4	.0340	200.0	.0603	-101.7	.7972	-59.6	1.7360	.0028	.0533	33.9
80	15.6	180.5	.0000	185.6	.0048	-116.9	.5476	-74.4	1.4190	.0000	.0000	0.0
90	0.0	165.0	.0340	170.0	.0152	-132.5	.3244	-90.0	1.1500	.0002	.0139	8.8
100	-15.6	149.4	.1392	154.4	.0982	-148.1	.1510	-105.6	.8811	.0018	.0426	27.1
110	-30.8	134.6	.3015	140.0	.2339	-163.3	.0422	-120.8	.6439	.0019	.0437	27.8
120	-45.0	120.0	.5083	125.0	.4284	-177.5	.0009	-135.0	.4430	.0001	.0095	6.0
130	-57.8	107.2	.7042	112.2	.6221	-190.3	.0161	-147.8	.3038	.0021	.0463	29.5
140	-68.9	96.1	.8837	101.1	.8075	-201.4	.0689	-158.9	.2171	.0108	.1038	66.2
150	-77.9	87.1	1.0500	92.1	.9634	-210.0	.1375	-167.9	.1722	.0239	.1547	98.5
160	-84.5	80.4	1.1650	85.5	1.0785	-217.0	.2014	-174.6	.1544	.0390	.1978	125.9
170	-88.6	78.4	1.2350	81.4	1.1496	-221.1	.2484	-178.6	.1503	.0526	.2283	148.1
180	-90.0	75.0	1.2590	80.0	1.1738	-225.5	.2827	-180.0	.1500	.0582	.2413	153.7

**Converted to multiplication formulas.

$K^1 = 626.9$, RMS = 400 MV/M

continued on page 60

IMAGE ENHANCERS.



The Model 6220 In-Line Image Enhancer provides overall signal enhancement and detail gain, as well as level dependent aperture equalization. It also features a built-in RGB decoder for chroma key applications.

The Model 6210 RGB Image Enhancer allows the operator to adjust

black region noise and background activity which can particularly improve tape quality in film transfer work.

For more information, circle our reader service card number.

3M Video Systems. Watch us in action.



Circle (48) on Reply Card

The HITACHI SK-90

Unsurpassed Picture Quality in a Free-Ranging Portable.

High technology in camera design is Hitachi's business. And the phenomenal SK-90 shines among Hitachi's previous successes.

With the comfortably balanced, self-contained SK-90, you can go on location and shoot action features, documentaries, commercials, training and sales tapes — without worrying about complex equipment, tripping over bulky cords, or staggering under heavy loads — and always producing an image truly worthy of broadcast transmission. The SK-90's sophistication makes it easy for you. Anyplace, anywhere from sub-zero to over 100° F. operating temperatures.

Technological advances? The SK-90 is brimming with them.

A Hitachi-developed Automatic Beam Optimizer (ABO) circuit cuts out the comet-tailing effect common to lesser cameras when shooting highly reflective objects.

Three 2/3" Saticon tubes combine with a smaller-size high index beam splitting prism to deliver better than 500-line horizontal resolution and better than 51dB signal-to-noise ratio.

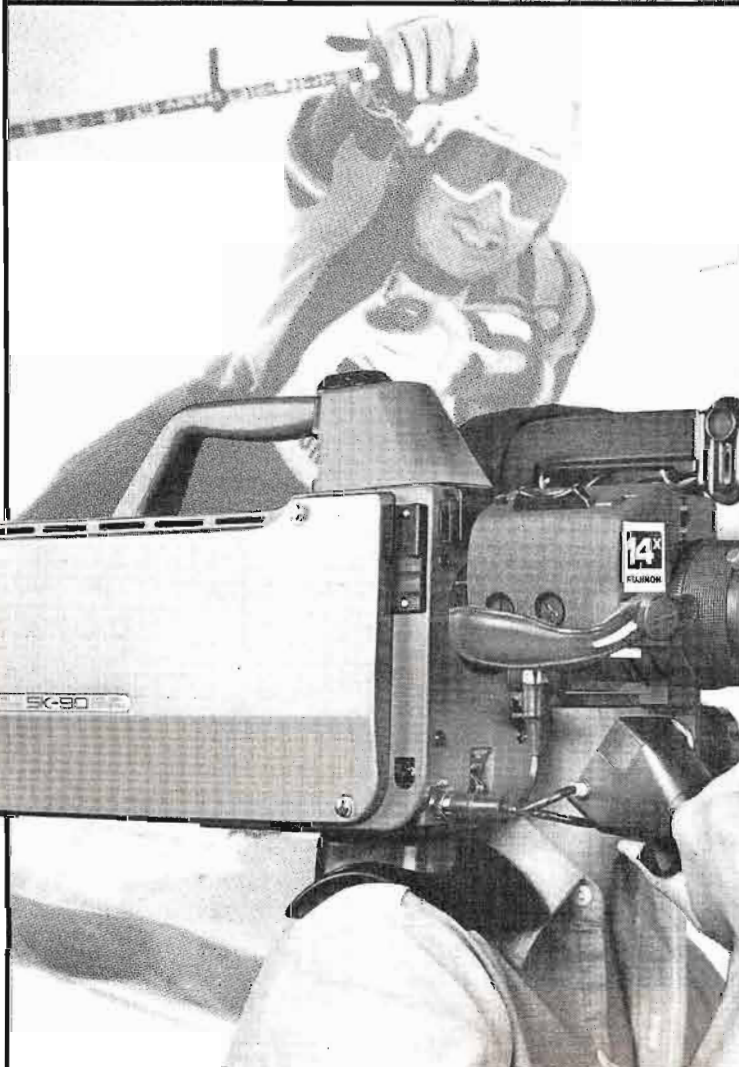
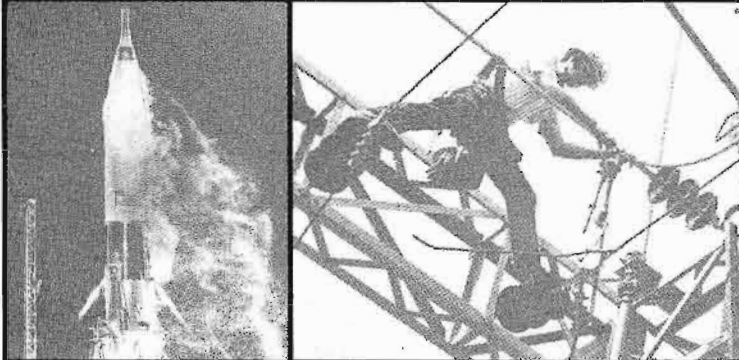
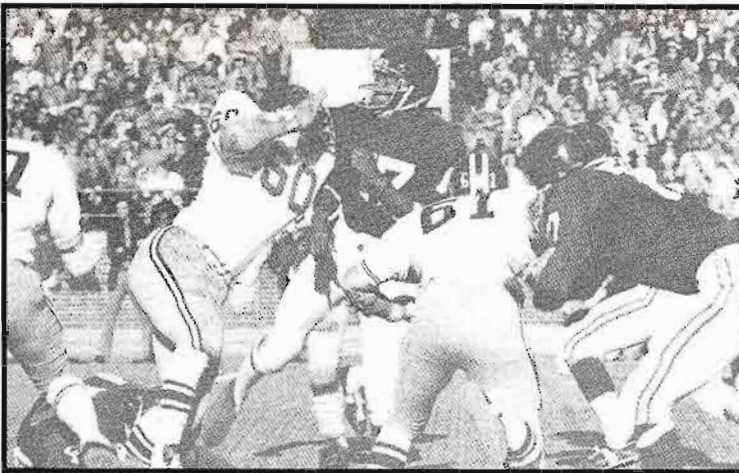
And, of course, there are all the additional features that assure sharp, crisp pictures and true colors: built-in 2H contour enhancer with comb filter...standard I & Q encoder...switchable color bar generator...automatic white balance...automatic iris...and a built-in Genlock circuit using black burst to lock your SK-90 to other cameras.

Options include a built-in linear matrix masking amplifier for high fidelity color rendition and a complete remote operating unit which lets the camera range up to 1000 feet away on standard camera cable. For an even greater working range of over 3000 feet, a Digital Command Unit/Triaxial Cable System is also available.

Remarkably, the Hitachi SK-90 may be the first affordable, self-contained portable that doesn't compromise. Contact your Hitachi dealer for more details.

 **HITACHI**
Hitachi Denshi America, Ltd.
FORMERLY HITACHI SHIBADEN CORP OF AMERICA

Executive Office: 58-25 Brooklyn-Queens Expressway, Woodside, N.Y. 11377 (212) 898-1261. Offices in: Chicago (312) 344-4020; Los Angeles (213) 328-2110; Dallas (214) 233-7623; Atlanta (404) 451-9453; Denver (303) 344-3156; Seattle (206) 298-1680.



Circle (49) on Reply Card

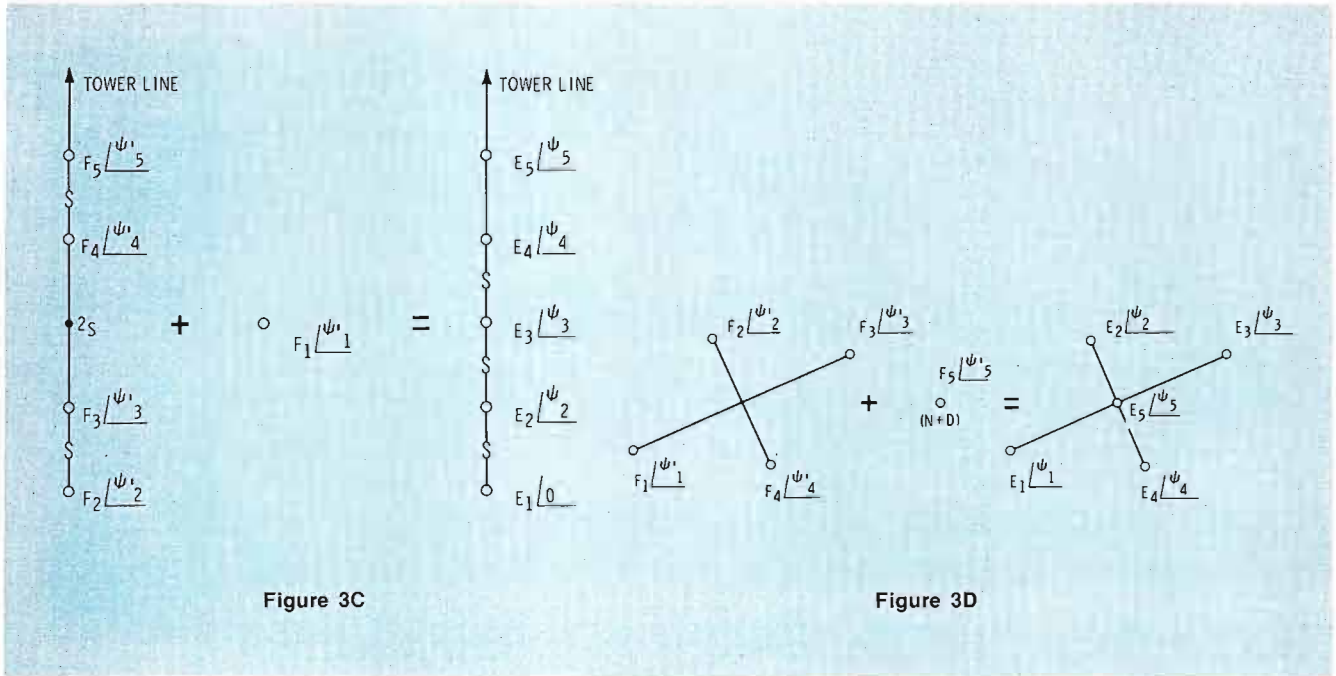
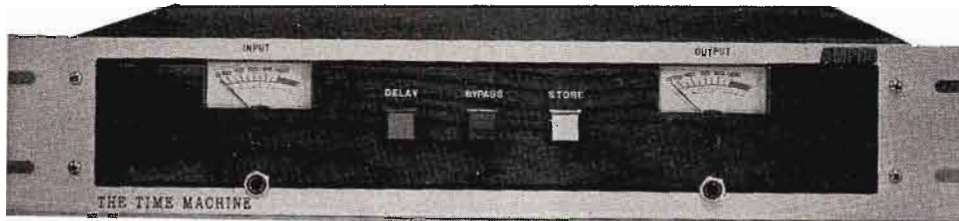


Figure 3C

Figure 3D

continued on page 62



The Time Machine™ Six-Second Audio Digital Delay Its Benefits Speak for Themselves!

Eliminate forever the maintenance headaches, on-air tape failures, cleaning, tape replacement and the audio quality degradation inherent in audio tape delay systems.

The Time Machine by Ampro is ideal for talk show censoring, and previewing of live telephoned news inserts.

Incorporates a STORE mode which allows the operator to electronically store a lead-in announcement which is read out at the beginning of delay cycle.

The electronically stored lead-in announcement is replaced in memory by the delayed message.

For a permanent lead-in announcement of music fill insertion during censoring. The Time Machine will automatically time and control an auxiliary tape cartridge playback unit for fill insertion at any live to delay mode transition.

Build-in timing synchronizes the full read out of memory contents with the switch from delay back to live operation.

SEND FOR DETAILS



Allied Broadcast Equipment

635 South E Street • Richmond, Indiana 47374 • Phone (317) 962-8596

PROFESSIONAL

**Ohio Disco Packager, SWB Electronics,
uses Stanton Exclusively.**



Larry L. Decker, Designer/Owner, examines finished control table for Disco use.

The trend to Portable Disco continues strong. An ambitious Company in Canton, Ohio, SWB, is achieving excellent success with their units (their goal is a national franchising operation). James C. Fravel, General Manager/Promotions, writes to Stanton, "We are using Stanton cartridges in each and every unit we sell. Two of our units have been running for about a year and a half without failure. We are quite proud of the track record of our units and the Stanton cartridges."

They use the 500AL because it's a durable cartridge and "gives SWB a 4 dB base boost that we like to have with the music we play. It has been, by far, the best cartridge we have used (and we have tried many)".

So, Stanton, world famous for its top-of-the-line calibrated cartridges, the 881S and the 681 series, also serves the professionals in an interesting branch of the Disco Industry.

Whether *your* usage involves recording, broadcasting, archives, disco or home entertainment, your choice should be the overwhelming choice of the professionals in every field . . . Stanton Cartridges.

*For further information write to: Stanton Magnetics,
Terminal Drive, Plainview, N. Y. 11803*

© STANTON 1978



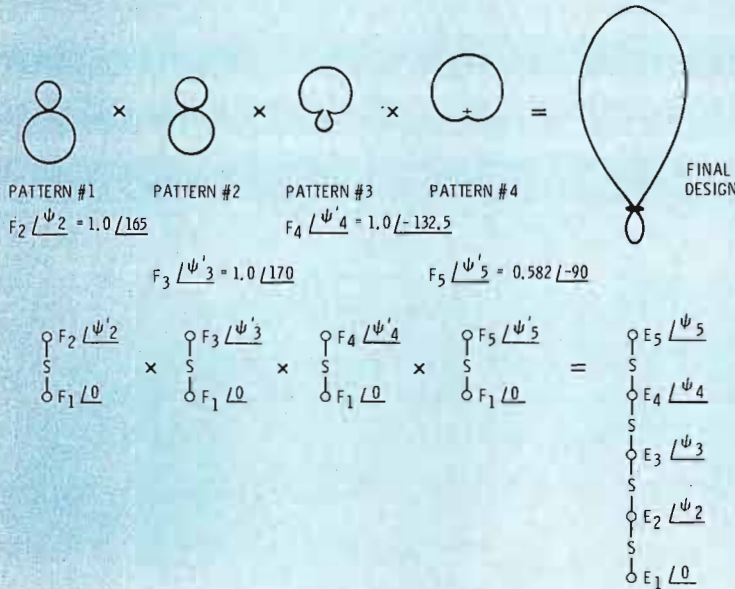
STANTON!

Directional Antennas

continued from page 60

Figure 4

WINS In-Line Design



Determination of Base Values, S = 90

$$E_1 / \psi_0 = F_1 / \psi_0$$

$$E_2 / \psi_2 = F_2 / \psi_2 + F_3 / \psi_3 + F_4 / \psi_4 + F_5 / \psi_5$$

$$= 2.7720 / -161.35^\circ$$

$$E_3 / \psi_3 = F_2 F_3 / \psi_2 + \psi_3 + F_2 F_4 / \psi_2 + \psi_4 + F_2 F_5 / \psi_2 + \psi_5 +$$

$$F_3 F_4 / \psi_3 + \psi_4 + F_3 F_5 / \psi_3 + \psi_5 + F_4 F_5 / \psi_4 + \psi_5$$

$$= 3.2660 / 43.6^\circ$$

$$E_4 / \psi_4 = F_2 F_3 F_4 / \psi_2 + \psi_3 + \psi_4 + F_2 F_3 F_5 / \psi_2 + \psi_3 + \psi_5 +$$

$$F_3 F_4 F_5 / \psi_3 + \psi_4 + \psi_5 + F_2 F_4 F_5 / \psi_2 + \psi_4 + \psi_5$$

$$= 1.9294 / -105.10^\circ$$

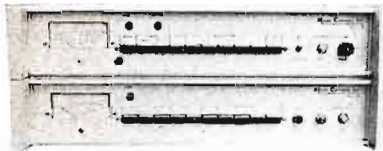
$$E_5 / \psi_5 = F_2 F_3 F_4 F_5 / \psi_2 + \psi_3 + \psi_4 + \psi_5$$

$$= 0.582 / 112.50^\circ$$

continued on page 64

TOMORROW'S STL FORCE TODAY

Engineered for Excellence — Designed for Dependability

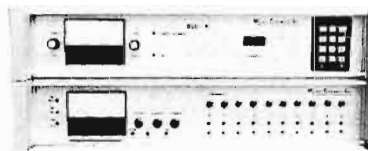


STUDIO-TRANSMITTER LINK (PTS-10/PRS-10)

- 10 Watts RF Output Power
- 2 Watt Monitor Amplifier in Receiver
- Direct Reading Forward & Reflected Power
- Sub Channel Injection Set on TX Front Panel
- "Hot-Standby" Switching Capability
- Compact Modular Construction

OTHER ACCESSORIES FROM MCA:

- PLG-10 Sub-Carrier Generator
- PLR-10 Sub-Carrier Receiver
- TSU-10 Automatic Transmitter Switcher



REMOTE CONTROL (DLC-9/DLT-9)

- Modern "Touch-Tone" Channel Address
- Digital for Command Accuracy & Analog for Telemetry Speed
- Continuous Channel Verification
- Available for Radio or Hard Wire Operation
- Expandable to 19, 29 or 39 Channels
- Expanded Scale Accuracy $\pm 0.2\%$

- RSU-10 Automatic Receiver Switcher
- Antennas, Transmission Line & Fittings



AUTOMATIC TRANSMITTER SYSTEM (ATS)

- Completely Self-Contained Modulation Monitor Built In
- Direct or Indirect Method of Power Sampling & Measurement
- Continuous Monitoring of Power and Modulation
- Selectable Peak Modulation Count on a Per Minute Basis
- LED Display Indicates Over-Modulation Counts Per Minute

MICRO CONTROL ASSOCIATES

P. O. Box 13250 Arlington, Texas 76013
817/265-2911



“Shooting a 2-hour network special with CEI-310 cameras was a real experience.”

Says the well-known director Vincent Scarza: “I’d heard about CEI-310 cameras, but I’d never worked with them.”

Scarza had the opportunity to work with them at ‘The World’s Largest Indoor Country Music Show,’ a 2-hour NBC prime time special edited from 4½ hours of videotape, shot at the Silverdome in Pontiac, Michigan in front of a live audience of 65,000.

Besides directing, Scarza co-produced with executive producer Jim Fitzgerald of Rudy Callicutt Productions. Complete video production facilities and crew were provided by Northwest Teleproductions.

The production involved seven cameras. Four were versions of the CEI-310—two hand-held portables, one portable in a mobile cart, and one studio version.

“I was amazed,” says Scarza, “at the absolutely marvelous pictures



produced by the CEI cameras—even under difficult lighting conditions.

“Maneuverability of the portable units was incredible. My cameramen were able to get fantastic hand-held shots. Since they had 4½ hours of non-stop shooting, light weight was really important.

“All in all, it was a dynamite performance. Anybody who hasn’t worked with the CEI-310 really doesn’t know what they’re missing.”

Isn’t it time you looked at the CEI-310? Call your local CEI dealer now. Or get in touch with Commercial Electronics, Inc., 880 Maude Avenue, Mountain View, California 94043, (415) 969-1910.

Changing the look of field production.

CEI

Directional Antennas

continued from page 62

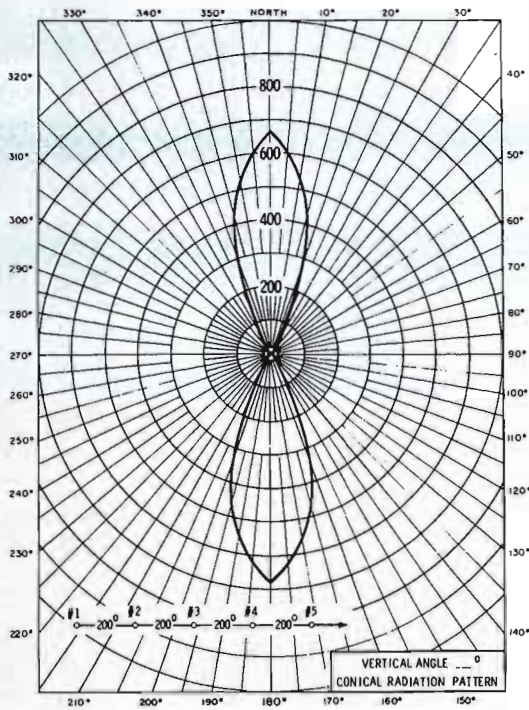


Figure 5

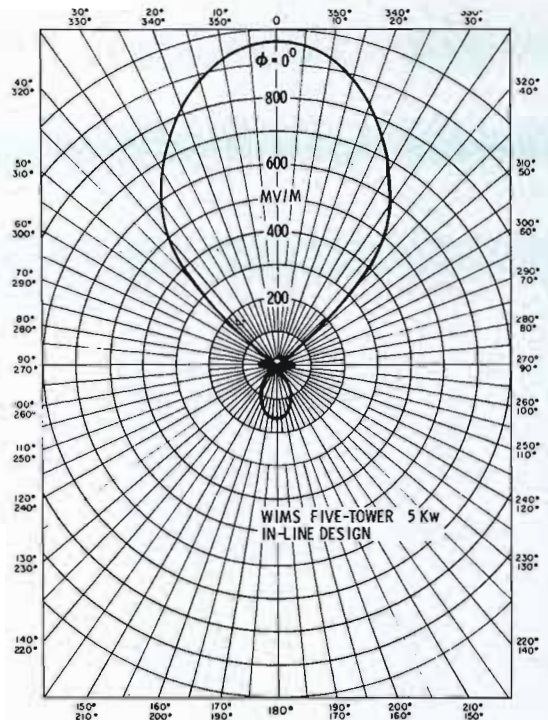


Figure 6

continued on page 68

AUTOOCUE

The Visible Memory Lighting Control System.

AUTOOCUE® is a computerized memory lighting control system of unusual versatility. The system uses a unique combination of computer and video technologies to store, display, control and recall lighting cues for theatrical and television productions.

A professional lighting control system is only as good as its software. Our customer's operating needs change from time to time, and the ability to re-program the AUTOOCUE prevents obsolescence.

If you have a demanding lighting control application, let us tell you how the AUTOOCUE can be tailored to fit your installation.

FOR THOSE WHO DEMAND THE FINEST

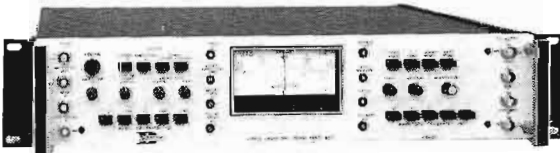
SKIRPAN LIGHTING CONTROL CORPORATION
61-03 32nd Avenue, Woodside, New York 11377 • 212-274-7222
1155 North LaCienega Blvd., Los Angeles California 90069 • 213-657-6383

THE BETTER WAY

Datatek - for television frequency response and envelope delay measurements

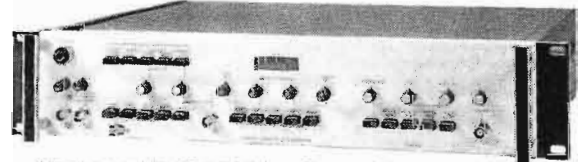
Model D-640

For envelope delay measurements -

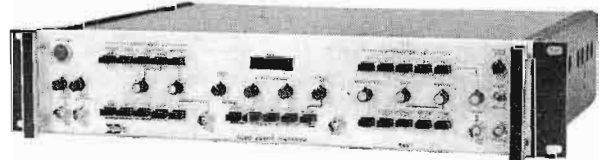


The D-640 is intended for use with the D-630A Video Sweep Generator to provide swept or spot frequency envelope delay measurements. It permits displaying simultaneously on an oscilloscope both amplitude and delay characteristics. Measurements of delay can be made regardless of path length. The D-640 is self calibrating through the use of crystal controlled digital circuits. **ONLY \$2,400.**

For equipment adjustments and performance measurements - Models D-630A and D-631



The Model D-630A Video Sweep Generator is ideally suited for measuring and optimizing station video equipment. It includes comprehensive marker facilities with frequency readout, fixed and variable sweep rates, CW mode and internal as well as external sync and blanking facilities. A color burst adder is available as an option for the D-630A. **ONLY \$2,400.**



The D-631 incorporates all the same facilities as the Model D-630A but additionally includes a detector and calibrated attenuator. **ONLY \$2,775.**

Other Advanced

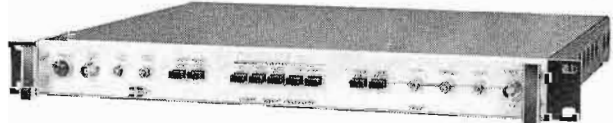
Datatek Products:
Routing Switcher Systems,
TV Transmitter Color Phase
Equalizers and Waveform
Correctors, Video Sweep
Generators, Distribution
Amplifiers for video, pulse,
audio and SMPTE time
code signals

**For More Information,
Write or Call**

D
DATATEK
CORP.

1166 W. CHESTNUT ST. UNION, N.J. 07083 • (201) 964-3656

For use as a station test signal - Model D-629



This Datatek Video Sweep Generator has inputs for sync and blanking to generate a composite video sweep signal synchronous with station pulses. It is used to route video sweep throughout the plant to monitor system frequency response, providing considerably more comprehensive information than a multiburst. **ONLY \$1,700.**

Circle (55) on Reply Card

INNOVATION 78



...the finest most complete line of cameras and broadcast equipment ever offered by one company — Philips.

Philips, with over 3 decades of leadership in cameras, transmitters, turn-key studios, mobile vans, systems, around the world.

Philips, the company that revolutionized color broadcasting in 1965 with the development of Plumbicon™ tube technology and the legendary Philips Norelco PC-60 camera.

Now, presenting the highlights of Philips latest line of innovative equipment as demonstrated to SRO audiences in our NAB "Innovation '78" exhibit:



LDK-25 Camera Family with New Diode-Gun Plumbicons. Our new 1-inch 73XQ Plumbicon tubes and camera circuitry give you *higher resolution and lower lag than 30mm cameras.* Better than

65% depth of modulation at 400 lines! With new

reducing the number of controls to achieve proper group-delay. Small size and minimum floor space are made possible by the advanced design and a unique common exciter which can also be retrofitted into earlier competitive systems. UHF offers a choice of internal or external vapor cooled Klystrons.

VIDEO 80...the Incredible Convertible Camera and Complete Production System for multi-use applications.

Converts to ENG, Field Production, Studio, or Special Applications (telecine, microscope, operating room lamps) with just a change of slide-on view-

finder and plug-in electronics.

Simple to set up and operate because the test features are built-in, with "no compromise" performance. With automatic features for total mobility.

Compact, rugged, lightweight and economical. Designed to go anywhere, do anything. And, Video 80 systems are expandable and compatible with existing equipment for additional cost savings.

LDK-14—New, 2/3-inch ENG/EFP/ Studio Systems Camera has the look and feel of a film camera with the picture quality and performance features of Philips studio cameras.

Features include: Outstanding broadcast picture quality for ENG, EFP, or full studio use. Lightweight, rugged, one piece. Low power consumption. Remote control option. High sensitivity. Dynamic Beam Control (DBC) for hot high-light handling. Fully automatic operation, including auto-centering, and switchable black stretch. 1½-inch and 5-inch view finders for hand-held or tripod use. Full bandwidth chroma key and triax facilities.

One Inch Video Recorders in both "C" and "B" formats to satisfy your requirements. Philips has always offered the widest selection of portable and studio camera systems to best meet your specific applications.

Now Philips expands this same "meet-your-needs" policy to include 1-inch VTR's and time base correctors, with both "C" format (PVR series) and "B" format (BCN series) VTR's in both portable and studio configurations.



Philips wide selection and systems experience provide the greatest objectivity and cost effectiveness in packaging systems to match your requirements.

Also presented at NAB:

The studio performance LDK-11, Field Production Portable and Compact Studio Camera. Full production control either remotely or at backpack. Up to 300' of ½" cable between camera head and backpack.

The LDH-20S, Economy Broadcast-Quality Studio Camera.

A new, versatile Sync Pulse Generator, LDK-4210.

A full line of Test and Measuring Equipment.

Altogether Philips displayed and introduced the widest range of cameras and broadcast equipment at NAB or anywhere else. For complete information write on your company letterhead (indicating product interest) today to:

Philips
Broadcast Equipment
Corp., 91 McKee Drive, Mahwah,
N.J. 07430 (201) 529-3800. (Canada:
Philips Broadcast Equipment, 601 Milner
Ave., Scarborough, Ontario M1B 1M8).



Dynamic Beam Control (DBC) to control hot highlights, as

much as 4 f-stops over peak white. The finest, state-of-the-art multicore studio and field camera system ever produced is now better than ever. Plus, *only* Philips rear-loading design, as in the advanced LDK-25 camera family, can deliver the *maximum* out of this new diode-gun tube technology.

NAB '78 also saw the addition of a new production portable to the LDK-25 family. The compact and lightweight LDK-15L matches the picture quality of either the LDK-25 multicore or LDK-5 digitally controlled triax cameras, enabling it to be used either as a compact studio camera or in the field as part of a multiple camera system. Totally compatible, the LDK-15L can be used with the base station of the LDK-5 or the CCU of the LDK-25.

Philips UHF/VHF Transmitters, famous around the world for high reliability and low operating cost, are now the

most rapidly growing transmitters in North America. Over 37 already installed since introduction to the U.S. and Canada... and over 1000 worldwide.



Transmitter output power range up to 110 kW. Equally suited for single or parallel operation. Designed for unattended operation with automatic or remote control.

Features include: I.F. modulation, solid state design except for power stages. High stability. Ease of installation and maintenance. SAW filter, re-



INNOVATIVE LEADER IN WORLD TELEVISION

PHILIPS

For Literature Only Circle (58) on Reply Card

Directional Antennas

continued from page 64

TABLE 2
FIVE-TOWER FIGURE EIGHT

$$\text{Equation: } E = KR\Theta \left[\left(\frac{1+M_1^2}{2M_1} + \cos(\Psi_1 + S \cos \Theta \cos \phi) \right) \times \left(\frac{1+M_2^2}{2M_2} + \cos(\Psi_2 + S \cos \Theta \cos \phi) \right) \times \left(\frac{1+M_3^2}{2M_3} + \cos(\Psi_3 + S \cos \Theta \cos \phi) \right) \times \left(\frac{1+M_4^2}{2M_4} + \cos(\Psi_4 + S \cos \Theta \cos \phi) \right) \right]^{1/2}$$

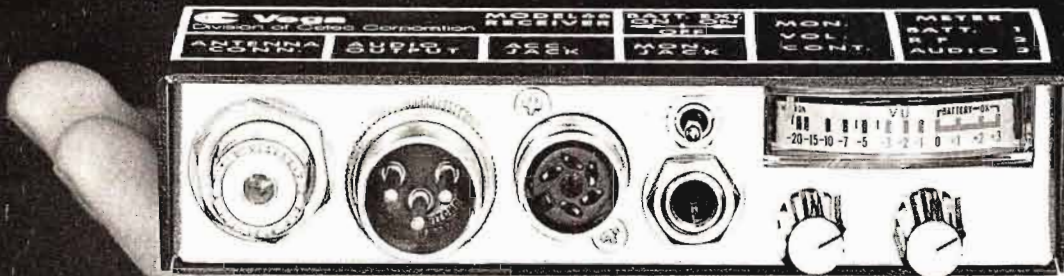
Assumptions: $M_1 = M_2 = M_3 = M_4$, $\Psi_1 = +7^\circ$, $\Psi_2 = -7^\circ$, $\Psi_3 = +38^\circ$, $\Psi_4 = -38^\circ$,
 $S = 200^\circ$, $f(\Theta) = 1.0$, $\Theta = 0^\circ$

A	B	C	D	E	F	G	H	I	J	L	M	N
θ	$200 \cos A$	$B+7$	$1+\cos C$	$B-7$	$1+\cos E$	$B+38$	$1+\cos G$	$B-38$	$1+\cos I$	$D+E+H+J$	\sqrt{L}	$K \cdot N$
0	200.0	207.0	0.109	193.0	.028	238.0	.470	162.0	.048	0.000	0.000	0.0 MV/M
10	196.9	203.9	0.086	189.9	.015	234.9	.425	158.9	.067	0.000	0.000	0.0
20	187.9	194.9	0.034	180.9	.001	225.1	.304	149.9	.135	0.000	0.000	0.0
30	173.3	180.3	0.000	166.3	.028	211.3	.146	135.3	.289	0.000	0.000	0.0
40	153.2	160.2	0.059	146.2	.189	191.2	.019	115.2	.574	0.000	.010	1.8
50	128.5	135.5	0.287	121.5	.478	166.5	.028	90.5	.991	0.004	.061	11.1
60	100.0	107.0	0.706	93.0	.948	138.0	.257	62.0	1.488	0.253	.503	91.5
70	58.4	75.4	1.252	61.4	1.478	106.4	.719	30.4	1.863	2.475	1.573	286.3
80	34.7	41.7	1.747	27.7	1.885	72.7	1.287	-3.3	1.998	8.533	2.921	531.6
90	0.0	7.0	1.993	-7.0	1.993	38.0	1.788	-38.0	1.788	12.698	3.563	648.4
100	-34.7	-27.7	1.885	-41.7	1.747	3.3	1.998	-72.7	1.267	8.533	2.921	531.6
110	-68.4	-61.4	1.478	-75.4	1.252	-30.4	1.863	-106.4	.718	2.475	1.573	286.3
120	-100.0	-93.0	0.948	-107.0	.706	-82.0	1.460	-138.0	.257	0.253	0.503	91.5
130	-128.5	-121.5	0.478	-135.5	.287	-90.5	.991	-166.5	.028	0.004	0.061	11.1
140	-153.2	-146.2	0.189	-160.2	.059	-115.2	.574	-191.2	.019	0.000	0.010	1.8
150	-173.3	-166.3	0.028	-180.3	0.000	-135.3	.289	-211.3	.146	0.000	0.000	0.0
160	-187.9	-180.9	0.001	-189.9	.034	-149.9	.135	-225.1	.304	0.000	0.000	0.0
170	-196.9	-189.9	.015	-203.9	.066	-158.9	.067	-234.9	.425	0.000	0.000	0.0
180	-200.0	-193.0	.028	-207.0	.109	-162.0	.048	-238.0	.470	0.000	0.000	0.0

$$K = \frac{180}{\sqrt{\frac{335.228}{36}}} = 182.0$$

continued on page 70

The Ultimate PORTABLE RECEIVER for wireless microphones



Vega now offers the most advanced portable receiver in the industry. Model 66 provides operation superior to the highly successful Vega Model 67, but in a rugged single unit that is much smaller. (Dimensions: W 5.4" x H 1.3" x D 6.7") Designed for the professional sound user, the 66's compact size makes it suitable for mounting to leading portable recorders, both audio and VTR's. The unit operates from either internal 9V batteries or an existing D.C. voltage source. Contact Vega for complete specifications on this exciting new unit or the Model 67 Portable Diversity Receiver.



Division of Cetec Corporation
P. O. Box 5348 • El Monte, California 91731 • Telephone: (213) 442-0782 • TWX: 910

Circle (57) on Reply Card

BROADCAST ENGINEERING



Scotch® 479
BRAND

SCOTCH IS FIRST IN BROADCAST. GIVE OR TAKE AN INCH.

Scotch® has been state of the art in broadcast videotape for more than twenty years. It's an industry-wide fact that nobody knows tape like 3M.

So when the industry looks at a new format, the industry looks to Scotch.



In broadcast quality one-inch, it's Scotch Master Broadcast 479. 479 has all of the qualities you've come to expect from a tape named Scotch.

Like superior color noise and signal-to-noise. And nobody gives you better RF output.

Scotch Master Broadcast 479.

When you come to that new format, you'll have an old friend.

"Scotch" is a registered trademark of 3M Company, St. Paul, MN 55101 © 1977, 3M CO.

DO YOU NEED A PROC-AMP



PRICE: \$2700 G.P.A. MODEL A-1
U.S. PAT. #4,065,790

TO DISTRIBUTE VIDEO TAPE FOR NON-BROADCAST USE A VIDEO TIME BASE CORRECTOR MAY NOT BE REQUIRED

SIEGEL—ELECTRONICS has designed a Genlocked Processing Amplifier specifically for the problems encountered with 1/4", 1/2", BETA MAX, and 3/4" Cassette systems. With it you can...

1. Reconstruct **clean sync.** to EIA-RS 170, FCC standards.
2. **Correct dark current error** from Vidicon cameras
3. **Correct color errors**, hue and saturation.
4. Do studio type **fades to black**, with burst maintained.
5. Horizontal **Image Enhancement**, Threshold controlled.
6. **Cross-Pulse display**, on ordinary monitor, for setting tape tension properly.
7. **Mix titles** in with simple back pack cameras.

For more information, on purchasing or renting a GPA please write to:

SIEGEL-ELECTRONICS

P.O. Box 66, Ft. Hamilton Station
Brooklyn, N.Y. 11209 tel. (212) 836-6938

Distributors inquiries are welcome

Circle (58) on Reply Card

Directional Antennas

continued from page 68

need compute halfway around the pattern since all in-line designs are symmetrical about their tower lines. Figure 5 is the polar graph of WIMS.

To arrive at the final base current ratios and phases, it is necessary to convert the design values of each two-tower pair to the final tower values. Again the WIMS design is used as the example. It is suggested that you follow the equation shown in Figure 4 to convert individual pairs into final values.

Table 2 is a calculation of a five-tower in-line figure eight array. This type of pattern will achieve the maximum amount of gain off the two ends of the propeller blades. It also achieves very good suppression over a wide arc between the two major lobes.

Figure 6 is a graphical plot of the five-tower plot of Table 2.

Editor's Note: As previously stated, this is the final article in a series by Jones on the basics of directional antenna design. Previous articles in this series may be found in **Broadcast Engineering** as follows: Part 1, p. 46, February, 1977; Part 2, p. 30, April, 1977; Part 3, p. 34, July, 1977; Part 4, p. 59, February, 1978; Part 5, p. 54, May, 1978.

Further design details on antenna configurations covering single antennas through 12-tower systems are included in the *Directional Antenna Handbook* by Robert A. Jones. Copies of this book are available at \$12.95 each from **Broadcast Engineering**, Technical Publishing Division, P.O. Box 12901, Overland Park, Kansas 66212.

Find out what turns on Bay Area FM

for the complete **OPTIMOD-FM** story
see us at Booth 114 at the NRBA
or call (800) 227-4498—in California (415) 957-1067

urban

Orban Associates Inc. 645 Bryant Street San Francisco, CA 94107

KJAZ 92.7 KSAN 94.9 KOIT 96.5 KABL 98.1 KCBS 98.9
KYUU 99.7 KIOI 101.3 KDFC 102.1 KFOG 104.5 KMEL 106.1

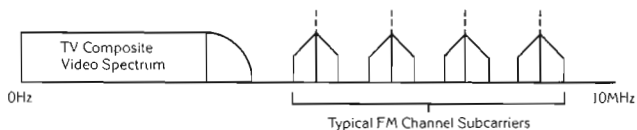
Circle (59) on Reply Card

Tomorrow's super sound. Today's super saver.

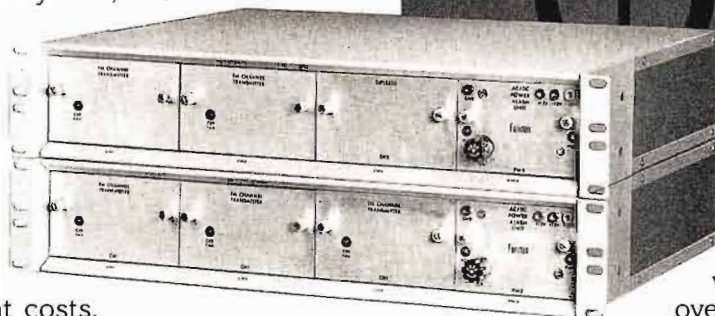
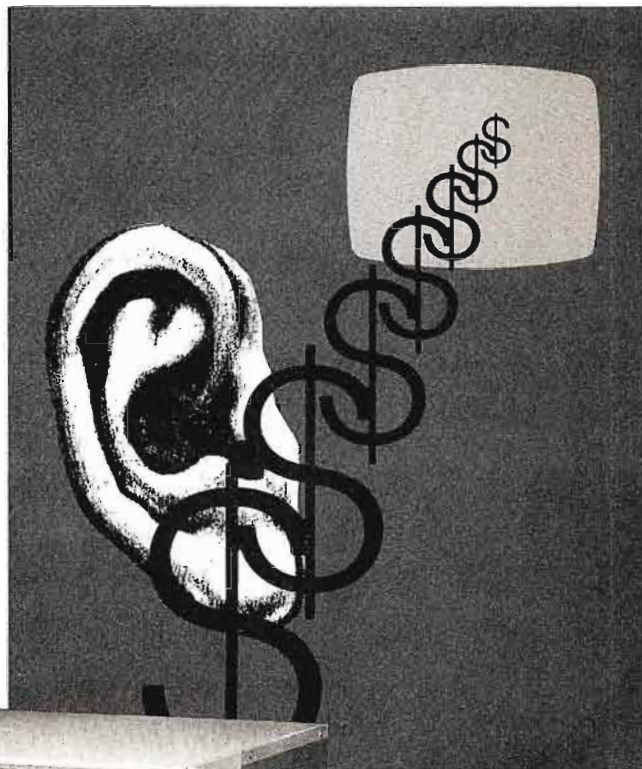
Farinon's new FV43-02 Audio Transmission Channel System is destined to revolutionize TV broadcasting. Because of this unique system, true high fidelity mono or stereo sound for TV can become a reality. And that's only the beginning.

Now by simply integrating the FV43-02 with your video transmission system, you'll realize an immediate savings in equipment costs, maintenance, and overall operations. That's because the FV43-02 eliminates the need for a separate TV audio transmission system. With your video, you'll transmit true high fidelity audio with low noise, low distortion, and a flat response to 15kHz. Superior to any TV sound you've ever heard.

Here's how it's done: The FV43-02 utilizes a portion of the spectrum immediately above the video for simultaneously transmitting/receiving up to five separate audio channels over an FM subcarrier frequency range of 5.8 to 8.59MHz. That means your video sys-



tem can not only handle TV stereo sound, but also a separate FM stereo broadcast station and a separate AM broadcast station simultaneously! How's that for flexibility and economy.




To prove its worth, more than 2000 Farinon systems like the FV43-02 are already in use by telephone companies for video/sound transmissions over microwave and cable. It's Bell-compatible and meets or exceeds CCIR and EIA standards.

With its standard interfacing, the FV43-02 is simple to install. And after initial performance checks, there are no controls to adjust. What's more, it's backed by Farinon's vast engineering experience and after-the-sale service.

For TV studio-to-transmitter-links and intracity relays, satellite transmissions, or head-end CATV, the revolutionary FV43-02 deserves to take a bow. Get in the act and find out more about tomorrow's super sound and today's super saver.



The Farinon Companies 
Circle (60) on Reply Card

U.S.A.: 1691 Bayport, San Carlos, CA 94070
Phone: (415) 592-4120, Telex: 34-8491

Canada: 657 Orly Ave., Dorval, PQ H9P 1G1
Phone: (514) 636-0974, Telex: 05-82-1893

Maximizing subcarrier deviation during simultaneous stereo transmission

Part 2

By James Tonne

Part 1 of this 2-part series appeared in the August, 1978 issue of **Broadcast Engineering**, page 42.

It should be pointed out at this time that the post-limiting filter may be located inside the subcarrier generator; some SCA generators have provision for plug-in filters. By the same token, some limiters have plug-in output networks, and insertion of the correct network will do

the job. It is equivalent electrically to locate the filter in either location.

There will be a treble rolloff due to this filter. That rolloff can be corrected (fully, at low modulation levels) by boosting the upper audio frequencies prior to or within the

continued on page 74

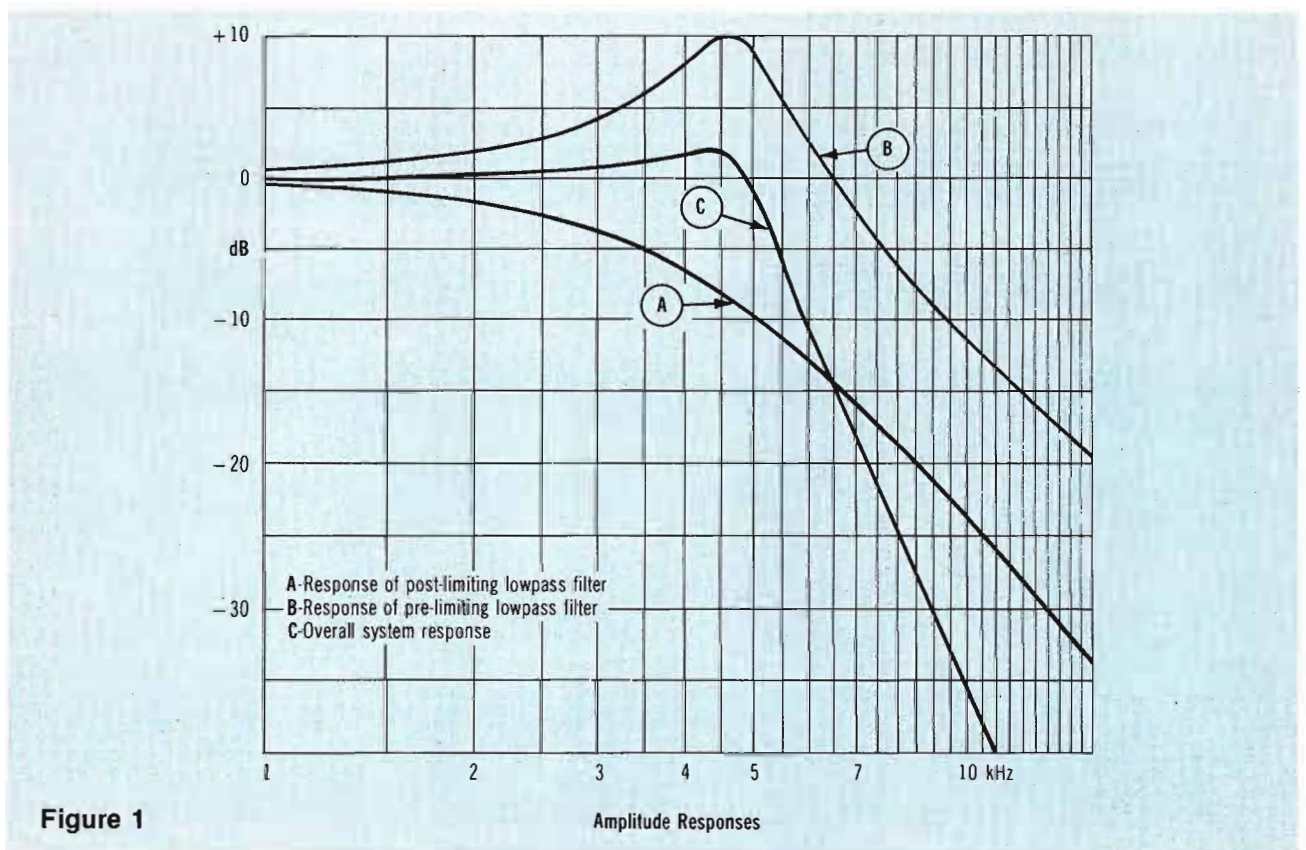


Figure 1

Amplitude Responses

SATICON^{®*} knocks the lead out of ENG cameras.

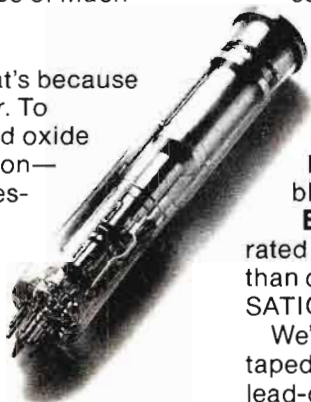
SATICON broadcast vidicons give you everything lead-oxide types deliver—and more. They have the sensitivity and low lag you need in ENG. Plus far superior resolution. And the promise of much longer life.

Let's take these points one at a time.

Resolution: up to 60% better. That's because SATICON modulation is 40-60% better. To approach the same resolution with lead oxide you have to increase aperture correction—which produces objectionable noise, especially in the red channel.

Longer life expectancy. Compare SATICON and lead-oxide warranties and you'll see how confident we are. Ours is spelled out in calendar months—regardless of how many hours of operation. Theirs is limited to a certain number of operating hours.

Consistently high sensitivity. The SATICON has a very narrow range in sensitivity from tube to



tube. And the lowest-sensitivity SATICON tubes are higher than the lowest-sensitivity lead-oxide tubes. Its R/G/B designation was set to optimize camera sensitivity: tubes don't need special doping for good red response, and tubes can be interchanged in any channel without serious degradation.

Low lag. The bias light that you use in ENG makes SATICON lag as good as lead oxide. Maybe better, since there's less of the long-tail blue lag that you often get with lead oxide.

Excellent temperature stability. SATICON is rated to 148° F for short operating periods—higher than camera ratings. Over long or short periods, SATICON has the stability you want.

We'd like you to see the difference. RCA has videotaped a side-by-side comparison of SATICON vs. lead-oxide performance. For a no-obligation showing at your station or for more information, contact RCA BC Tube Marketing Manager, New Holland Avenue, Lancaster, PA 17604. Or call (717) 397-7661.

*Used by permission of trademark owner.

RCA

Circle (61) on Reply Card



THINKING VIDEO? THINK CAMERA MART.

Because at Camera Mart, we feature an entire line of video equipment including Ikegami, Hitachi, Panasonic, Sony, Microtime and many others. For example, consider our Ikegami package, complete with HL-77 high sensitivity Plumbicon®* shoulder camera, Canon f/1.6 wide-angle 10-100mm zoom and Sony VO-3800 U-Matic recorder.

This custom package, or whatever you need in video, including Microtime-base correctors, are all available for sale, rent or through convenient lease-purchase options—arranged to suit every budget. In fact, practically any special package or purchase option you need can be arranged at Camera Mart.

So when your thoughts turn to video, turn your attention to Camera Mart. Whether you're planning to rent or buy, we've got what you need.

*Plumbicon is a registered trademark of N.V. Philips.



Camera Mart
40 years of excellence.

THE CAMERA MART, INC.
456 West 55th Street, New York 10019
(212) 757-6977 / Telex: 1-2078
Sales • Service • Rental

Circle (62) on Reply Card

Subcarrier deviation

continued from page 72

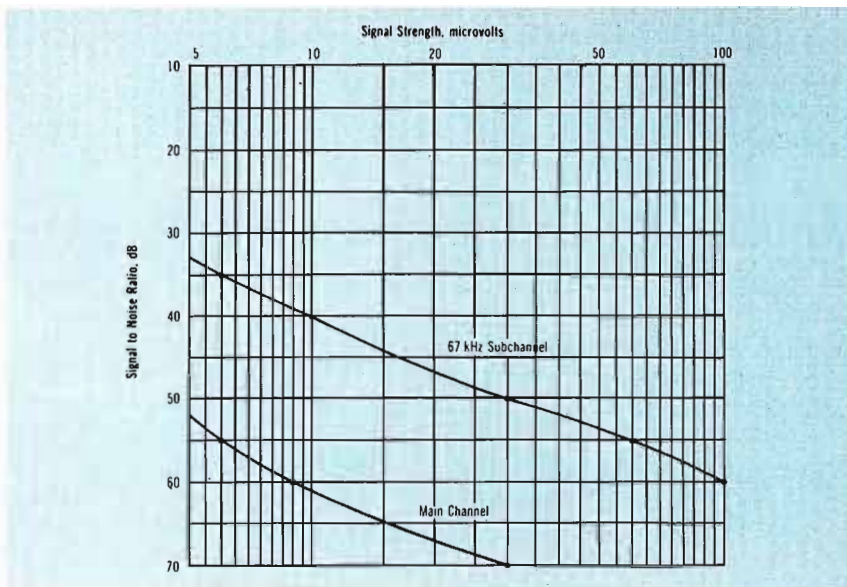


Figure 2 Typical quieting of SCA receiver.

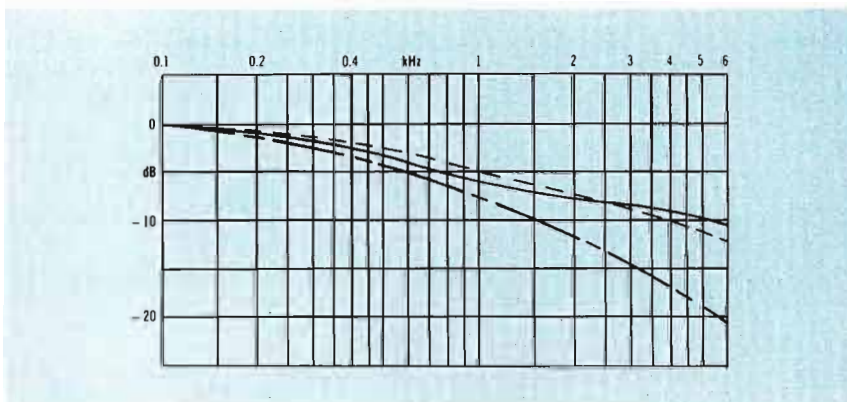


Figure 3 Frequency responses of available SCA receivers. SCA generator used precision 150-microsecond pre-emphasis.

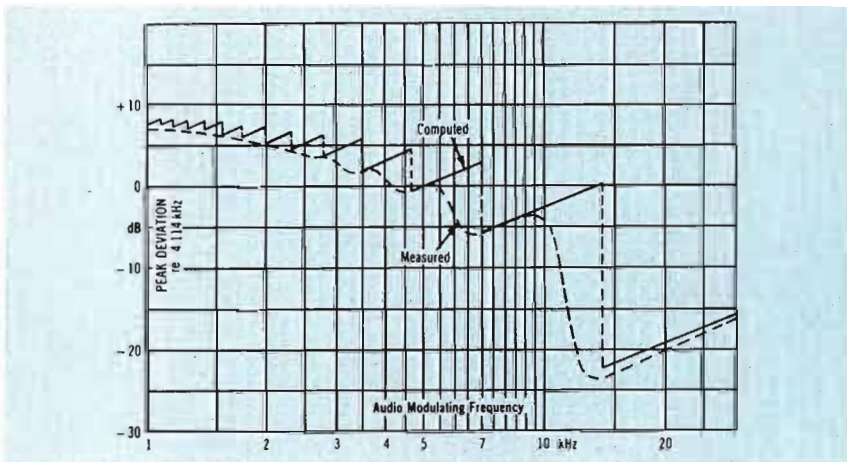


Figure 4 Maximum allowable deviation of 67kHz SCA subcarrier during stereo transmission.

continued on page 76



Some people buy us for our fader

because ours is better than any you can buy elsewhere. Ours has all the features you need, like smooth action, accurate tracking, long life and low noise, plus a full 85 dB attenuation. And ours is coffee proof. It's just one more reason an Auditronics mixer is a better investment for the long haul. To learn more, circle reader service number or write to us for complete information.



It's coffee proof

auditronics, inc.

3750 Old Getwell Road, Memphis, Tennessee 38118 / (901) 362-1350

Circle (63) on Reply Card



Your radio programming at a glance... in English!

With BASIC A, you program with real words on a standard keyboard—and see 'em all on a CRT! BASIC A's unique memory management concept lets you *label* a group of several commonly used schedule entries—so that only *one* entry is needed to summon the group! As a result, the standard 4,000-entry memory will give you all of the capacity you are likely to need. But as you grow, so does BASIC A (up to 16,000 entries). There's much more to BASIC A...ask for the 4-page brochure which tells the whole story.

BASIC A
—the complete one



IGM

A Division of NTI
4041 Home Road
Bellingham, WA 98225
206-733-4567

Circle (64) on Reply Card

Subcarrier deviation

continued from page 74

limiter. If the audio applied to the limiter is preceded by a network whose frequency response is as shown in Figure 4 trace B, then the overall system response at levels below the limiting threshold(s) will be as shown in Figure 4, trace C.

When the limiting and filtering system (as described) is installed, there will be found to be no need for any other audio lowpass filtering in the SCA generator. Indeed, such filtering may be detrimental to the transient response of the subcarrier deviation-controlling system, allowing overmodulation on a transient basis.

If such a filter is available at no additional cost (e.g., as a byproduct of altering the SCA generator), then it may be installed ahead of the limiter (if of a suitable impedance). In this position it may remove noise which might be on the program source as well as removing high-frequency pilot tones, if present.

Under normal circumstances, however, such filtering is of dubious utility.

This particular system of limiting and filtering offers the promise of generally maximized modulation capability of the SCA subcarrier while transmission is in a stereophonic mode. Program signals with an abundance of energy in the 0 kHz region will tend to operate the first section of the limiter, however. In addition, observe that the post-limiting lowpass filter will set a frequency-dependent ceiling on the subcarrier modulation capability. As a result, only 2 kHz maximum subcarrier deviation can be obtained at a modulating frequency of 5500 Hz. Listening tests have shown that this is of minimal importance. At slightly lower modulation levels the system response is flat.

If the limiter output is set so that the subcarrier is deviated 4 kHz

continued on page 78

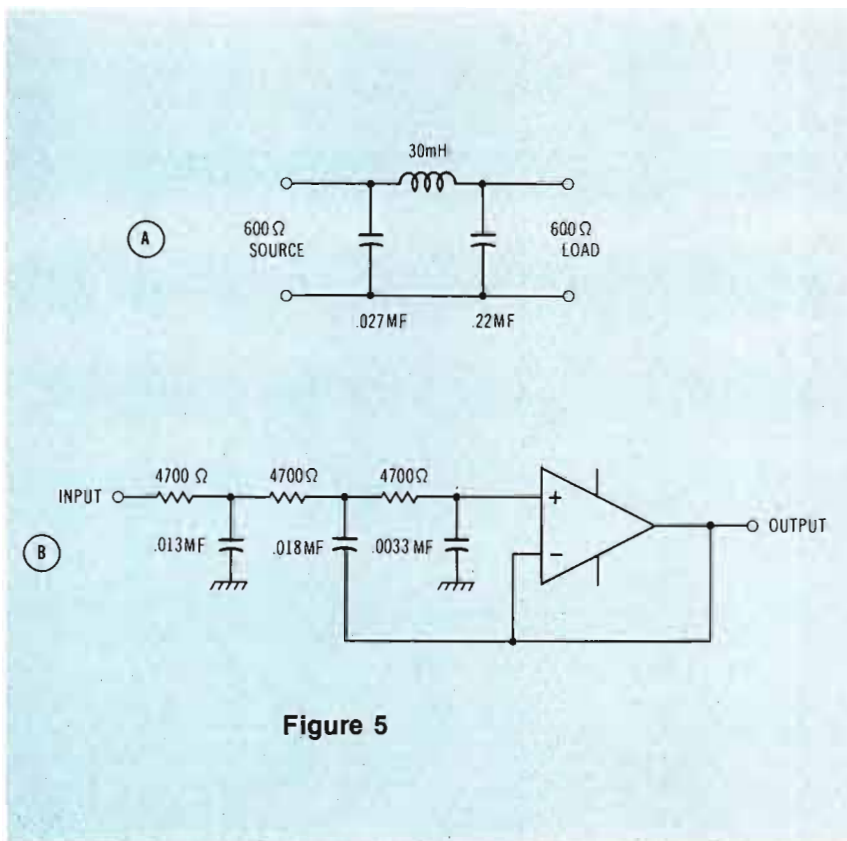
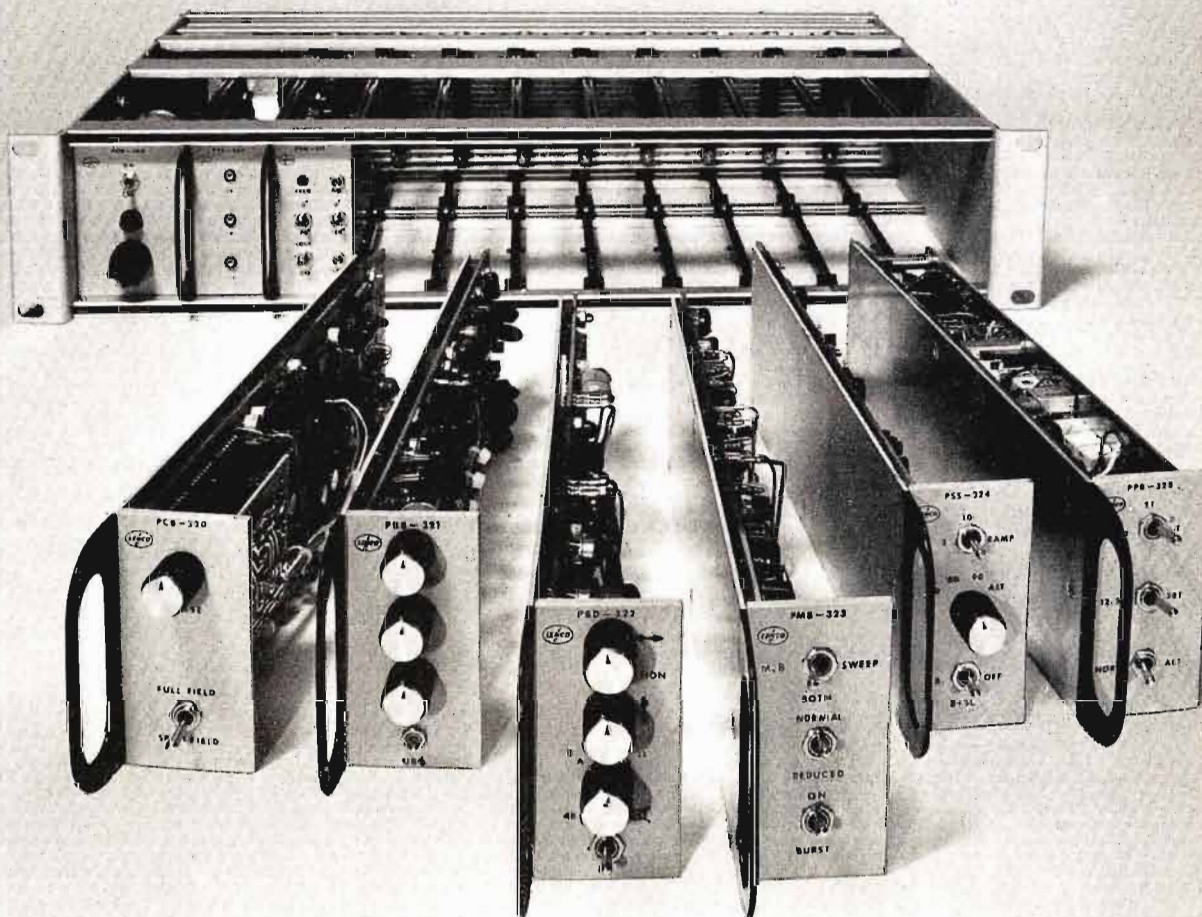


Figure 5

Introducing the you-name-it, you-got-it video test set.



Here, finally, is a totally integrated modular video test set designed specifically for professional use. Lenco's 300 System lets *you* specify video test signals to meet *your* system requirements, not the manufacturer's.

Use the Lenco PSG-310 Digital Color Sync Generator, or one of your own generators, with any one, a combination, or all of the test modules. Mix 'em or match 'em any way you want. There are 29 test signals available to answer *all* of your system test specifications.

And with the Lenco 300 System, you get a lot more for a lot less. For instance, all of our

advanced test signal modules have composite video delay, making Lenco the *only* manufacturer that can *individually time* the test signals to your system.

You won't have to wait to find out how much better the 300 System test set is, either. We'll deliver it to your studio within two weeks. And we're so sure of your acceptance of Lenco equipment that we offer a *two-year* warranty on all parts and labor—and that includes freight to and from our factory!

Call or write for a demonstration today. You'll find Lenco to be your first — and only — video test set alternative.



**LENCO IS LOOKING FOR VIDEO
DESIGN ENGINEERS. CALL BRUCE BLAIR
(314) 243-3147.**

LENCO, INC., ELECTRONICS DIVISION

300 N. Maryland St., Jackson, MO. 63755, (314) 243-3147 / 13670 Littlecrest Dr., Dallas, TX. 75234 (214) 241-0976 / P.O. Box 301, Atchison, KS. 66002, (913) 367-1146

Some things are easily broken...

...not the CO90!



The CO90 miniature condenser microphone was designed by engineers who understand the "real world" requirements of a studio microphone. They've included things like cable assemblies that can be easily and inexpensively replaced in the field. But the CO90 has one feature that no other manufacturer can offer — the Electro-Voice warranty.

Electro-Voice backs up the CO90 with the only two-year unconditional warranty in the business. That means Electro-Voice will repair or replace your CO90 when returned to Electro-Voice — no matter what caused the damage.

Electro-Voice can offer that type of warranty because the CO90 was designed to withstand the rigors of professional use. If your application demands a miniature condenser microphone that can take less-than-gentle treatment, the CO90 is the one you should buy.

EV **Electro-Voice**
a gulton company

600 Cecil Street, Buchanan, Michigan 49107

Circle (66) on Reply Card

Subcarrier deviation

continued from page 76

peak at a modulating rate of 3500 Hz, then nearly 8 kHz peak deviation will result at low modulating frequencies. It is this capability that offers a significant increase in the loudness of the audio as delivered from the subcarrier receiver.

In the system as described, nothing has been done to attempt correction of the subcarrier receivers' rolled-off, upper-end audio response. This can be done if the pre-emphasis in the high-frequency controller in the limiter has a greater than 6 dB per octave slope. It must be mentioned at this point that a high-frequency controller of the clipping type should never be used for 150 microsecond service: difference-frequency intermodulation distortion will be extreme.

For those who wish to construct their own filters, appropriate schematics are shown in Figure 5 (for the post-limiting filter) and Figure 6 (for the pre-limiting filter). Both passive (inductor - capacitor)

and active (opamp - capacitor) versions are shown. The two versions of each filter are identical in performance, in spite of tales by the ignorant swallowed by the gullible.

Figure 7 illustrates the total concept as presented.

A step-by-step installation would then be as follows:

1. Prior to the limiter, install the response-correcting lowpass filter, whose response is shown in Figure 4, trace B. Either of the circuits shown in Figure 6 will be satisfactory.

2. Use an FM-type (frequency-conscious) limiter, set up for 150-microsecond pre-emphasis. Do not use de-emphasis on the output of the limiter.

3. After the limiter, install the spectrum-shaping lowpass filter, whose response is shown in Figure 4, trace A. The circuits shown in Figure 5 are suggested. Some limit-

continued on page 80

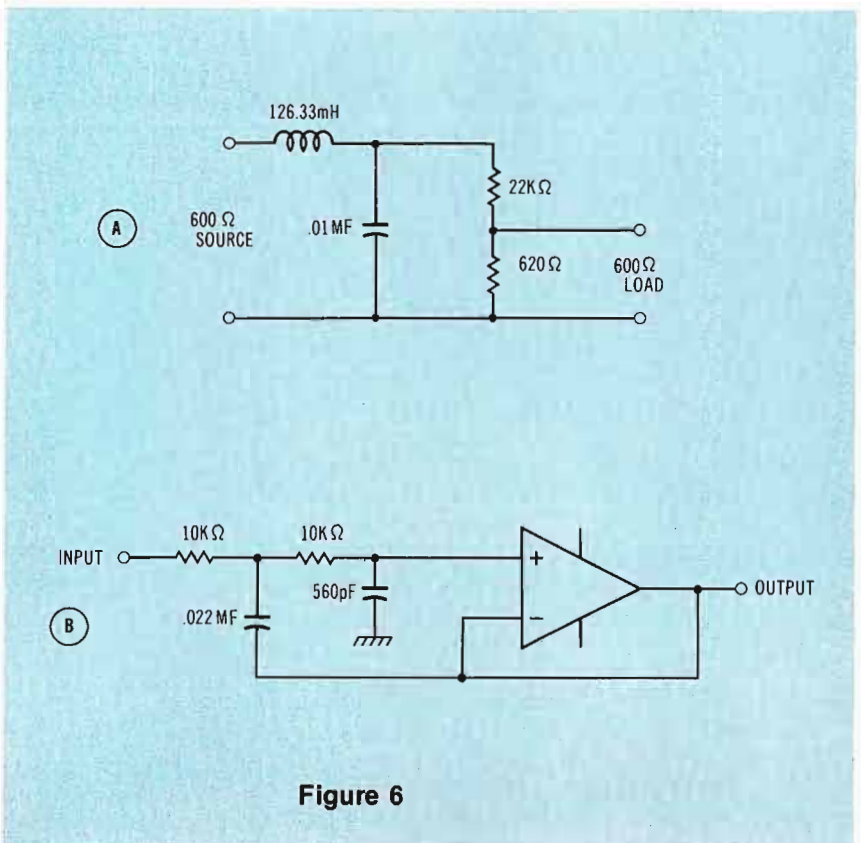


Figure 6

Better video—digitally— for any TV standard

PAL/SECAM

PAL-M



CVS-517 Digital Time Base Corrector

Broadcast quality (SECAM optional), L. Lock and V. Lock. SECAM option also provides PAL/SECAM bi-directional standards conversion. Features: 2h + window, Gen Lock, DOC, Vel Comp, Proc Amp. Options include: SECAM, Image Enhancer/Noise Reducer, 16h window.



CVS-515 Digital Time Base Corrector

Broadcast quality; has NTSC to PAL-M standards conversion. Features: 2h+ window, Gen Lock, DOC, Vel Comp, and Proc Amp. Image Enhancer/Noise Reducer and 16h window optional.

NTSC



CVS-510 Digital Time Base Corrector

Ideal for CCTV and CATV; monochrome or heterodyne color. Features include: 1h + window, DOC, Proc Amp, Color Interlace.



CVS-504B Digital Time Base Corrector

Broadcast quality, monochrome, direct and heterodyne color, (L. Lock and V. Lock). Includes: 3h window, Gen Lock, Proc Amp. Options: Vel Comp, Heterodyne Phase Corrector.



CVS-516 Digital Time Base Corrector

Broadcast quality, specifically designed for heterodyne VTRs. Features: 2h+ window, Gen Lock, DOC, Vel Comp, Proc Amp. Options: Image Enhancer/Noise Reducer, 16h window.



CVS 310 Image Enhancer/Noise Reducer

Reduces luminance & chroma noise 6 dB; enhances horiz. & vert.; minimizes fine grain noise, moiré & streaking; reduces chroma-to-luminance crosstalk by 20 dB; corrects chroma/luma delay errors.



CVS-520 Digital Time Base Corrector

Broadcast quality for every VTR: segmented or nonsegmented. Only TBC with 9 bit 4x subcarrier digital processing. Can update mono quad to color; has DOC, line-by-line Vel Comp and digital outputs.

EPIC™ Computer Aided Editor

A complete, software-based system for on or off-line use with multiple VTRs—from quad and 1" to 3/4" cassette types. With EPIC, functions that, before, required separate, costly hardware—like time code generation—are now in software. As a result, total system cost is reduced while versatility and convenience are increased.

Want to know more about TBCs?

Ask for our free booklet, the "What, Why and When of Time Base Correction."



Consolidated Video Systems, inc.

U.S. Headquarters 1255 E. Arques Avenue Sunnyvale, California 94086 Phone: (408) 737-2100 Telex: 35-2028	European Office 293 Regent Street London, W1V2HR England Phone: 636 3850 Telex: 268316
---	---

Circle (67) on Reply Card

CVS is making digital technology work for video users worldwide. To keep up to date on our new product developments call or write.

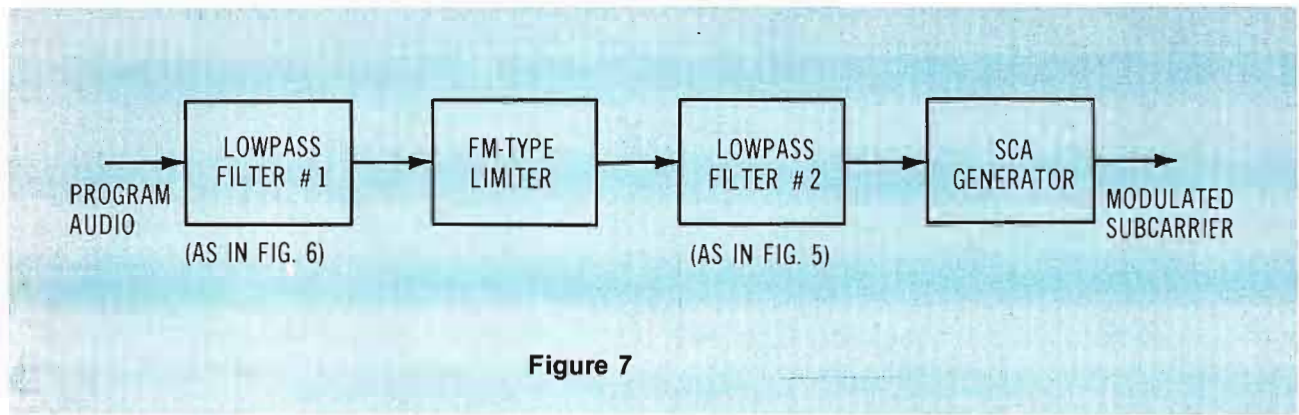


Figure 7

Subcarrier deviation

continued from page 78

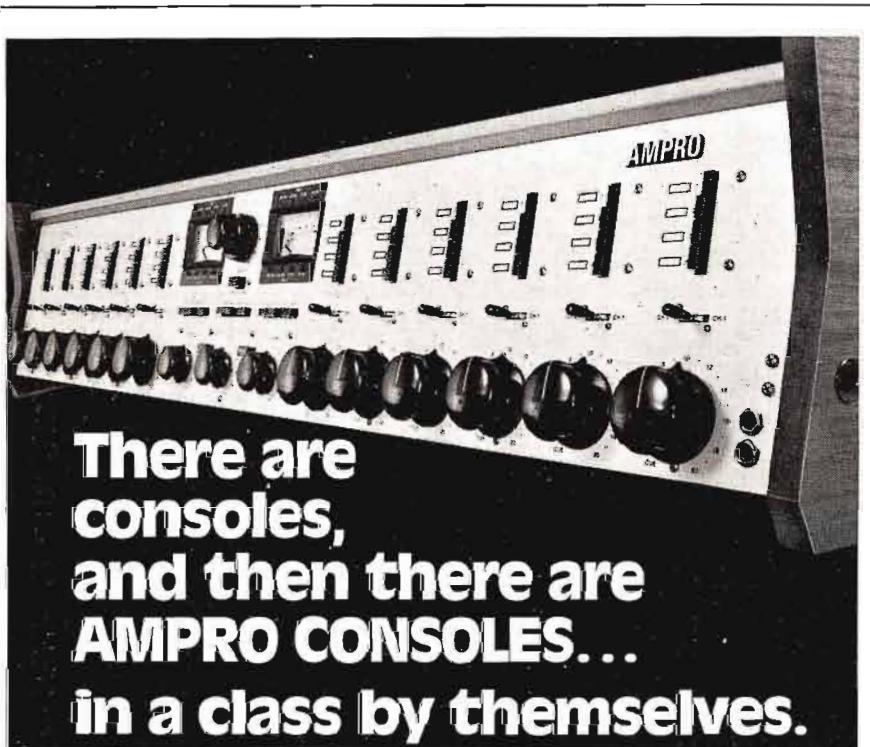
ers have provision for plug-in output networks; if so, the filter is installed at that point. Or that filter can be installed in the SCA generator.

Operate the SCA generator without pre-emphasis and without the customary (or at least common) 5 kHz lowpass filter. Such filtering, although useful in some other circumstances, is of no particular benefit in this system.

5. Adjust the limiter's input level control for the desired degree of limiting, perhaps 5 to 10 dB on peaks of frequent recurrence. Set the limiter's output level control for a subcarrier deviation of 4 kHz at a modulating rate of 3.5 kHz. Under these circumstances the subcarrier deviation will approach 8 kHz at the lower audio frequencies. If this is in excess of what the monitor can handle, reduce the limiter's output level control until the monitor can accept the deviation, which in some cases may be as little as 7.5 or even 6 kHz.

6. While monitoring the stereophonic subchannel with the stereo monitor metering switch in the L-R or subchannel position, sweep the audio oscillator feeding the SCA system from 50 Hz through 15 kHz to demonstrate that there is no crosstalk into the stereophonic subchannel or the main channel, as a result of modulating the SCA generator.

When this system is installed it will be found that the heavier deviation of the SCA subchannel will enhance the signal-to-noise ratio of the SCA system, with a minimum of audible byproducts. □



Dollar for dollar no other console offers you as many operational features as AMPRO. And that means your job is easier because you can control a myriad of functions right at your fingertips. *Standard* features included in 6 to 12 mixer models...

1. **FOUR INTERLOCKED PUSHBUTTON SWITCHES** per input channel allows selection of up to 48 individual sources.
2. **FOUR LEVEL LED "STRETCHED PEAK" INDICATORS** on each output channel in addition to two standard VU meters.
3. **REMOTE START SWITCHING** for all high level inputs.
4. **PHASE TEST SWITCH** for immediate audible check of mono sum signal.
5. **BALANCED TRANSFORMER** preamps on all mic and high level inputs.

Don't settle for less than Ampro perfection. Take a closer look for yourself. Send for a FREE brochure on CONSOLES today!



AMPRO BROADCASTING INC.

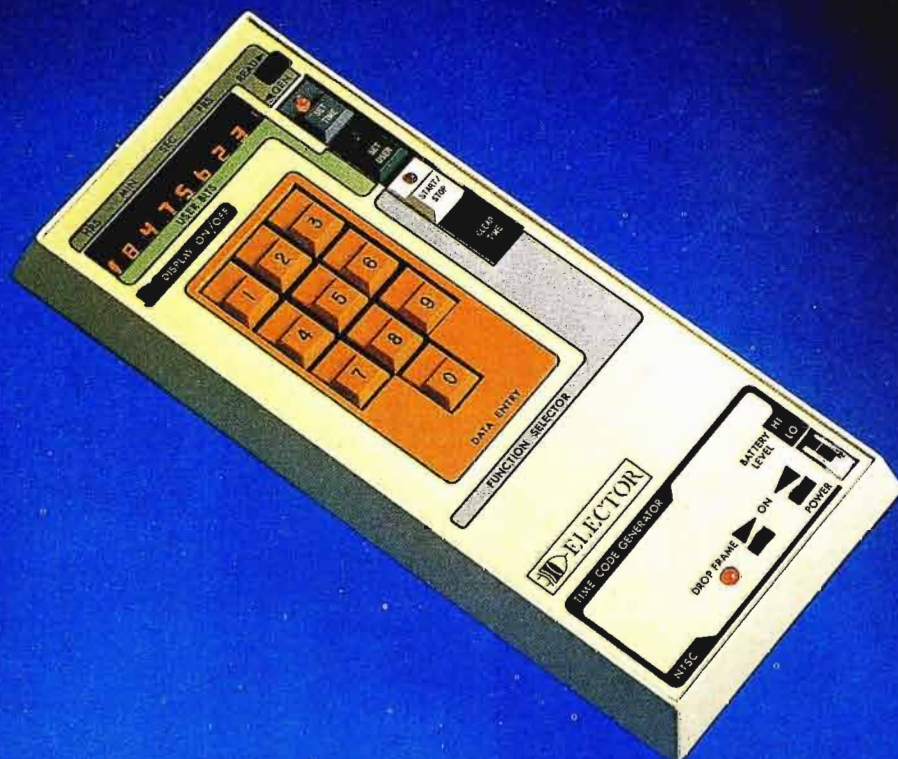
850 PENNSYLVANIA BLVD., FEASTERVILLE, PA 19047 • (215) 322-5100
Professional Equipment for Broadcasting Professionals

VISIT US AT BOOTH NO. 125, NRBA SHOW

Circle (68) on Reply Card

Electro

introduces the first completely portable
SMPTE/EBU Time Code Generator.
(Including keyboard entry of user bit data)



It works with you wherever you go.

The Electro TCG Mk III portable Time Code Generator creates a whole new era of video production techniques with its compact, lightweight flexibility.

Measuring only 9" long, and weighing less than three pounds, the TCG Mk III runs for up to 16 hours at a time on its rechargeable batteries.

Equipped with a belt harness carrying case, or optional desk-top stand, the TCG Mk III is equally versatile out in the field or inside the studio, utilizing the battery eliminator.

Available in either NTSC, PAL or SECAM configurations, Electro's TCG Mk III works with you wherever you go in the world. An integral play-speed Time Code Reader is available as an option.

Ask us for full details and the name of your nearest distributor.



Electro & Optical Systems Limited, 3015 Kennedy Road, Scarborough, Ontario, Canada M1V 1E7. Tel: (416) 291-4492.
Telex: 065-25431.

Circle 891 on Reply Card

Increasing power-grid tube life in FM broadcast transmitters Part 2

By Warren Schulz, chief engineer, WFYR-Chicago

*This article concludes a two-part series which began in the August, 1978 issue of **Broadcast Engineering**, page 58.*

New tube procedure

After you have completed the vacuum-tube logbook entry for a new vacuum tube, you are ready to place it in service. Unfortunately, the only "tube tester" you have is the transmitter. Several precautions should be taken before you attempt full-power operation with a new tube. First, operate the new tube for about 30 minutes at full-rated filament voltage only. While this time is passing, check the grid current meter. Since most transmitters have bias applied when the filament is on this, it is a good chance to check for a possible internal grid short. Of course, the grid current meter should read zero provided no RF is applied. If RF is applied you will see a normal and stable reading.

After the 30 minutes you are ready to apply voltage. Star with the stage's power control at its lowest point. Advance the control so that the tube is operating at about 50% of its normal plate current level. Continue this reduced voltage/power operation for about 15 minutes. After 15 minutes of stable operation you are ready to operate the stage at normal level.

If these precautions are not followed, you may find that a gas formation will cause a flashover. While the internal flashover may not harm the tube, it can cause failure or related circuitry to the tube. This break-in procedure should be followed any time a vacuum tube has been out of service for more than three months.

Can you run a hot standby transmitter?

Probably not. I attempted to operate a Harris FM10H3 transmitter in the filament "on" condition continuously. After about three weeks with filament on a new 4CX300 tube, it was rendered useless. After some discussion with Bill Massey, then service manager at Harris, I received a very reasonable answer as to the cause of the failure. The explanation was that when the oxide cathode is at operating temperature, metallic barium is being evaporated from the cathode and being deposited on cooler surfaces of the inside of the tube.

When only the filament voltage is applied, the coolest part of the tube is the ceramic cylinder forming the insulation between the plate and screen. This metallic plating on the inside surface of the ceramic increases the plate capacitance to the point that the tube will no longer function at VHF frequencies. It was interesting to note that after the first week of filament "on" condition, the transmitter power output dropped when the plate was turned on. However, it was possible to restore normal parameters by retuning the IPA plate circuit. By the second week it was impossible to restore normal readings by tuning the IPA tank circuit.

It was Massey's suggestion that the filament voltage be reduced to between 5.2 and 5.5 volts for the 4CX300. He felt that the 6.0-volt level specified by the manufacturer was a compromise between best tube life and acceptable warm-up time. It then would be practical to use a lower filament voltage, providing the warm-up time was not a factor when operating the tube in a continuous manner. However, even with reduced filament voltage, it was indicated that it would be desirable to operate the transmitter frequently so that the barium would be driven off the insulator surfaces. After ruining several new and used 4CX300 tubes in attempting to operate a hot standby transmitter, I gave up. I did reduce the filament voltage to 5.2 volts. As of this date it has resulted in at least double the tube life for the 4CX300 IPA.

Physical maintenance

For the external-anode power-grid tube, it is a good practice to wash the external anode in soap and water. The tube should be rinsed in clear water to remove any soap film. The insulating surfaces should be clean and free of any foreign matter. Keeping the fins clean can be assisted by a compressed-air. The tube socket should be kept in good condition.

continued on page 86

MICROTIME — Select Your Technology

If you are in the market for video signal processing equipment that will produce the best possible pictures — then look at MICROTIME. We can provide you with the complete range of video correction products for Time Base Correction, Image Processing, Noise Reduction, Color Correction, Velocity Correction, and Dropout Compensation using the technology that does it best.

Digital



2020 Electronic Signal Processor

Digital signal processor for any VTR. Provides 58 dB signal-to-noise ratio, Auto-Trac 2, Velocity Correction, and Image Processing which provides 3 dB visual noise reduction. DOC, Line Error Detection and 24 H line correction range options are available.

2020 Plus Total Signal Corrector

The most comprehensive signal corrector to process a signal from any video source. Provides Velocity Correction, Image Plus Processing, Auto-Trac 2, and 58 dB signal-to-noise ratio. Line Error Detection, 24 H line correction range, and DOC available.

1020 Time Base Corrector

Sensible time base correction for non-segmented helical scan VTRs. Low cost and high performance are featured with 4 H line or 24 H line correction range, internal sync generator, optional Image Processing, DOC and Velocity Correction.

CCD



1600 CCD Time Base Corrector

Lightweight, portable TBC designed for broadcast quality Electronic Field Production and other applications where 3/4" VTRs are used. Incorporates charge-coupled device technology to provide low cost and excellent performance. Includes 55 dB signal-to-noise ratio, 4 H line correction range, Auto-Trac 2 and optional Image Processing.

Image Processing

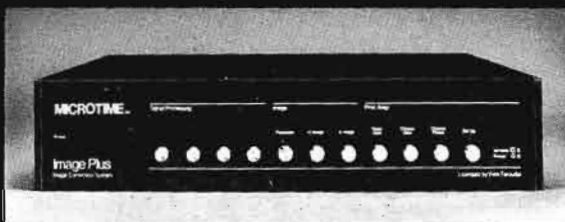


Image Plus Correction System

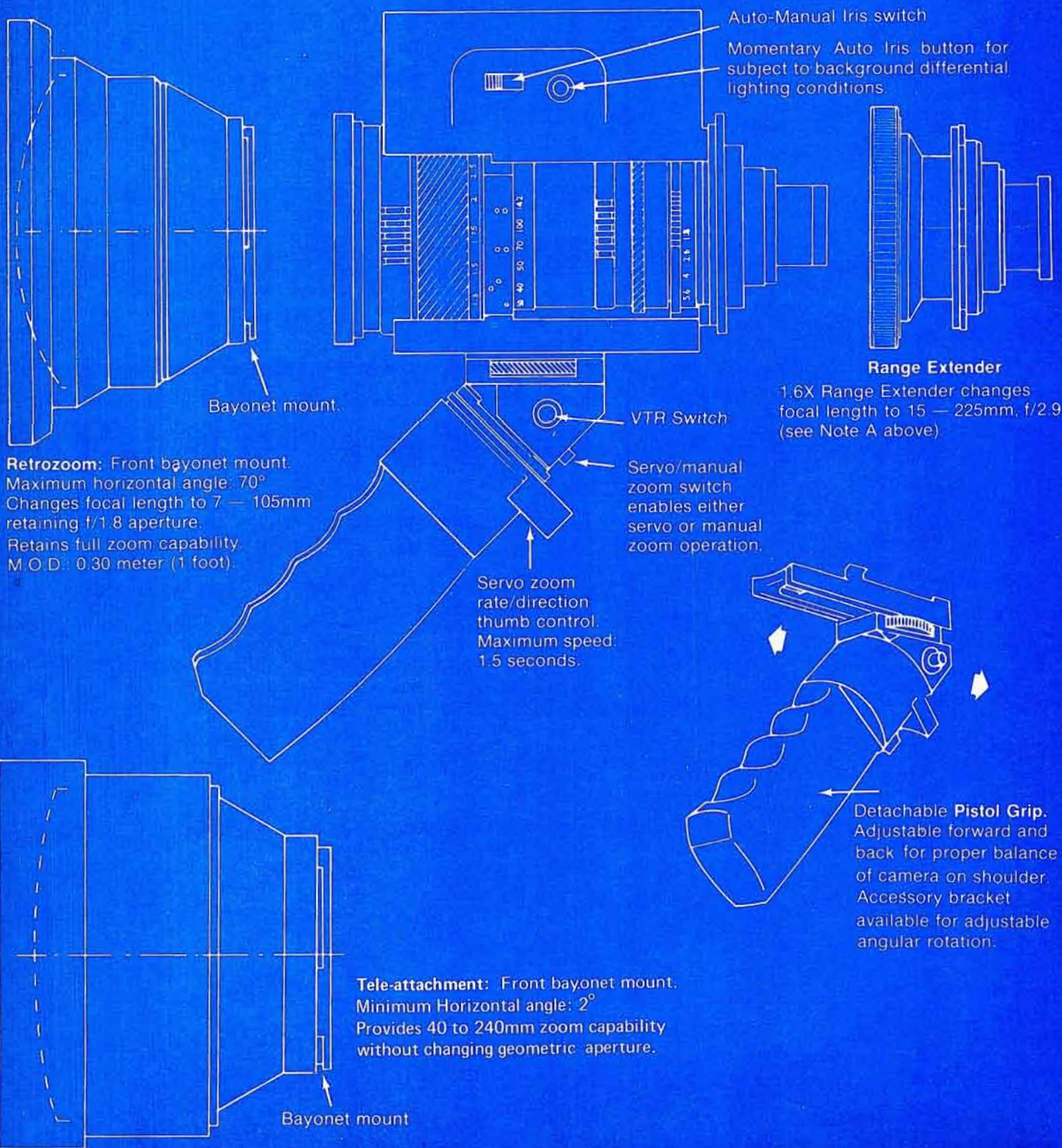
Provides horizontal and vertical detail improvement, reduces luminance and chrominance noise by 6 dB, corrects group delay errors and reduces chroma hue shift and cross color errors to improve any signal.

Microtime, Inc.
1280 Blue Hills Avenue
Bloomfield, Ct. 06002
(203) 242-0761 TWX 710-425-2390

Circle (70) on Reply Card

MICROTIME

How angenieux's advanced 15x system provides extraordinary quality and performance



Range Extender

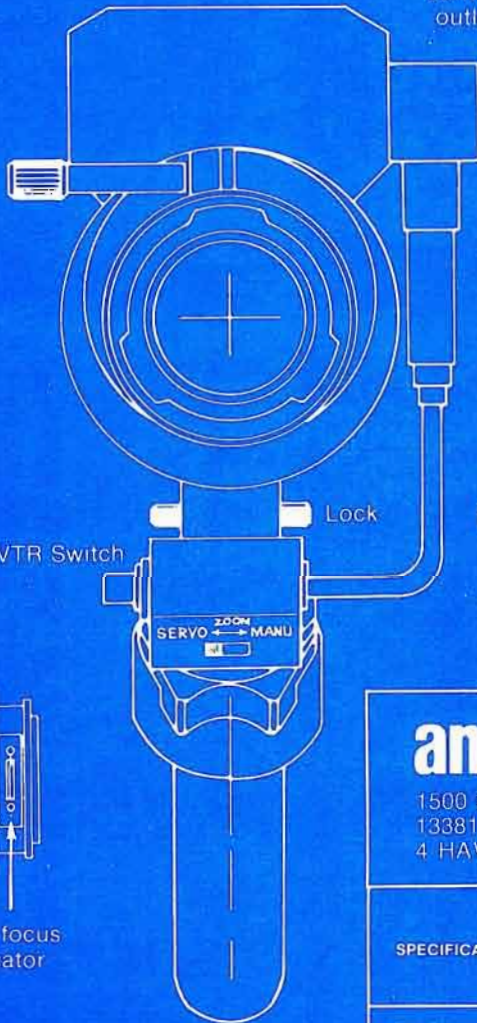
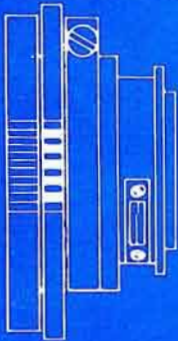
Note A

Second Range Extender (1.6X) may be mounted in tandem providing 2.56X factor, changing focal length to 25 — 365mm, f/4.6



Accessory Focus Control outlet available to accept flexible cable for manual focus hand control.

Rear Mount

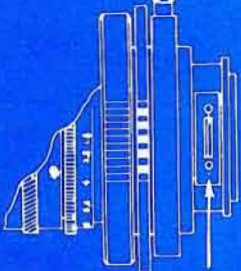


Manual focus hand control for rear-camera operation.

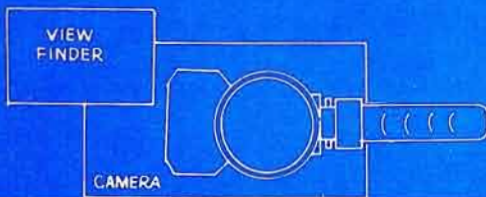


Accessory attachment utilizes servo zoom pistol grip on pan handle of tripod for studio mode operation.

Rear Mount



Adjustable back focus mount with indicator



The camera can be placed on its side without interference from the lens.

Circle (71) on Reply Card

angénieux corporation of america

1500 OCEAN AVE., BOHEMIA, NEW YORK 11716 • (516) 567-1800
13381 BEACH AVE., VENICE, CALIFORNIA 90291 • (213) 821-5080
4 HAVEN HILL SQ., AGINCOURT, ONT. M1V1M4 • (416) 291-2363

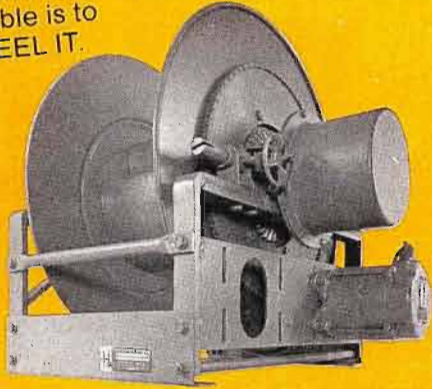
SPECIFICATIONS	BASIC LENS	WITH RETROZOOM	WITH TELE-ATTACHMENT	WITH 1.6X RANGE EXTENDER	WITH TELE-ATTACHMENT AND TWO 1.6X RANGE EXTENDERS
Focal Length	9.5 - 142mm	7 - 105mm	40 - 240mm	15 - 225mm	41 - 615mm
Continuous Zoom Range	15X	15X	6X	15X	15X
Maximum Aperture	f/1.8 - f/2.6	f/1.8 - f/2.6	f/1.9 - f/2.6	f/2.9 - f/4.2	f/4.7 - f/6.7
Photometric factor	1.20	1.27	1.27	1.24	1.35
Minimum Object Distance	0.60m 2 ft.	0.30m 1 ft.	1.50m 5 ft.	0.60m 2 ft.	1.50m 5 ft.
Horizontal Angle of View	54° - 4°	70° - 5 1/4°	9° - 2°	34 1/2° - 2 1/2°	3 1/2° - 1°
Vertical Angle of View	41° - 3°	53 1/2° - 3 3/4°	6 1/2° - 1 3/4°	26° - 2°	2 1/2° - 3/4°
Smallest Object Field	27 X 35mm 1.1 X 1.4"	20 X 26mm 0.8 X 1"	46 X 60mm 1.8 X 2.4"	17 X 22mm 0.7 X 0.9"	18 X 24mm 0.7 X 0.95"
Weight of Total Package: lens, iris/zoom, servos, pistol grip, mount and attachments	2.5 kg 5.5 lbs.	3.8 kg 8.4 lbs.	4 kg 8.8 lbs.	2.7 kg 6.0 lbs.	4.6 kg 10.1 lbs.

15 x 9.5 FOR 2/3" PRISM COLOR CAMERAS

Reel it.

FOR EASY HANDLING

We've got the reels you need to handle and store all the cable you use for remote broadcast operations... microphone cable, power cable and coax. The best way to handle broadcast cable is to REEL IT.



Send for complete selection guide.



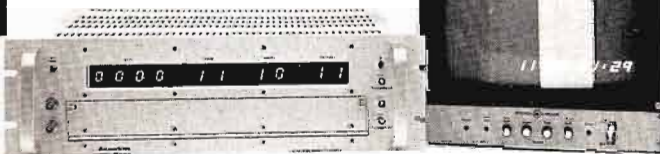
HANNAY REELS

CLIFFORD B. HANNAY & SON, INC., WESTERLO, NEW YORK 12193

Circle (72) on Reply Card

Generator - Reader - Video Generator

Datametrics Model SP-722 Generates / Translates SMPTE Code and Displays Time on Video Monitor along with Subject Matter.



Generate

- Time Code/User Bits
- Video Synchronization
- Jam Synchronization

Translate

- 0.25 to 10 Volt Sensitivity
- 1/4 to 40 Times Speed
- BCD Outputs

Time Display

- Infinitely Positionable
- Size and Style Selectable
- Intensity Variable



datametrics

Datametrics Inc.
340 Fordham Road, Wilmington, Mass. 01887
Tel: (617) 658-5410 TWX: 710-347-7672

Circle (73) on Reply Card

Tube life

continued from page 82

Compressed air and a small paint brush will do an excellent job of keeping the insulators and socket components clean.

Generally, a clean transmitter is a trouble-free transmitter. Keeping the insulator surfaces free of foreign matter will help reduce the possibility of flashovers and the resulting damage of such an occurrence. I have been using an industrial-type 1HP, 12-gallon, storage-tank, air compressor with an OSHA approved nozzle for transmitter clean-up. This has proven to be very effective in keeping the transmitters in "like new" condition.

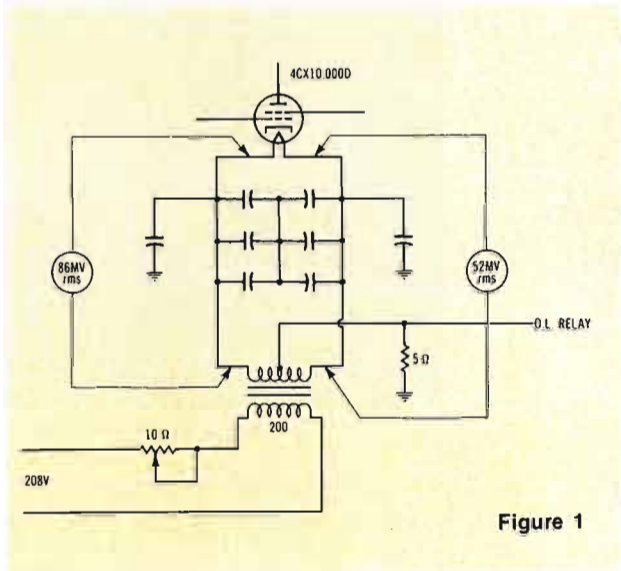


Figure 1

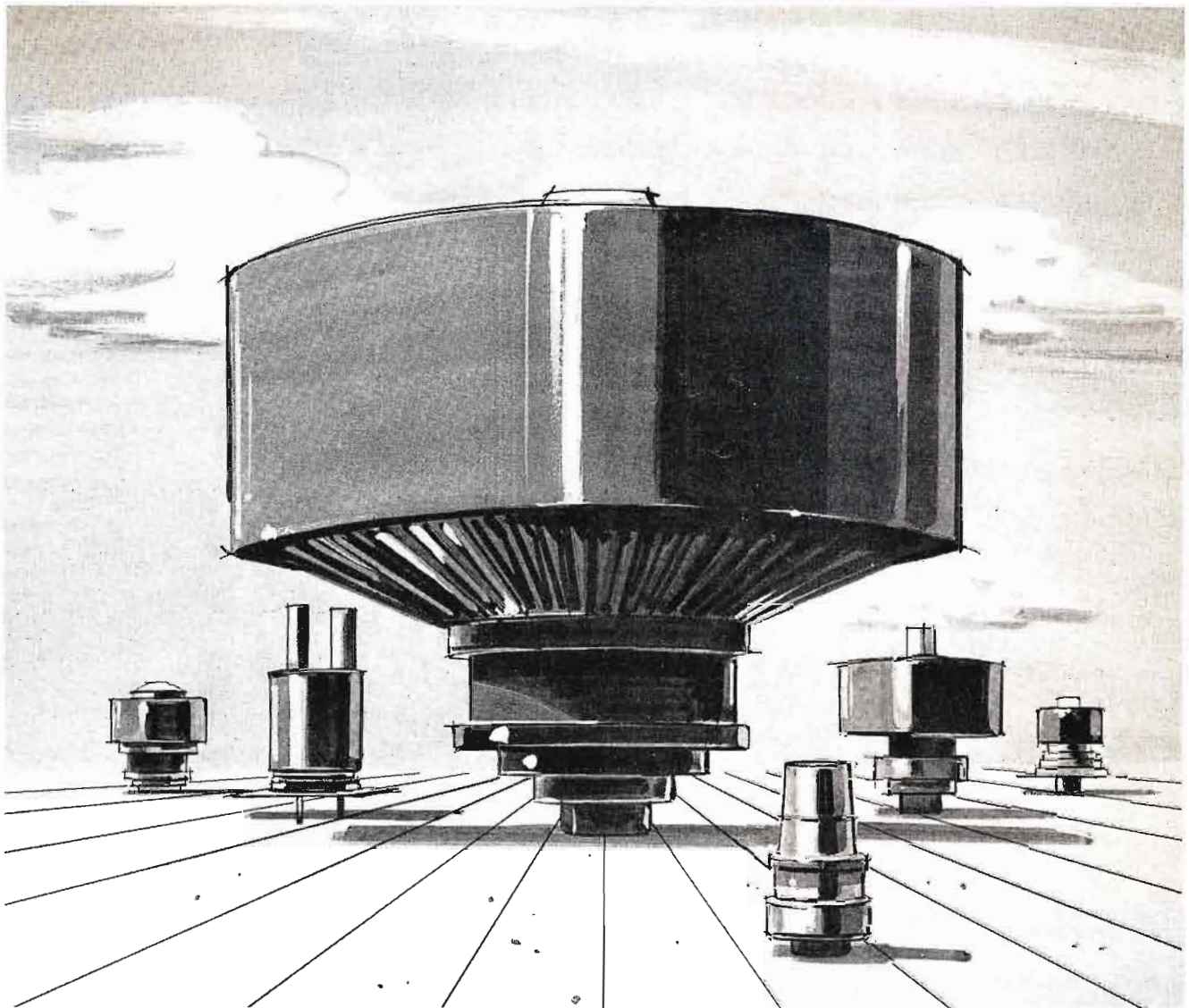
Summary

In conclusion, I would suggest obtaining an accurate method of determining filament voltage beyond that provided by the transmitter manufacturer. This secondary standard should be accurate to 2 or 3%. The secondary standard shall be used to determine the accuracy of the transmitter metering. Then the filament should be optimized for best life.

It is important to keep accurate records since the tube life for a 4CX15000 can run from 6 months to 3 years depending on how you treat it. The tube logbook is the best method as compared to searching through years of maintenance logs. □

References

1. R.I. Sutherland, "Care and Feeding of Power Grid Tubes", Eimac Division of Varian, 1st Edition, 1967, Pages 14-17, 142-146.
2. Engineering News Letter, "Life vs. Filament Voltage", Eimac Division of Varian, September 20, 1965.
3. M.W. Massey, Service Manager, Harris Corp., Letter to Warren Shulz regarding filament voltage for 4CX300A, October 23, 1975.



RCA Power Tubes and Devices

State of the art leadership for over 40 years.

With over 40 years experience, and a proven record of quality and performance, RCA continues to advance the state of the art for almost every major power tube application.

RCA's combined line of regular and large power tubes is one of the broadest in the industry, ranging in power all the way up to 250kW . . . and in frequency to 4000 MHz.

The RCA line also includes a comprehensive array of cavities and circuits that are specifically designed to enhance the advantages of RCA's power tubes. Together they achieve a total power package that's unmatched for reliability and high performance.

As new areas of need arise, RCA engineering will add innovative designs for both tubes and associated devices.

For more information on the entire RCA Power Tube line contact your RCA Industrial Tube Distributor or fill out and return the reply coupon.

Sales Promotion Services
RCA Distributor and Special Products Division
P.O. Box 100
Deptford, NJ 08096

Please send me the new RCA Power Tubes and Devices Catalog (PWR-574).

Name _____

Company _____

Street _____

City/State/Zip _____

RCA Electro Optics
and Devices

The importance of time code in computer assisted editing systems

By Arthur Schneider

There have been too many times I have encountered post-production problems because of poor time code on videotape. By the time a code problem is discovered, it may not be too late to correct, but the inconvenience and cost involved can become outrageous.

Drop and non-drop

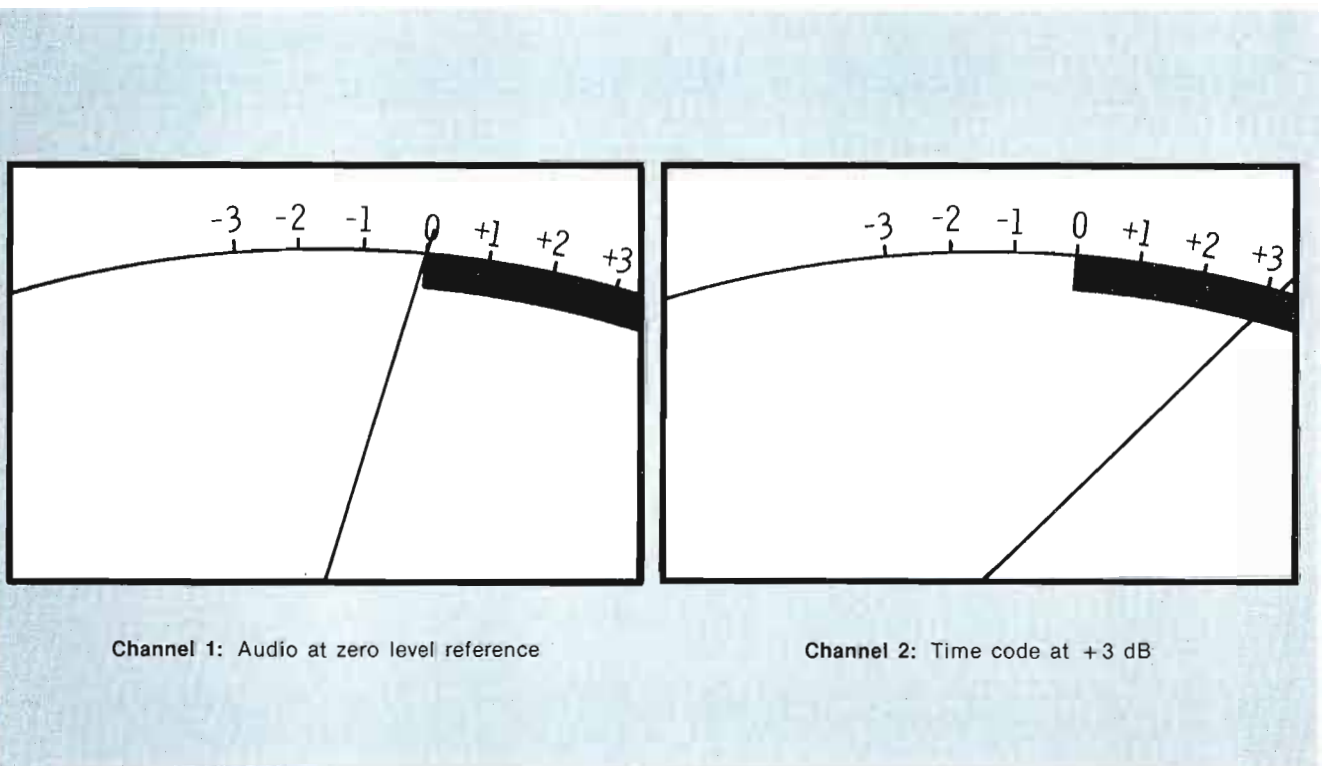
A question frequently asked is "What is the difference between

drop and non-drop frame time codes?" Time code is an electronic method of identifying television picture frames, similar in concept to film edge numbers in use. The most popular use of time code is in making electronic edits by locating a particular spot on the tape. This is accomplished by searching, parking (stopping), cueing and synchronizing and finally making the edit—all based on time code.

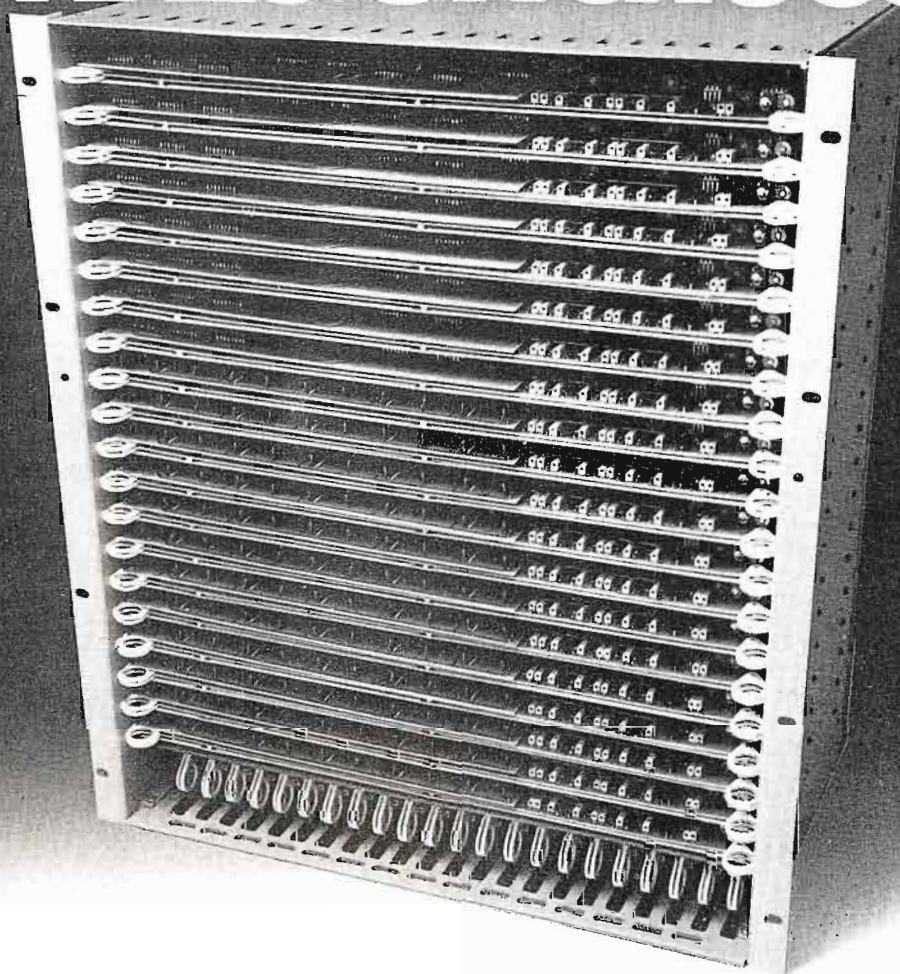
Time code editing first appeared in 1967 and one of the first manu-

facturers to utilize time code for editing was a company known as EECO. For many years, time code editing was generically referred to as EECO editing because of its popularity and the ease with which edits could be made. Time code numbers could be written down and referred to later, which was not the case with electronic editing systems that used beeps or tones to trigger an edit.

Even though the term SMPTE time *continued on page 90*



GET YOUR SIGNALS UNCROSSED.



No matter how complicated your studio operation is, we can unscramble your signals and send them on their way, with one of our nine off-the-shelf Switcher series.

For example, many broadcasters use our lower cost 15X or RX Series Switchers to switch input signals to their VTR machines. By providing instant access to signals at the touch of a button, difficult editing jobs are accomplished on the spot and, during the Vertical Interval.

And to minimize system downtime we've designed our Series 20X and 40X Switchers for optimum reliability and capability. Most units have a microprocessor in every channel to eliminate total system failure if the logic system malfunctions. And you can replace a channel

module without shutting down the entire system.

For audio use, our solid-state Series AX Switchers make the old fashioned patch panel a thing of the past.

All 3M Routing Switchers can be built to nearly any input/output capability, with vertical interval switching and can be operated by many types of controls.

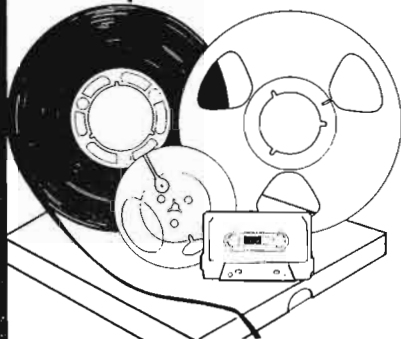
Studio operation is getting more complex every day. You can't fight it, so why not switch? Switch to 3M Routing Systems.

Circle the reader service card number at the back of the book for more information or call 205-883-7370 for system design assistance. 3M Video Systems. Watch us in action.

Circle (75) on Reply Card

3M
COMPANY

Audio Tape for professionals



REEL TO REEL TAPE

Ampex, 3M. All grades.
On reels or hubs.

CASSETTES, C-10-C-90.

With Agfa, Ampex, 3M tape.

LEADER & SPLICING TAPE

EMPTY REELS & BOXES

All widths, sizes.

— COMPETITIVE • FROM STOCK —

For your catalog, call or write: **Tom Franke**

312/297-0955



Recording Supply Co.

Div. of
Polyline Corp.

1233 Rand Road
Des Plaines, IL 60016

Circle (76) on Reply Card

Time code

continued from page 88

code has generally replaced the term EECO, some people within the industry still refer to computer-style editing as EECO editing. However, true EECO format time code does not have the flexibility of present-day SMPTE time code, so the SMPTE standards committee evolved a more detailed form of time code containing 80 bits of information per frame which also allows the addition of user bits (which will be covered later).

When time code first appeared, it was called continuous time code, later to be called color time and now called non-drop frame time code. This is because the time code is recorded at the television color frequency which makes the tape and the time code 3.6 seconds

longer each hour. This caused no end of confusion at the television stations that broadcast these tapes because if an hour show was edited and timed using time code as a timing reference, an hour show would play back 3.6 seconds longer.

In order to solve this problem, the SMPTE standards committee came up with a new form of time code that would compensate for this 3.6 second increase each hour. This format was called drop frame time code. The committee decided to eliminate a certain number of frames each hour to shorten the time code and make it match clock time. Since 3.6 seconds equals 108 television frames, this number would have to be eliminated from the time code

continued on page 92

Superior SMPTE from BTX

4300 Reader and Video Display

4200 Reader and Digital Display

4100 Edit Code Generator

4400 Decoder

BTX guarantees superior performance from 1.5 to 1200 IPS even at -18dBm or with any degree of time jitter.

BTX guarantees superior reliability and assures it with a 100-hour operational burn-in prior to shipment.

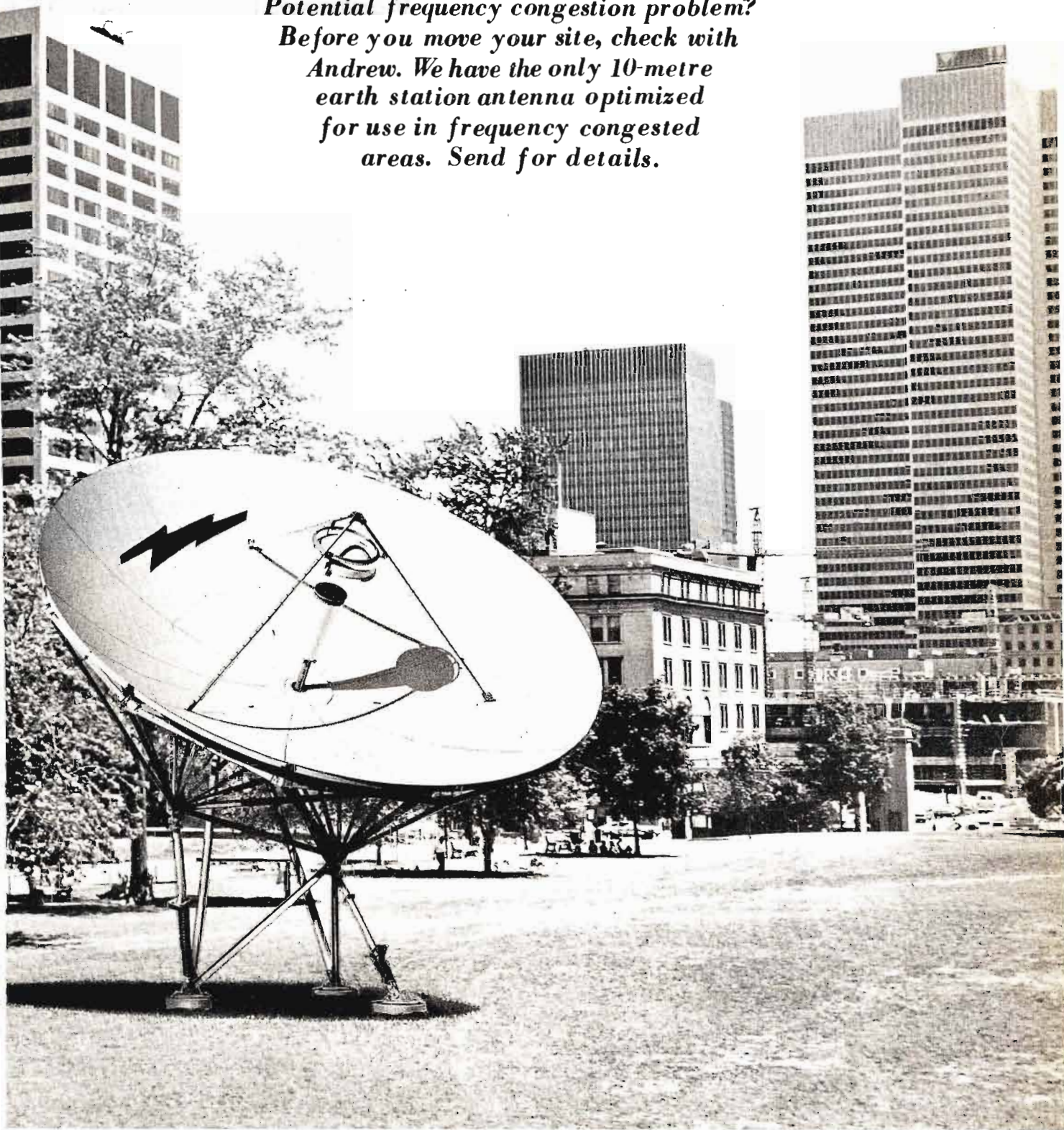
BTX guarantees time-code system compatibility with its complete line of cost-effective modular building blocks. For complete information, call:

The BTX Corporation • 438 Boston Post Road
Weston, Massachusetts 02193 • 617-891-1239

Circle (77) on Reply Card

Since you can't plan the city around an antenna,
we planned our antenna around the city.

*Potential frequency congestion problem?
Before you move your site, check with
Andrew. We have the only 10-metre
earth station antenna optimized
for use in frequency congested
areas. Send for details.*



UNITED STATES: 10500 W. 153rd St., Orland Park, IL, Tel. (312) 349-3300. AUSTRALIA: 171 Henty St. Reservoir, Victoria 3073, Tel. (03) 460-1544. BRAZIL: Av. Victor Andrew, 585, Caixa Postal 600, 18100 Sorocaba, São Paulo, Tel. (0152) 28900. CANADA: 606 Beech St., Whitby, Ont. L1N5S2, Tel. (416) 668-3348. FRANCE: B.P. 44, 28400 Nogent-le-Rotrou, Tel. (37) 52 19 06. GREAT BRITAIN: Lochgelly, Fife KY5 9HG, Tel. (0592) 780561. MEXICO: Av. Reforma 445, P.B.—K México 5, D.F., Tel. (905) 525-5443. ITALY: Viale Gianca Maria, 5, 20122 Milano, Tel. (02) 784412.

Circle (78) on Reply Card

 **ANDREW**

FC45 Only \$448



the interference free frequency counter all the way through 230 MHz & 600 MHz with Prescaler

A Frequency Counter that you can really count on...

Right at the radio or TV transmitter site, next to a high power transmitter and even on top of a color TV high voltage cage. Engineers and technicians are amazed as they pick up the only double-shielded frequency counter and use it where their high-priced counter won't stand still. Only the FC45 has a vinyl-clad, steel-covered case, to do that extra shielding, and matched and shielded input leads. Others don't even provide the test leads, let alone match them to your instrument.

When needing super accurate frequency measurements to five times better than FCC specs all the way through 600 MHz UHF. The easy to use, direct-reading, 8-digit pushbutton FC45 has an accuracy of 1 part per million (.0001 percent). Time base crystal is hand selected, baked in an oven for 30 days, installed into your FC45 and run for 30 days again before re-documenting and shipping. That's how far Sencore goes to protect your FCC license.

When checking in low level circuits all the way down to 25 millivolts and all the way up through 230 megahertz. Other counters fall off at about 80 MHz on their one Megohm input. Exclusive "Snoop Loop", with this outstanding sensitivity, enables you to "pick up" all the way back to the oscillator without loading the circuit; avoids direct connection to transmitter output, too. Plus exclusive crystal check for checking crystals out-of-circuit.

And you can extend these FC45 reliable uses even further with...



PR47 600 MHz Prescaler: Extends FC45 from 230 MHz to 600 MHz by plugging into special FC45 power jack and inserting into input lead. \$125

PR50 Audio Prescaler: Extends use of FC45, or any other frequency counter, to .1 Hz and .01 Hz for audio and subaudible measurements. Same size and use as PR47. \$125

PL207 "Snoop Loop": RF pick-up loop with cable to avoid direct circuit connection. \$9.95

Write for 24-page FC45 Frequency Counter Sencore News or order instrument from: Sencore, Inc., 3200 Sencore Drive, Sioux Falls, South Dakota 57107

SENCORE

In Canada:
Superior Electronics

Time code

continued from page 90

each hour. So, two frames per minute were dropped each minute every hour around the clock except every tenth minute.

The reason is that if two frames were dropped every minute every hour, 120 frames would be dropped instead of the needed 108 frames. This frame dropping occurred at only one point in the time code changes from 01:04:59:29 to 01:05:00:00, the time code actually is displayed as 01:05:00:02, skipping frames 00 and 0; which do not exist in drop frame even though the picture frames are consecutive.

This made time code agree with the clock on the wall, therefore drop frame time code is also called clock time.

User bits

Within the past few years has come the introduction of a new feature called user bits. They are available for any purpose the user may desire. In general though, each television frame is limited to 4 letters or 8 digits or a combination of the two. There are occasions when this limitation may be strung out over a period of several seconds or longer which allows the user to include nearly unlimited data. However, one may not be able to read this expanded information unless printed out (on paper) by a computer.

Time code is generated in a form known as a binary code. This means that each letter or number is made up of a series of ones and zeros. One frame of time code representing 1/30 of a second contains 80 bits of binary time code information. Thirty-two of these bits are delegated to represent time in the form of hours (up to 23), minutes (up to 59), and frames (up to 30). Another 32 bits are used for adding alpha-numerics (letters and numbers) to the time code by the user and to designate such things as reel numbers, recording date or any other information that can be abbreviated in 4 letters or 8 digits. The rest of the binary data in the time code is used to determine the type of code and other things not relevant to this discussion.

User bit data must be recorded as the time code is being recorded on the tape and can't be added once

continued on page 94

GENERAL ELECTRIC Large Screen TV Projectors

The General Electric Large Screen Video Projectors incorporate advances in simplicity, reliability and performance in large screen television projection.

This solid-state, high-brightness television projector is engineered for remote control operation; with improved circuit design for enhanced picture quality, power efficiency, and increased ease of operation, maintenance and service.

It utilizes the exclusive GE light valve—single gun, single optical path system which requires no convergence adjustments to faithfully reproduce monochrome and natural color TV pictures of high resolution and contrast.

Built-in remote control capability allows set-up adjustment and operating control at the projector, or from 200 feet away, with the addition of an accessory cable.

APPLICATIONS

In addition to projecting information from all standard video sources such as off-air TV tuner, video tape, video cassette, live camera, closed-circuit data network, video film chain, etc., the versatile system can be coupled to computer facilities through suitable interface equipment. It can project alpha-numeric data, graphic displays and computer generated images in real time.

GE large screen TV projectors are now in use in Business, Industry, Education, Medicine, Military, Government, Entertainment and the Arts.

Business—Instant review and analysis of computer data bank information, stockholders meetings, conferences, presentation of advertising and sales promotional campaigns, sales meetings.

Industry—Safety and Industrial training programs.

Military—Command and control displays, computer read-out, dynamic visual simulators, tactical and operational situation displays.

Medicine—Teaching surgical techniques, medical procedures, nursing, training and consultation conference information displays.

Entertainment—Sports, CCTV, standard TV, concerts, box office extensions.

Education—Off-campus programs and seminars, demonstration of the arts, teaching sciences, lecture demonstrations.



"Thousand" Series Projectors. (PJ500 and PJ700 not shown.)

PERFORMANCE FEATURES

- High efficiency power circuits permit operation at low line voltages without affecting picture quality.
- Low input power . . . 1,200 watts compared to 1,700 watts or more for other professional television projectors.
- Operates from standard 120v/20 amp appliance outlets.
- No radiation hazard. Highest voltage used is 7,200 v.
- LED circuit monitors and beam current meter included.
- Sweep reversal switches allow easy projected image changeover for front or rear screen applications.
- Variable picture size from 2 to 20 feet in width.
- Versatile projector mounting includes table top, gimbal, or on its matching, accessory base.
- Accessory rolling base allows easy transportability.
- Afocal lenses available to vary projection distance from standard 3.0:1 (throw distance to screen width) by factors of 2 or ½.

GE Large Screen Television Projector Specifications

Model	Projector Type	Minimum Output (in lumens)	Power Supply	Video Input & Standards	Price*
PJ500**	Color	220	60 Hz, 117 v., ± 10%	NTSC & RGB	\$35,000
PJ700**	Monochrome	600	60 Hz, 117 v., ± 10%	525 lines/60 f.p.s.	\$30,000
PJ5000	Color	220	50/60 Hz, 117 v., ± 10%	525 lines/60 f.p.s. or 625 lines/50 f.p.s., NTSC & RGB	\$55,000
PJ5100	Color	220	60 Hz, 117 v., ± 10%	1023 lines/60 f.p.s., RGB	\$72,500
PJ5800	Color	220	60 Hz, 117 v., ± 10%	875 lines/60 f.p.s., RGB	\$72,500
PJ7000	Monochrome	600	50/60 Hz, 117 v., ± 10%	525 lines/60 f.p.s.	\$48,500
PJ7010	Monochrome	600	50/60 Hz, 117 v., ± 10%	625 lines/50 f.p.s.	\$48,500
PJ7050	Monochrome	1000	50/60 Hz, 117 v., ± 10%	525 lines/60 f.p.s.	\$53,500
PJ7100	Monochrome	600	60 Hz, 117 v., ± 10%	1023 lines/60 f.p.s.	\$52,000
PJ7150	Monochrome	1000	60 Hz, 117 v., ± 10%	1023 lines/60 f.p.s.	\$57,000

**used/factory refurbished *effective 1/78

Video Display Equipment Operation
Electronics Park, Building 6-206,
Syracuse, New York 13221
Phones: (315) 456-2562/2533/2179

GENERAL  ELECTRIC

Circle (80) on Reply Card

Time code

continued from page 92

the time code has been put on the tape. So it is up to the tape operator or someone on the production staff to provide information to be recorded in the user bit area of the time code.

User bits may be very helpful in

identifying reel numbers or providing other useful information. However, everyone must use it on a consistent basis. It does no good to have some reels with user bit information and others without it.

One of the most common methods

of editing musical numbers is to put time code on an audio playback device and transfer that code information to the videotape. However, if the same section of audio is played back repeatedly, the time code is also copied to the videotape an equal number of times.

In order for a computer-assisted editing system to identify the correct take, a user bit code may be inserted in the time code on the audio track. Then, as the time code of that take is repeated over and over again, time of day code is also transferred on a continuous basis so that each take now contains a second reference code. This time code information may be included in the vertical interval of the video signal, in effect, giving two different codes, one repeating and one in ascending order.

Editing systems have been developed that rely exclusively on user bits for reel identification, relieving the editor of having to type in the proper reel number each time a reel of tape is changed. The system does it for him by selecting the reel number from the user bit information and entering it into the computer's memory.

In addition, there are editing systems that have the ability to edit with SMPTE time code, tape timer or user bits. Until recently, user bits were not in wide use because of the lack of standardization and equipment to generate and display this type of data.

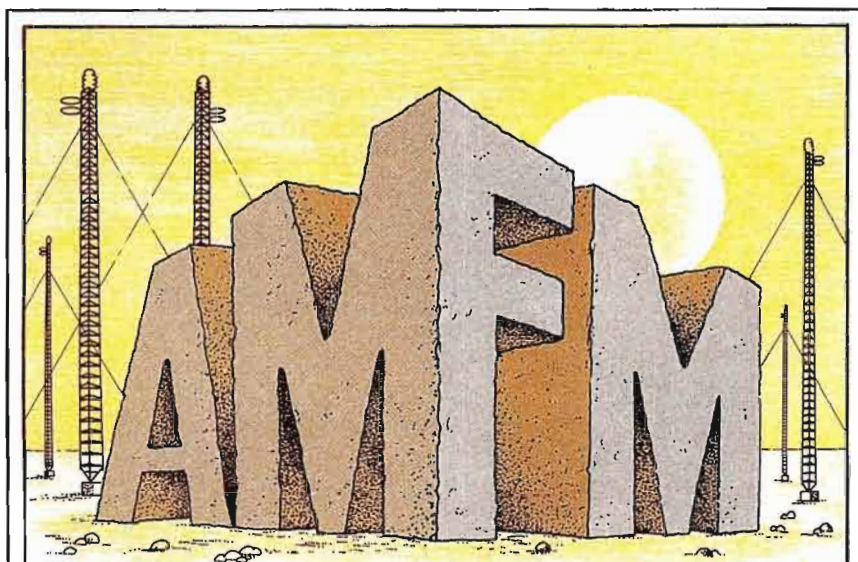
Keeping it clean

In order to achieve optimum recordings on videotape, the VTR tape path must be cleaned thoroughly. This includes all audio, video record, play and erase heads as well as the path that the tape takes during record and playback.

Dirty heads may cause low levels, distortion or no signal at all in severe cases. Don't take it for granted that the last person using the machine cleaned it. Only a few minutes of care will prevent these problems.

Nearly all present-day computer assisted editing systems use channel 1 (left channel) to record program audio and channel 2 (right channel) to record time code. Channel 1 audio is recorded in the normal manner. Channel 2 is used to record SMPTE time code at 3 dB above

continued on page 96



A Solid Quarter Century Foundation in AM/FM Towers

What does our 25 years experience in AM/FM towers do for you?

It offers you designs that are performance proven to be reliable under the worst conditions, year after year.

It assures you of top value returned for every inch of steel, every hour of engineering you've paid for.

It enables us to offer valuable advice to help you decide just what you really need in a tower. We can point out potential problems you may have overlooked. We'll even show you how to cut costs wherever possible.

Choose Stainless for your next radio tower.

We're solid in AM/FM experience.



The tower people
Stainless, inc.

North Wales, PA. 19454 U.S.A.
Phone: (215) 699-4871 • TWX: 510-661-8097

AF0578

Circle (81) on Reply Card

Only the finest ingredients go into our pancakes.

It goes practically without saying that the company responsible for the leading reference in cassette tapes should offer the finest available pancake product for cassette dupes. And with TDK 1/8" bulk tape for high speed duplication and industrial A/V use, you get the same high performance tape found in our Dynamic cassette, with its low noise and high output characteristics, plus broad dynamic range and low distortion.

You can also have it ready-loaded into our "Y" series bulk duplicator cassettes, for lifetime warranted jam-proof, dropout-free performance. We're equally particular about our audio/visual, data, endless and leaderless dictation cassettes, as well.

Along with superior performance, TDK 1/4" pancakes offer the added advantage of two separate series: "L," similar to our superb Audua open reel product, and "S," for general purpose applications. Both are supplied on 3600-foot 10 1/2"

NAB bulk hubs. Or, you can buy them on 1200, 1800 and 3600-foot reels.

All TDK products are made with only the finest ingredients, so you can taste their good performance in any industrial and professional application.

So, if you want high quality and reliability in *all* your professional applications, go TDK all the way. Let us show you how TDK professional products can upgrade the quality of your products—and save you time, too. For further information, write us or call (516) 746-0880.



World leader in recording tape technology.



TDK Electronics Corp., 755 Eastgate Blvd., Garden City, NY 11530
2906 W. Peterson Ave., Chicago, IL 60645; 2041 Rosecrans Ave., Suite 365, El Segundo, CA 90245

Circle (82) on Reply Card

Time code

continued from page 94

zero level. That is, the time code should record and play back 3 dB above the zero level reference mark on the VU meter.

These levels will give optimum performance during computer assisted editing. Time code may be

recorded at levels below 3 dB, but searching, cueing and time code readability may be impaired in some systems. Still others may accept time code levels as low as -5 dB, but only if the quality of the time code is good. If consistency is maintained

when recording time code, chances of encountering problems on virtually any system are slim.

Avoiding problems

The most serious problem encountered in time code editing is that of poor quality time code. This may be caused by a number of things, such as dirty audio heads, distortion introduced into the time code channel by defective amplifiers or attempts to duplicate time code without proper signal processing. Misaligned audio heads are another source of low level or distorted time codes. Audio head alignment is a maintenance function and should be checked with a master alignment tape provided by the VTR manufacturer.

Occasionally, audio amplifiers may become overloaded by feeding excessive levels into them. This almost always causes distortion in the time code signal which is signified by erratic reproduction of the time code. The solution is to use high quality audio amplifiers and distribute the code without overloading the system.

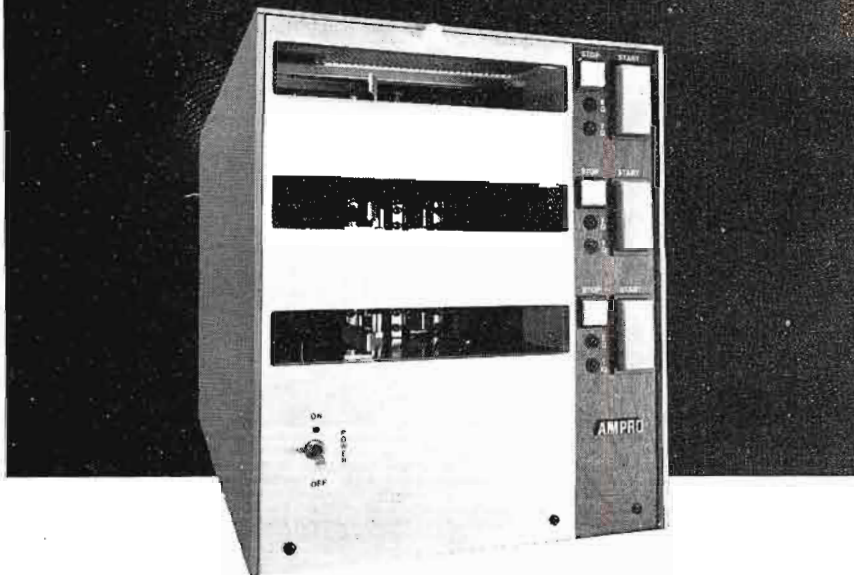
Another problem that occurs frequently is distortion created by feeding the time code into an AGC (Automatic Gain Control) amplifier or through an audio limiter. No constraints should be put on the time code signal being recorded on videotape.

A term frequently heard is jam sync, which means the slaving of time code already existing on a videotape which is re-recorded through a master slave generator onto the same tape in exact synchronization with the existing time code. Jam syncing may be used to correct low level or marginal time code. It is also done by slaving the last recorded time through a master slave clock and when the system goes into record, the time code is synchronized and continues to record until the end of the recording. This process continues until the edited tape is completed at which time a continuous time code track has been laid down.

Duplicating time code—When copying time code from one tape to another, the safest way to prevent distortion is to duplicate the time code through a master slave clock that generates fresh time code in

continued on page 100

TRI-DEK[®]...the low cost, compact triple deck cartridge reproducer from AMPRO.



It works harder for you with 4 exclusive features:

1. **SELF ALIGNING PINCH ROLLERS** automatically adjust for mechanical misalignment. Prevents tape slew, poor stereo phasing and excessive tape wear common to all other cartridge equipment.
2. **INDIVIDUAL PLAYBACK DECKS** share only the power transformer and motor.
3. **TRANSPORT DECKS ARE PLUG-IN** and interchangeable for easy cleaning and alignment. NO wiring. NO soldering. NO mess!
4. **CIRCUIT BOARDS ARE REAR ACCESSIBLE** for simple adjustment and replacement and interchangeable with Ampro single deck systems.

You get maximum reliability with a completely independent operating system for each deck...audio playback, cue detection, logic control and power supply regulation. Record option available.

Don't settle for less than Ampro perfection. Take a closer look for yourself. Send for a FREE brochure on TRI-DEK.



AMPRO BROADCASTING INC.

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

Circle (83) on Reply Card



It all started with a single invention. The fluid camera head, back in 1952.

Today, O'Connor offers the most comprehensive professional camera support system anywhere. All designed around the fluid head. All designed to interchange easily with the ever expanding array of motion picture and video products.

The O'Connor system includes six different fluid heads with

numerous counterbalance spring options, nine solid teakwood "Claw Ball" type tripods, the super-rigid, yet flexible Hydro-Ped, twelve camera platforms, six optional bases, three adaptors, extended or adjustable video handles and durable cases for everything. For information,

write: O'Connor Engineering, 100 Kalmus Dr., Costa Mesa, CA 92627; or 11 Rue des Moraines, 1227 Carouge, Geneva, Switzerland.

FIRST THE O'CONNOR FLUID HEAD.

NOW THE TOTAL SYSTEM.

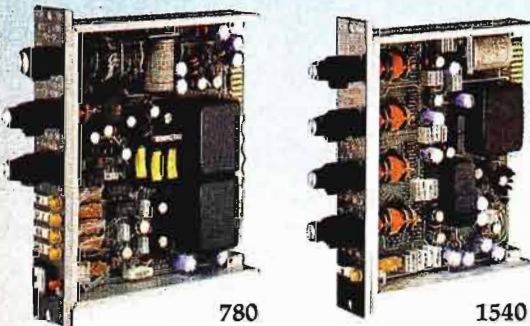
Circle (84) on Reply Card

DON'T TURN

Discover the New Console



NEW ADM 3200 Series Console.



Two of the major features of the 3200 and 1600 Series Production Consoles are the all-new 780 Preamplifier and the 1540 Four-Band Equalizer.

It figures.

With new broadcast audio developments tumbling one over another at an accelerated rate, it figures that someone had to stop and put all the pieces of this new technology together the right way.

It figures that Audio Designs and Manufacturing would be that someone. ADM takes its leadership role seriously. That's why we take great pride in...

ANNOUNCING THE ALL-NEW ADM® BROADCAST PRODUCTION CONSOLES. We designed them "from scratch" to make sure they'd handle the most exacting programming and production requirements, and handle

THE PAGE...

Technology of the '80's



NEW ADM 1600 Series Console.

them well. The 3200 and 1600 series consoles are flexible, modular, multi-input, multi-studio and production center units with a host of capabilities. Although they feature a number of significant innovations, the new consoles consist of proven, practical components that are up-to-the-minute in state of the art techniques. And they are backed by ADM's *exclusive* 5-year warranty, the most comprehensive in the industry.

Make sure you get the full story on this important new advance in broadcast audio consoles.

Only from ADM... it figures.

For information...

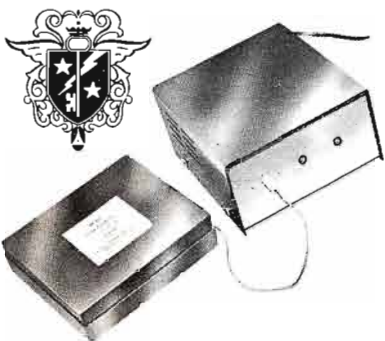
contact Audio Designs and Manufacturing, Inc., 16005 Sturgeon, Roseville, Michigan 48066. Phone (313) 778-8400. TLX-23-1114. Southeastern Office: Phone (904) 694-4032.

AMPEX Distributed outside U.S.A. by Ampex International Operations, Inc.

ADM

The Audio Company

NICKEL CADMIUM ENG. BATTERIES AND ONE HOUR AUTOMATIC CHARGERS



For **ALEXANDER** Nickel-Cadmium **REPLACEMENT BATTERIES** For...

**SONY (BP20) — JVC (PBP-1)
AKAI (PACK) — etc.**

CHARGERS WILL AUTOMATICALLY CHARGE IN 1 TO 4 HRS. DEPENDING ON CAPACITY... (SWITCHES TO TRICKLE)

Write Wire or Phone

ALEXANDER manufacturing co.

Box 1645 Mason City, Iowa 50401
Phone (515) 423-8955



Circle (85) on Reply Card

Time code

continued from page 96

synchronization with the source time code. If the time code reader is equipped to regenerate time code, this too may be used to reshape the time code waveform so that it will read without distortion. It is not advisable to copy time code by any other means except as described here, because the quality will not be adequate for editing. Stressing these facts about distortion may seem redundant, but nearly all time code problems encountered during editing are the direct result of poor quality time code.

Non-synchronous time code—This problem manifests itself in the form of frequent aborts of the edit cycle (either preview or record). The system will repeatedly attempt to make an edit but as the time code approaches the edit point, the code

will drift out of frame synchronization and straddles two adjacent frames. The system gets confused since it cannot determine which frame is the correct one. Therefore, it re-cues and tries to make the edit over and over again.

The problem of drifting or non-synchronous time code may occur when the reference signal feeding the time code generator is interrupted. It should also be noted that time code can only be recorded correctly with the VTR referenced to the video signal which is locked horizontally and vertically, otherwise the time code will not synchronize with the television picture frame.

The only way to correct this problem is to re-code that section of tape that exhibits this error. This

continued on page 102

Split Second Time Machine

The Telex/Magnecord 1400 recorder. Split second timing with a grid of 524 lines passing a quartz crystal control reference each capstan revolution. This senses, and corrects the speed of the DC servo drive some 4000 times per second*. Speed stability is so accurate the National Weather and the Environmental Satellite Services selected Telex/Magnecord 1400's over all others to record meteorological display data.

Of course, broadcasters also favor the 1400 for the rugged stability of the die cast main frame, DTL logic and exceptionally clean electronics. Compare our speed, specs, and price. We invite you to make a split second decision.

*At 7 1/2 ips, adjustable $\pm 1\%$ to compensate for tape thicknesses and mechanical wear.

TELEX
COMMUNICATIONS, INC.

9600 ALDRICH AVE. SO. • MINNEAPOLIS, MINN. 55420 U.S.A.
Europe: 22 rue de la Legion-d'honneur, 93200 St. Denis, France
Canada: Telak Electronics, Ltd., Scarborough, Ontario

Introducing the SPG 130N...
 a new design approach in digital
 Source Sync Generators with ten
 times better horizontal resolution.
 A perfect companion to the
 SPG 102N N.T.S.C. Master Generator.



LEITCH

Progressive Concepts in Television Technology

Leitch Video Inc.,
 210 South 8th Street,
 Lewiston,
 N.Y. 14092.
 Tel: (716) 754-4349

Leitch Video Limited,
 705 Progress Avenue,
 Scarborough,
 Ontario M1H 2X1.
 Tel: (416) 438-5060

Circle (87) on Reply Card

Time code

continued from page 100

may be done by using a master slave clock as outlined earlier and slaving it to a portion of the old code ahead of where it will be used.

Notes and edit logs—Without proper recording logs, editing would be very difficult, to say the least. These notes assist the editor in locating scenes by time code number, noting the good and bad takes and supplying the staff with information relative to editing. Basic information should include: the scene number, the take number, the page number in the script (optional), start time code where the slate first appears, start time code of the scene (action cue), stop time of the scene (where cut is), and comments about the scene. This log should be given to the editor and a copy included in the box with the videotape machine.

It is most important that complete and detailed edit notes be taken. Many production facilities provide a time code reader in the control booth so that during taping the

production staff will be able to make notes for editing regarding program content rather than technical comments. Someone is bound to remember a point that someone else may have forgotten.

Time code labels—No matter how accurate the logs are, an improperly labeled tape reel or box may cause many wasted hours of searching for material. Include the following information and be sure it appears the same way on the tape reels as it does on the tape box: show title, show number if in a series, reel number, recorded date, whether master or isolated feed and the ISO camera number, type of time code on the reel, and whether format type A, B or C (1-inch only).

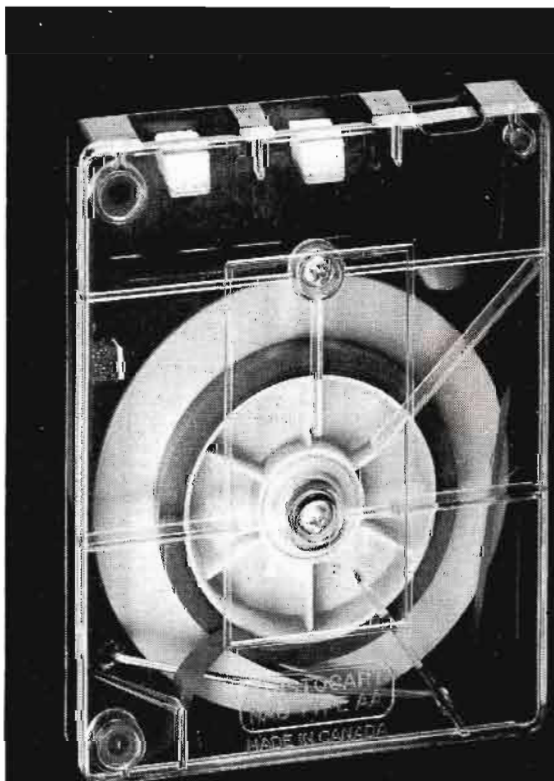
Include in the box any information about tape defects or technical problems in the recording itself. Be sure to immediately notify the proper people of these problems so they can be corrected if necessary. Rewind all tapes prior to returning

them to their boxes to prevent transportation damage.

Pre-rolls—Pre-roll is the time or distance ahead of the edit point where all the VTRs involved in the edit, park or stop prior to synchronizing before actually making the edit. Some systems have variable pre-rolls allowing the user the flexibility of seeing more or less recorded material ahead of the edit point.

Even though some videotape machines are able to make frame accurate edits with as little as a one second pre-roll, the majority of VTRs in use today require from 7- to 10-second pre-rolls. To prevent frequent edit aborts, there must be stable video, control track and time code at the pre-roll point. In addition, all servos in the VTR must be adjusted to the manufacturer's specifications.

Videocassette recorders usually require longer pre-rolls than other types of VTRs since the tape must
continued on page 104



NAB TYPE AA Cartridge
manufactured by
ARISTOCART DIV. WESTERN BROADCASTING LTD.
505 BURRARD ST. VANCOUVER, CANADA V7X 1M6
TEL: (604) 687-2844 TELEX: 04-54639

We've set
the industry's highest standard
of cartridge sound reproduction
— and we maintain it
in every cartridge

With ARISTOCART, quality variation problems and time-consuming selection routines are eliminated. What you tape is what you hear — consistently. Each ARISTOCART is individually tested for phase, frequency response and overall performance. On a properly aligned machine, it will deliver stereo fidelity at least equal to the most sophisticated reel-to-reel equipment. Or we replace it at our expense. Another plus: ARISTOCART's exclusive pressure pad configuration prolongs the life of your expensive head by as much as 100%.
So you save significantly on maintenance.

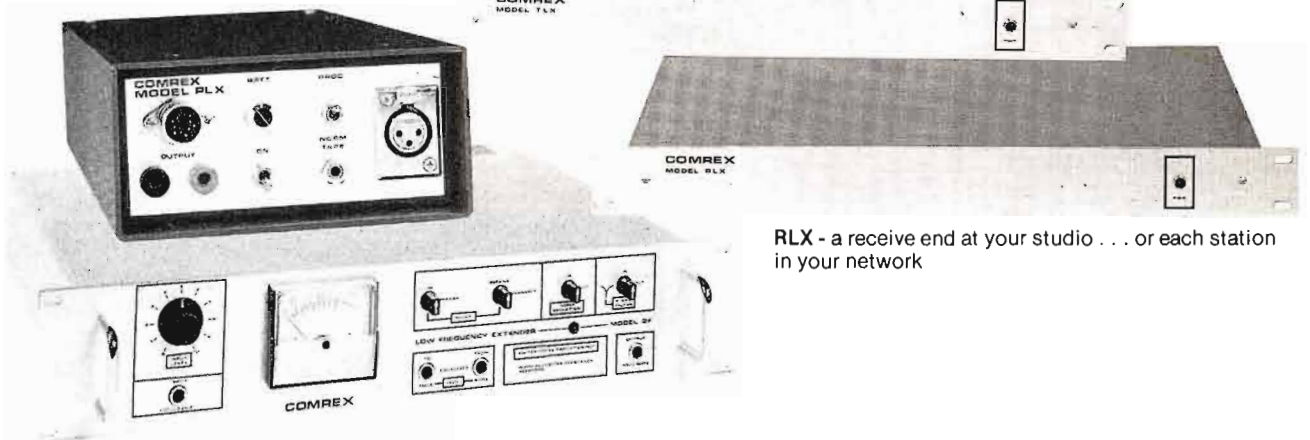
Note to AM operators: ARISTOCART delivers superb mono quality now and incomparable stereo when you convert, without further alteration.

ARISTOCART

The cartridge for people who care how they sound

TLX - to transmit from your studio

PLX - to transmit from remote locations (battery operated)



RLX - a receive end at your studio . . . or each station in your network

2F - a studio unit which can be operated in either the transmit or receive mode

The Sports-Minded Low Frequency Extenders From Comrex

We introduced our full LX line in Las Vegas . . . to a very enthusiastic audience. More than once we heard: "If I hadn't dialed it myself, I wouldn't have believed it!"

One of the nicest reactions to the LX comes from Norm Woodruff, News Planning Consultant, in his radio newsletter "Keeping Current":

"To me, the *still* newest and best gadget going is a frequency expander for use on dial-up telephone lines. It was introduced a few months ago, and now has been placed in

some new configurations that make it even more attractive. . . . It can be used on two-way systems to improve quality. I mentioned this item when it was first out, and mention it again because it is still the newest piece of equipment that can do miraculous things to help out remote quality. As the networks start bringing full-fidelity broadcasts to your studio from the other side of the country, the audience is going to find it unpleasant to hear a local news event or ball game with the poor quality we have been allowing. This gadget solves the problem."

COMREX

60 Union Avenue, P.O. Box 269, Sudbury, Massachusetts 01776
617-443-5077

Circle (89) on Reply Card

Time code

continued from page 102

be withdrawn from the cassette and wrapped around the video head before going into play. This is not true of open reel to reel VTRs. The new design 1-inch VTRs have become very popular for use in editing systems since wind and search time is more than five times faster than videocassette recorders. The average wind speed of a 1-inch VTR is about 30 times play speed while the wind speed of a cassette recorder is about six times play speed.

In post-production, using computer assisted editing systems, it is imperative to allow sufficient leader ahead of the first wanted video or audio. This must be done during the original recording. Before notifying the production crew that you have achieved speed, a rule of thumb is to allow about 20 seconds from the time the record button is pressed until the first action cue is given. Videotape stock is relatively inexpensive compared to the frustration that can occur during editing because there is not enough pre-roll time to allow the system to cue up.

The 20-second stabilizing period mentioned before may be utilized to slate scenes as well as final focusing and framing of cameras before the action cue is given. Now there will be adequate pre-roll leader for any type of editing system.

Once the VTR has started to record and as long as it continues to record without stopping, another scene may be slated without having to wait 20 seconds again since the time code, control track and video are being recorded continuously. It is also wise to avoid large gaps of blank tape between takes as this may confuse some editing systems since they sense the absence of time code and may go into rewind looking for code. There should be no more than a 5-second gap of time code between takes.

Recording multiple feeds—There may be occasions when two or more isolated cameras are being recorded at the same time. It is imperative that the tape operator carefully check to see that all of the VTRs involved in the recording session are being fed from the same time

code generator and that the code type (drop or non-drop frame) remains the same throughout the recording session—particularly if it covers a period of several days. Some computer editing systems cannot accept mixed time code and this may cause serious problems during editing if mixed.

There are sometimes situations where more than one time code generator is in use at any given time. This is especially true at network facilities and larger television stations because some production people prefer to use elapsed time code while others use time of day. Still others want drop frame code, and yet some people insist on non-drop frame code.

It has happened more than once that one time code generator has been feeding one VTR while a different time code generator is feeding another VTR on the same studio feed because someone has not patched it correctly. It is very difficult to edit with mixed time code under these conditions. Computations by the editor to compensate for the differences may certainly try his patience.

Ascending time code—When starting to record time code at the beginning of a reel, always start with a low number and let the time increase to a higher number.

For example, suppose the operator was using the time of day code and recorded the first take at 9 AM. The first time code recorded on the tape would be 9:00:00. If the recording ended at 3 PM that day, the time code would be displayed as 15:00:00, since virtually all time code generators are 24-hour clocks.

Now, suppose it took until 3 PM to record only 30 minutes of program material on a one hour reel. To conserve tape stock, the operator decides to use the balance of this hour reel the next day. The following day, the operator starts to record where he left off the previous day.

But it happens that the first take the second day starts with time of day code at 9:00:00 AM. The recording process continues until

the one hour reel is fully recorded. Now, what obviously has happened is that two sets of identical time codes were recorded on the same reel. How does the computer know which set of time codes the operator really wants?

It doesn't matter what time code number is used first as long as the numbers continually increase in time. If using a partial reel, with the balance to be used at another time, reset the code generator to any number greater than the last number recorded on the reel. This technique requires co-ordination on the part of the production staff as well as the tape operators to be sure the generator is set correctly before starting to record each day.

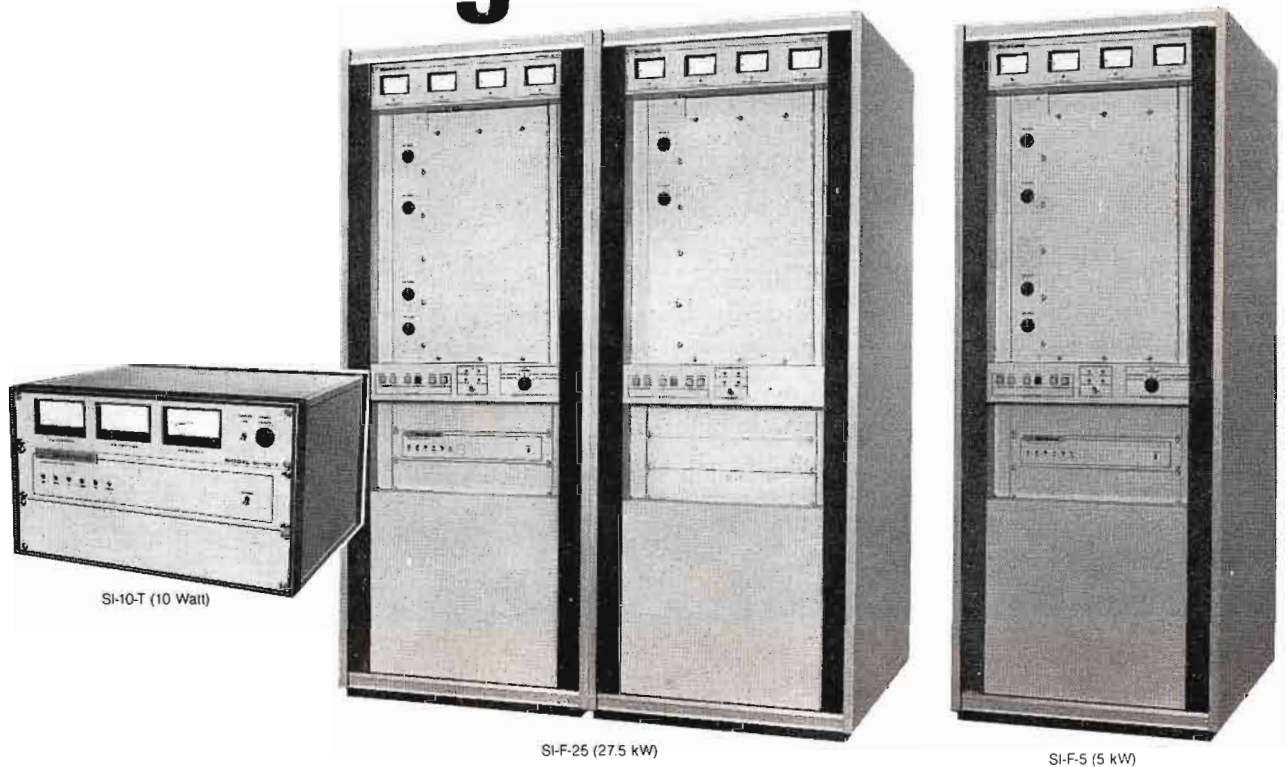
Another method is to start recording on a new reel, setting the time code generator to one hour. Let it run continuously throughout the day's shooting without changing it until the reel is fully recorded. If recording more than one complete reel each day, reset the time code generator at one hour for every new reel so they are all consistent.

The midnight problem—There is a point on the 24-hour clock that may cause a problem with some computer assisted editing systems. That is, when the clock time goes past 23 hours, 59 minutes and 59 seconds, the clock time will change to 00:00:00, not 24 hours. When attempting to make an edit just past this zero point on the clock, the pre-roll time must start before zero or somewhere near 23:59:50. The system will abort the edit attempt since it is counting down to the edit point from 23:59:50, but as it crosses over 00:00:00, the system gets confused since it thinks it must rewind towards zero, which in reality is ahead of it, not behind it.

Therefore, the system stops and tries to recue again and again. But it will never be able to make the edit because of this drastic time code change over at midnight. So, if recording near midnight either start the scene before midnight and let it continue after midnight, or wait

continued on page 106

What makes these new Sintronic FM transmitters so exciting?



SI-10-T (10 Watt)

SI-F-25 (27.5 kW)

SI-F-5 (5 kW)

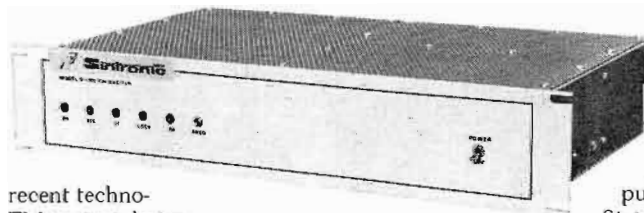
Well for one thing...

... the new Sintronic on-frequency, direct FM exciter. It's the heart of all our latest FM transmitters.

And it's exciting because it combines good engineering and recent technological advances in a solid-state FM exciter design which embodies such features as .001% stability without expensive crystals or ovens... 5 LEDs which continually monitor the key circuits... noise and distortion figures so low we could barely measure them in the lab (but we spec'd them conservatively, just like everything we do at Sintronic).

But there's a lot more that's exciting about our FM transmitters.

We start with our new exciter to a pair of 4CX250Bs driving a stable, grounded grid power amplifier for our 1.5, 3.5, and 5 kilowatt transmitters. We add another cabinet



containing our high power amplifier and we're at 12.5 kW or 27.5 kW; and with two 27.5 kW we go on up to 55 kW. Each has its own "12-pulse" power supply.

Sintronic has been making FM and AM transmitters for more than 15 years. They are now operating in more than 34 countries, some in remote locations under severe environmental conditions.

That's the Sintronic story: solid design, terrific performance, and all at prices that make our cost/performance ratio pretty exciting, too.

Call or write to learn all the other exciting details of our FM transmitters—and our AM transmitters are exciting, too! Sintronic Corporation, 212 Welsh Pool Road, Lionville, PA. 19353 (215) 363-0444. Ask for Tom Humphrey.

Sintronic CORPORATION
Sintronic is a subsidiary of Singer Products Co., Inc.

Circle (90) on Reply Card

Time code

continued from page 104

until the clock has changed to zero before starting to record.

Ping ponging audio—Since the accepted standard for computerized editing utilizes channel one to record and play back program material and channel two to record and play back time code, there are times when videotapes used in computer assisted editing have these two

channels reversed. Some people record videotapes with audio on channel two. Others may record audio on both channels. In either case, a correction of some sort must be made to provide audio and time code on the correct channels for editing.

This procedure requires the audio, if on channel two, to be re-recorded onto channel one in one operation.

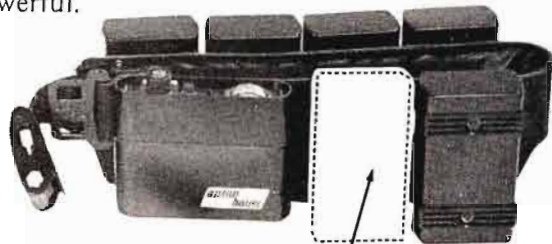
Then, in a second pass, time code is recorded on channel two in place of the old program sound. This channel swapping has been given the name of ping ponging.

Correcting tapes in this manner, although effective, is time consuming and expensive. A by-product of ping-ponging is cross talk (interference between the audio and the time code channels) and is heard as a low frequency buzz on the audio channel. This type of interference is usually only found on 3/4-inch videocassettes. In addition, the program sound also loses a generation of quality by being re-recorded onto another channel using this method.

THE Quick-Change Artists

PORTABLE POWER FROM MIDWEST

Manufactured by Anton-Bauer; it's the power system that's modular, compact, reliable, and powerful.



MODULAR — You can snap it on the camera, wear it on a belt, or make problem-free charges.

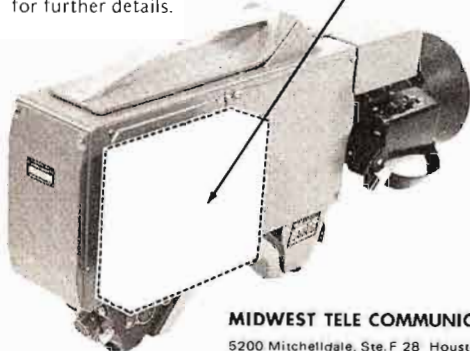
COMPACT — Small enough to move on you or your equipment without unnecessary weight.

Contact any Midwest office for further details.



RELIABLE — The unique construction makes our batteries the most rugged in the industry.

POWERFUL — Snap one SV-13 silver zinc battery on your HL-77, TK-76, SK-80 or other camera and shoot up to 3.5 hours. Then take one second to snap on a fresh battery... become a quick change artist.



MIDWEST TELE COMMUNICATIONS DIVISION

5200 Mitchelldale, Ste. F 28 Houston, TX 77092 (713)686-9278
300 First Avenue, S. Nitro, WV 25143 (304)722-2921
1395 Air Rail Ave. Virginia Beach, VA 23455 (804)464-6256
1804 Cargo Ct. Louisville, KY 40299 (502)491-2888
1150C W.B. Cincinnati, OH 45203 (513)651-1904
3331 N.W. 82nd Ave. Miami, FL 33122 (305)592-5355
15046 Beltway Dallas, TX 75240 (214)387-2755
4937 Harford Ave. Beltsville, MD 20705 (301)937-1890



A subsidiary of Unarco Industries, Inc.

Circle (91) on Reply Card

Production hints

The following suggestions, if implemented during production, are meant to reduce the possibility of error or extra cost during post production.

1. Specify before taping begins which type of time code is to be used and stay with it. Either drop or non-drop frame time code may be used, but should not be mixed since this may cause problems during editing in some systems.

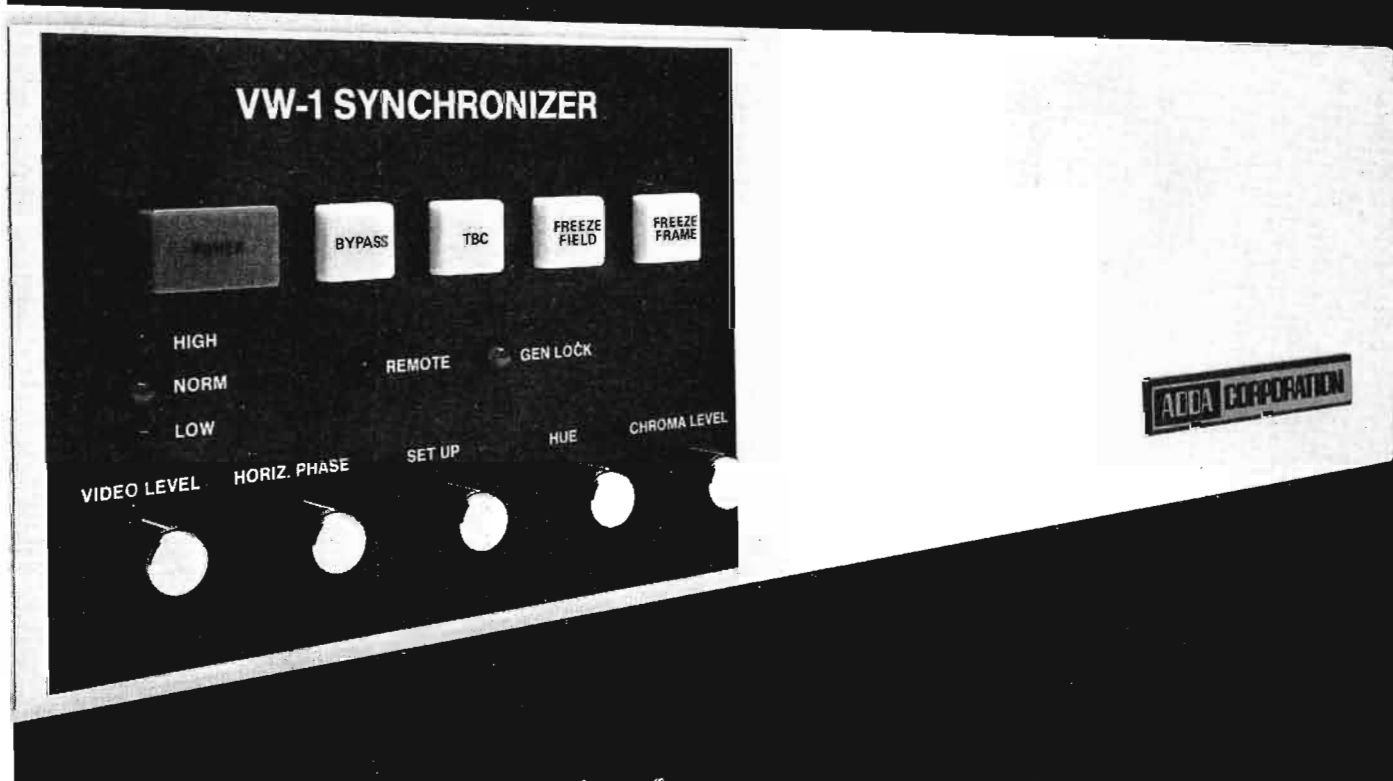
2. Record program audio on channel one and time code on channel two. The code on channel two should be recorded at 3 dB, which is a recording level reference. This format is used on most major computer assisted editing systems.

3. If time code characters are inserted into the picture on work prints, follow these general guidelines:

- Place the inserted time code numbers in a black box, if the character inserter has this capability. This makes the numbers more legible regardless of video content.
- Don't make the characters too large or they may block out too much picture. Most character generators have 3 or 4 sizes available. Use the size one up from the smallest. Also, don't make the characters too wide; leave room on the screen for characters that may be added during editing.
- Since most character inserters have some sort of positioner, be sure to position the characters in the lower left corner of the monitor.
- A one frame time code error may occur when the characters displayed in the picture do not agree with the time code that corresponds

continued on page 108

ADDA does it again!



A frame synchronizer with TBC and freeze frame for under \$20,000.

We asked you what you wanted in a low cost synchronizer, and you told us. Now ADDA Corporation delivers just what you need. A digital frame synchronizer that locks remote, network, ENG, and satellite feeds to your station reference. With fourth, not third, harmonic sampling. With time base correction for heterodyne color U-Matic recorders. With freeze frame and a separate field freeze mode that eliminates interfield jitter.

But here's the clincher. The ADDA VW-1 synchronizer protects the vertical blanking interval at the lowest price in the industry. We give you the latest in digital technology, not extraneous bells

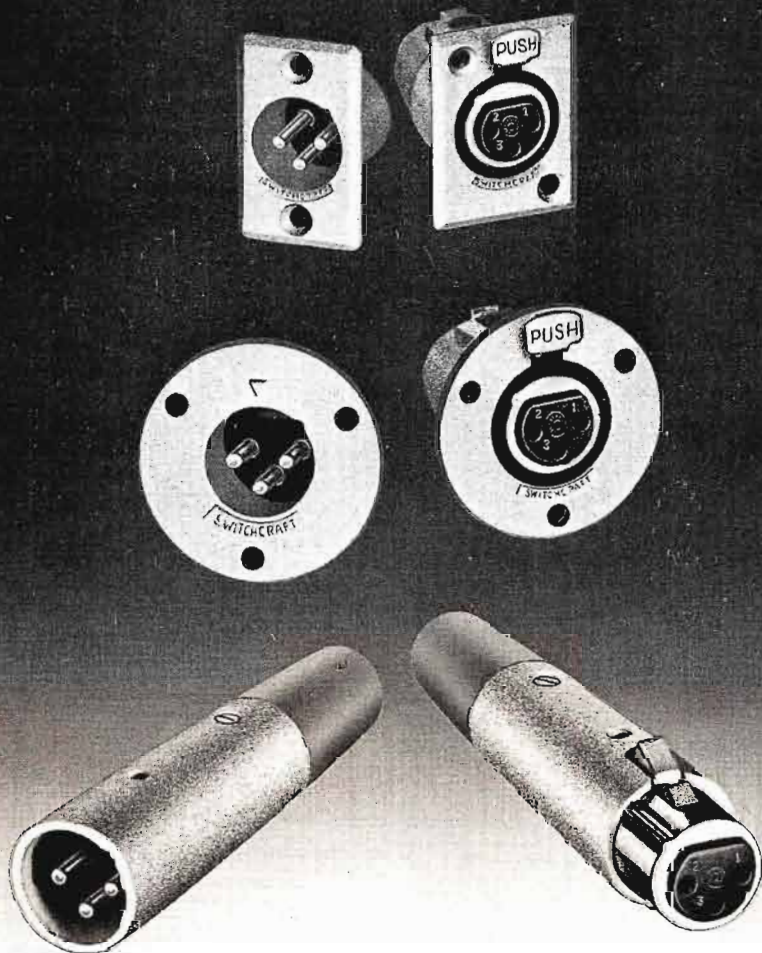
and whistles. So you get more of what you need for less money.

Let us show you our solution to your blanking problems. Use the reader service card, write or call ADDA Corporation, 1671 Dell Avenue, Campbell, California 95008. Telephone: (408) 379-1500. Southeast District Office: 2693 Twigg Circle, Marietta, Georgia 30067. Telephone: (404) 953-1500.

ADDA CORPORATION

Circle (92) on Reply Card

Here come the professionals



Switchcraft® introduces an entirely new line of professional audio connectors. Starting with clean, modern styling, precision die-cast housings and a special "Vel-Tone" non-reflective finish, the professionalism of these outstanding audio connectors continues every step of the way with Switchcraft innovative, pace setting quick-ground provision. Each Quick-Ground Professional (QGP) audio connector shares much of the uncommon features of the "Q-G" audio connector. Until now, the standard of the audio industry. Captive design insert screw, exclusive ground lug, and bifurcated contacts.

The QGP audio connectors bring a new degree of performance to connectors. The insert is molded of a specially selected thermoplastic for long wear and excellent dielectric properties. The contacts and pins have 50 micro

© Registered trademark of Switchcraft, Inc.

inches gold over 50 micro inches nickel... unheard of in any other audio connector. This means more reliable connections, all the time.

All in all, the QGP audio connectors are unlikely to be surpassed in quality of performance or variety of features for some time to come. Of course the Switchcraft Quick-Ground Professionals carry a price tag commensurate with their position at the top.

Think like a professional. Think Switchcraft QGP. Call the Switchcraft distributor near you for data, prices and the model you require. They have them on-the-shelf. Switchcraft, Inc., 5555 N. Elston Avenue, Chicago, Illinois 60630.



Circle (93) on Reply Card

Time code

continued from page 106

to that frame on channel two. The characters may be one frame behind the actual time code on channel two. This is because the character inserter does not have a one frame look-ahead circuit which puts the two in sync. Before making work prints, find out if the character inserter has been modified to correct this problem. Otherwise all the edits will be one frame late. The term for this modified unit is on-time, which indicates that it has the look-ahead feature.

- The video levels of the inserted characters are very important. Peak white levels should not exceed 80% and the black levels should not go below the blanking signal. Otherwise, the characters will distort and cause the picture to tear or roll vertically if they get into the synchronizing signals.

4. Check the video, audio and code levels periodically during recording to prevent distortion, low levels or any other problems.

5. Identify all tapes as clearly as possible. Be sure that all work print tapes carry the same identification as their corresponding master tapes. Most important are the show title, show number (if in a series), reel number, recorded date, whether master or ISO (isolated) feed, type of time code (DF or NDF), and any technical information about the tape.

6. After recording, rewind all tapes to their beginning. This is especially important for videocassettes to insure against transportation damage. Check the tape label against the box to be sure you are putting the right tape in the right box. Don't laugh! And similar problems occur every day.

7. Whenever possible, record a tape leader. Generally, this is from thirty to sixty seconds of color bars and reference tone at zero level on channel one.

8. Finally, and most important, when in doubt, ask. This simple rule will prevent errors, speed up production and keep costs (and tempers) down.

To sum it up, a little care in recording time code as well as in duplicating it, will prevent most edit abort errors and speed up post-production. It cannot be stressed often enough that "haste makes waste" and to re-do outweighs the time it takes to do it right the first time by a wide margin. Time code editing is here to stay. Let's try to make it easy. □

HEAR FROM US BEFORE YOU HEAR FROM THEM.

Today's broadcasting equipment and standards let you transmit things you never could before.

Like tape hiss, cue tone leakage and turntable rumble, to name a few.

And that's precisely why you need the JBL 4301 Broadcast Monitor.

It lets you hear everything you're transmitting. All the good stuff. And, all the bad. So you can detect the flaws before your listeners do.

The 4301 is super-compact, so it fits all EIA Standard racks. 19" h x 12 1/16" d x 11 1/2" w. It costs \$168. And it's made by JBL. The recognized leader in professional sound equipment.

Just give us your name and address and we'll send you all the 4301's very impressive specs.

Along with the name of your nearest JBL Professional Products Dealer.

He'll tell you everything you need to hear.



GET IT ALL.



James B. Lansing Sound, Inc. / Professional Division, 8500 Balboa Boulevard, Northridge, California 91329

Circle (94) on Reply Card

Most popular TV channel frequencies

By Stu Rauch and Jens Simonsen

MARK AND PROTECT YOUR TOWER WITH CONFIDENCE!

A HIGH INTENSITY LIGHTING SYSTEM offering

Reduced Weight and Windage
Easier, Lower Cost Installations
No High Voltage Conduit Runs
Improved Reliability and Serviceability
Fully FAA Approved

Now, over 160 reliable ElectroFlash Systems are in operation. The FTB-205 systems mark and protect America's **NEWEST BROADCAST TOWERS.*** Many more towers with ElectroFlash protection are operating in **CANADA.***

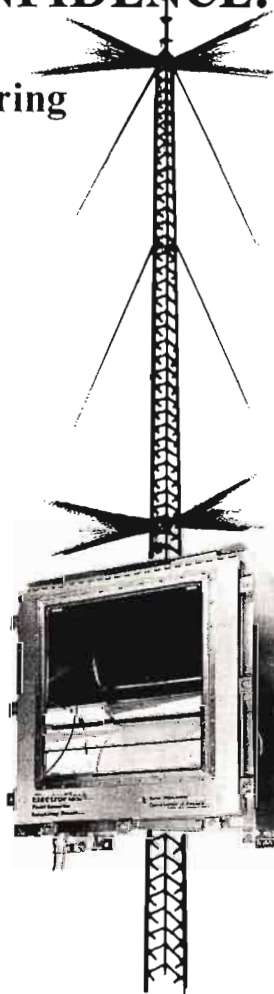
These numbers do not include the ElectroFlash Systems on Microwave communications towers or the "HOT" tower systems, one on a ½ mega-watt radio navigation radiator and others on combination AM radiator-FM towers in the United States and Canada.*

TIME TO REPAINT YOUR TOWER? Many of the systems installed are replacing surface paint and night lighting on older towers.*

Why the FTB-205 ElectroFlash Beacon System from FTCA? Simple! When you add considerations such as:

- Superior Design
- High Quality Construction
- Lower Installation Cost
- Proven Reliability
- Long Life
- Outstanding Warranty Coverage

to other exclusive features, the results are benefits obtainable only with the FTB-205 ElectroFlash System.



* for system locations and station calls or for additional information on the marking of your tower.

WRITE OR TELEPHONE,

FLASH TECHNOLOGY

CORPORATION of AMERICA

55 LAKE STREET, NASHUA, NEW HAMPSHIRE 03060

TEL. (603) 883-6500

Manufacturers of television sets for closed-circuit TV distribution systems are faced with a common question: Which television channels should I choose for my distribution system? This important question normally arises whenever a new TV factory or a closed-circuit television system is planned.

There are many factors to consider in order to obtain the best reception at all locations and to avoid interference from local transmitters, or between the distributed channels. Some factors to be considered are:

- How many locally-generated signals must be transmitted?
- Are both VHF and UHF channels to be used?
- Are S-band channels wanted? (S-bands are the special CATV bands on either side of normal VHF television band III.)
- Must off-air channels be distributed?
- Should off-air channels be transferred to other channels in order to avoid influence from direct signal pick-up from strong TV transmitters?

As a general rule, the use of neighbor channels should be avoided because the adjacent channel suppression of TV receivers is often insufficient for good-quality reception. Also, local oscillator and image interference may occur, which means that channels placed at distances of the IF frequency, or twice that value, should be avoided.

For example, in the European TV system B(VHF), the channel separation is 7 MHz and the IF is usually about 39 MHz. The local oscillator frequency of a receiver tuned to channel "n" is situated in channel n+5, and the image is partly in channel n+10 and partly in n+11 (see Figure 1). In the U.S. system M, the channel separation is 6 MHz and the IF 45.75 MHz. Thus,

continued on page 112

Circle (95) on Reply Card

A product line that satisfies everyone's editing equipment requirements

**DATATRON SUPPLIES
VIDEOTAPE EDITING SYSTEMS
AND PERIPHERAL EQUIPMENT FOR
EVERY EDITING APPLICATION -
AND EVERY BUDGET**

DATATRON 2000 — THE ALL NEW THIRD GENERATION VIDEO-TAPE EDITING SYSTEM FEATURING DISTRIBUTED PROCESSING, AN INTERACTIVE COLOR CRT OPERATOR INTERFACE, CONTINUOUS RECORD VTR ROLL CAPABILITY, FLOPPY DISK EDIT LIST STORAGE, USER BITS, AND A HOST OF OTHER REFINEMENTS. THE MOST ADVANCED ELECTRONIC VIDEOTAPE EDITING SYSTEM YOU CAN BUY.

TEMPO 76 — THE FIRST VIDEOTAPE EDITING SYSTEM THAT PUTS BOTH SMPTE TIME CODE AND CONTROL TRACK TECHNOLOGIES AT YOUR FINGERTIPS IN ONE UNIT. WITH ENHANCEMENTS SUCH AS TEXT EDITING, EXTENDED MEMORY, SYSTEM DEBUG AND EXPANDED INTERFACE CAPABILITY, TEMPO 76, IS STILL THE MOST SOPHISTICATED AND FLEXIBLE EDITING SYSTEM IN ITS CLASS.

EDITMATE III — A NEW, FULL FEATURE CONTROL TRACK EDITOR WITH EDIT DECISION LISTING CAPABILITY. SOPHISTICATED EDITING FEATURES AT A SURPRISINGLY LOW PRICE. ALSO AVAILABLE IN AN EDITOR-ONLY VERSION (EDITMATE II), AND IN AN EDIT LISTER-ONLY VERSION (EDITMATE I).

PERIPHERAL EQUIPMENT — DATATRON'S EDITING SYSTEMS ARE BACKED-UP BY A COMPLETE ARRAY OF FULLY COMPATIBLE PERIPHERALS, INCLUDING SMPTE CODE READERS AND GENERATORS (WITH OR WITHOUT USER-BITS), CHARACTER GENERATORS, JAM-SYNC GENERATORS, ROUTING SWITCHERS, PAPER TAPE PUNCHES AND READERS, AND MORE.

WRITE OR CALL TO LEARN MORE
ABOUT THE MOST COMPLETE
LINE OF EDITING PRODUCTS
IN THE INDUSTRY.

DATATRON 2000

datatron, inc.

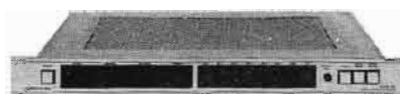
1562 Reynolds Ave., Irvine, California 92705 (714) 540-9330 TWX 910-595-1589
Mailing Address: P.O. Box 11427, Santa Ana, California 92711



5150 SMPTE CODE GENERATOR



5250 SMPTE CODE READER



5260 SMPTE/USER BITS READER



5170 SMPTE/USER BITS GENERATOR



5152 JAM SYNC GENERATOR

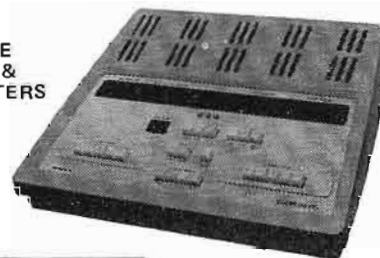


9 x 3 ROUTING SWITCHER



5450 CHARACTER GENERATOR

EDITMATE
EDITORS &
EDIT LISTERS



TEMPO 76
EDITORS

Video Jacks Plugs Patch- Cords

GENUINE
WESTERN ELECTRIC

BRAND NEW GUARANTEED
(WHILE PRESENT STOCKS LAST)

CURRENTLY USED BY THE NETWORKS
AND THROUGHOUT THE BROADCAST
INDUSTRY

AT SURPLUS PRICES

477B JACKS, 75 OHM	\$5.00
372A HAIR PIN	\$6.00
358A PLUGS	\$3.50

LARGE STOCK AUDIO JACKS, PLUGS,
PATCH CORDS, PATCH BAYS

SCREEN ROOM POWER FILTERS

P-LINE—TELEPHONE LARGE
EQUIPMENT STOCK
* IMMEDIATE DELIVERY

TELECTRIC
CO.

1218 VENICE BLVD.
LOS ANGELES, CAL 90006
213-748-2281

Circle (97) on Reply Card

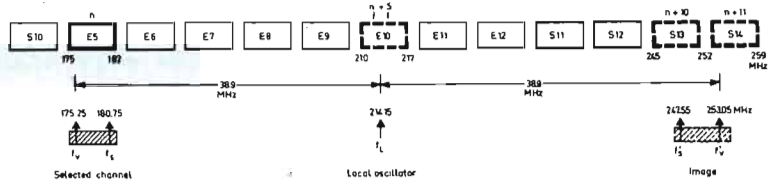


Figure 1 Origin of local oscillator and image interference. In this example, a TV receiver with 38.9 MHz IF is tuned to channel E5. The local oscillator can cause disturbance on E10. Interference from S13 and S14 may occur if image suppression is bad. Thus, channel E10, S13 and S14 should not be used with channel E5.



Figure 2 Professional TV modulator with UHF converter, Philips PM 5580 and PM 5594/5.

Channel frequencies

continued from page 110

troubles may occur in channels $n+7$, $n+14$ and $n+15$. In the European UHF systems, G, I and K, the separation is 8 MHz, and with the IF about 39 MHz the local oscillator will be located in the holes between the channels $n+4$ and $n+5$; in this case, we have only to consider the image at channel $n+9$.

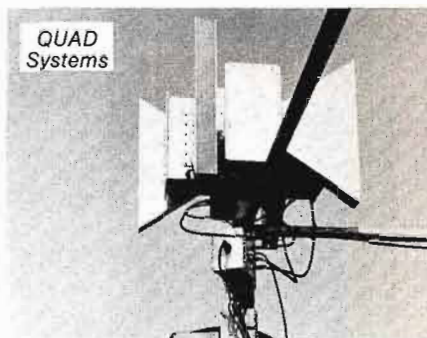
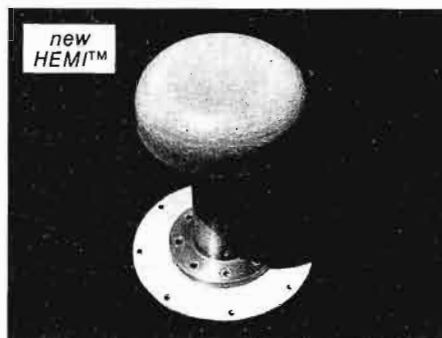
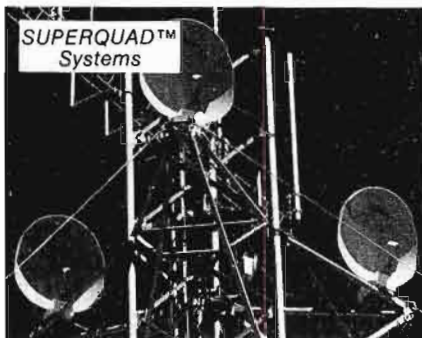
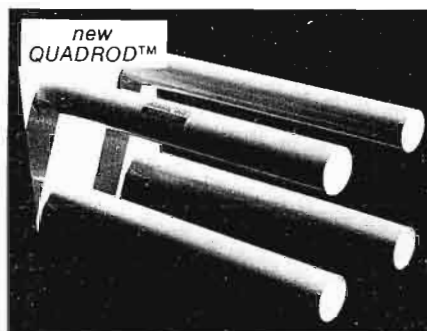
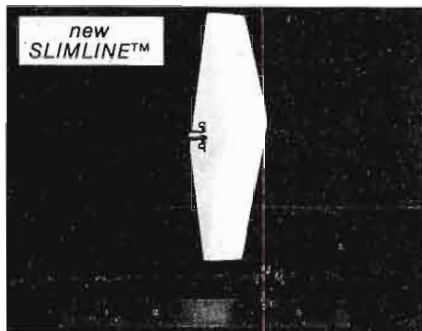
U.S. vs European

When all of these points have been considered, there is still some freedom to select the channels, and the question arises as to whether some channels are more frequently

chosen than others. The Philips development and supply center for professional TV equipment in Copenhagen has investigated this subject by reviewing about 2000 recent systems ordered by U.S. and European customers.

For some years Philips has supplied TV modulators and converters to manufacturers of television receivers, closed-circuit TV systems, and CATV systems. Figure 2 shows the Philips PM 5580 modulator and RF converter for the European system G. A typical television manufacturing plant central distribution

continued on page 114



WHAT'S NEW WITH NURAD?

1. HEMI™ Hemispherical Antenna for Airborne Systems.
2. SLIMLINE™ Antenna for the new microminiature portable transmitters.
3. QUADROD™, at last a 7GHz counterpart to the famous GOLDENROD™.
4. Complete Microwave TV Systems Capability.

See the HEMI™, SLIMLINE™, and QUADROD™ at IBC 78, Wembley, England, September 25-29, and at the SMPTE Convention, New York City, October 29-November 3.

NURAD understands and is interested in your systems problems. Call, write, or see us.

NURAD, INC.
ANTENNAS

&

**MICROWAVE TV
SYSTEMS**

2165 DRUID PARK DRIVE
BALTIMORE, MARYLAND, U.S.A.

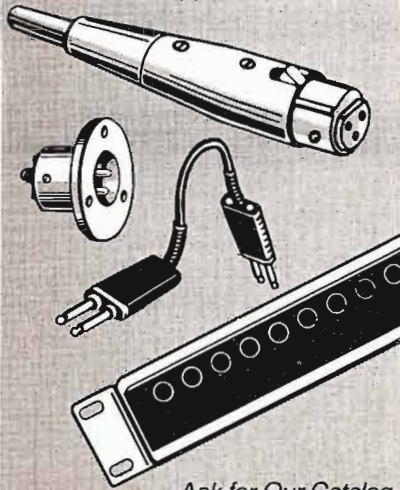
Circle (98) on Reply Card

TELEPHONE (301) 462-1700
TWX/TELEX (710) 234-1071

SWITCHCRAFT
INC.

**AUDIO
CONNECTORS
JACKS/PLUGS/PATCH CORDS**

Shipped from STOCK!



Ask for Our Catalog

PRO-AUDIO SPECIALTIES CO.

1291 RAND ROAD
DES PLAINES, ILLINOIS 60016
PHONE (312) 827-8388

Circle (99) on Reply Card

Channel frequencies

continued from page 112

unit is shown in Figure 3. The Philips series of converters, PM 5591-5596, are crystal controlled and are supplied pretuned to the TV channel of the customer's choice.

The crystal frequency and channel designation of the 2000 Philips systems were used as input to a computerized analysis. The computer was programmed to identify the various TV systems, to perform a statistical analysis, and to present the results in the form of several tables and histograms.

For the purposes of this article only the combined VHF and UHF histograms are illustrated. Figure 4 shows the American system M where channels 2 to 6 are situated in VHF band I, channels 7 to 13 in band III and channels 14 to 83 in the UHF bands IV and V.

Figure 5 shows the European VHF and UHF channels, and the histogram is combined from the TV systems B, G, H, I and K [channels

continued on page 118

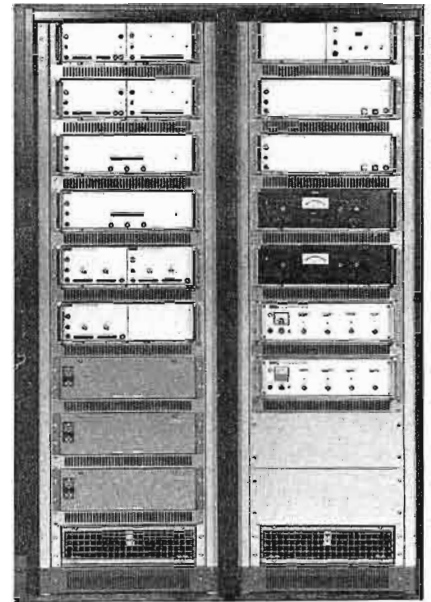


Figure 3 The central distribution unit of a manufacturing plant where two modulators and eight converters together with pattern generators and other progressional TV equipment are mounted in a 19-inch rack.

One reason Jim King sells 75% of his cassette tape loaders overseas is because it's profitable.

Another is because we showed him how.

James L. King, President, King Instrument Corporation, Westboro, Mass. (40 Employees)

Can we do the same for you?

Write:
Secretary of Commerce
U.S. Department of Commerce
Industry and Trade Administration, BED-18
Washington, D.C. 20230

**Ad
Council**

A Public Service of
This Magazine &
The Advertising Council

Up to now you had to choose between the turntable you wanted and the turntable you could afford.



Technics MKII Series. The SL-1300 MKII automatic, the SL-1400 MKII semi-automatic and the SL-1500 MKII manual.

You expect a quartz turntable to give unparalleled speed accuracy. And these do. What you didn't expect were all the other advantages Technics totally quartz-controlled direct-drive system gives you.

Like torque that cuts buildup time to an incredible 0.7 seconds. And at the same time maintains 0% speed fluctuations with loads up to 300 gms. That's equivalent to 150 tonearms tracking at 2 gms. each.

And that's not all. Technics MKII Series adds quartz accuracy to whatever pitch variation you desire. In exact 0.1% increments. At the touch of a button. And instantaneously

displayed by the front-panel LEDs.

And to take advantage of all that accuracy, Technics has a low-mass S-shaped universal tonearm that's so accurate, friction is down to 7 mg. (vertical and horizontal).

Technics MKII Series. Compare specifications. Compare quartz. And you'll realize there's really no comparison.

MOTOR: Brushless DC motor, quartz-controlled phase-locked servo circuit. SPEED: 33 $\frac{1}{3}$ and 45 RPM. STARTING TORQUE: 1.5 kg. per cm. BUILDUP TIME: 0.7 seconds (= 90° rotation) to 33 $\frac{1}{3}$ RPM. SPEED DRIFT: Within $\pm 0.002\%$. WOW & FLUTTER: 0.025% WRMS. RUMBLE: -78 dB. PITCH VARIATION: $\pm 9.9\%$.

Technics MKII Series. A rare combination of audio technology. A new standard of audio excellence.

Technics
Professional Series

Circle (101) on Reply Card

With Fujinon...



F/1.9
14x10 zoom

with built-in
2X extender



F/1.7
12x9 zoom



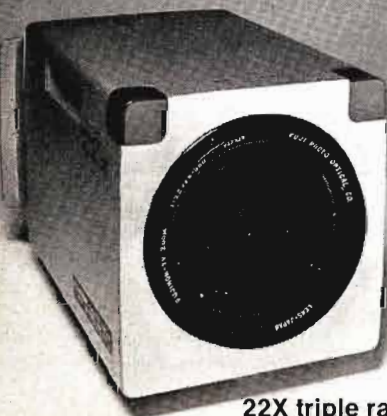
F/1.4 6mm
ultra wide angle

10X close-focusing
wide angle zoom



14X wide-angle
high resolution zoom

16X lightweight
4-range wide angle zoom



22X triple range
field zoom

30X twin range
field zoom



Beam Splitting
Optical Systems



what you see is always what you get.

Exactly. Everytime. From edge to edge, corner to corner. The color, the clarity and the fringe transmission are all unexcelled. In fact, no other lenses can equal Fujinon's low distortion, spectral transmission and flare characteristics. It all helps explain why more television cameras are equipped with Fujinon than any other lens. (Notice how many ads for cameras show Fujinon lenses?)

Whatever the application, whatever the conditions, Fujinon offers a lens that will give you exactly what you want. For ENG/EFP cameras, Fujinon can put you in the middle of the action even when you can't get anywhere near it. (Our 14x10 zoom with built in 2X extender gives you 10 to 280mm zoom; that's equal to 544mm on a 1 1/4" format.) And when things get close, you can, too, with a 6mm lens that focuses down to 0-inch.

For studio and field cameras, choose from 10 to 30X zooms including the widest, close focusing lens up to a 60X zoom that gives you 620mm focal length without attachments. In addition to broadcast, Fujinon offers the **longest line of lenses for closed circuit television**. Including lenses for high light and low light conditions; for high radiation environments, for surveillance and education. You can also turn to Fujinon for **hologram and moire cameras, medical fiber optic devices, and binoculars** (from 4x25 up to 25x150).

Besides being light years ahead in performance, value and quality, Fujinon backs you up with service that's the best available. Check the specs below on Fujinon BCTV lenses. Then ask for a free side-by-side demo. You'll soon agree that with Fujinon, what you see is always what you get. And if you don't see exactly what you want, just ask.

MODEL NO.	FORMAT	FOCAL LENGTH (mm)	f	M.O.D. (METERS)	DIAGONAL	FIELD ANGLE HORIZONTAL	VERTICAL	BACK FOCAL LENGTH (mm)	OPERATION				REMARKS
									MOUNT	IRIS	ZOOM	FOCUS	

ENG/EFP Lenses (For Prism Type Cameras)

A10X10.5	3/8"	10.5X105	1.4	1.5	57°38'-6°18'	47°30'-5°04'	36°32'-3°47'	60.12		DC	Flexible Cable	Flexible Cable	Adaptable for 2X extender
A12X10	3/8"	10-120	1.9	0.8	57°37'-5°15'	47°30'-4°12'	36°32'-3°09'	58.08		DC	DC	Manual	
A12X19	3/8"	9-108	1.7	0.8	62°52'-5°50'	52°06'-4°40'	40°16'-3°30'	30.63		DC	DC	Manual	
A12X9	3/8"	10-140	1.9	0.8	57°37'-4°30'	47°30'-3°36'	36°32'-2°42'	38.99		DC	DC	Manual	Built-in 2X extender
A14X11	3/8"	11-154	2.1	0.8	53°08'-4°05'	43°36'-3°16'	33°24'-2°27'	60.36		DC	DC	Manual	Built-in 2X extender
A22X12.5	3/8"	12.5-275	1.6	2.5	47°9'-2°19'	38°30'-1°52'	29°21'-1°24'			DC	Manual	Manual	Built-in 2X extender
AF6	3/8"	6	1.4	0.2	83°54'	70°36'	56°00'			Manual		Manual	

ENG/EFP Lenses (For Relay Type Cameras)

N10X10	3/8"	10-100	1.9	1.0	57°37'-6°18'	47°30'-5°02'	36°32'-3°47'	29.02		DC	Manual	Manual	
N12X9	3/8"	9-108	1.7	0.8	62°52'-5°50'	52°06'-4°40'	40°16'-3°30'	29.30		DC	DC	Manual	
N14X10	3/8"	10-140	1.9	0.8	57°37'-4°30'	47°30'-3°36'	36°32'-2°42'	32.49		DC	DC	Manual	

Optical Accessories Systems for ENG/EFP Lenses

Servo Zoom Module (ZSM)	Grip Attachment (GHA)	DC Power Source (DPS)	Flexible Cable (CFC)
Servo Focus Module (FSM)	Extension Cable (ECA)	Mounting Clamp (MCA)	Zoom Handle (CZH)
Lens Grip (SRD)	Servo Focus Demand (FMM)	Manual Zoom Module (ZMM)	Manual Focus Demand (FMM)
			Focus Grip (CFH)

Studio/Field Television Lenses

R10X11	1"	11-110	2.1	0.35	72°00'-8°18'	60°12'-6°36'	47°06'-5°00'	60.52		DC	Flexible Cable	Flexible Cable	Adaptable for X1.5, 2, 2.5 extenders
R14X13	1"	13-182	1.6	0.75	63°00'-5°00'	52°30'-4°00'	40°30'-3°00'	61.53		DC	Flexible Cable	Flexible Cable	Adaptable for X1.5, 2, 2.5 extenders
R16X13	1"	13-210	1.6	0.75	63°13'-4°22'	52°25'-3°29'	40°32'-2°37'	61.70		DC	Manual or Servo Drive	Manual or Servo Drive	Built-in X1.5, 2, 2.5 extenders
R22X18	1"	18-400	1.8	2.5	46°27'-2°17'	37°54'-1°50'	28°53'-1°22'	60.84		DC	Flexible Cable	Flexible Cable	Built-in X1.5, 2 extenders
R30X16	1"	16-500	1.8	2.5	53°08'-1°50'	43°36'-1°28'	33°24'-1°06'	70.03		DC	Manual or Servo Drive	Manual or Servo Drive	Built-in 2X extender
P10X15	1 1/4"	15-150	2.8	0.35	71°00'-6°00'	59°20'-6°30'	46°20'-4°54'	63.74		DC	Flexible Cable	Flexible Cable	Built-in 2X extender
P14X17	1 1/4"	17-240	2.2	0.75	63°00'-5°00'	52°30'-4°00'	40°30'-3°00'	88.37		DC	Flexible Cable	Flexible Cable	Adaptable for X1.5, 2, 2.5 extenders
P16X17	1 1/4"	17-270	2.1	0.75	64°22'-4°32'	53°27'-3°38'	41°23'-21°23'	81.72		DC	Manual or Servo Drive	Manual or Servo Drive	Built-in X1.5, 2, 2.5 extenders
P22X25	1 1/4"	25-550	2.2		46°19'-2°17'	37°46'-1°49'	28°47'-1°22'	95.98		DC	Flexible Cable	Flexible Cable	Built-in X1.5, 2.5 extenders
P30X20	1 1/4"	20-620	2.2	2.5	56°17'-1°59'	46°20'-1°35'	35°36'-1°11'	91.39		Servo Drive	Manual or Servo Drive	Manual or Servo Drive	Built-in 2X extender

Fujinon Beam Splitting Optical Systems for Color TV Cameras

Dichroic Prisms 3/8", 1" and 1 1/4" format systems. Other sizes available.
 Dichroic Relays 3/8", 1" and 1 1/4" format systems. Other sizes available.
 Striped Filters Overcoated and non-overcoated available in monochrome, cross and color sequence types.
 Tolerance of center deviation: Less than 0.2mm.
 Flatness: Within 5 fringes over the faceplate.
 Surface parallelism: 0.05mm maximum thickness variation.
 Tolerance of stripe width: For stripes less than 30 μm wide — less than 3 μm.
 For stripes over 30 μm wide — less than ±10%
 Tolerance of pitch width: Less than ±2 μm.
 Tolerance of total pitches: Less than 5 m to 100 pitches.

Image Format	1" Type	3/8" Type	The Others
Diameter	26.2 ± 0.1mm	17.6 ± 0.1mm	Variable
Thickness	2.5 ± 0.3mm	1.5 ± 0.2mm	Variable
Edge Bavel	0.25 ± 0.13mm X 45°	0.2 ± 0.1mm X 45°	Variable

Fujinon Optical, Inc. • 672 White Plains Road • Scarsdale, NY 10583 • (914) 472-9800

FUJINON

cetec broadcast group

Great products for AM/FM radio broadcast.

System 7000 program automation.

FM broadcast antenna systems.

AM and FM transmitters, consoles, and studio equipment.

Cetec Broadcast Group means good news for radio broadcasters!



Cetec Broadcast Group

The Broadcast Divisions of Cetec Corporation

1110 Mark Avenue,
Carpinteria, Calif 93013
(805) 684-7686

Channel frequencies

continued from page 114

2-4 in Band I, channels 5-12 in band III and 21-68 in bands IV and V).

From these histograms a "most popular" list can be made. For the American system, channel 2 is the most popular, followed by channels 6, 12 and 3. For the European systems, the score in decreasing order of popularity is channel 4, channel 21, channel 5 and channel 2.

It is interesting to observe that the low channel numbers are most frequently used and that the channel numbers at the beginning and end of each band dominate. Notice also that in the UHF range the round numbers (multiples of 10) are popu-

lar. This tendency may possibly have a psychological reason. Since there is more space in the UHF range, and if no restrictions due to local transmitter channels exist, there is a tendency for humans to select round figures.

The distribution between VHF and UHF channels is about 70/30 for the U.S. system compared with about equal distribution for European systems. However, it must be noted that since there was less data available for analysis for the American channels than for the European channels, this distribution pattern may not be completely accurate for the industry as a whole. □

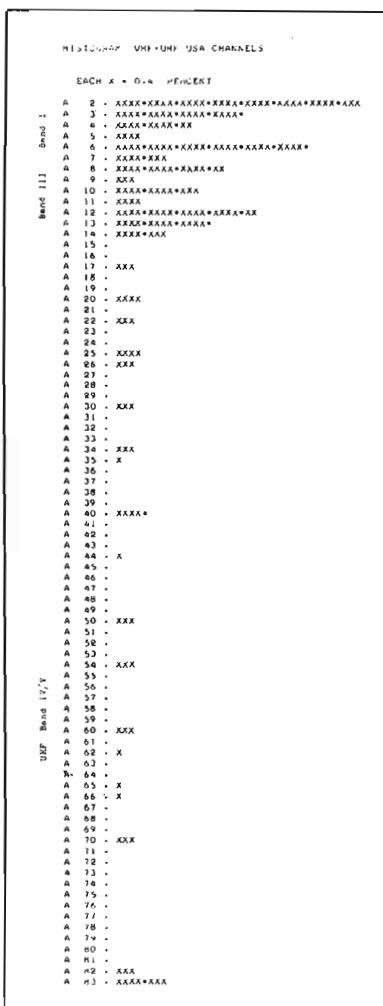


Figure 4 Histogram of VHF and UHF channels for American TV system M.

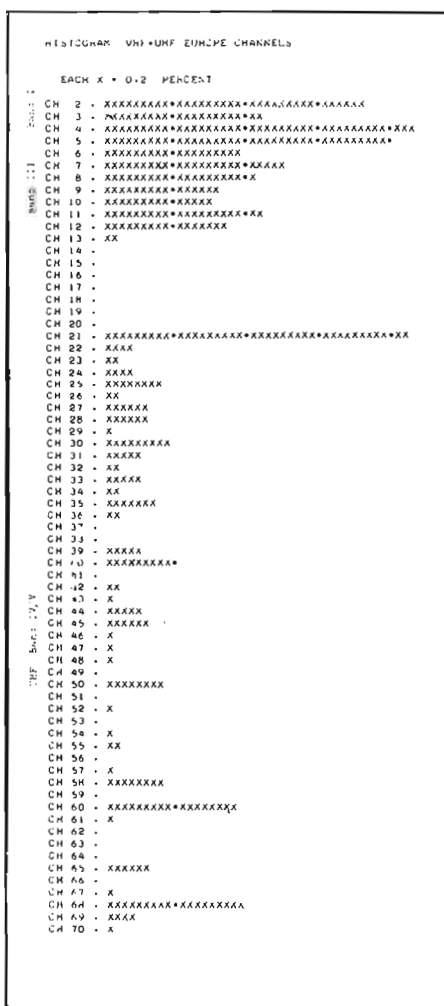
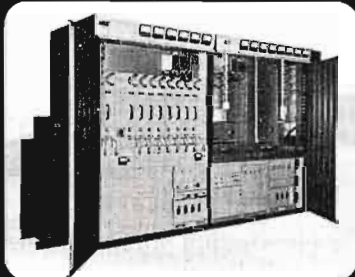
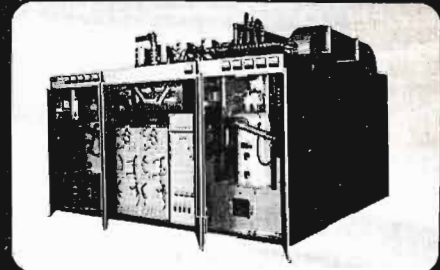
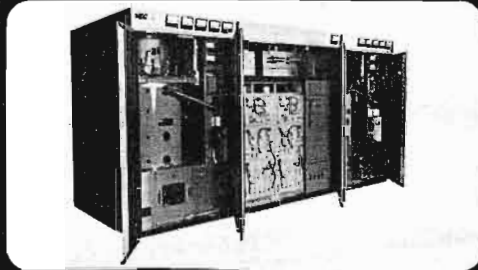
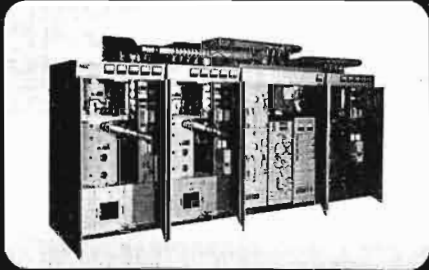
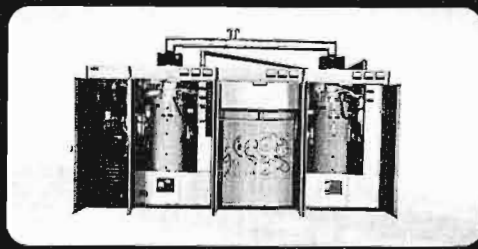
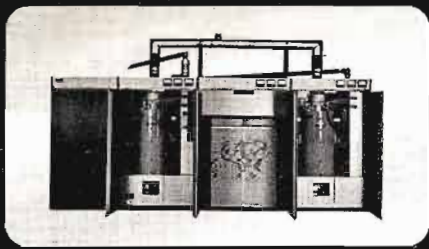
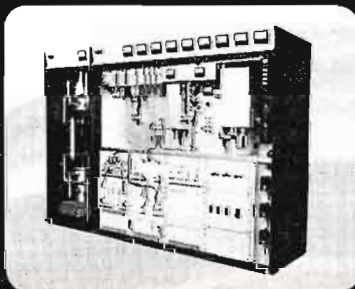
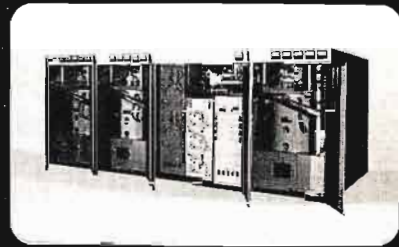


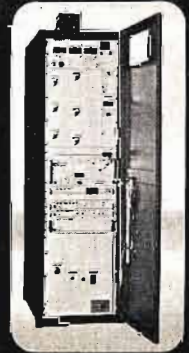
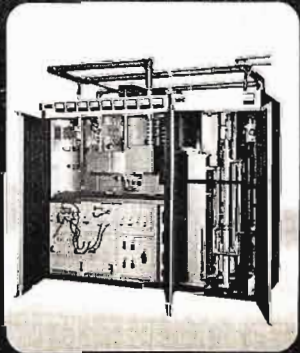
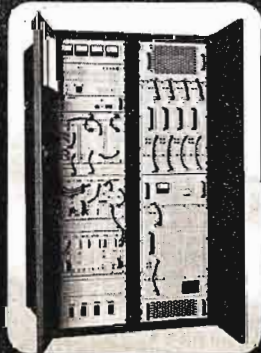
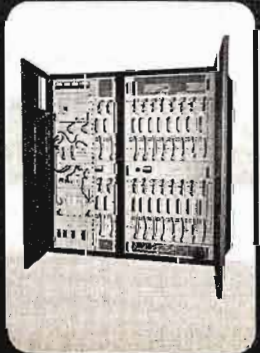
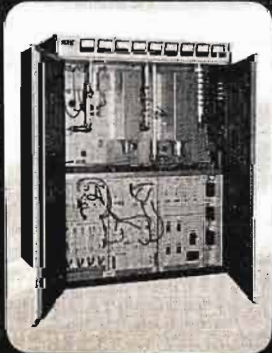
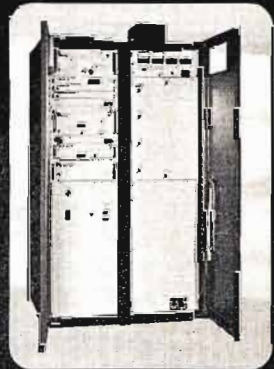
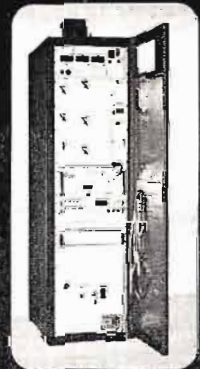
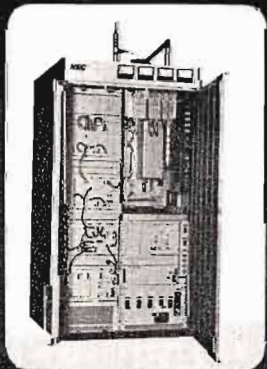
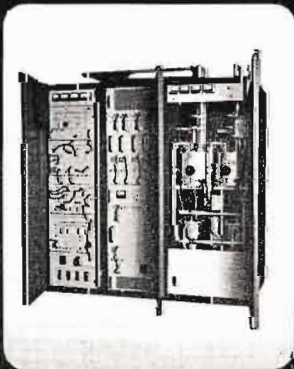
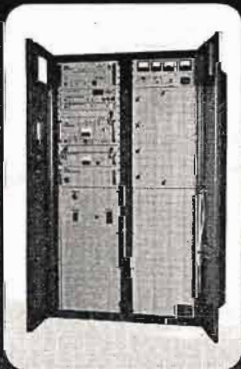
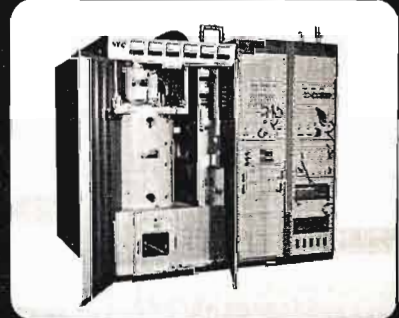
Figure 5 Histogram of VHF and UHF channels for European TV systems B, G, H, I and K.



**20 more reasons
to buy your next
transmitter from
NEC
Nippon Electric Co., Ltd.
Tokyo, Japan**



Call 800-323-6656/In Illinois (312) 640-3792
NEC America, Inc.
Broadcast Equipment Division
130 Martin Lane, Elk Grove, Village, Illinois 60007
Circle (104) on Reply Card



AFA saved them \$3,500,000 on 2" VTR's

TV STATIONS

KDAL-TV Duluth, MN
AMPEX VR-2000
WAST-TV Albany, NY
RCA TR-70C
WHP-TV Harrisburg, PA
AMPEX VR-1200
WAEO-TV Rhinelander, WI
RCA TR-70C
WZTV-TV Nashville, TN
AMPEX VR-2000
WVEC-TV Norfolk, VA
AMPEX VR-2000
KEVN-TV Rapid City, SD
(2) AMPEX VR-1200's
WCIX-TV Miami, FL
(2) AMPEX VR-1200's
KOEO-TV San Francisco, CA
(2) AMPEX VR-1200's
KCMD-TV Kansas City, MO
AMPEX HS-200

INSTITUTIONS

**N.Y. Institute of Technology
Video Center NY**
AMPEX VR-2000
**Kansas City Baptist Temple
Kansas City, MO**
AMPEX VR-1200
**National Aeronautics &
Space Administration**
AMPEX VR-1200
**Faith Tabernacle Church
Baltimore, MD**
(2) AMPEX VR-1200's
Faith Temple San Jose, CA
(2) RCA TR-50's

PRODUCTION FACILITIES

EUE Screen Gems New York, NY
(4) AMPEX VR-2000's
Editel Los Angeles, CA
(2) AMPEX AVR-1's
Editel Chicago, IL
(2) AMPEX VR-1200's
**Columbia Pictures Videocassette
Services Elk Grove, IL**
(2) AMPEX VR-2000's
National Video Center New York, NY
AMPEX HS-200
Dolphin Production New York, NY
AMPEX VR-2000
Media Stream Lake Charles, LA
(2) AMPEX VR-1200's
Upstairs Productions Portland, OR
AMPEX VR-1200
Studio Television Services Los Angeles, CA
AMPEX VR-1200C
Bell & Howell Video Systems Evanston, IL
(2) AMPEX VR-1200's
TV-R, Inc. New York, NY
AMPEX VR-2000
**Modern Telecommunications, Inc.
New York, N.Y.**
AMPEX HS-200

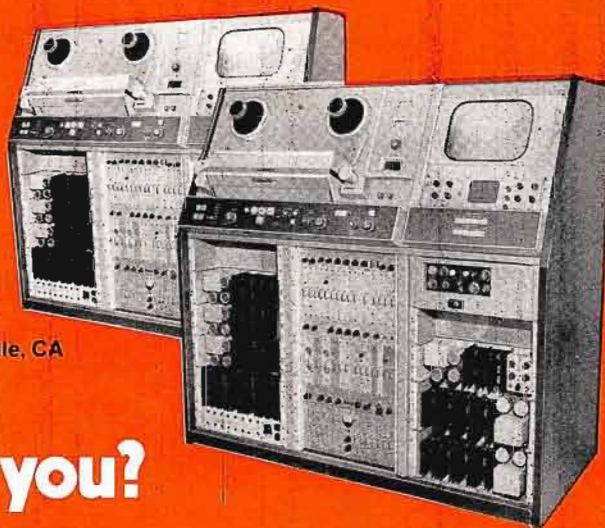
MANUFACTURERS

**Consolidated Video Systems, Inc.
Santa Clara, CA**
AMPEX VR-2000
Recortec, Inc. Sunnyvale, CA
(2) AMPEX VR-1200's
Spin Physics, Inc. San Diego, CA
AMPEX VR-1200
Computer Magnetics Corp. Sunnyvale, CA
AMPEX VR-1200

FILM PRODUCTION FACILITIES

Innervision Productions St. Louis, MO
AMPEX VR-1200
Maritz Labs St. Louis, MO
AMPEX VR-1200
MGS Services New York, NY
AMPEX VR-1200
P.A.T. Video Services, Inc. New York, NY
AMPEX VR-2000
(2) AMPEX VR-1200's
Cine Magnetics Film Labs Mamaroneck, NY
AMPEX VR-1200

Our customers know value when they see it. If they bought 'em new, those VTR's would have cost \$7 Million. But our "preowned" VTR's are fully rebuilt and good as new. In fact... with our custom options added, they're probably "better" than new. If you don't believe us... ask someone else who knows... our customers.



They saved...how about you?

AFA can fill your need with a customized, fully rebuilt video tape recorder. Call us today for complete information.

AFA

A.F. ASSOCIATES, INC.

100 Stonehurst Court, Northvale, N.J. 07647
2465 E. Bayshore, Suite 301, Palo Alto, CA 94303

Circle (105) on Reply Card

201-767-1000 415-321-4823

1978 BROADCAST BUYERS' GUIDE

Since our first edition of the Buyers' Guide ten years ago, the broadcasting industry has grown tremendously in complexity of equipment and completeness of broadcast services. Just as the industry has responded to use of new technologies—most notably the micro-processor in all phases of automation—the Buyers' Guide has responded by providing the most complete directory possible for engineers, managers, and purchasing agents requiring broadcasting equipment and/or services. Reflecting the current healthy state of our industry, this year's Buyers' Guide has 818 product categories, lists 736 manufacturers, and contains 222 advertisers. It's the result of a dedicated staff effort to make it our finest tool for purchasing the industry's hardware, software, and services.

Companies with advertising in this issue are listed in red under each appropriate product heading. These Red Listings include the ad page location, to serve as a direct reference to the product information you are seeking.

Each year, Broadcast Engineering mails extensive questionnaire forms to suppliers around the world. They are asked to identify, by special code number, every product they currently market. In the process, scores of new products and companies are added, while lines that have been phased out—and firms that have left the field—are deleted. Once amassed and assembled, these new data are processed through a unique computer operation, programmed to "read" the code numbers and assigned company names and Red Listings to appropriate product headings.

Dealers or distributors are identified in the Product Directory by the letter "D" after the company name, followed by a numerical code showing the geographical regions (or portion of a region) served. The following chart shows the states included in each region:

1. New England (ME, NH, VT, MA, RI, CT)
2. Middle Atlantic (NY, NJ, PA)
3. East North Central (OH, IN, IL, MI, WI)
4. West North Central (MN, IA, MO, ND, KS, SD, NE)
5. South Atlantic (DE, MD, DC, VA, WV, NC, SC, GA, FL)
6. East South Central (KY, TN, AL, MS)
7. West South Central (AR, LA, OK, TX)
8. Mountain (MT, ID, WY, CO, NM, AZ, UT, NV)
9. Pacific (AK, WA, OR, CA, HI)

The Master Index of Manufacturers and Suppliers. Beginning on page 223 you'll find a complete, alphabetized index of mailing addresses for all of the companies listed in the Product Directory. Additional information appears under the index listing for advertisers in this issue: the name and telephone number of the home office sales manager, followed by, in many cases, a roster of regional sales contacts for that firm.

Reader Service Cards. For your convenience, multiple Reader Service Cards are bound into this edition. Each card is valid for a full year. By circling the appropriate numbers on the card, you can secure additional information, directly from the advertiser, through August 1979.

Attn. Chief Engineers

One stop for

NATIONWIDE

Vendor Alerting!



When buying BROADCAST EQUIPMENT...

one call to IMAS means that every potential vendor in the U.S.A. is made aware of your needs... at no cost or obligation to you!

IMAS enables you to:

- Find new sources.
- Pinpoint the best price performing products by direct comparison of specs and costs.
- Control costs by matching vendor capabilities with your needs.
- Save time searching for vendors.

Send your requests for bids or quotes by mail or
CALL, TOLL-FREE, **800-336-3045**
In Virginia call 703-525-0400 collect.



IMAS... a national vendor notification system.
Call now... lines are open at all times.

industrial marketing
advisory services, inc.

P.O. Box 1238 Arlington, Va. 22210

Circle (106) on Reply Card

PRODUCT DIRECTORY

ATS --See Automated Transmission Systems

Alarms, Carrier

B & I Electronics, Inc.
Bayly Engineering Ltd.
CCA Electronics Corp.
Hallikainen & Friends, Inc.
Rivers Associates, Inc.
Track Audio, Inc. D 1-9
Video Aids Corp. of Colorado
The Widget Works, Inc.

Alarms, Fault

See Adv. Page

Moseley Associates, Inc. 23

Pinzone Communications Products Inc. 256

B & I Electronics, Inc.
Bayly Engineering Ltd.
Belar Electronics Lab., Inc.
Beta Technology, Inc.
Bird Electronic Corp.
Broadcast Automation Associates Inc. D 1,2,5,6
Datalogic-Rust Co.
Dragnet Engineering Labs., Inc.
Harris Corp. Broadcast Products Div.
Hughes & Phillips Inc.
Moseley Associates, Inc.
National Electrolab Ltd.
Pinzone Communications Products Inc.
Rivers Associates, Inc.
Rust Corp.

Alarms, Teletype Receiver

B & I Electronics, Inc.
Moseley Associates, Inc.
Sono-Mag Corp.

Alarms, Tower Light Failure --

See Tower Light Failure Alarms

Alarm Systems, Burglar

Conrac Corp. Cramer Div.
G.C. Electronics
Heath Co.
P. R. Mallory & Co. Inc.
Microwave Assoc. Inc.
Mountain West Alarm D8
Mu-Del Electronics, Inc.
The Widget Works, Inc.

Alarm Systems, Fire

Conrac Corp. Cramer Div.
G.C. Electronics
Heath Co.
IGM Div. of Northwestern Tech.
Microwave Assoc. Inc.
Mountain West Alarm D8
The Widget Works, Inc.

Amplifier Kits

Collins Television Services
Communication Modifications, Inc.
Heath Co.
K & L Pro Audio D, 1, 2, 5, 6
Opamp Labs, Inc.

Amplifiers, AF-AGC

See Adv. Page

Altec Lansing Sound Products 205
Comrex Corp. 103
Elcom Engineering Co. 266
Inovonics 253
Russco Electronics Mfg. Inc. 16
Val-Tronics, Inc. 245
Wilkinson Electronics, Inc. 194

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Distributor Inc. D 3, 4, 6, 7
BGW Systems Inc.
Belar Electronics Lab., Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
Comrex Corp.
Dyma Engineering, Inc.
Elcom Engineering Co.
Eventide Clock Works Inc.
Everything Audio D 1-9
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Inovonics
Landy Associates Inc. D 1,2
Lauderdale Electronic Labs D 1-9
Marti Electronics
Martin Audio/Video D2
McCurdy Radio Ind. Inc.
Microwave Assoc. Inc.
Modular Audio Products Unit of Modular Devices, Inc.
Monroe Electronics, Inc.
Motorola SPI
Rupert Neve, Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Oregon Sound & Lights D 8,9
RCA Broadcast Systems
ROH Corporation
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
Russco Electronics Mfg. Inc.
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Sphere Electronics
Studio Electronics D 3,4,7
Thomson-CSF Laboratories, Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.
Yamaha International Corp.

Amplifiers, AF Compressing

See Adv. Page

Altec Lansing Sound Products 205
Inovonics 253
Moseley Associates, Inc. 23

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Distributor Inc. D 3, 4, 6, 7
Audio Interface Inc.
Autodyne D 1-9
Autogram Corp. D 7
Automated Processes, Inc.

Belar Electronics Lab., Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Comrex Corp.
Dyma Engineering, Inc.
EMT Franz VGmbH
Elcom Engineering Co.
Eventide Clock Works Inc.
Everything Audio D 1-9
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Inovonics
LPB Inc.
Landy Associates Inc. D 1,2
Lauderdale Electronic Labs D 1-9
Marti Electronics
Martin Audio/Video D2
McCurdy Radio Ind. Inc.
Microwave Assoc. Inc.
Modular Audio Products Unit of Modular Devices, Inc.
Monroe Electronics, Inc.
Moseley Associates, Inc.
Rupert Neve, Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Oregon Sound & Lights D 8,9
Quad-Eight Electronics
RCA Broadcast Systems
ROH Corporation
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
Shure Brothers Inc.
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Spectra Sonics
Sphere Electronics
Studio Electronics D 3,4,7
TM Systems, Inc.
Thomson-CSF Laboratories, Inc.
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
United Recording Electronics Industries
VIF International D 1-9
Val-Tronics, Inc. D2
Westlake Audio
Wilkinson Electronics, Inc.

Amplifiers, AF General Purpose

See Adv. Page

Altec Lansing Sound Products 205
Datatek Corp. 65
Logitek Electronic Systems 188
Ramko Research Inc. .. 186-187
Russco Electronics Mfg. Inc. 16

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Designs & Mfg.
Audio Distributor Inc. D 3, 4, 6, 7
Audio Interface Inc.
Autodyne D 1-9
Autogram Corp. D 7
Automated Processes, Inc.

BGW Systems Inc.
Bayly Engineering Ltd.
Belar Electronics Lab., Inc.
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Cetec Broadcast Group
Collins Television Services
Crown International, Inc.
Datatek Corp.
Dyma Engineering, Inc.
Dynair Electronics, Inc.
Edcor Div. of P.A.C.
Everything Audio D 1-9
Fisher Berkeley Corp.
Grandy, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
Holland Electronics
H. M. Holzberg Associates, Inc. D 1,2,5
Industrial Sciences
International Nuclear Corp.
Johnson Electronics Inc.
K & L Pro Audio D, 1, 2, 5, 6
Landy Associates Inc. D 1,2
Logitek Electronic Systems
Marti Electronics
Martin Audio/Video D2
McMartin Industries, Inc.
Micro-Trak Corp.
Microwave Assoc. Inc.
Modular Audio Products Unit of Modular Devices, Inc.
Monroe Electronics, Inc.
Charles Moore
Motorola SPI
Rupert Neve, Inc.
Norton Associates Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Oregon Sound & Lights D 8,9
Paso Sound Products Inc.
Pulse Dynamics Mfg. Corp. (PDMC)
Quad-Eight Electronics
RCA Broadcast Systems
ROH Corporation
Ram Audio Systems, Inc.
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
Russco Electronics Mfg. Inc.
Shure Brothers Inc.
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Genesis D 8,9
Spectra Sonics
Sphere Electronics
Studio Electronics D 3,4,7
Superscope, Inc.
TEAC Corp of America
TM Systems, Inc.
Telex Communications, Inc.
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
UMC Electronics Co. Broadcast Products Div.
Ultra Audio Pixtec
United Recording Electronics Industries
Val-Tronics, Inc. D2
Vamco Engineering
Video Aids Corp. of Colorado
Ward-Beck Systems, Ltd.
Westlake Audio
Wilkinson Electronics, Inc.
Yamaha International Corp.

Amplifiers, AF Peak Limiting AM

See Adv. Page

Altec Lansing Sound Products205 Inovonics253

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Designs & Mfg.
Autodyne D 1-9
Automated Processes, Inc.
Belar Electronics Lab., Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Dyma Engineering, Inc.
EMT Franz VGmbH
Elcom Engineering Co.
Eventide Clock Works Inc.
Everything Audio D 1-9
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Inovonics
LPB Inc.
Landy Associates Inc. D 1,2
Marti Electronics
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Microwave Assoc. Inc.
Moseley Associates, Inc.
Rupert Neve, Inc.
Orange County Electronics Int'l., Inc.
Orban Assoc. Inc.
Pacific Recorders and Engr. Corp.
QEI Corp.
RCA Broadcast Systems
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Genesis D 8,9
Spectra Sonics
Studio Electronics D 3,4,7
Thomson-CSF Laboratories, Inc.
Track Audio, Inc. D 1-9
United Recording Electronics Industries
VIF International D 1-9
Val-Tronics, Inc. D2
Westlake Audio
Wilkinson Electronics, Inc.

Amplifiers, AF Peak Limiting FM

See Adv. Page

Inovonics253 Moseley Associates, Inc.23

Allied Broadcast Equipment D 1-9
Autodyne D 1-9
Automated Processes, Inc.
Belar Electronics Lab., Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Comrex Corp.
Dyma Engineering, Inc.
EMT Franz VGmbH
Elcom Engineering Co.

Everything Audio D 1-9
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Inovonics
LPB Inc.
Landy Associates Inc. D 1,2
Marti Electronics
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Microwave Assoc. Inc.
Moseley Associates, Inc.
Orange County Electronics Int'l., Inc.
Orban Assoc. Inc.
Pacific Recorders and Engr. Corp.
QEI Corp.
RCA Broadcast Systems
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Genesis D 8,9
Spectra Sonics
Studio Electronics D 3,4,7
Thomson-CSF Laboratories, Inc.
Track Audio, Inc. D 1-9
United Recording Electronics Industries
VIF International D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Amplifiers, AF Remote

See Adv. Page

Altec Lansing Sound Products205

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Designs & Mfg.
Autodyne D 1-9
Automated Processes, Inc.
Bayly Engineering Ltd.
Bogen Div. Lear Siegler, Inc.
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
Cetec Broadcast Group
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Industrial Sciences
LPB Inc.
McMartin Industries, Inc.
Micro-Trak Corp.
Microwave Assoc. Inc.
Rupert Neve, Inc.
Opamp Labs, Inc.
Pulse Dynamics Mfg. Corp. (PDMC)
QRK Electronic Products
RCA Broadcast Systems
Richmond Sound Design, Ltd.
Shure Brothers Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Tri-Tronics Professional Electronics
Ultra Audio Pixtec
Wilkinson Electronics, Inc.

Amplifiers, AF Reverberation

See Adv. Page

Altec Lansing Sound Products205

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Automated Processes, Inc.
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
Cara Pacific Sales Co. D 8,9
Dyma Engineering, Inc.
Everything Audio D 1-9
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9

H. M. Holzberg Associates, Inc. D 1,2,5
K & L Pro Audio D, 1, 2, 5, 6
Landy Associates Inc. D 1,2
Lauderdale Electronic Labs D 1-9
MICMIX Audio Products, Inc.
Microwave Assoc. Inc.
Rupert Neve, Inc.
Opamp Labs, Inc.
Oregon Sound & Lights D 8,9
Pulse Dynamics Mfg. Corp. (PDMC)
Quad-Eight Electronics
Robins Broadcast & Sound Equip. Corp.
Sansui Electronics Corp.
Shure Brothers Inc.
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9
Westlake Audio

Amplifiers, AF Stereo

See Adv. Page

Altec Lansing Sound Products205 Ramko Research Inc. ..186-187

A & E by Osawa
Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Interface Inc.
Autodyne D 1-9
Autogram Corp. D 7
Automated Processes, Inc.
BGW Systems Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Crown International, Inc.
Dyma Engineering, Inc.
Everything Audio D 1-9
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
K & L Pro Audio D, 1, 2, 5, 6
Landy Associates Inc. D 1,2
James B. Lansing Sound, Inc.
Logitek Electronic Systems
Micro-Trak Corp.
Modular Audio Products Unit of Modular Devices, Inc.
Motorola SPI
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Oregon Sound & Lights D 8,9
QRK Electronic Products
RCA Broadcast Systems
ROH Corporation
Ram Audio Systems, Inc.
Ramko Research Inc.
Robins Broadcast & Sound Equip. Corp.
Sinai-Johnson D 8,9
Singer Products Co., Inc.
Sound Genesis D 8,9
Spectra Sonics
Studer Revox America
Studio Electronics D 3,4,7
Superscope, Inc.
Telex Communications, Inc.
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
UMC Electronics Co. Broadcast Products Div.
Val-Tronics, Inc. D2
Westlake Audio
Wilkinson Electronics, Inc.
Yamaha International Corp.

Amplifiers, Audio Loop

Audio Interface Inc.

Broadcast Component Dist. Communication Medias D 1-9
Broadcast Equipment Distributors D 1-9
Collins Television Services
Dyma Engineering, Inc.
Micro-Trak Corp.
Pulse Dynamics Mfg. Corp. (PDMC)
Tri-Tronics Professional Electronics

Amplifiers, Bridging

See Adv. Page

Ramko Research Inc. ..186-187

Allied Broadcast Equipment D 1-9
Audio Designs & Mfg.
Autogram Corp. D 7
Automated Processes, Inc.
BGW Systems Inc.
Bayly Engineering Ltd.
Blonder-Tongue Labs.
Bogen Div. Lear Siegler, Inc.
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Equipment Distributors D 1-9
The Camera Mart, Inc. D 1,2,3
Cara Pacific Sales Co. D 8,9
Collins Television Services
Communications Technology, Inc.
Delta Electronics Inc. (N.C.)
Dyma Engineering, Inc.
Dynair Electronics, Inc.
Gould Inc. Instruments Div.
Grass Valley Group, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
International Nuclear Corp.
Kaitronics Corp.
James B. Lansing Sound, Inc.
Mastertone Co., Inc. D 4
Merill Cable Equipment Corp.
Micro-Trak Corp.
Microwave Assoc. Inc.
Modular Audio Products Unit of Modular Devices, Inc.
Norton Associates Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Quad-Eight Electronics
RCA Broadcast Systems
ROH Corporation
Ramko Research Inc.
Richmond Hill Laboratories Ltd.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
Scientific-Atlanta, Inc.
Shure Brothers Inc.
Sono-Mag Corp.
Sound Genesis D 8,9
Spectra Sonics
Studio Electronics D 3,4,7
3M Co. Mincom Div.
Tri-Tronics Professional Electronics
Vamco Engineering
Winegard Television Systems

Amplifiers, Clamping

See Adv. Page

Telemet.....189

American Data Corp. A North American Philips Co.
Automated Processes, Inc.
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Collins Television Services
Di-Tech Inc.
Dyma Engineering, Inc.
Dynair Electronics, Inc.
Farinon Electric
Grass Valley Group, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Industrial Sciences
International Communications & Control Corp.
International Nuclear Corp.
Kaitronics Corp.
Leitch Video Ltd.

Lenco Inc. Electronics Div.
 Marconi Electronics Inc.
 Microwave Assoc. Inc.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 RCA Broadcast Systems
 Richmond Hill Laboratories Ltd.
 Telemet a Geotel Co.

Amplifiers, Compressing

See Adv. Page

Broadcast Component	
Dist. Communication	
Medias.....	200
Inovonics.....	253
Moseley Associates, Inc.....	23
Orban Assoc. Inc.	70
Ramko Research Inc. ..	186-187

Allied Broadcast Equipment D 1-9
 Audio Distributor Inc. D 3, 4, 6, 7
 Autodyne D 1-9
 Automated Processes, Inc.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Elcom Engineering Co.
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Inovonics
 LPB Inc.
 Marti Electronics
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Moseley Associates, Inc.
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Orban Assoc. Inc.
 Pacific Recorders and Engrg. Corp.
 QEI Corp.
 Quad-Eight Electronics
 RCA Broadcast Systems
 Ramko Research Inc.
 Robins Broadcast & Sound Equip. Corp.
 The Ken Schaffer Group, Inc.
 Shure Brothers Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Thomson-CSF Laboratories, Inc.
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 United Recording Electronics Industries
 Westlake Audio

Amplifiers, DC

Automated Processes, Inc.
 Bayly Engineering Ltd.
 Boston Sound & Power Systems
 Central Dynamics Corp.
 Crown International, Inc.
 Datalogic-Rust Co.
 Dyma Engineering, Inc.
 Gould Inc. Instruments Div.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 Lectronic Research Laboratories, Inc. D 1-9
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Moseley Associates, Inc.
 Motorola SPI
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRR Electronic Products
 RCA Broadcast Systems
 ROH Corporation

Paso Sound Products Inc.
 Rust Corp.
 Sound Genesis D 8,9
 Technics by Panasonic
 Tektronix Inc.

Amplifiers, Distribution Audio

See Adv. Page

Bonneville Productions.....	202
Broadcast Component	
Dist. Communication	
Medias.....	200
Datatek Corp.....	65
Dynair Electronics, Inc.....	251
Grass Valley Group, Inc.....	3
Harris Corp.	17
ROH Corporation.....	211
Ramko Research Inc. ..	186-187
Scientific Systems, Inc.....	266
Telemet.....	189
Wilkinson Electronics, Inc.....	194

Allied Broadcast Equipment D 1-9
 American Data Corp. A North
 American Philips Co.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Auditrronics, Inc.
 Autodyne D 1-9
 Automated Processes, Inc.
 BGW Systems Inc.
 Bayly Engineering Ltd.
 Bell Audio Systems, Inc.
 Beta Technology, Inc.
 Bogen Div. Lear Siegler, Inc.
 Bonneville Productions Div. of
 Bonneville Int'l. Corp.
 Boston Sound & Power Systems
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Channematic, Inc.
 Collins Television Services
 Communications Technology, Inc.
 Datatek Corp.
 Di-Tech Inc.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Farinon Electric
 Grass Valley Group, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D 1,2,5
 Industrial Sciences
 International Communications &
 Control Corp.
 Johnson Electronics Inc.
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Marconi Electronics Inc.
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Micro-Trak Corp.
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRR Electronic Products
 RCA Broadcast Systems
 ROH Corporation

Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip. Corp.
 Scientific Systems, Inc.
 Shintron Co. Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Technics by Panasonic
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 Thomson-CSF Laboratories, Inc.
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 Val-Tronics, Inc. D2
 Vamco Engineering
 Vital Industries Inc.
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Wilkinson Electronics, Inc.

Amplifiers, Distribution Video

See Adv. Page

Central Dynamics Corp.....	57
Datatek Corp.....	65
Dynair Electronics, Inc.....	251
Grass Valley Group, Inc.....	3
Harris Corp.	17
ROH Corporation.....	211
Telemet.....	189

American Data Corp. A North
 American Philips Co.
 Applied Video Electronics, Inc. D 1-9
 Autodyne D 1-9
 Beta Technology, Inc.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Channematic, Inc.
 Cohu, Inc. Electronics Div.
 Collins Television Services
 Communications Technology, Inc.
 Comprehensive Video Supply Corp. D 1-9
 Dage-MTI, Inc.
 Datatek Corp.
 Di-Tech Inc.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Dynasciences Div. Whitaker Corp.
 GBC Closed Circuit TV Corp.
 Grass Valley Group, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Industrial Sciences
 International Communications &
 Control Corp.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Marconi Electronics Inc.
 Media Concepts, Inc. D 1-9
 Merlin Engineering Works, Inc.
 Microwave Assoc. Inc.
 Charles Moore
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 QSI Systems, Inc. D 1
 RCA Broadcast Systems
 ROH Corporation
 Richmond Hill Laboratories Ltd.
 Rohde & Schwarz Sales Co.
 Scientific-Atlanta, Inc.
 Shintron Co. Inc.
 Sigma Electronics, Inc.
 Technics by Panasonic
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 3M Co. Mincom Div.
 Vamco Engineering
 Video Aids Corp. of Colorado

Viscount Industries Ltd.
 Vital Industries Inc.

Amplifiers, FM

AEL, Inc.
 Belar Electronics Lab., Inc.
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 The Finney Co.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 KVC Video Systems Inc. D 1,2
 Martin Audio/Video D2
 McMartin Industries, Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Superscope, Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Winegard Television Systems

Amplifiers, Keying

American Data Corp. A North
 American Philips Co.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 Central Dynamics Corp.
 Communications Technology, Inc.
 Industrial Sciences
 KVC Video Systems Inc. D 1,2
 Microwave Assoc. Inc.
 Richmond Hill Laboratories Ltd.
 Thomson-CSF Laboratories, Inc.
 Video Devices Co.

Amplifiers, Line

See Adv. Page

Bonneville Productions.....	202
Broadcast Component	
Dist. Communication	
Medias.....	200
Opamp Labs, Inc.....	264
Ramko Research Inc. ..	186-187
Wilkinson Electronics, Inc.....	194

Allied Broadcast Equipment D 1-9
 American Data Corp. A North
 American Philips Co.
 Audio Designs & Mfg.
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Blonder-Tongue Labs.
 Bogen Div. Lear Siegler, Inc.
 Bonneville Productions Div. of
 Bonneville Int'l. Corp.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Central Dynamics Corp.
 Cetec Broadcast Group
 Collins Television Services
 Dyma Engineering, Inc.
 The Finney Co.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 International Communications &
 Control Corp.
 Johnson Electronics Inc.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 James B. Lansing Sound, Inc.
 Marti Electronics
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Merrill Cable Equipment Corp.
 Micro-Trak Corp.
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.

Monroe Electronics, Inc.
 Charles Moore
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRK Electronic Products
 Quad-Eight Electronics
 ROH Corporation
 Ramko Research Inc.
 Richmond Hill Laboratories Ltd.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Shure Brothers Inc.
 Sono-Mag Corp.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 TM Systems, Inc.
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 United Recording Electronics
 Industries
 Westlake Audio
 Wilkinson Electronics, Inc.

Amplifiers, Masking

Bogen Div. Lear Siegler, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Microwave Assoc. Inc.
 Richmond Sound Design, Ltd.

Amplifiers, Microphone

See Adv. Page

Audio Designs & Mfg. 98-99
Broadcast Component
Dist. Communication
Medias.....200
Logitek Electronic
Systems.....188
Opamp Labs, Inc.....264
RTS Systems256
Ramko Research Inc. .. 186-187

Allied Broadcast Equipment D 1-9
 Audio Designs & Mfg.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Collins Television Services
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Edcor Div. of P.A.C.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Communications &
 Control Corp.
 Johnson Electronics Inc.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Nagra Magnetic Recorders, Inc.
 Rupert Neve, Inc.
 Newark Electronics D 1-9
 Norton Associates Inc.
 Opamp Labs, Inc.
 Oregon Sound & Lights D 8,9
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 QRK Electronic Products
 Quad-Eight Electronics
 RTS Systems

Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Sound Genesis D 8,9
 Sphere Electronics
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Ultra Audio Pixtec
 United Recording Electronics
 Industries
 Westlake Audio

Amplifiers, Mixing

See Adv. Page

Audio Designs & Mfg. 98-99
Broadcast Component
Dist. Communication
Medias.....200
Russco Electronics
Mfg. Inc.16

Allied Broadcast Equipment D 1-9
 American Data Corp. A North
 American Philips Co.
 Audio Designs & Mfg.
 Autogram Corp. D 7
 Automated Processes, Inc.
 Bell Audio Systems, Inc.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Video Systems, Ltd.
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Central Dynamics Corp.
 Cetec Broadcast Group
 Collins Television Services
 Communications Technology, Inc.
 Crosspoint Latch Corp.
 Dage-MTI, Inc.
 Dyma Engineering, Inc.
 GLI Div. VSC
 Grass Valley Group, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 Johnson Electronics Inc.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 James B. Lansing Sound, Inc.
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Charles Moore
 Nagra Magnetic Recorders, Inc.
 Newark Electronics D 1-9
 Olesen D 1-9
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRK Electronic Products
 Quad-Eight Electronics
 RCA Broadcast Systems
 ROH Corporation
 RTS Systems
 Ramko Research Inc.
 Richmond Hill Laboratories Ltd.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Russco Electronics Mfg. Inc.
 Sansui Electronics Corp.
 Shure Brothers Inc.
 Sinai-Johnson D 8,9

Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Ultra Audio Pixtec
 Val-Tronics, Inc. D2
 Westlake Audio

Amplifiers, Monitor

See Adv. Page

Audio Designs & Mfg. 98-99
Broadcast Component
Dist. Communication
Medias.....200
Harris Corp.17
Logitek Electronic
Systems.....188
Ramko Research Inc. .. 186-187
Russco Electronics
Mfg. Inc.16
Wilkinson Electronics,
Inc.194

Allied Broadcast Equipment D 1-9
 American Data Corp. A North
 American Philips Co.
 Audio Designs & Mfg.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Belar Electronics Lab., Inc.
 Bell Audio Systems, Inc.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Collins Television Services
 Crown International, Inc.
 Di-Tech Inc.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Farinon Electric
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 International Communications &
 Control Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 James B. Lansing Sound, Inc.
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 Marti Electronics
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Charles Moore
 Nagra Magnetic Recorders, Inc.
 The Narda Microwave Corporation
 National Electrolab Ltd.
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 QRK Electronic Products
 Quad-Eight Electronics
 RCA Broadcast Systems
 ROH Corporation
 Ramko Research Inc.
 Robins Broadcast & Sound Equip.
 Corp.
 Russco Electronics Mfg. Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Superscope, Inc.

TEAC Corp of America
 Teleration, A Div. of Bell & Howell
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Wilkinson Electronics, Inc.

Amplifiers, Operational

Amperex Electronic Corp. Slatersville
 Div.
 Automated Processes, Inc.
 Computer Labs
 Dyma Engineering, Inc.
 Gotham Audio Corp.
 Holland Electronics
 Jensen Transformers
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Charles Moore
 Motorola SPI
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Quad-Eight Electronics
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Singer Products Co., Inc.
 Sphere Electronics
 Tektronix Inc.
 Track Audio, Inc. D 1-9

Amplifiers, Power

See Adv. Page

Autodyne267
Broadcast Component
Dist. Communication
Medias.....200
Brown Electronic Labs264
Opamp Labs, Inc.....264
Ramko Research Inc. .. 186-187

Acrodyne Industries Inc.
 Allied Broadcast Equipment D 1-9
 American Data Corp. A North
 American Philips Co.
 Audio Marketing Ltd. D 1,2,3
 Autodyne D 1-9
 Automated Processes, Inc.
 BGW Systems Inc.
 Bayly Engineering Ltd.
 Belar Electronics Lab., Inc.
 Bell Audio Systems, Inc.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 Brown Electronic Labs
 CCA Electronics Corp.
 California Instruments
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Continental Electronics Mfg. Co.
 Crown International, Inc.
 Dyma Engineering, Inc.
 Electro Sound, Inc.
 Farinon Electric
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Harris Corp. PRD Electronics Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 James B. Lansing Sound, Inc.
 Lita Broadcasting Distributors D 1-9
 Martin Audio/Video D2
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Motorola SPI
 Nagra Magnetic Recorders, Inc.
 North American Radio Corp.
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9

Panasonic Company
 Paso Sound Products Inc.
 Pulse Dynamics Mfg. Corp. (PDMC)
 Quad-Eight Electronics
 RCA Broadcast Systems
 ROH Corporation
 Ram Audio Systems, Inc.
 Ramko Research Inc.
 Robins Broadcast & Sound Equip.
 Corp.
 Shure Brothers Inc.
 Sinai-Johnson D 8,9
 Sound Genesis D 8,9
 Spectra Sonics
 Studer Revox America
 Studio Electronics D 3,4,7
 Superex Electronics Corp.
 Superscope, Inc.
 TEAC Corp of America
 Tayburn Electronics, Inc.
 Technics by Panasonic
 Telex Communications, Inc.
 TerraCom
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Ultra Audio Pixtec
 Varian Associates, Inc. Electron Device
 Group
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Yamaha International Corp.

Amplifiers, Processing Audio

See Adv. Page

Inovonics253

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Automated Processes, Inc.
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Inovonics
 International Electro-Magnetics
 K & L Pro Audio D, 1, 2, 5, 6
 Kahn Communications, Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Orange County Electronics Int'l., Inc.
 Robins Broadcast & Sound Equip.
 Corp.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2

Amplifiers, Processing Video

See Adv. Page

**Central Dynamics
 Corp.57**
**Grass Valley Group,
 Inc.3**
Harris Corp.17
Microtime, Inc.83
Siegel Electronics70
3M Co.58

Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Cohu, Inc. Electronics Div.
 Dyma Engineering, Inc.
 Dynasciences Div. Whitaker Corp.
 Grass Valley Group, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Marconi Electronics Inc.
 Media Concepts, Inc. D 1-9
 Microtime, Inc.
 Microwave Assoc. Inc.

Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 RCA Broadcast Systems
 Richmond Hill Laboratories Ltd.
 Siegel Electronics
 Sigma Electronics, Inc.
 Tektronix Inc.
 Telemation, A Div. of Bell & Howell
 3M Co. Mincom Div.
 Versa Count Engineering
 Vital Industries Inc.

Amplifiers, Pulse

See Adv. Page

**Central Dynamics
 Corp.57**
Datatek Corp.65
Dynair Electronics, Inc.251
ROH Corporation211
Telemet189

American Data Corp. A North
 American Philips Co.
 Applied Video Electronics, Inc. D 1-9
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Cohu, Inc. Electronics Div.
 Collins Television Services
 Datatek Corp.
 Di-Tech Inc.
 Dynair Electronics, Inc.
 Dynasciences Div. Whitaker Corp.
 Grass Valley Group, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Nuclear Corp.
 KVC Video Systems Inc. D 1,2
 Kaitronics Corp.
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Marconi Electronics Inc.
 Microwave Assoc. Inc.
 Charles Moore
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 RCA Broadcast Systems
 ROH Corporation
 Richmond Hill Laboratories Ltd.
 Shintron Co. Inc.
 Sigma Electronics, Inc.
 Technics by Panasonic
 Tektronix Inc.
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 3M Co. Mincom Div.
 Varian Associates, Inc. Electron Device
 Group
 Video Aids Corp. of Colorado
 Vital Industries Inc.

Amplifiers, Pulse Delay

See Adv. Page

Dynair Electronics, Inc.251

American Data Corp. A North
 American Philips Co.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Cohu, Inc. Electronics Div.
 Collins Television Services
 Di-Tech Inc.
 Dynair Electronics, Inc.
 Grass Valley Group, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 KVC Video Systems Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Microwave Assoc. Inc.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5

Richmond Hill Laboratories Ltd.
 Sigma Electronics, Inc.
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2

Amplifiers, Quad

Robins Broadcast & Sound Equip.
 Corp.
 Sansui Electronics Corp.

Amplifiers, Remote

See Adv. Page

**Wilkinson Electronics,
 Inc.194**

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Belar Electronics Lab., Inc.
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 Cetec Broadcast Group
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Martin Audio/Video D2
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Microwave Assoc. Inc.
 Newark Electronics D 1-9
 Pulse Dynamics Mfg. Corp. (PDMC)
 RCA Broadcast Systems
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Shure Brothers Inc.
 Tri-Tronics Professional Electronics
 Ultra Audio Pixtec
 Wide Band Engineering Co., Inc.
 Wilkinson Electronics, Inc.

Amplifiers, RF General Purpose

See Adv. Page

Harris Corp.17
**International
 Microwave Corp.216**
National Electrolab Ltd.258
**Wilkinson Electronics,
 Inc.194**

AEL, Inc.
 ALLTECH Div. Cutler-Hammer Los
 Angeles Operation
 Allied Broadcast Equipment D 1-9
 Belar Electronics Lab., Inc.
 Blonder-Tongue Labs.
 CSI Electronics, Inc.
 Computer Magnetics Corp.
 Continental Electronics Mfg. Co.
 Harris Corp. Broadcast Products Div.
 International Microwave Corp.
 McMartin Industries, Inc.
 Merrill Cable Equipment Corp.
 Microwave Assoc. Inc.
 Motorola SPI
 Mu-Del Electronics, Inc.
 The Narda Microwave Corporation
 National Electrolab Ltd.
 North American Radio Corp.
 Radiation Devices Co., Inc.
 Rodelco Corp.
 Singer Products Co., Inc.
 Television Technology Corp.
 Track Audio, Inc. D 1-9
 Wide Band Engineering Co., Inc.
 Wilkinson Electronics, Inc.
 Winegard Television Systems

Amplifiers, RF Peak Limiting

Broadcast Communications Devices,
 Inc. D 8,9
 Harris Corp. Broadcast Products Div.
 Lauderdale Electronic Labs D 1-9
 Microwave Assoc. Inc.
 The Narda Microwave Corporation

RCA Broadcast Systems
 Sound Genesis D 8,9
 Thomson-CSF Laboratories, Inc.
 Track Audio, Inc. D 1-9
 Wilkinson Electronics, Inc.

Amplifiers, RF Power

See Adv. Page

EEV, Inc.37
Harris Corp.17
**Howe-Yin Research Co.
 Inc.208**
**Moseley Associates,
 Inc.23**
National Electrolab Ltd.258

AEL, Inc.
 Acrodyne Industries Inc.
 Allied Broadcast Equipment D 1-9
 Belar Electronics Lab., Inc.
 Blonder-Tongue Labs.
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Communication Modifications, Inc.
 Computer Magnetics Corp.
 Continental Electronics Mfg. Co.
 EEV, Inc.
 EIMAC Div. of Varian
 EMCEE Broadcast Products
 English Electric Valve Co. Ltd.
 Fisher Burke Professional Audio D 8
 Harris Corp. Broadcast Products Div.
 Harris Corp. PRD Electronics Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Howe-Yin Research Co. Inc.
 International Microwave Corp.
 Marconi Communication Systems Ltd.
 McMartin Industries, Inc.
 Microwave Assoc. Inc.
 Moseley Associates, Inc.
 Motorola SPI
 Mu-Del Electronics, Inc.
 National Electrolab Ltd.
 North American Radio Corp.
 Nurad, Inc.
 QEI Corp.
 Rohde & Schwarz Sales Co.
 Scientific Radio Systems, Inc.
 Singer Products Co., Inc.
 Sintronic Corp.
 Television Technology Corp.
 Townsend Associates, Inc.
 Varian Associates, Inc. Electron Device
 Group
 Wilkinson Electronics, Inc.
 Winegard Television Systems

Amplifiers, Sensing

Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D
 1-9
 Mastertone Co., Inc. D 4
 Microwave Assoc. Inc.
 Moseley Associates, Inc.
 Motorola SPI

Amplifiers, Stabilizing

Central Dynamics Corp.
 Collins Television Services
 Grass Valley Group, Inc.
 International Nuclear Corp.
 KVC Video Systems Inc. D 1,2
 Lenco Inc. Electronics Div.
 Marconi Electronics Inc.
 Microwave Assoc. Inc.
 Telemet a Geotel Co.

Amplifiers, Stereo Booster

Allied Broadcast Equipment D 1-9
 CCA Electronics Corp.
 Dyma Engineering, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9

Ram Audio Systems, Inc.
Robins Broadcast & Sound Equip.
Corp.

Amplifiers, Stereo Limiter

See Adv. Page
Inovonics 253
Moseley Associates, Inc. 23

Allied Broadcast Equipment D 1-9
Automated Processes, Inc.
BGW Systems Inc.
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Dyma Engineering, Inc.
EMT Franz VGmbH
Fisher Burke Professional Audio D 8
Gotham Audio Corp.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Inovonics
LPB Inc.
Landy Associates Inc. D 1,2
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Microwave Assoc. Inc.
Moseley Associates, Inc.
Rupert Neve, Inc.
Orange County Electronics Int'l., Inc.
Orban Assoc. Inc.
Oregon Sound & Lights D 8,9
QEI Corp.
RCA Broadcast Systems
ROH Corporation
Ramko Research Inc.
Robins Broadcast & Sound Equip.
Corp.
Singer Products Co., Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Thomson-CSF Laboratories, Inc.
Track Audio, Inc. D 1-9
United Recording Electronics
Industries
Val-Tronics, Inc. D2
Westlake Audio
Wilkinson Electronics, Inc.

Amplifiers, TV Video

See Adv. Page
Datek Corp. 65
Howe-Yin Research Co. Inc. 208
Siegel Electronics 70

AEL, Inc.
Belar Electronics Lab., Inc.
Blonder-Tongue Labs.
Broadcast Video Systems, Ltd.
CCA Electronics Corp.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Collins Television Services
Dage-MTI, Inc.
Datek Corp.
Delta Electronics Inc. (N.C.)
Dynair Electronics, Inc.
Dynamics Div. Whitaker Corp.
GBC Closed Circuit TV Corp.
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
Howe-Yin Research Co. Inc.
Industrial Sciences
International Nuclear Corp.
Javelin Electronics
KVC Video Systems Inc. D 1,2
Landy Associates Inc. D 1,2
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Electronics Inc.

Media Concepts, Inc. D 1-9
Microwave Assoc. Inc.
Motorola SPI
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
RCA Broadcast Systems
RCA Cablevision Systems
Siegel Electronics
Sigma Electronics, Inc.
Tektronix Inc.
Telemet a Geotel Co.
3M Co. Mincom Div.
Vamco Engineering
Varian Associates, Inc. Electron Device
Group
Video Aids Corp. of Colorado

Amplifiers, Video Sweep

KVC Video Systems Inc. D 1,2
Lenco Inc. Electronics Div.
Microwave Assoc. Inc.
Tektronix Inc.

Amplifiers, Zero Studio Delay

Grass Valley Group, Inc.
Lenco Inc. Electronics Div.
Microwave Assoc. Inc.
Sigma Electronics, Inc.
Sound Genesis D 8,9

Analysis Forms

Lauderdale Electronic Labs D 1-9

Analizers, Audio System

See Adv. Page
Bald Mountain Lab 262
Potomac Instruments, Inc. 206,207

Allied Broadcast Equipment D 1-9
Autodyne D 1-9
Bald Mountain Lab
Cara Pacific Sales Co. D 8,9
Dyma Engineering, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
Inovonics
Leader Instruments Corp.
Potomac Instruments, Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9

Analizers, Distortion

See Adv. Page
Potomac Instruments, Inc. 207
Sound Technology 25

Allied Broadcast Equipment D 1-9
Amber Electro Design, Ltd.
Autodyne D 1-9
B & K Instruments Inc.
Broadcast Electronics, Inc.
Cara Pacific Sales Co. D 8,9
Crown International, Inc.
Dyma Engineering, Inc.
Fisher Burke Professional Audio D 8
Frequency Devices Inc.
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
Ivie Electronics
Leader Instruments Corp.
The London Co.
Marconi Instruments Div. of Marconi
Electronics Inc.
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
Sound Technology
TM Systems, Inc.
Tektronix Inc.
Track Audio, Inc. D 1-9

Analizers, Harmonic

See Adv. Page
Potomac Instruments, Inc. 207
Sound Technology 25

AILTECH Div. Cutler-Hammer Los
Angeles Operation
Allied Broadcast Equipment D 1-9
Amber Electro Design, Ltd.
B & K Instruments Inc.
Cara Pacific Sales Co. D 8,9
Fisher Burke Professional Audio D 8
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Ivie Electronics
Kay Elemetrics Corp.
Leader Instruments Corp.
Marconi Instruments Div. of Marconi
Electronics Inc.
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
Sound Technology
Tektronix Inc.
Track Audio, Inc. D 1-9

Analizers, Insertion Signal

Cezar International, Ltd.
Marconi Instruments Div. of Marconi
Electronics Inc.
Philips Test & Measuring Instruments,
Inc.

Analizers, Intermodulation

See Adv. Page
Potomac Instruments, Inc. 207
Sound Technology 25

Allied Broadcast Equipment D 1-9
Amber Electro Design, Ltd.
B & K Instruments Inc.
Cara Pacific Sales Co. D 8,9
Crown International, Inc.
Dyma Engineering, Inc.
Heath Co.
Marconi Instruments Div. of Marconi
Electronics Inc.
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
Sound Technology
Tektronix Inc.
Track Audio, Inc. D 1-9

Analizers, Power Line Disturbance

See Adv. Page
Dranetz Engineering Labs, Inc. 209
Dranetz Engineering Labs., Inc.

Analizers, RF Network

Alford Mfg. Co.
Harris Corp. PRD Electronics Div.
Rohde & Schwarz Sales Co.
Scientific-Atlanta, Inc.
Tektronix Inc.
Wide Band Engineering Co., Inc.

Analizers, Sideband

See Adv. Page
Telemet 189

Kahn Communications, Inc.
Marconi Instruments Div. of Marconi
Electronics Inc.
Rohde & Schwarz Sales Co.
Telemet a Geotel Co.

Analizers, Spectrum

Altec Lansing Sound Products
Amber Electro Design, Ltd.
Audio Designs & Mfg.

B & K Instruments Inc.
Cara Pacific Sales Co. D 8,9
Harris Corp. Broadcast Products Div.
Ivie Electronics
Kahn Communications, Inc.
Kay Elemetrics Corp.
Marconi Instruments Div. of Marconi
Electronics Inc.
Rohde & Schwarz Sales Co.
Sound Genesis D 8,9
Systron-Donner
Tektronix Inc.
Telemet a Geotel Co.
Texscan Corp.
Track Audio, Inc. D 1-9

Analizers, Video

See Adv. Page
Marconi Instruments 195

B & K Precision Dynascan Corp.
Colorado Video Inc.
Imero Fiorentino Associates, Inc.
Harris Corp. Broadcast Products Div.
Lenco Inc. Electronics Div.
Marconi Instruments Div. of Marconi
Electronics Inc.
Rohde & Schwarz Sales Co.
Sencore Inc.
Tektronix Inc.
Telemet a Geotel Co.

Antenna Alignment Systems, Microwave

Advance Industries
Innovative Television Equipment, Inc.
Micro Communications, Inc. Grenier
Field
Nurad, Inc.
Power-Optics Inc.
Scientific-Atlanta, Inc.
Texscan Corp.
Varian/Beverly Micro-Link Products

Antenna and Tower Guys

See Adv. Page
Fred A. Nudd Corp. 242
Philadelphia Resins Corp. 20
Stainless, Inc. 94

Advance Industries
CCA Electronics Corp.
Cetec Broadcast Group
Dyma Engineering, Inc.
G.C. Electronics
H. M. Holzberg Associates, Inc. D
1,2,5
Lita Broadcasting Distributors D 1-9
Fred A. Nudd Corp.
Philadelphia Resins Corp.
Singer Products Co., Inc.
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-
Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.
United Radio Supply Inc. D9

Antenna and Tower Installation and Services

See Adv. Page
Harris Corp. 17
Fred A. Nudd Corp. 242
Stainless, Inc. 94

AEL, Inc.
Advance Industries
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Fisher Burke Professional Audio D 8
Fort Worth Tower Co., Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Micro Communications, Inc. Grenier
Field

Fred A. Nudd Corp.
Nurad, Inc.
Oldham Tower Systems
Prodelin Inc.
RCA Broadcast Systems
Soll
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.

Antenna Baluns, RF Dry

See Adv. Page

Electro Impulse, Inc.244

Dielectric Communications A Unit of General Signal
Electro Impulse, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
North Hills Electronics, Inc.
Phelps Dodge Communications Co.
Potomac Instruments, Inc.
Scala Radio Corp.

Antenna Dummy Loads

See Adv. Page

Bird Electronic Corp.265
Dielectric Communications220
Electro Impulse, Inc.244
Harris Corp.17
Wilkinson Electronics, Inc.194

Allied Broadcast Equipment D 1-9
Bayly Engineering Ltd.
Bird Electronic Corp.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
C. S. P. Inc.
Communication Modifications, Inc.
Continental Electronics Mfg. Co.
Corning Glass Works
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
Electro Impulse, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Lectronic Research Laboratories, Inc. D 1-9
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Maury Microwave Corp.
Micro Communications, Inc. Grenier Field
RCA Broadcast Systems
Rex Rheostat & Co., Inc.
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Antenna Heater Controls

Allied Broadcast Equipment D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
H. M. Holzberg Associates, Inc. D 1,2,5
Lita Broadcasting Distributors D 1-9
Micro-Trak Corp.
Val-Tronics, Inc. D2

Antenna Ice Warning Systems

Allied Broadcast Equipment D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Harris Corp. Broadcast Products Div.
Micro-Trak Corp.
RCA Broadcast Systems
Val-Tronics, Inc. D2
The Widget Works, Inc.

Antenna Remote Indicators

CCA Electronics Corp.
Dielectric Communications A Unit of General Signal
Fisher Burke Professional Audio D 8

Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Nurad, Inc.
Scientific-Atlanta, Inc.
Val-Tronics, Inc. D2

Antenna RF Current Controllers

See Adv. Page

C. S. P. Inc.244
Delta Electronics Inc. (Va.)191

CCA Electronics Corp.
C. S. P. Inc.
Delta Electronics Inc. (Va.)

Antenna Sampling Systems

CCA Electronics Corp.
C. S. P. Inc.
Cablewave Systems Inc.
Cetec Broadcast Group
Delta Electronics Inc. (Va.)
Elcom Engineering Co.
Geleco Electronics Ltd.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Moseley Associates, Inc.
Multronics, Inc.
North American Radio Corp.

Antenna Systems

See Adv. Page

Andrew Corp.91
Harris Corp.17
Micro Control Associates, Inc.62
Nurad, Inc.113
Sitco Antenna Co.196

Alford Mfg. Co.
Andrew Corp.
Anixter-Mark
Bogner Broadcast Equipment Corp.
CCA Electronics Corp.
C. S. P. Inc.
Cablewave Systems Inc.
Cetec Broadcast Group
Continental Electronics Mfg. Co.
Delta Electronics Inc. (Va.)
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
The Finney Co.
G.C. Electronics
Geleco Electronics Ltd.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
KVC Video Systems Inc. D 1,2
Marconi Communication Systems Ltd.
Mastertone Co., Inc. D 4
Micro Communications, Inc. Grenier Field
Micro Control Associates, Inc.
Microwave Assoc. Inc.
Multronics, Inc.
Nurad, Inc.
Phelps Dodge Communications Co.
Prodelin Inc.
RCA Broadcast Systems
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Shively Laboratories, Inc.
Singer Products Co., Inc.
Sitco Antenna Co.
Tayburn Electronics, Inc.
Winegard Television Systems

Antenna Tuning Units

CCA Electronics Corp.
CSI Electronics, Inc.
C. S. P. Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Continental Electronics Mfg. Co.
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.

G.C. Electronics
Geleco Electronics Ltd.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Maury Microwave Corp.
Micro Communications, Inc. Grenier Field
Multronics, Inc.
North American Radio Corp.
RCA Broadcast Systems
Texscan Corp.
Tri-Tronics Professional Electronics
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Antenna VSWR Indicators

See Adv. Page

Moseley Associates, Inc.23

Bird Electronic Corp.
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Communication Modifications, Inc.
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
Leader Instruments Corp.
Micro Communications, Inc. Grenier Field
Moseley Associates, Inc.
Sencore Inc.
Singer Products Co., Inc.
Texscan Corp.

Antennas, Directional System

See Adv. Page

Nurad, Inc.113

Alford Mfg. Co.
Bogner Broadcast Equipment Corp.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
C. S. P. Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Continental Electronics Mfg. Co.
Dielectric Communications A Unit of General Signal
The Finney Co.
Geleco Electronics Ltd.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Innovative Television Equipment, Inc.
Micro Communications, Inc. Grenier Field
Multronics, Inc.
Nurad, Inc.
RCA Broadcast Systems
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Shively Laboratories, Inc.
Singer Products Co., Inc.

Antennas, Receiving FM

See Adv. Page

Harris Corp.17
Sitco Antenna Co.196

Anixter-Mark
Belar Electronics Lab., Inc.
Catel Div. United Scientific Corp.
Communications, Ltd.
The Finney Co.
G.C. Electronics
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Johnson Electronics Inc.
McMartin Industries, Inc.
Micro Communications, Inc. Grenier Field
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Scientific-Atlanta, Inc.

Sitco Antenna Co.
Sound Dynamics, Inc. D8, 9
United Radio Supply Inc. D9
Winegard Television Systems

Antennas, Receiving LF

See Adv. Page

McKay Dymek Co.252

Anixter-Mark
H. M. Holzberg Associates, Inc. D 1,2,5
KVC Video Systems Inc. D 1,2
McKay Dymek Co.
Rohde & Schwarz Sales Co.

Antennas, Receiving MF

See Adv. Page

McKay Dymek Co.252

Anixter-Mark
Belar Electronics Lab., Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
KVC Video Systems Inc. D 1,2
McKay Dymek Co.
Rohde & Schwarz Sales Co.

Antennas, Receiving UHF

See Adv. Page

Nurad, Inc.113
Sitco Antenna Co.196

Anixter-Mark
Blonder-Tongue Labs.
EMCEE Broadcast Products
The Finney Co.
G.C. Electronics
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
Micro Communications, Inc. Grenier Field
Nurad, Inc.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Phelps Dodge Communications Co.
Prodelin Inc.
RCA Distributor & Special Products Div.
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Scientific-Atlanta, Inc.
Singer Products Co., Inc.
Sitco Antenna Co.
United Radio Supply Inc. D9
Winegard Television Systems

Antennas, Receiving VHF

See Adv. Page

Nurad, Inc.113
Sitco Antenna Co.196

Anixter-Mark
Blonder-Tongue Labs.
Communications, Ltd.
EMCEE Broadcast Products
The Finney Co.
G.C. Electronics
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
Micro Communications, Inc. Grenier Field
Nurad, Inc.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Phelps Dodge Communications Co.
Prodelin Inc.
RCA Distributor & Special Products Div.
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Scientific-Atlanta, Inc.
Sitco Antenna Co.
United Radio Supply Inc. D9
Winegard Television Systems

Antennas, Receiving Microwave

See Adv. Page

- Andrew Corp.**..... 91
- Nurad, Inc.**.....113

Andrew Corp.
 Anixter-Mark
 Bogner Broadcast Equipment Corp.
 Broadcast Consultants Corp. D 1-9
 Cablewave Systems Inc.
 Engineering Associates
 Farinon Electric
 H. M. Holzberg Associates, Inc. D 1,2,5
 Lectronic Research Laboratories, Inc. D 1-9
 Mastertone Co., Inc. D 4
 Maury Microwave Corp.
 Micro Communications, Inc. Grenier Field
 Microwave Assoc. Inc.
 Nurad, Inc.
 Prodelin Inc.
 RF Systems, Inc.
 Rohde & Schwarz Sales Co.
 Scientific-Atlanta, Inc.
 Singer Products Co., Inc.
 Tayburn Electronics, Inc.
 TerraCom

Antennas, Remote Pickup

See Adv. Page

- Andrew Corp.**..... 91

Allied Broadcast Equipment D 1-9
 Andrew Corp.
 Anixter-Mark
 Belar Electronics Lab., Inc.
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Farinon Electric
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 Micro Communications, Inc. Grenier Field
 Moseley Associates, Inc.
 Nurad, Inc.
 Scala Radio Corp.
 Scientific-Atlanta, Inc.
 Tayburn Electronics, Inc.
 Wilkinson Electronics, Inc.

Antennas, Remote Transmitting, Radio

See Adv. Page

- Broadcast Component Dist. Communication Medias**.....200

Allied Broadcast Equipment D 1-9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 Farinon Electric
 H. M. Holzberg Associates, Inc. D 1,2,5
 Winegard Television Systems

Antennas, STL

See Adv. Page

- Nurad, Inc.**.....113

Allied Broadcast Equipment D 1-9
 Andrew Corp.
 Anixter-Mark
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Cablewave Systems Inc.
 Cetec Broadcast Group
 Contel Mfg.

Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 Micro Communications, Inc. Grenier Field
 Micro Control Associates, Inc.
 Moseley Associates, Inc.
 Nurad, Inc.
 Prodelin Inc.
 RCA Broadcast Systems
 Scala Radio Corp.
 Singer Products Co., Inc.
 Swager Tower Corp.
 TerraCom
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Antennas, Transmitting FM

See Adv. Page

- Broadcast Component Dist. Communication Medias**.....200
- Cetec Broadcast Group**.....118
- Val-Tronics, Inc.**.....245

Alford Mfg. Co.
 Allied Broadcast Equipment D 1-9
 Broadcast Component Dist. Communication Medias D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 LPB Inc.
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McMartin Industries, Inc.
 Micro Communications, Inc. Grenier Field
 Phelps Dodge Communications Co.
 RCA Broadcast Systems
 Rohde & Schwarz Sales Co.
 Scala Radio Corp.
 Shively Laboratories, Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Antennas, Transmitting HF

See Adv. Page

- CCA Electronics Corp.**.....221

CCA Electronics Corp.

Antennas, Transmitting LF

See Adv. Page

- Stainless, Inc.**..... 94

CCA Electronics Corp.
 Cetec Broadcast Group
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of General Signal
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Micro Communications, Inc. Grenier Field
 Stainless, Inc.

Antennas, Transmitting MF

CCA Electronics Corp.
 Cetec Broadcast Group
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of General Signal
 Harris Corp. Broadcast Products Div.

H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 McMartin Industries, Inc.
 Rohde & Schwarz Sales Co.
 Shively Laboratories, Inc.

Antennas, Transmitting UHF

See Adv. Page

- Nurad, Inc.**.....113
- Sitco Antenna Co.**.....196

Acrodyne Industries Inc.
 Alford Mfg. Co.
 Andrew Corp.
 Anixter-Mark
 Bogner Broadcast Equipment Corp.
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 EMCEE Broadcast Products
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Micro Communications, Inc. Grenier Field
 Nurad, Inc.
 Phelps Dodge Communications Co.
 Prodelin Inc.
 RCA Broadcast Systems
 Rohde & Schwarz Sales Co.
 SWR Inc.
 Scala Radio Corp.
 Shively Laboratories, Inc.
 Sitco Antenna Co.

Antennas, Transmitting UHF/VHF, Circularly Polarized

Alford Mfg. Co.
 Bogner Broadcast Equipment Corp.
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Nurad, Inc.
 RCA Broadcast Systems
 SWR Inc.

Antennas, Transmitting VHF

See Adv. Page

- Nurad, Inc.**.....113
- Sitco Antenna Co.**.....196

Acrodyne Industries Inc.
 Alford Mfg. Co.
 Anixter-Mark
 Bogner Broadcast Equipment Corp.
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 EMCEE Broadcast Products
 The Finney Co.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Micro Communications, Inc. Grenier Field
 Nurad, Inc.
 Phelps Dodge Communications Co.
 Prodelin Inc.
 RCA Broadcast Systems
 Rohde & Schwarz Sales Co.
 SWR Inc.
 Scala Radio Corp.
 Shively Laboratories, Inc.
 Singer Products Co., Inc.
 Sitco Antenna Co.

Antennas, Transmitting Microwave

See Adv. Page

- Nurad, Inc.**.....113

Alford Mfg. Co.
 Andrew Corp.
 Anixter-Mark
 Bogner Broadcast Equipment Corp.
 CCA Electronics Corp.
 Cablewave Systems Inc.
 Dyma Engineering, Inc.
 Farinon Electric
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 Micro Communications, Inc. Grenier Field
 Micro Control Associates, Inc.
 Microwave Assoc. Inc.
 Nurad, Inc.
 Prodelin Inc.
 RF Systems, Inc.
 Rohde & Schwarz Sales Co.
 Scientific-Atlanta, Inc.
 Singer Products Co., Inc.
 Tayburn Electronics, Inc.
 TerraCom
 Val-Tronics, Inc. D2

Antennas, TV Earth Station

See Adv. Page

- Andrew Corp.**..... 91

Andrew Corp.
 Anixter-Mark
 Collins Div. Rockwell International
 Farinon Electric
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Hughes Aircraft Co. Microwave Communications Products
 Marconi Communication Systems Ltd.
 Microdyne Corp.
 Nurad, Inc.
 Prodelin Inc.
 RF Systems, Inc.
 Scientific-Atlanta, Inc.
 TerraCom

Arms, Tone

See Adv. Page

- Broadcast Component Dist. Communication Medias**.....200
- Harris Corp.**..... 17
- Val-Tronics, Inc.**.....245

Allied Broadcast Equipment D 1-9
 Audio-Technica U.S. Inc.
 Autodyne D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 LPB Inc.
 Mastertone Co., Inc. D 4
 McCurdy Radio Ind. Inc.
 Micro-Trak Corp.
 Oregon Sound & Lights D 8,9
 Osawa & Co. (USA), Inc.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Professional Audio Service D 1-9

QRK Electronic Products
 Russco Electronics Mfg. Inc.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Stanton Magnetics Inc.
 Studio Electronics D 3,4,7
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Attenuators, Audio

See Adv. Page

Shallco, Inc.261
Tech Laboratories Inc.248

Allen Avionics
 Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 CCA Electronics Corp.
 Cetec Broadcast Group
 Duncan Electronics, Inc.
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 Kay Elemetrics Corp.
 Kings Electronics Co., Inc.
 Lauderdale Electronic Labs D 1-9
 Marconi Instruments Div. of Marconi Electronics Inc.
 Orange County Electronics Int'l., Inc.
 Potomac Instruments, Inc.
 Quad-Eight Electronics
 ROH Corporation
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip. Corp.
 Rohde & Schwarz Sales Co.
 Shallco, Inc.
 Shure Brothers Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Tech Laboratories Inc.
 Texscan Corp.
 Waters Mfg. Inc.
 Weinschel Engineering Co.
 Westlake Audio

Attenuators, Fixed

See Adv. Page

Electro Impulse, Inc.244
Shallco, Inc.261
Tech Laboratories Inc.248

Allen Avionics
 Bayly Engineering Ltd.
 Bird Electronic Corp.
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dielectric Communications A Unit of General Signal
 Electro Impulse, Inc.
 The Finney Co.
 Harris Corp. Broadcast Products Div.
 Harris Corp. PRD Electronics Div.
 Holland Electronics
 Kay Elemetrics Corp.
 Kings Electronics Co., Inc.
 Lauderdale Electronic Labs D 1-9
 Lectronic Research Laboratories, Inc. D 1-9
 Maury Microwave Corp.
 Merrill Cable Equipment Corp.
 Mu-Del Electronics, Inc.
 The Narda Microwave Corporation
 Orange County Electronics Int'l., Inc.
 Rohde & Schwarz Sales Co.
 Shallco, Inc.
 Tech Laboratories Inc.
 Tektronix Inc.
 Texscan Corp.
 Trompeter Electronics
 Waters Mfg. Inc.
 Weinschel Engineering Co.

Attenuators, Impedance Matching

See Adv. Page

Electro Impulse, Inc.244
Shallco, Inc.261
Tech Laboratories Inc.248

Alford Mfg. Co.
 Allen Avionics
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dielectric Communications A Unit of General Signal
 Electro Impulse, Inc.
 Harris Corp. Broadcast Products Div.
 Kay Elemetrics Corp.
 Lauderdale Electronic Labs D 1-9
 Maury Microwave Corp.
 Merrill Cable Equipment Corp.
 Mu-Del Electronics, Inc.
 The Narda Microwave Corporation
 North Hills Electronics, Inc.
 Rohde & Schwarz Sales Co.
 Shallco, Inc.
 Sound Genesis D 8,9
 Tech Laboratories Inc.
 Tektronix Inc.
 Texscan Corp.
 Waters Mfg. Inc.
 Weinschel Engineering Co.

Attenuators, Microwave

See Adv. Page

Electro Impulse, Inc.244
Tech Laboratories Inc.248

AILTECH Div. Cutler-Hammer Los Angeles Operation
 Dielectric Communications A Unit of General Signal
 Electro Impulse, Inc.
 Harris Corp. PRD Electronics Div.
 Kay Elemetrics Corp.
 Kings Electronics Co., Inc.
 Lectronic Research Laboratories, Inc. D 1-9
 Maury Microwave Corp.
 Microwave Assoc. Inc.
 Mu-Del Electronics, Inc.
 The Narda Microwave Corporation
 Rohde & Schwarz Sales Co.
 Systron-Donner
 Tech Laboratories Inc.
 Tektronix Inc.
 Texscan Corp.
 Varian Associates, Inc. Electron Device Group
 Waters Mfg. Inc.
 Weinschel Engineering Co.

Attenuators, RF

See Adv. Page

Bird Electronic Corp.265
Electro Impulse, Inc.244
Shallco, Inc.261
Tech Laboratories Inc.248

AILTECH Div. Cutler-Hammer Los Angeles Operation
 Alford Mfg. Co.
 Bird Electronic Corp.
 Dielectric Communications A Unit of General Signal
 Electro Impulse, Inc.
 Harris Corp. Broadcast Products Div.
 Harris Corp. PRD Electronics Div.
 Holland Electronics
 Kahn Communications, Inc.
 Kay Elemetrics Corp.
 Kings Electronics Co., Inc.
 Lectronic Research Laboratories, Inc. D 1-9
 Marconi Instruments Div. of Marconi Electronics Inc.
 Merrill Cable Equipment Corp.
 Micro Communications, Inc. Grenier Field
 Microwave Assoc. Inc.
 Mu-Del Electronics, Inc.
 Oak Industries, Inc.
 Rohde & Schwarz Sales Co.
 Shallco, Inc.

Systron-Donner
 Tech Laboratories Inc.
 Tektronix Inc.
 Texscan Corp.
 Waters Mfg. Inc.
 Weinschel Engineering Co.
 Winegard Television Systems

Audio Stacks, Rebuilt or Rebuilding Services for VTR

See Adv. Page

Videomax Div.1

Computer Magnetics Corp.
 International Electro-Magnetics
 Minneapolis Magnetics, Inc.
 Taber Mfg. & Engr. Co.
 Videomax Div. Orrox Corp.

Automated Transmission Systems (ATS)

See Adv. Page

C. S. P. Inc.244
Harris Corp.17
Moseley Associates, Inc.23
Time & Frequency Tech., Inc.5
Val-Tronics, Inc.245

Allied Broadcast Equipment D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 C. S. P. Inc.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Landy Associates Inc. D 1,2
 Moseley Associates, Inc.
 PWH Electronics
 Potomac Instruments, Inc.
 QEI Corp.
 Eric Small & Associates
 Time & Frequency Tech., Inc.
 Val-Tronics, Inc. D2
 The Widget Works, Inc.

Automation, Camera Control

Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Panasonic Company
 Power-Optics Inc.
 RCA Broadcast Systems
 Technics by Panasonic

Automation, Color Corrector

Broadcast Communications Devices, Inc. D 8,9
 CoHu, Inc. Electronics Div.
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Panasonic Company
 RCA Broadcast Systems
 Technics by Panasonic
 Television Equipment Associates

Automation, Data Processing

See Adv. Page

Central Dynamics Corp.57
IGM76
Moseley Associates, Inc.23
Vital Industries Inc.BC
 Automation Electronics, Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Consultants Corp. D 1-9
 Central Dynamics Corp.
 Cox Data Services Suite 100/Prado North
 IGM Div. of Northwestern Tech.
 Kaman Sciences Corp.

Marconi Communication Systems Ltd.
 Moseley Associates, Inc.
 PSI Paperwork Systems, Inc.
 Paperwork Systems
 Quad-Eight Electronics
 Sono-Mag Corp.
 Studer Revox America
 Vital Industries Inc.
 The Widget Works, Inc.

Automation, Equipment Control, Radio

See Adv. Page

Broadcast Component Dist. Communication Medias200
Cetec Broadcast Group118
IGM76
Moseley Associates, Inc.23

Aitken Communications Inc.
 Allied Broadcast Equipment D 1-9
 Autogram Corp. D 7
 Automated Broadcast Controls
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Consolidated Electronic Industries
 Datalogic-Rust Co.
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.
 International Communications & Control Corp.
 Moseley Associates, Inc.
 RCA Broadcast Systems
 Rivers Associates, Inc.
 Rust Corp.
 Eric Small & Associates
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 UMC Electronics Co. Broadcast Products Div.
 VIF International D 1-9
 The Widget Works, Inc.

Automation, Equipment Control, TV

See Adv. Page

American Data Corp.7
Central Dynamics Corp.57
Dytek Industries, Inc.185
Harris Corp.17
Holland Electronics264
IGM76
Kaitronics Corp.252
Moseley Associates, Inc.23
Time & Frequency Tech., Inc.5
Vital Industries Inc.BC
 American Data Corp. A North
 American Philips Co.
 Broadcast Communications Devices, Inc. D 8,9
 CMX Systems Div. of Orrox Corp.
 Central Dynamics Corp.
 Datalogic-Rust Co.
 Dytek Industries, Inc.
 Energy Technology, Inc.
 Grass Valley Group, Inc.
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 IGM Div. of Northwestern Tech.
 Industrial Sciences
 International Communications & Control Corp.
 Kaitronics Corp.
 Magna-Tech Electronic Co., Inc.

Marconi Communication Systems Ltd.
Microtime, Inc.
Moseley Associates, Inc.
RCA Broadcast Systems
Richmond Hill Laboratories Ltd.
Rust Corp.
Eric Small & Associates
Sono-Mag Corp.
Time & Frequency Tech., Inc.
Torpey Controls & Engineering Ltd.
Video Aids Corp. of Colorado
Video Specialties
Videomedia
Vital Industries Inc.
The Widget Works, Inc.

Automation, Film Chain

Central Dynamics Corp.
Industrial Sciences
KVC Video Systems Inc. D 1,2
Kaitronics Corp.
Laird Telemedia Inc.
Panasonic Company
Quad-Eight Electronics
RCA Broadcast Systems
Technics by Panasonic

Automation, Lighting Control

See Adv. Page

Electro Controls 14
Skirpan Lighting Control Corp. 64

Berkey-Colortran Inc.
Broadcast Communications Devices, Inc. D 8,9
Electro Controls
Energy Technology, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Kliegl Bros. Lighting
Lumitrol, Ltd. D-Canada
Skirpan Lighting Control Corp.
Strand Century, Inc.
Studer Revox America
Theatre Techniques Inc.

Automation, Program Control

See Adv. Page

American Data Corp. 7
Broadcast Component Dist. Communication Medias 200
Central Dynamics Corp. 57
Cetec Broadcast Group 118
Datatron, Inc. 111
Dytek Industries, Inc. 185
IGM 76
Vital Industries Inc. BC

Aitken Communications Inc.
Allied Broadcast Equipment D 1-9
American Data Corp. A North American Philips Co.
Autogram Corp. D 7
Automated Broadcast Controls
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
CCA Electronics Corp.
C.R.V. Systems, Inc.
Central Dynamics Corp.
Cetec Broadcast Group
Consolidated Electronic Industries
Datatron, Inc.
Dytek Industries, Inc.
ESE
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Kaitronics Corp.
Kaman Sciences Corp.
Marconi Communication Systems Ltd.
Microtime, Inc.
Rupert Neve, Inc.

Quad-Eight Electronics
RCA Broadcast Systems
Richmond Hill Laboratories Ltd.
Rivers Associates, Inc.
Sono-Mag Corp.
Studer Revox America
Tape-Athon Corp.
Tektronix Inc.
Torpey Controls & Engineering Ltd.
VIF International D 1-9
Video Specialties
Vital Industries Inc.
Ward-Beck Systems, Ltd.

Automation, Program Logging

See Adv. Page

Central Dynamics Corp. 57
Datatron, Inc. 111
Harris Corp. 17
IGM 76
Scully Recording Instruments 32,33
Time & Frequency Tech., Inc. 5

Allied Broadcast Equipment D 1-9
Automated Broadcast Controls
Automation Electronics, Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Central Dynamics Corp.
Cetec Broadcast Group
Consolidated Electronic Industries
Datatron, Inc.
Grass Valley Group, Inc.
Hallikainen & Friends, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Lauderdale Electronic Labs D 1-9
Mastertone Co., Inc. D 4
Microtime, Inc.
Panasonic Company
QSI Systems, Inc. D 1
Richmond Hill Laboratories Ltd.
Scully Recording Instruments Div. of Dictaphone Corp.
Eric Small & Associates
Sono-Mag Corp.
Studer Revox America
Technics by Panasonic
Time & Frequency Tech., Inc.
Vital Industries Inc.

Automation, Projector

Central Dynamics Corp.
ESE
Kaitronics Corp.
Laird Telemedia Inc.
Marconi Electronics Inc.
RCA Broadcast Systems
Spindler & Sauppe, Inc.

Automation, Switching

See Adv. Page

Adcom Communications Inc. 40
Broadcast Component Dist. Communication Medias 200
Central Dynamics Corp. 57
Dytek Industries, Inc. 185
IGM 76
Vital Industries Inc. BC

Adcom Communications Inc.
Allied Broadcast Equipment D 1-9
American Data Corp. A North American Philips Co.
Automated Broadcast Controls
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9

CCA Electronics Corp.
CMX Systems Div. of Orrox Corp.
C.R.V. Systems, Inc.
Central Dynamics Corp.
Cetec Broadcast Group
Consolidated Electronic Industries
Data Communications Corp.
Dytek Industries, Inc.
Grass Valley Group, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech. Industrial Sciences
Landy Associates Inc. D 1,2
Marconi Electronics Inc.
Microtime, Inc.
Panasonic Company
QSI Systems, Inc. D 1
RCA Broadcast Systems
Richmond Hill Laboratories Ltd.
Richmond Sound Design, Ltd.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Studer Revox America
Technics by Panasonic
VIF International D 1-9
Vital Industries Inc.

Automation, Tape Control, Cartridge

See Adv. Page

IGM 76

Aitken Communications Inc.
Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Autogram Corp. D 7
Automated Broadcast Controls
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
CCA Electronics Corp.
CMX Systems Div. of Orrox Corp.
Central Dynamics Corp.
Cetec Broadcast Group
Consolidated Electronic Industries
Delta Electronics Inc. (N.C.)
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Mastertone Co., Inc. D 4
Professional Audio Service D 1-9
RCA Broadcast Systems
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
UMC Electronics Co. Broadcast Products Div.
VIF International D 1-9

Automation, Tape Control, Reel

See Adv. Page

IGM 76

AEG-Telefunken Magnetic Tape Recorder Dept.
Allied Broadcast Equipment D 1-9
Autogram Corp. D 7
Automated Broadcast Controls
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
CCA Electronics Corp.
Central Dynamics Corp.
Cetec Broadcast Group
Dyma Engineering, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Mastertone Co., Inc. D 4
Otari Corp.
RCA Broadcast Systems

Rivers Associates, Inc.
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Tape-Athon Corp.
Telcom Research
VIF International D 1-9

Automation, Transmitter Logging

See Adv. Page

Harris Corp. 17
Moseley Associates, Inc. 23
Time & Frequency Tech., Inc. 5

Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Datalogic-Rust Co.
Dielectric Communications A Unit of General Signal
Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5
Marconi Instruments Div. of Marconi Electronics Inc.
Moseley Associates, Inc.
Rust Corp.
Eric Small & Associates
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Time & Frequency Tech., Inc.
The Widget Works, Inc.

Automation, Video Display Terminals

See Adv. Page

Time & Frequency Tech., Inc. 5

Data Communications Corp.
Time & Frequency Tech., Inc.

Automation, Video Tape Machine

See Adv. Page

Kaitronics Corp. 252

Ampex Corp.
Automation Techniques, Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
CMX Systems Div. of Orrox Corp.
Central Dynamics Corp.
Channelmatic, Inc.
ESE
Fernseh Group Robert Bosch Corp.
Kaitronics Corp.
Media Concepts, Inc. D 1-9
Merlin Engineering Works, Inc.
Microtime, Inc.
RCA Broadcast Systems
Recortec Inc.
Telcom Research
Videomedia

Battery Pack Chargers

See Adv. Page

Alexander Mfg. Co. 100
Frezzolini Electronics, Inc. 215
Midwest Corp. 106
Video Components, Inc. 183

Alexander Mfg. Co.
Anton/Bauer Inc.
The Camera Mart, Inc. D 1,2,3
Christie Electric Corp.
Cine 60, Inc.
Cinecraft Int'l, Inc. Export Agents, D ESE
Frezzolini Electronics, Inc.
Alan Gordon Enterprises Inc.
Harris Corp. Broadcast Products Div.
Ikegami Electronics (USA) Inc.

KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Midwest Corp. Tele Communications Div.
 Mountain West Alarm D8
 Nagra Magnetic Recorders, Inc.
 Newark Electronics D 1-9
 North Wind Power Co.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Sencore Inc.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Television Products Co. Inc.
 United Radio Supply Inc. D9
 Video Components, Inc.

Battery Packs, ENG

See Adv. Page

Alexander Mfg. Co.100
 Frezzolini Electronics, Inc.215
 Midwest Corp.106
 Video Components, Inc.183
 Yardney Electric Corp.217

Alexander Mfg. Co.
 Anton/Bauer Inc.
 Broadcast Communications Devices, Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Christie Electric Corp.
 Cine 60, Inc.
 Cinecraft Int'l., Inc. Export Agents, D
 Comprehensive Video Supply Corp. D 1-9
 Frezzolini Electronics, Inc.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Products Div.
 Ikegami Electronics (USA) Inc.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Midwest Corp. Tele Communications Div.
 Mountain West Alarm D8
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Television Products Co. Inc.
 United Radio Supply Inc. D9
 Video Components, Inc.
 Yardney Electric Corp.

Blowers and Fans

AMCO Engineering Co.
 Amco Engineering Co.
 Bud Industries, Inc.
 Javelin Electronics
 Lectronic Research Laboratories, Inc. D 1-9
 Newark Electronics D 1-9
 Optima Enclosures
 Stantron Div.
 Tele-Measurements, Inc. D 2

Bridges, Common Point

See Adv. Page

Delta Electronics Inc. (Va.)191
 Harris Corp.17
 Potomac Instruments, Inc.206

Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Delta Electronics Inc. (Va.)
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Potomac Instruments, Inc.
 Val-Tronics, Inc. D2

Buzz Tone Eliminators, Videotape Edit

See Adv. Page

A. F. Associates, Inc.193

A. F. Associates, Inc.

Cabinets, Consoles and Racks (Enclosures Only)

See Adv. Page

Broadcast Component Dist. Communication Medias200
 Dyma Engineering, Inc.267
 Harris Corp.17
 Rus Lang Corp.204
 Winsted Corp.221

AMCO Engineering Co.
 Amco Engineering Co.
 Automated Broadcast Controls
 Bayly Engineering Ltd.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment & Supply Co. D 1-9
 Bud Industries, Inc.
 CCA Electronics Corp.
 Cases Inc.
 Cetec Broadcast Group
 Comprehensive Video Supply Corp. D 1-9
 Dyma Engineering, Inc. Enclosure Corp.
 Equipto Storage Systems
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Laird Telemedia Inc.
 Landy Associates Inc. D 1,2
 Rus Lang Corp.
 MacKenzie Laboratories, Inc.
 Mastertone Co., Inc. D 4
 McCurdy Radio Ind. Inc.
 Micro-Trak Corp.
 Charles Moore
 Newark Electronics D 1-9
 Optima Enclosures
 Paso Sound Products Inc.
 Quad-Eight Electronics
 Research Technology, Inc.
 Sansul Electronics Corp.
 Scientific-Atlanta, Inc.
 Shintron Co. Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Stantron Div.
 Storeel Corp.
 Studio Electronics D 3,4,7
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 UMC Electronics Co. Broadcast Products Div.
 United Radio Supply Inc. D9
 Vector Electronic Co., Inc.
 Westlake Audio
 Wilkinson Electronics, Inc.
 Winsted Corp.

Cable, Camera

Belden Corp.
 Boston Insulated Wire & Cable Co.
 Brand-Rex Co.
 The Camera Mart, Inc. D 1,2,3
 Comprehensive Video Supply Corp. D 1-9
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.
 Ikegami Electronics (USA) Inc.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Kings Electronics Co., Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9

Media Concepts, Inc. D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 RCA Broadcast Systems
 Super8 Sound, Inc.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2

Cable, Coaxial Flexible

See Adv. Page

Trompeter Electronics218
 Val-Tronics, Inc.245

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Andrew Corp.
 Belden Corp.
 Blonder-Tongue Labs.
 Boston Insulated Wire & Cable Co.
 Brand-Rex Co.
 CCA Electronics Corp.
 Cablewave Systems Inc.
 Cetec Broadcast Group
 Comark Industries Inc.
 Comm/Scope Co.
 Comprehensive Video Supply Corp. D 1-9
 Dyma Engineering, Inc.
 The Finney Co.
 GBC Closed Circuit TV Corp.
 G.C. Electronics
 General Cable Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 LPB Inc.
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Mazy Microwave Corp.
 Maze Corp D6
 Media Concepts, Inc. D 1-9
 Micro Communications, Inc. Grenier Field
 Micro Control Associates, Inc.
 Newark Electronics D 1-9
 Nurad, Inc.
 Phelps Dodge Communications Co.
 Prodelin Inc.
 RCA Broadcast Systems
 Saxton Products Inc.
 Singer Products Co., Inc.
 Studer Revox America
 Tele-Measurements, Inc. D 2
 Times Wire and Cable
 Trompeter Electronics
 United Radio Supply Inc. D9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.
 Winegard Television Systems

Cable, Coaxial Rigid

See Adv. Page

SWR Inc.41

AEL, Inc.
 Alford Mfg. Co.
 Allied Broadcast Equipment D 1-9
 Andrew Corp.
 Belden Corp.
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Cablewave Systems Inc.
 Cetec Broadcast Group
 Comark Industries Inc.
 Comm/Scope Co.
 Dyma Engineering, Inc.
 General Cable Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Mazy Microwave Corp.
 Maze Corp D6
 Micro Communications, Inc. Grenier Field
 Newark Electronics D 1-9
 Nurad, Inc.
 Phelps Dodge Communications Co.
 Prodelin Inc.
 RCA Broadcast Systems
 SWR Inc.

Shively Laboratories, Inc.
 Singer Products Co., Inc.
 Times Wire and Cable
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Cable, Direct Burial

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Belden Corp.
 Brand-Rex Co.
 CCA Electronics Corp.
 Cablewave Systems Inc.
 J I Case Davis Div.
 Comm/Scope Co.
 General Cable Corp.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Lauderdale Electronic Labs D 1-9
 Media Concepts, Inc. D 1-9
 Phelps Dodge Communications Co.
 Tele-Measurements, Inc. D 2
 Times Wire and Cable

Cable, Microphone

See Adv. Page

Harris Corp.17
 Whirlwind Audio42

Allied Broadcast Equipment D 1-9
 Belden Corp.
 Boston Insulated Wire & Cable Co.
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Comprehensive Video Supply Corp. D 1-9
 Dyma Engineering, Inc.
 G.C. Electronics
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Media Concepts, Inc. D 1-9
 Nagra Magnetic Recorders, Inc.
 Neutrik
 Olesen D 1-9
 Oregon Sound & Lights D 8,9
 Saxton Products Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Studer Revox America
 Switchcraft Inc.
 Tele-Measurements, Inc. D 2
 Times Wire and Cable
 United Radio Supply Inc. D9
 Whirlwind Audio
 Whirlwind Music
 Wilkinson Electronics, Inc.

Cable, Optical Fiber

See Adv. Page

Harris Corp.17
 Telemet189

Comm/Scope Co.
 General Cable Corp.
 Harris Corp. Broadcast Products Div.
 Newark Electronics D 1-9
 Radiation Devices Co., Inc.
 Rank Precision Industries, Inc. (N.Y.)
 Telemet a Geotol Co.

Cable, Shielded Audio

See Adv. Page

Whirlwind Audio42

Allied Broadcast Equipment D 1-9
 Audio-Technica U.S. Inc.
 Belden Corp.
 Boston Insulated Wire & Cable Co.
 Brand-Rex Co.
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Comm/Scope Co.
 Comprehensive Video Supply Corp. D 1-9
 Dyma Engineering, Inc.
 EMT Franz VGmbH

Fisher Burke Professional Audio D 8
 GBC Closed Circuit TV Corp.
 G.C. Electronics
 General Cable Corp.
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 Lita Broadcasting Distributors D 1-9
 Media Concepts, Inc. D 1-9
 Newark Electronics D 1-9
 Oregon Sound & Lights D 8,9
 Osawa & Co. (USA), Inc.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Quad-Eight Electronics
 Sansui Electronics Corp.
 Saxton Products Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Studer Revox America
 Tele-Measurements, Inc. D 2
 Times Wire and Cable
 United Radio Supply Inc. D9
 Whirlwind Audio
 Whirlwind Music
 Wilkinson Electronics, Inc.

Cable Laying Equipment

J I Case Davis Div.
 Ditch Witch Div. of Charles Machine
 Works Inc.
 Roll-A-Reel
 Suda Seisakusho Co., Ltd. Nitsuko-
 Bldg.

Cable Locators, Underground

Rycom Instruments

Cable Stripping Tools

See Adv. Page

**Western Electronic
 Products Co. 266**

Comprehensive Video Supply Corp. D
 1-9
 Lauderdale Electronic Labs D 1-9
 Newark Electronics D 1-9
 Western Electronic Products Co.
 Winegard Television Systems

Calibration Service, Instrument

See Adv. Page

**Potomac Instruments,
 Inc. 207**
Sencore Inc. 92

Alford Mfg. Co.
 B & K Instruments Inc.
 Bird Electronic Corp.
 Commercial Radio Monitoring Co., Inc.
 National Electrolab Ltd.
 Photo Research Div. of Kollmorgen
 Corp.
 Potomac Instruments, Inc.
 Sadelco, Inc.
 Sencore Inc.
 Tektronix Inc.

Calorimeters, RF

See Adv. Page

Bird Electronic Corp. 265

Belden Corp.
 Bird Electronic Corp.
 Canon USA, Inc. Optics Div.
 Harris Corp. PRD Electronics Div.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Wilkinson Electronics, Inc.

**Camera Carrying Stabilizers,
 Operator Vest Mount**

The Camera Mart, Inc. D 1,2,3
 Cinema Products Corp.

**Camera Carrying Systems,
 Television Portapak**

The Camera Mart, Inc. D 1,2,3
 Cine 60, Inc.
 Comprehensive Video Supply Corp. D
 1-9
 GBC Closed Circuit TV Corp.
 Gruber Products Co.
 Harris Corp. Broadcast Products Div.
 US JVC Corp. Professional Video Div.
 Javelin Electronics
 K & H Products, Ltd.
 Landy Associates Inc. D 1,2
 Lee-Ray Industries, Inc.
 Media Concepts, Inc. D 1-9
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Sony Corp. of America VTR Div.
 Tele-Measurements, Inc. D 2
 Video Components, Inc.
 Videodetics Corp.

**Camera Dollies, Stands and
 Tripods**

See Adv. Page

Harris Corp. 17
**O'Connor Eng. Labs,
 Inc. 97**

Autodyne D 1-9
 Berkey-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Cinema Products Corp.
 Cohu, Inc. Electronics Div.
 Comprehensive Video Supply Corp. D
 1-9
 Comquip, Inc.
 Cosmical Lens Div. Asahi Precision
 Co., Ltd.
 Davis & Sanford Co. Inc.
 Editel Communications
 GBC Closed Circuit TV Corp.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Image Devices Inc. D 1-9
 Innovative Television Equipment, Inc.
 Javelin Electronics
 K & H Products, Ltd.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Lee-Ray Industries, Inc.
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Media Concepts, Inc. D 1-9
 O'Connor Eng. Labs. Inc.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Quick-Set Inc.
 RCA Broadcast Systems
 SGL Waber Electric
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Television Products Co. Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.
 Weather Scan, Inc. D

Camera Housings, Environmental

Asaca Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 Cohu, Inc. Electronics Div.
 Electro & Optical Systems Ltd.
 GBC Closed Circuit TV Corp.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 Image Devices Inc. D 1-9
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Media Concepts, Inc. D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Power-Optics Inc.
 Quick-Set Inc.
 Technics by Panasonic

Tele-Cine Inc.
 Tele-Measurements, Inc. D 2

Camera Pan and Tilt Heads

See Adv. Page

**O'Connor Eng. Labs,
 Inc. 97**

Asaca Corp. of America
 Autodyne D 1-9
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Cinema Products Corp.
 Cohu, Inc. Electronics Div.
 Comprehensive Video Supply Corp. D
 1-9
 Cosmical Lens Div. Asahi Precision
 Co., Ltd.
 Davis & Sanford Co. Inc.
 Editel Communications
 Electro & Optical Systems Ltd.
 GBC Closed Circuit TV Corp.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 Image Devices Inc. D 1-9
 Innovative Television Equipment, Inc.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Media Concepts, Inc. D 1-9
 O'Connor Eng. Labs. Inc.
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Power-Optics Inc.
 Quick-Set Inc.
 RCA Broadcast Systems
 Technics by Panasonic
 Tele-Cine Inc.
 Tele-Measurements, Inc. D 2
 Television Products Co. Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.
 Weather Scan, Inc. D

**Camera Remote Control
 Equipment**

See Adv. Page

**Panasonic Video
 Systems Div. 34-35**

Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Catel Div. United Scientific Corp.
 Cohu, Inc. Electronics Div.
 Dage-MTI, Inc.
 Electro & Optical Systems Ltd.
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 Innovative Television Equipment, Inc.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Marconi Communication Systems Ltd.
 Panasonic Company
 Panasonic Video Systems Div.
 Power-Optics Inc.
 Quick-Set Inc.
 Technics by Panasonic
 Tektronix Inc.
 Tele-Cine Inc.
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2

Cameras, Closed Circuit B&W

ATV Research
 Asaca Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Comquip, Inc.

Dage-MTI, Inc.
 Denson Electronic Corp. D 1-9
 Editel Communications
 GBC Closed Circuit TV Corp.
 General Electric Co. ISO Div.
 General Electric Co. Tubes/MW
 Devices
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Lenzar Optics Corp.
 Marconi Communication Systems Ltd.
 Media Concepts, Inc. D 1-9
 Motorola Communications and
 Electronics Inc.
 NEC America, Inc. Broadcasting Equip.
 Div.
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Power-Optics Inc.
 QSI Systems, Inc. D 1
 RCA Distributor & Special Products
 Div.
 RCA Electro Optics and Devices
 Sony Corp. of America VTR Div.
 TEAC Corp of America
 Technics by Panasonic
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Telescript, Inc.
 Teltron Inc.
 Temtron Electronics D 1-9
 Videodetics Corp.
 Weather Scan, Inc. D
 Westinghouse Ind. & Gov't Tube Div.

Cameras, Closed Circuit Color

See Adv. Page

**Philips Broadcast
 Equip Corp. 66-67**

Asaca Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Commercial Electronics, Inc.
 Comquip, Inc.
 Denson Electronic Corp. D 1-9
 Editel Communications
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 General Electric Co. ISO Div.
 General Electric Co. Tubes/MW
 Devices
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 US JVC Corp. Professional Video Div.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Media Concepts, Inc. D 1-9
 NEC America, Inc. Broadcasting Equip.
 Div.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 Sharp Electronics Corp.
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Telescript, Inc.
 Temtron Electronics D 1-9
 Videodetics Corp.
 Weather Scan, Inc. D

Cameras, Film Chain

See Adv. Page

**Philips Broadcast
 Equip Corp. 66-67**

Broadcast Communications Devices,
 Inc. D 8,9
 C.R.V. Systems, Inc.

The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Commercial Electronics, Inc.
 Comquip, Inc.
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 Ikegami Electronics (USA) Inc.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Media Concepts, Inc. D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 RCA Broadcast Systems
 Sharp Electronics Corp.
 Technics by Panasonic
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Temtron Electronics D 1-9
 Thomson-CSF Laboratories, Inc.
 Videodetics Corp.
 Weather Scan, Inc. D

Cameras, Film Cine

See Adv. Page

Cinema Products Corp. 9

Arriflex Corp.
 The Camera Mart, Inc. D 1,2,3
 Canon USA, Inc. Optics Div.
 Cinecraft Int'l, Inc. Export Agents, D
 Cinema Products Corp.
 Comquip, Inc.
 Eastman Kodak Co.
 Fernseh Group Robert Bosch Corp.
 Frezzolini Electronics, Inc.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 KVC Video Systems Inc. D 1,2
 RCA Broadcast Systems
 Super8 Sound, Inc.
 Teledyne Camera Systems
 Victor Duncan, Inc. D 4,5,6,7

Cameras, Film Still

Canon USA, Inc. Optics Div.
 Comquip, Inc.
 Eastman Kodak Co.
 Image Devices Inc. D 1-9

Cameras, Image Motion Compensation

Comquip, Inc.
 Dynasciences Div. Whitaker Corp.

Cameras, Surveillance

ATV Research
 Asaca Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Comquip, Inc.
 Dage-MTI, Inc.
 Dyma Engineering, Inc.
 Eastman Kodak Co.
 GBC Closed Circuit TV Corp.
 General Electric Co. ISO Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 Image Devices Inc. D 1-9
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Lenzar Optics Corp.
 Marconi Communication Systems Ltd.
 Media Concepts, Inc. D 1-9
 Mountain West Alarm D8
 NEC America, Inc. Broadcasting Equip.
 Div.
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Power-Optics Inc.

QSI Systems, Inc. D 1
 RCA Distributor & Special Products
 Div.
 RCA Electro Optics and Devices
 Sharp Electronics Corp.
 Technics by Panasonic
 Teledyne Camera Systems
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Telescript, Inc.
 Teltron Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Videodetics Corp.
 Westinghouse Ind. & Gov't Tube Div.

Cameras, TV Color Field

See Adv. Page

Commercial Electronics, Inc. 63
Hitachi Denshi America, Ltd. 59
Marconi Electronics Inc. 15
Panasonic Video Systems Div. 34-35
Philips Broadcast Equip Corp. 66-67

Asaca Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 CCA Electronics Corp.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cinema Products Corp.
 Cohu, Inc. Electronics Div.
 Commercial Electronics, Inc.
 Dyma Engineering, Inc.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 International Video Corp.
 US JVC Corp. Professional Video Div.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 NEC America, Inc. Broadcasting Equip.
 Div.
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 RCA Broadcast Systems
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Thomson-CSF Laboratories, Inc.
 Victor Duncan, Inc. D 4,5,6,7

Cameras, TV Color Studio Broadcast

See Adv. Page

Commercial Electronics, Inc. 63
Harris Corp. 17
Marconi Electronics Inc. 15
Panasonic Video Systems Div. 34-35
Philips Broadcast Equip Corp. 66-67

All Mobile Video, Inc.
 Ampex Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 CCA Electronics Corp.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Commercial Electronics, Inc.
 Dyma Engineering, Inc.
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.

H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 International Video Corp.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 RCA Broadcast Systems
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Temtron Electronics D 1-9
 Thomson-CSF Laboratories, Inc.
 Victor Duncan, Inc. D 4,5,6,7

Cameras, TV ENG

See Adv. Page

The Camera Mart, Inc. 74
Commercial Electronics, Inc. 63
Hitachi Denshi America, Ltd. 59
Marconi Electronics Inc. 15
Philips Broadcast Equip Corp. 66-67

All Mobile Video, Inc.
 Ampex Corp.
 Asaca Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 CCA Electronics Corp.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cinema Products Corp.
 Commercial Electronics, Inc.
 Dyma Engineering, Inc.
 GBC Closed Circuit TV Corp.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 International Video Corp.
 US JVC Corp. Professional Video Div.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Electronics Inc.
 Media Concepts, Inc. D 1-9
 NEC America, Inc. Broadcasting Equip.
 Div.
 Nurad, Inc.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 RCA Broadcast Systems
 Sharp Electronics Corp.
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Temtron Electronics D 1-9
 Thomson-CSF Laboratories, Inc.
 Victor Duncan, Inc. D 4,5,6,7

Cameras, TV Remote Control Broadcast

Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Commercial Electronics, Inc.
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 International Video Corp.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Martin Audio/Video D2
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 Power-Optics Inc.
 RCA Broadcast Systems

Teltron Inc.
 Victor Duncan, Inc. D 4,5,6,7

Capacitors, Transmitting, Mica and Vacuum

See Adv. Page

EEV, Inc. 37
Surcom Associates 246

Bailey Engineering Ltd.
 CCA Electronics Corp.
 C. S. P. Inc.
 Cetec Broadcast Group
 Comet Sales
 Corning Glass Works
 EEV, Inc.
 EEV Canada Ltd.
 English Electric Valve Co. Ltd.
 Harris Corp. Broadcast Products Div.
 ITT Jennings
 Lectronic Research Laboratories, Inc.
 D 1-9
 Newark Electronics D 1-9
 Surcom Associates

Cartridge Machine Alignment Tape

See Adv. Page

Fidelipac 213

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Autodyne D 1-9
 Broadcast Cartridge Service D 7,8,9
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Fidelipac
 Fisher Burke Professional Audio D 8
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 Lauderdale Electronic Labs D 1-9
 Lita Broadcasting Distributors D 1-9
 Nortronics Co., Inc.
 Professional Audio Service D 1-9
 Sound Dynamics, Inc. D8, 9
 Taber Mfg. & Engr. Co.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2

Cartridge Machine Rebuilding Services

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Cetec Broadcast Group
 Communications, Ltd.
 Dyma Engineering, Inc.
 Lauderdale Electronic Labs D 1-9

Cartridge Machines, Dual Deck

See Adv. Page

Harris Corp. 17
McCurdy Radio Ind. Inc. IBC

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.

Cetec Broadcast Group
 Consolidated Electronic Industries
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 International Electro-Magnetics
 KVC Video Systems Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Lita Broadcasting Distributors D 1-9
 MacKenzie Laboratories, Inc.
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 RCA Broadcast Systems
 Rapid-Q, Edco Products, Inc.
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Cartridge Machines, Multiple Deck

See Adv. Page

Ampro Broadcasting Inc. 96
Harris Corp. 17
International Tapetronics Corp. 49
McCurdy Radio Ind. Inc. IBC
Telex Communications, Inc. 8

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Audi-Cord Corp.
 Autodyne D 1-9
 Automated Broadcast Controls
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Consolidated Electronic Industries
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 International Electro-Magnetics
 International Tapetronics Corp.
 KVC Video Systems Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 MacKenzie Laboratories, Inc.
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 RCA Broadcast Systems
 Rapid-Q, Edco Products, Inc.
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Studio Electronics D 3,4,7
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Cartridge Machines, Random Access

See Adv. Page

Broadcast Electronics, Inc. 52

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Broadcast Controls
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Consolidated Electronic Industries
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 International Electro-Magnetics
 KVC Video Systems Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 MacKenzie Laboratories, Inc.
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Telex Communications, Inc.
 UMC Electronics Co. Broadcast
 Products Div.
 VIF International D 1-9
 Wilkinson Electronics, Inc.

Cartridge Machines, Single Deck

See Adv. Page

Broadcast Component Dist. Communication Medias 200
Broadcast Electronics, Inc. 52
Contel Mfg. 12
Harris Corp. 17
International Tapetronics Corp. 49
Ramko Research Inc. .. 186-187
Telex Communications, Inc. 8

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Audi-Cord Corp.
 Audio Distributor Inc. D 3, 4, 6, 7
 Autodyne D 1-9
 Bell Audio Systems, Inc.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 C.R.V. Systems, Inc.
 Cetec Broadcast Group
 Consolidated Electronic Industries
 Contel Mfg.
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 International Electro-Magnetics
 International Tapetronics Corp.
 KVC Video Systems Inc. D 1,2

LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 MacKenzie Laboratories, Inc.
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 Micro-Trak Corp.
 Panasonic Company
 RCA Broadcast Systems
 Ramko Research Inc.
 Rapid-Q, Edco Products, Inc.
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Studio Electronics D 3,4,7
 Superscope, Inc.
 Technics by Panasonic
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Cartridge Machines, Stereo

See Adv. Page

Broadcast Electronics, Inc. 52
Ramko Research Inc. .. 186-187
Telex Communications, Inc. 8

AEG-Telefunken Magnetic Tape
 Recorder Dept.
 Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Audi-Cord Corp.
 Autodyne D 1-9
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 International Tapetronics Corp.
 KVC Video Systems Inc. D 1,2
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Micro-Trak Corp.
 RCA Broadcast Systems
 Ramko Research Inc.
 Rapid-Q, Edco Products, Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Studio Electronics D 3,4,7
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Cartridge Reconditioning Services

Broadcast Cartridge Service D 7,8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Harris Corp. Broadcast Products Div.
 Mastertone Co., Inc. D 4
 Professional Audio Service D 1-9

Cartridge Recording Services

Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D
 1-9
 Mastertone Co., Inc. D 4

Media Concepts, Inc. D 1-9
 Pentagon Industries, Inc.
 Professional Audio Service D 1-9

Cartridge Reloading Services, Audio

Aristocart Div. Western Broadcasting
 Co., Ltd.
 Broadcast Cartridge Service D 7,8,9
 Broadcast Electronics, Inc.
 Colorado Magnetics
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Professional Audio Service D 1-9

Cartridge Splice Finder

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Autodyne D 1-9
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 International Tapetronics Corp.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 RCA Broadcast Systems
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 Val-Tronics, Inc. D2

Cartridges, Magnetic Tape

See Adv. Page

Aristocart Div. 102
Broadcast Component Dist. Communication Medias 200
Fidelipac 213
Harris Corp. 17

Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Ampro Broadcasting Inc.
 Aristocart Div. Western Broadcasting
 Co., Ltd.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Magnetics Corp.
 Autodyne D 1-9
 BSC Inc.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Cartridge Service D 7,8,9
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Capitol Magnetic Products
 Cetec Broadcast Group
 Colorado Magnetics
 Consolidated Electronic Industries
 Contel Mfg.
 Dimension 3 Recording Co.
 Fidelipac
 Fuji Photo Film USA, Inc. Magnetic
 Products Dept.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 Image Devices Inc. D 1-9

LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 MacKenzie Laboratories, Inc.
 Mastertone Co., Inc. D 4
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products Group
 Professional Audio Service D 1-9
 RCA Broadcast Systems
 Sinai-Johnson D 8,9
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Telex Communications, Inc.
 3M Co. Magnetic Audio/Video Prod. Div.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Cartridges, Phono

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
K & L Pro Audio.....254
Stanton Magnetics Inc.....61

Allied Broadcast Equipment D 1-9
 Audio-Technica U.S. Inc.
 Autodyne D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 Fisher Burke Professional Audio D 8
 Gotham Audio Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 McCurdy Radio Ind. Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Neutrik
 Osawa & Co. (USA), Inc.
 Professional Audio Service D 1-9
 QRK Electronic Products
 RCA Broadcast Systems
 Ram Audio Systems, Inc.
 Satin by Osawa
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Stanton Magnetics Inc.
 Studio Electronics D 3,4,7
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Cartridges, Stereo

See Adv. Page

Aristocart Div.102
 Allied Broadcast Equipment D 1-9
 Aristocart Div. Western Broadcasting Co., Ltd.
 Audio-Technica U.S. Inc.
 Autodyne D 1-9

Broadcast Automation Associates Inc. D 1,2,5,6.
 Broadcast Cartridge Service D 7,8,9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Communications, Ltd.
 Dimension 3 Recording Co.
 Dyma Engineering, Inc.
 Fidelipac
 Fisher Burke Professional Audio D 8
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Professional Audio Service D 1-9
 QRK Electronic Products
 RCA Broadcast Systems
 Ram Audio Systems, Inc.
 Shure Brothers Inc.
 Sono-Mag Corp.
 Sound Genesis D 8,9
 Stanton Magnetics Inc.
 Studio Electronics D 3,4,7
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Cartridges, Videotape

Ampex Corp.
 Broadcast Communications Devices, Inc. D 8,9
 Comquip, Inc.
 Fuji Photo Film USA, Inc. Magnetic Products Dept.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products Group
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 RCA Broadcast Systems
 Recortec Inc.
 Sony Corp. of America VTR Div.
 Studio Electronics D 3,4,7
 Tele-Measurements, Inc. D 2
 3M Co. Magnetic Audio/Video Prod. Div.
 Val-Tronics, Inc. D2

Cases, Film and Tape, Carrying and Shipping

Anvil Cases
 Cara Pacific Sales Co. D 8,9
 Cases Inc.
 Comprehensive Video Supply Corp. D 1-9
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Neumade Products Corp.
 Professional Audio Service D 1-9
 Progressive Marketing D 1-9
 Research Technology, Inc.
 The Ken Schaffer Group, Inc.
 Thermodyne International Ltd.
 3M Co. Magnetic Audio/Video Prod. Div.
 Track Audio, Inc. D 1-9

Cases, Video Equipment Transit

Anvil Cases
 The Camera Mart, Inc. D 1,2,3

Cara Pacific Sales Co. D 8,9
 Cases Inc.
 Comprehensive Video Supply Corp. D 1-9
 Landy Associates Inc. D 1,2
 Lee-Ray Industries, Inc.
 Panasonic Video Systems Div.
 Progressive Marketing D 1-9
 Thermodyne International Ltd.
 Video Components, Inc.

Cassette Duplication Machines

Allied Broadcast Equipment D 1-9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Fisher Burke Professional Audio D 8
 Grinnan Fixture Co. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Panasonic Company
 Pentagon Industries, Inc.
 Singer Products Co., Inc.
 Sony Corp. of America VTR Div.
 Sound Genesis D 8,9
 Technics by Panasonic
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9

Cassette Machines, Dual Deck

Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 CCA Electronics Corp.
 Cetec Audio
 Grinnan Fixture Co. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Rapid-Q, Edco Products, Inc.
 Sound Genesis D 8,9

Cassette Machines, Multiple Deck

Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 CCA Electronics Corp.
 Grinnan Fixture Co. D 1-9
 KVC Video Systems Inc. D 1,2
 Rapid-Q, Edco Products, Inc.

Cassette Machines, Random Access

Ampex Corp.
 Broadcast Automation Associates Inc. D 1,2,5,6
 CCA Electronics Corp.
 CMX Systems Div. of Orrox Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Videodetics Corp.

Cassette Machines, Single Deck

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Eumig Lake Success Business Park
 Grinnan Fixture Co. D 1-9
 Heath Co.
 K & L Pro Audio D, 1, 2, 5, 6
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Ramko Research Inc.
 Rapid-Q, Edco Products, Inc.
 Sansui Electronics Corp.
 Sound Genesis D 8,9
 Superscope, Inc.
 TEAC Corp of America
 Tandberg of America, Inc.
 Technics by Panasonic

Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 Uher Corp.
 Westlake Audio

Character Generators

See Adv. Page

Datatron, Inc.111
Kaitronics Corp.252
Knox Ltd.249

The BTX Corp.
 Beston Electronics Inc.
 Broadcast Communications Devices, Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Chyron Telesystems
 Datametrics Inc.
 Datatron, Inc.
 Dynasciences Div. Whitaker Corp.
 EECO
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Interand Corp. Telestrator Div.
 International Communications & Control Corp.
 KVC Video Systems Inc. D 1,2
 Kaitronics Corp.
 Knox Ltd.
 Laird Telemedia Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 MPB Technologies Inc.
 Media Concepts, Inc. D 1-9
 Motorola SPI
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 QSI Systems, Inc. D 1
 SPI-ITT Metrix Instruments Div.
 Shintron Co. Inc.
 System Concepts Inc.
 Technics by Panasonic
 Tektronix Inc.
 Telcom Research
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Thomson-CSF Laboratories, Inc.
 3M Co. Mincom Div.
 Video Data Systems
 Video Devices Co.

Character Generators, Wire Service Memory System

Beston Electronics Inc.
 Media Concepts, Inc. D 1-9
 Video Data Systems

Choppers

Comark Industries Inc.
 Tektronix Inc.
 Townsend Associates, Inc.

Chroma Key Background Movement Devices

Industrial Sciences
 KVC Video Systems Inc. D 1,2
 Marconi Communication Systems Ltd.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Power-Optics Inc.

Chroma Keyer-Decoders

See Adv. Page

Telemet.....189

Broadcast Video Systems, Ltd.
 Central Dynamics Corp.
 Dynasciences Div. Whitaker Corp.
 Grass Valley Group, Inc.
 Industrial Sciences
 Lenco Inc. Electronics Div.
 Marconi Communication Systems Ltd.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Telemet a Geotol Co.

Chroma Keyers

See Adv. Page
American Data Corp. 7
Central Dynamics Corp. 57
Telemet 189

American Data Corp. A North
 American Philips Co.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Computer Image Video Controllers
 Dytek Industries, Inc.
 Corning Glass Works
 Crosspoint Latch Corp.
 Dyma Engineering, Inc.
 Dynasciences Div. Whitaker Corp.
 Glentronix Ltd. D 1-9
 Grass Valley Group, Inc.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Ikegami Electronics (USA) Inc.
 Industrial Sciences
 KVC Video Systems Inc. D 1,2
 Marconi Communication Systems Ltd.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 RCA Broadcast Systems
 Richmond Hill Laboratories Ltd.
 Shintron Co. Inc.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Telemet a Geotol Co.
 Thomson-CSF Laboratories, Inc.
 3M Co. Mincom Div.
 Vital Industries Inc.

Clamps, Equipment Mounting

Packaged Lighting Systems
 Suda Seisakusho Co., Ltd. Nitsuko-Bldg.

Cleaner, Circuit Board

G.C. Electronics
 Miller-Stephenson Chemical Co., Inc.
 Temtron Electronics D 1-9
 Track Audio, Inc. D 1-9
 Westlake Audio

Cleaner, Magnetic Tape Head

Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Magnetics Corp.
 Autodyne D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Comprehensive Video Supply Corp. D 1-9
 Fidelipac
 G.C. Electronics
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 P. R. Mallory & Co. Inc.
 Mastertone Co., Inc. D 4
 Memorex Corp. Professional Products Group
 Miller-Stephenson Chemical Co., Inc.
 Nortronics Co., Inc.
 Nova Corp.
 Professional Audio Service D 1-9
 Saxton Products Inc.
 Sinai-Johnson D 8,9
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Stüder Revox America
 TEAC Corp of America
 Tele-Measurements, Inc. D 2
 Television Equipment Associates

3M Co. Magnetic Audio/Video Prod. Div.
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 United Recording Electronics Industries
 VIF International D 1-9
 Westlake Audio

Clocks and Chronographs

See Adv. Page
Broadcast Component Dist. Communication Medias 200
ESE 257
Harris Corp. 17

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Digital Concepts Corp.
 Dyma Engineering, Inc.
 ESE
 General Time Service
 Glentronix Ltd. D 1-9
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div. Heath Co.
 IGM Div. of Northwestern Tech.
 Image Devices Inc. D 1-9
 Leitch Video Ltd.
 Jules Racine & Co., Inc.
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Torpey Controls & Engineering Ltd.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Vamco Engineering

Clocks, Digital and Digital Driver

See Adv. Page
Broadcast Component Dist. Communication Medias 200
Datatron, Inc. 111
ESE 257
Logitek Electronic Systems 188
Pacific Recorders and Engrg. Corp. 26

Allied Broadcast Equipment D 1-9
 Applied Video Electronics, Inc. D 1-9
 Autodyne D 1-9
 Automated Broadcast Controls
 Beta Technology, Inc.
 Boston Sound & Power Systems
 Broadcast Aids, Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Cetec Broadcast Group
 Channelmatic, Inc.
 Comprehensive Video Supply Corp. D 1-9
 Datametrics Inc.
 Datatron, Inc.
 Digital Concepts Corp.
 Dyma Engineering, Inc.
 ESE
 Everything Audio D 1-9
 Glentronix Ltd. D 1-9
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div. Heath Co.

H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.
 Industrial Sciences
 Kaitronics Corp.
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Logitek Electronic Systems
 Mastertone Co., Inc. D 4
 Motorola SPI
 PWH Electronics
 Pacific Recorders and Engrg. Corp.
 QRK Electronic Products
 QSI Systems, Inc. D 1
 Ramko Research Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Systron-Donner
 Tele-Measurements, Inc. D 2
 Torpey Controls & Engineering Ltd.
 Track Audio, Inc. D 1-9
 Vamco Engineering
 Video Devices Co.
 Westlake Audio

Clocks, Station Master Control

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Beta Technology, Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Channelmatic, Inc.
 Datametrics Inc.
 Digital Concepts Corp.
 ESE
 Glentronix Ltd. D 1-9
 IGM Div. of Northwestern Tech.
 Kaitronics Corp.
 Laird Telemedia Inc.
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 PWH Electronics
 QSI Systems, Inc. D 1
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Track Audio, Inc. D 1-9
 Video Devices Co.

Collimeters

See Adv. Page
Electro Impulse, Inc. 244

Electro Impulse, Inc.
 Ramko Research Inc.
 Specialized Industries, Inc.

Color Correction Equipment

See Adv. Page
Datek Corp. 65
Microtime, Inc. 83
Siegel Electronics 70
Thomson-CSF Laboratories, Inc. 46-47
3M Co. 58

Ampex Corp.
 Broadcast Communications Devices, Inc. D 8,9
 Datatek Corp.
 Editel Communications
 Fernseh Group Robert Bosch Corp.
 Glentronix Ltd. D 1-9
 Harris Corp. Broadcast Products Div.
 Ikegami Electronics (USA) Inc.
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Microtime, Inc.
 Photo Research Div. of Kollmorgen Corp.
 Power-Optics Inc.
 Siegel Electronics
 Tektronix Inc.
 Telemation, A Div. of Bell & Howell
 Television Equipment Associates
 Thomson-CSF Laboratories, Inc.
 3M Co. Mincom Div.

Colorizers -- See Generators, Special Effect

Combiners, Power

See Adv. Page
Harris Corp. 17

AEL, Inc.
 CCA Electronics Corp.
 C. S. P. Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of General Signal
 Electro Impulse, Inc.
 Geleco Electronics Ltd.
 Harris Corp. Broadcast Products Div.
 Micro Communications, Inc. Grenier Field
 Mu-Del Electronics, Inc.
 The Narda Microwave Corporation
 North American Radio Corp.
 North Hills Electronics, Inc.
 Shively Laboratories, Inc.

Common Point Bridges -- See Bridges, Common Point

Communication Systems, Land Mobile

See Adv. Page
Harris Corp. 17

AILTECH Div. Cutler-Hammer Los Angeles Operation
 Allied Broadcast Equipment D 1-9
 American Microsignal Co.
 Atlantic Research Corp.
 Bayly Engineering Ltd.
 CCA Electronics Corp.
 Comquip, Inc.
 Dyma Engineering, Inc.
 Editel Communications
 The Gerstenslager Co.
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 International Microwave Corp.
 KVC Video Systems Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Microwave Assoc. Inc.
 Panasonic Company
 Paso Sound Products Inc.
 Phelps Dodge Communications Co.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Superex Electronics Corp.
 Technics by Panasonic
 Temtron Electronics D 1-9
 TerraCom
 Victor Duncan, Inc. D 4,5,6,7

Communication Systems, Microwave

See Adv. Page

International Microwave Corp. 216
Moseley Associates, Inc. 23
Nurad, Inc. 113

Atlantic Research Corp.
 CCA Electronics Corp.
 Cablewave Systems Inc.
 Coastcom
 Collins Div. Rockwell International
 Comark Industries Inc.
 Dyma Engineering, Inc.
 GTE Lenkurt, Inc.
 Hughes Aircraft Co. Microwave Communications Products
 Ikegami Electronics (USA) Inc.
 International Microwave Corp.
 Marconi Communication Systems Ltd.
 Micro Control Associates, Inc.
 Microwave Assoc. Inc.
 Moseley Associates, Inc.

Motorola Communications and Electronics Inc.
 Nurad, Inc.
 Singer Products Co., Inc.
 Tepco Corp.
 TerraCom
 Varian Associates, Inc. Electron Device Group
 Varian/Beverly Micro-Link Products

Communication Systems, Multiplex

See Adv. Page

Moseley Associates, Inc. 23

Atlantic Research Corp.
 Bayly Engineering Ltd.
 Beta Technology, Inc.
 Broadcast Consultants Corp. D 1-9
 Catel Div. United Scientific Corp.
 Coastcom
 Collins Div. Rockwell International
 Farinon Electric
 GTE Lenkurt, Inc.
 Image Devices Inc. D 1-9
 International Microwave Corp.
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Micro TV, Inc.
 Moseley Associates, Inc.
 The Ken Schaffer Group, Inc.
 Singer Products Co., Inc.
 TerraCom

Communication Systems, STL

See Adv. Page

International Microwave Corp. 216
Marti Electronics 243
Moseley Associates, Inc. 23

Allied Broadcast Equipment D 1-9
 Audio Distributor Inc. D 3, 4, 6, 7
 Bayly Engineering Ltd.
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Cablewave Systems Inc.
 Cetec Broadcast Group
 Coastcom
 Comark Industries Inc.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Farinon Electric
 GTE Lenkurt, Inc.
 Harris Corp. Broadcast Products Div.
 Hughes Aircraft Co. Microwave Communications Products
 International Microwave Corp.
 Lita Broadcasting Distributors D 1-9
 Marti Electronics
 Mastertone Co., Inc. D 4
 Micro Control Associates, Inc.
 Microwave Assoc. Inc.
 Moseley Associates, Inc.
 North American Radio Corp.
 Nurad, Inc.
 Rivers Associates, Inc.
 Singer Products Co., Inc.
 Tele-Measurements, Inc. D 2
 Tepco Corp.
 TerraCom
 Val-Tronics, Inc. D2
 Varian/Beverly Micro-Link Products

Communication Systems, Teleprinter

See Adv. Page

Moseley Associates, Inc. 23

Broadcast Automation Associates Inc. D 1,2,5,6
 GTE Lenkurt, Inc.
 Grinnan Fixture Co. D 1-9
 Moseley Associates, Inc.

Comparators, Video

Time Tech Corp.

Compensators, Dropout

See Adv. Page

Microtime, Inc. 83
 The Camera Mart, Inc. D 1,2,3
 Digital Video Systems
 Microtime, Inc.
 RCA Broadcast Systems
 Tele-Measurements, Inc. D 2
 3M Co. Mincom Div.

Connectors, Cable

See Adv. Page

Harris Corp. 17
Pro-Audio Specialties Co. 114
Switchcraft Inc. 108
Telectric Co. 112
Trompeter Electronics 218
Whirlwind Audio 42

Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Blender-Tongue Labs.
 Boston Insulated Wire & Cable Co.
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 The Finney Co.
 G.C. Electronics
 Harris Corp. Broadcast Products Div.
 Javelin Electronics
 K & L Pro Audio D, 1, 2, 5, 6
 Kings Electronics Co., Inc.
 Lita Broadcasting Distributors D 1-9
 Maury Microwave Corp.
 Merrill Cable Equipment Corp.
 Micro Communications, Inc. Grenier Field
 Neutrik
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Phelps Dodge Communications Co.
 Pro-Audio Specialties Co.
 Professional Audio Service D 1-9
 Rex Rheostat & Co., Inc.
 Saxton Products Inc.
 Sono-Mag Corp.
 Switchcraft Inc.
 Tektronix Inc.
 Telectric Co.
 Times Wire and Cable
 Trompeter Electronics
 Union Connector Co., Inc.
 Whirlwind Audio
 Whirlwind Music

Consoles, Audio AM

See Adv. Page

Audio Designs & Mfg. 98-99
Auditronics, Inc. 75
Broadcast Component Dist. Communication Medias 200
Cetec Broadcast Group 118
LPB Inc. 217
Listec TV Equip. Corp. 258
Logitek Electronic Systems 188
McCurdy Radio Ind. Inc. IBC
Opamp Labs, Inc. 264
Quantum Audio Labs, Inc. 264
Ramko Research Inc. .. 186-187
Ward-Beck Systems, Ltd. IFC
Wilkinson Electronics, Inc. 194

AMCO Engineering Co.
 Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Amco Engineering Co.
 Ampro Broadcasting Inc.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Interface Inc.

Auditronics, Inc.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Bud Industries, Inc.
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Audio
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Contel Mfg.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Industrial Sciences
 International Communications & Control Corp.
 LPB Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Micro-Trak Corp.
 Modular Audio Products Unit of Modular Devices, Inc.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Pacific Recorders and Engr. Corp.
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRK Electronic Products
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 RCA Broadcast Systems
 ROH Corporation
 Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip. Corp.
 Russco Electronics Mfg. Inc.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Sphere Electronics
 Studer Revox America
 Studio Electronics D 3,4,7
 Tangent Systems, Inc.
 Tele-Measurements, Inc. D 2
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 UMC Electronics Co. Broadcast Products Div.
 United Recording Electronics Industries
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Wilkinson Electronics, Inc.
 Yamaha International Corp.

Consoles, Audio FM

See Adv. Page

Audio Designs & Mfg. 98-99
Auditronics, Inc. 75
Broadcast Component Dist. Communication Medias 200
Cetec Broadcast Group 118
Collins Div. 30

LPB Inc. 217
Listec TV Equip. Corp. 258
Logitek Electronic Systems 188
Quantum Audio Labs, Inc. 264
Ramko Research Inc. .. 186-187
Ward-Beck Systems, Ltd. IFC
Wilkinson Electronics, Inc. 194

AMCO Engineering Co.
 Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Amco Engineering Co.
 Ampro Broadcasting Inc.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Interface Inc.
 Auditronics, Inc.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Bud Industries, Inc.
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Audio
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Contel Mfg.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D 1,2,5
 Industrial Sciences
 International Communications & Control Corp.
 LPB Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Micro-Trak Corp.
 Modular Audio Products Unit of Modular Devices, Inc.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Pacific Recorders and Engr. Corp.
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRK Electronic Products
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 RCA Broadcast Systems
 ROH Corporation
 Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip. Corp.
 Russco Electronics Mfg. Inc.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Sphere Electronics
 Studer Revox America
 Studio Electronics D 3,4,7
 Tangent Systems, Inc.
 Tele-Measurements, Inc. D 2
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics

UMC Electronics Co. Broadcast Products Div.
 United Recording Electronics Industries
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Wilkinson Electronics, Inc.
 Yamaha International Corp.

Consoles, Audio Portable

See Adv. Page

Audio & Design Recording Inc.216
Audio Designs & Mfg. 98-99
Harris Corp. 17
LPB Inc.217
Listec TV Equip. Corp.258
Quantum Audio Labs, Inc.264
Ramko Research Inc. ..186-187
Russco Electronics Mfg. Inc. 16
Ward-Beck Systems, Ltd.IFC

AMCO Engineering Co.
 Allied Broadcast Equipment D 1-9
 Amco Engineering Co.
 Audio & Design Recording Inc.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Marketing Ltd. D 1,2,3
 Auditronics, Inc.
 Autodyne D 1-9
 Automated Processes, Inc.
 BSC Inc.
 Bayly Engineering Ltd.
 Boston Sound & Power Systems
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Bud Industries, Inc.
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Central Dynamics Corp.
 Cetec Broadcast Group
 Collins Television Services
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Industrial Sciences
 International Communications & Control Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Oregon Sound & Lights D 8,9
 Pulse Dynamics Mfg. Corp. (PDMC)
 QRK Electronic Products
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 RCA Broadcast Systems
 Ramko Research Inc.
 Richmond Sound Design, Ltd.

Robins Broadcast & Sound Equip. Corp.
 Russco Electronics Mfg. Inc.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Sphere Electronics
 Studer Revox America
 Studio Electronics D 3,4,7
 Superscope, Inc.
 TEAC Corp of America
 Tele-Measurements, Inc. D 2
 Theatre Techniques Inc.
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 UMC Electronics Co. Broadcast Products Div.
 Ultra Audio Pixtec
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Yamaha International Corp.

Consoles, Audio Recording

See Adv. Page

Altec Lansing Sound Products205
Ampro Broadcasting Inc. 80
Audio & Design Recording Inc.216
Auditronics, Inc. 75
Autodyne267
Collins Div. 30
Dyma Engineering, Inc.267
Harris Corp. 17
LPB Inc.217
Listec TV Equip. Corp.258
Logitek Electronic Systems188
McCurdy Radio Ind. Inc. IBC
Pacific Recorders and Engrg. Corp. 26
Quantum Audio Labs, Inc.264
Val-Tronics, Inc.245
Ward-Beck Systems, Ltd.IFC

AMCO Engineering Co.
 Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Amco Engineering Co.
 Ampro Broadcasting Inc.
 Audio & Design Recording Inc.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Interface Inc.
 Audio Marketing Ltd. D 1,2,3
 Auditronics, Inc.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 BSC Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Bud Industries, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Cetec Audio
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D 1,2,5

Industrial Sciences
 International Communications & Control Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 MCI, Inc.
 Magna-Tech Electronic Co., Inc.
 Martin Audio/Video D2
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Modular Audio Products Unit of Modular Devices, Inc.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Oregon Sound & Lights D 8,9
 Pacific Recorders and Engrg. Corp.
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 RCA Broadcast Systems
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip. Corp.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Sphere Electronics
 Studer Revox America
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Tangent Systems, Inc.
 Tele-Measurements, Inc. D 2
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 UMC Electronics Co. Broadcast Products Div.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Yamaha International Corp.

Consoles, Audio TV

See Adv. Page

Audio Designs & Mfg. 98-99
Dytek Industries, Inc.185
LPB Inc.217
Listec TV Equip. Corp.258
Logitek Electronic Systems188
Quantum Audio Labs, Inc.264
Ramko Research Inc. ..186-187
Ward-Beck Systems, Ltd.IFC

AMCO Engineering Co.
 Allied Broadcast Equipment D 1-9
 Amco Engineering Co.
 Ampro Broadcasting Inc.
 Audio Designs & Mfg.
 Auditronics, Inc.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 BSC Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Bud Industries, Inc.
 C.R.V. Systems, Inc.
 Cara Pacific Sales Co. D 8,9
 Central Dynamics Corp.
 Cetec Audio
 Cetec Broadcast Group
 Collins Television Services
 Dyma Engineering, Inc.
 Dytek Industries, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 Glentronix Ltd. D 1-9

Grinnan Fixture Co. D 1-9
 Hallikainen & Friends, Inc.
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D 1,2,5
 Industrial Sciences
 International Communications & Control Corp.
 J&D International, Elec. Div. Unit E-East
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 LPB Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 Marconi Electronics Inc.
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Micro-Trak Corp.
 Modular Audio Products Unit of Modular Devices, Inc.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Pacific Recorders and Engrg. Corp.
 QRK Electronic Products
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 RCA Broadcast Systems
 Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip. Corp.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Sphere Electronics
 Studio Electronics D 3,4,7
 Tangent Systems, Inc.
 Tele-Measurements, Inc. D 2
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 UMC Electronics Co. Broadcast Products Div.
 Ultra Audio Pixtec
 United Recording Electronics Industries
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Yamaha International Corp.

Consoles, Routing --See Switchers, Routing

Consoles, Stereo

See Adv. Page

Audio Designs & Mfg. 98-99
Auditronics, Inc. 75
Broadcast Component Dist. Communication Medias200
CCA Electronics Corp.221
Collins Div. 30
LPB Inc.217
Listec TV Equip. Corp.258
Logitek Electronic Systems188
McCurdy Radio Ind. Inc. IBC
Pacific Recorders and Engrg. Corp. 26
Quantum Audio Labs, Inc.264
Ramko Research Inc. ..186-187
Russco Electronics Mfg. Inc. 16
Ward-Beck Systems, Ltd.IFC

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Interface Inc.
 Auditronics, Inc.
 Autodyne D 1-9
 Autogram Corp. D 7

Automated Processes, Inc.
 BSC Inc.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 Bud Industries, Inc.
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Audio
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Electrohome Ltd.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Communications &
 Control Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Lita Broadcasting Distributors D 1-9
 Logitek Electronic Systems
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Charles Moore
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Oregon Sound & Lights D 8,9
 Pacific Recorders and Engrg. Corp.
 QRK Electronic Products
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 RCA Broadcast Systems
 Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Russco Electronics Mfg. Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Sphere Electronics
 Studer Revox America
 Studio Electronics D 3,4,7
 Tangent Systems, Inc.
 Tele-Measurements, Inc. D 2
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 Tri-Tronics Professional Electronics
 UMC Electronics Co. Broadcast
 Products Div.
 United Recording Electronics
 Industries
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Wilkinson Electronics, Inc.

Consoles, Video Portable

See Adv. Page

Central Dynamics Corp. 57
Dytek Industries, Inc. 185
Listec TV Equip. Corp. 258

AMCO Engineering Co.
 Amco Engineering Co.
 American Data Corp. A North
 American Philips Co.

Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 Bud Industries, Inc.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Computer Image Video Controllers
 Dytek Industries, Inc.
 Crosspoint Latch Corp.
 Dyma Engineering, Inc.
 Dytek Industries, Inc.
 GBC Closed Circuit TV Corp.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Nuclear Corp.
 J&D International, Elec. Div. Unit E-
 East
 Listec TV Equip. Corp.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 RCA Broadcast Systems
 Richmond Hill Laboratories Ltd.
 Ross Video Ltd.
 Sony Corp. of America VTR Div.
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.
 Videodetics Corp.
 Vital Industries Inc.
 Weather Scan, Inc. D
 Winsted Corp.

Consoles, Video Studio

See Adv. Page

Central Dynamics Corp. 57
Dytek Industries, Inc. 185
Grass Valley Group, Inc. 3
Listec TV Equip. Corp. 258
Telemet 189
Winsted Corp. 221

AMCO Engineering Co.
 Amco Engineering Co.
 American Data Corp. A North
 American Philips Co.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 Bud Industries, Inc.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Computer Image Video Controllers
 Dytek Industries, Inc.
 Crosspoint Latch Corp.
 Dage-MTI, Inc.
 Dyma Engineering, Inc.
 Dytek Industries, Inc.
 GBC Closed Circuit TV Corp.
 Glentronix Ltd. D 1-9
 Grass Valley Group, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Nuclear Corp.
 J&D International, Elec. Div. Unit E-
 East
 Laird Telemedia Inc.
 Listec TV Equip. Corp.
 Marconi Electronics Inc.
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 RCA Broadcast Systems
 Richmond Hill Laboratories Ltd.
 Ross Video Ltd.
 Shintron Co. Inc.
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 Video Components, Inc.
 Videodetics Corp.
 Vital Industries Inc.
 Weather Scan, Inc. D
 Winsted Corp.

**Controllers, Equipment, Network
 Tone Activated**

Broadcast Consultants Corp. D 1-9
 Cetec Broadcast Group
 Rivers Associates, Inc.
 The Widget Works, Inc.

Converters, A/D and D/A

Computer Labs
 Digital Video Systems
 Motorola SPI
 Tektronix Inc.

Converters, Frequency

AEL, Inc.
 California Instruments
 Catel Div. United Scientific Corp.
 Communication Modifications, Inc.
 The Finney Co.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Marconi Electronics Inc.
 Motorola SPI
 Mu-Del Electronics, Inc.
 North Hills Electronics, Inc.
 Oak Industries, Inc.
 Philips Test & Measuring Instruments,
 Inc.
 Telemet a Geotel Co.
 Varian Associates, Inc. Electron Device
 Group

**Converters, Phase --See Phase
 Converters, Single to Three-
 Phase**

Counter-Timers

See Adv. Page

Adcom Communications Inc. 40
ESE 257
Logitek Electronic Systems 188

Adcom Communications Inc.
 Allied Broadcast Equipment D 1-9
 Artists' Engineering Visual
 Communications Div.
 Broadcast Aids, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Conrac Corp. Cramer Div.
 Dana Laboratories, Inc. see-Racal-
 Dana Instruments Inc.
 Dyma Engineering, Inc.
 EIP Microwave
 ESE
 John Fluke Mfg. Co., Inc.
 Glentronix Ltd. D 1-9
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 Hickok Elect. Instrument
 Kaitronics Corp.
 Laird Telemedia Inc.
 Lectrotech Inc.
 Logitek Electronic Systems
 Motorola SPI
 Newark Electronics D 1-9
 Pacific Recorders and Engrg. Corp.
 Philips Test & Measuring Instruments,
 Inc.
 QRK Electronic Products
 QSI Systems, Inc. D 1
 Racal-Dana Instruments Inc.
 Ramko Research Inc.
 Sigma Electronics, Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Specialized Industries, Inc.
 Systron-Donner
 Tektronix Inc.
 Telcom Research
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Varnco Engineering

Counters, Frequency

See Adv. Page

Sencore Inc. 92

Allied Broadcast Equipment D 1-9
 Broadcast Communications Devices,
 Inc. D 8,9
 Communication Modifications, Inc.
 Dana Laboratories, Inc. see-Racal-
 Dana Instruments Inc.
 Dyma Engineering, Inc.
 EIP Microwave
 Elcom Engineering Co.
 John Fluke Mfg. Co., Inc.
 Heath Co.
 Hickok Elect. Instrument
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Newark Electronics D 1-9
 Philips Test & Measuring Instruments,
 Inc.
 Racal-Dana Instruments Inc.
 Scientific-Atlanta, Inc.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Tektronix Inc.
 United Radio Supply Inc. D9

Couplers, Hybrid

Alford Mfg. Co.
 Arvin CATV
 Broadcast Consultants Corp. D 1-9
 Comark Industries Inc.
 Dyma Engineering, Inc.
 Electro Impulse, Inc.
 Harris Corp. Broadcast Products Div.
 Maury Microwave Corp.
 Micro Communications, Inc. Grenier
 Field
 Microwave Assoc. Inc.
 Monroe Electronics, Inc.
 The Narda Microwave Corporation
 North Hills Electronics, Inc.
 Saxton Products Inc.
 Shively Laboratories, Inc.
 Varian Associates, Inc. Electron Device
 Group
 Wide Band Engineering Co., Inc.

Crystals, Quartz

Eidson Electronic Co.
 Harris Corp. Broadcast Products Div.
 Marconi Communication Systems Ltd.
 Motorola SPI

Custom Control Systems

See Adv. Page

C. S. P. Inc. 244
Dytek Industries, Inc. 185

A. F. Associates, Inc.
 Accurate Sound Co.
 American Data Corp. A North
 American Philips Co.
 Ampro Broadcasting Inc.
 BJA Systems, Inc.
 Bayly Engineering Ltd.
 Broadcast Consultants Corp. D 1-9
 C. S. P. Inc.
 Central Dynamics Corp.
 Cetec Broadcast Group
 Communications, Ltd.
 Custom Audio Electronics
 Datalogic-Rust Co.
 Dyma Engineering, Inc.
 Dytek Industries, Inc.
 Imero Fiorentino Associates, Inc.
 Fisher Burke Professional Audio D 8
 Holland Electronics
 IGM Div. of Northwestern Tech.
 Industrial Sciences
 Micro-Trak Corp.
 Rupert Neve, Inc.
 Olesen D 1-9
 Orange County Electronics Int'l, Inc.
 Quad-Eight Electronics
 ROH Corporation
 Richmond Sound Design, Ltd.
 Rivers Associates, Inc.
 Rust Corp.

The Ken Schaffer Group, Inc.
 Sound Genesis D 8,9
 Tangent Systems, Inc.
 Vamco Engineering
 Video Specialties
 Wilkinson Electronics, Inc.

Cyclorama, Studio Drapery

Janson Industries
 Lumitrol, Ltd. D-Canada
 Olesen D 1-9

Data Receivers --See Receivers, Data

Data Transmitters

Boston Sound & Power Systems
 Coastcom
 Marconi Communication Systems Ltd.
 Radiation Devices Co., Inc.
 TerraCom
 Varian Associates, Inc. Electron Device Group
 The Widget Works, Inc.

Decoders, Digital Sync

Central Dynamics Corp.
 Digital Video Systems
 Lenco Inc. Electronics Div.
 Television Research International

Decoders, Four Channel Stereo

K & L Pro Audio D, 1, 2, 5, 6
 Motorola SPI
 Sansui Electronics Corp.

Decoders, Tone

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
Frequency Devices Inc.....246

American Microsignal Co.
 Ampro Broadcasting Inc.
 Bayly Engineering Ltd.
 Broadcast Component Dist.
 Communication Medias D 1-9
 Channematic, Inc.
 Di-Tech Inc.
 Dyma Engineering, Inc.
 Frequency Devices Inc.
 Gorman Redlich Mfg. Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.
 Monroe Electronics, Inc.
 Rivers Associates, Inc.
 UMC Electronics Co. Broadcast Products Div.
 Val-Tronics, Inc. D2
 Vega Div. of Cetec Corp.

Decoders, Tone, EBS

See Adv. Page

Logitek Electronic Systems.....188

Allied Broadcast Equipment D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 ESE
 Elcom Engineering Co.
 Gorman Redlich Mfg. Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Logitek Electronic Systems
 Monroe Electronics, Inc.
 Rivers Associates, Inc.
 Tape City, Inc.
 Time & Frequency Tech., Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Delay Cartridges, Audio

See Adv. Page

Broadcast Component Dist. Communication Medias.....200

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Autodyne D 1-9
 Broadcast Cartridge Service D 7,8,9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Cetec Broadcast Group
 Comex Systems Inc.
 Fidelipac
 H. M. Holzberg Associates, Inc. D 1,2,5
 International Tapetronics Corp.
 LPB Inc.
 Mastertone Co., Inc. D 4
 Professional Audio Service D 1-9
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studer Rexov America
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2

Delay Lines

Allen Avionics
 Altec Lansing Sound Products
 Amperex Electronic Corp. Slatersville Div.
 Walther M. A. Andersen & Assoc., Inc.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 Cablewave Systems Inc.
 Central Dynamics Corp.
 Corning Glass Works
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 ESC Electronics Corp.
 Eventide Clock Works Inc.
 Everything Audio D 1-9
 Gotham Audio Corp.
 H. M. Holzberg Associates, Inc. D 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 Kappa Networks, Inc.
 Lectionic Research Laboratories, Inc. D 1-9
 Leitch Video Ltd.
 Listec TV Equip. Corp.
 Marconi Communication Systems Ltd.
 Maury Microwave Corp.
 Microtime, Inc.
 Neutrik
 Pacific Recorders and Engrg. Corp.
 Phelps Dodge Communications Co.
 Quad-Eight Electronics
 The Ken Schaffer Group, Inc.
 Sound Genesis D 8,9
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Television Equipment Associates
 Thomson-CSF Electron Tubes
 Times Wire and Cable
 Track Audio, Inc. D 1-9
 United Recording Electronics Industries

Delay Lines, Audio, Digital

See Adv. Page

Allied Broadcast Equipment.....60
Eventide Clock Works Inc.....265
The Ken Schaffer Group, Inc.45

Allied Broadcast Equipment D 1-9
 Eventide Clock Works Inc.
 The Ken Schaffer Group, Inc.

Delay Measuring Sets, Envelope

See Adv. Page

Asaca Corp. of America.....29
Datatek Corp.....65
Telemet.....189

Asaca Corp. of America
 Broadcast Communications Devices, Inc. D 8,9
 Comex Systems Inc.
 Datatek Corp.
 Dranetz Engineering Labs., Inc.
 Ivie Electronics
 Rohde & Schwarz Sales Co.
 Tektronix Inc.
 Telemet a Geotel Co.
 Television Equipment Associates

Delay Units, Video

See Adv. Page

Allen Avionics265
Microtime, Inc.83

Allen Avionics
 Walther M. A. Andersen & Assoc., Inc.
 Broadcast Video Systems, Ltd.
 Central Dynamics Corp.
 Corning Glass Works
 ESC Electronics Corp.
 Kappa Networks, Inc.
 Lenco Inc. Electronics Div.
 Listec TV Equip. Corp.
 Microtime, Inc.
 Telemation, A Div. of Bell & Howell
 Television Equipment Associates

Demagnetizers, Bulk Tape

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
Harris Corp.17
Wide Range Electronics192

Allied Broadcast Equipment D 1-9
 Audio Distributor Inc. D 3, 4, 6, 7
 Autodyne D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Everything Audio D 1-9
 Fidelipac
 G.C. Electronics
 Garner Industries
 Glentronix Ltd. D 1-9
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 International Tapetronics Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 Lita Broadcasting Distributors D 1-9
 Magnasync/Moviola Corp.
 Mastertone Co., Inc. D 4
 Microtran Co., Inc.
 Nortronics Co., Inc.
 Optek
 Pentagon Industries, Inc.
 Professional Audio Service D 1-9
 Robins Broadcast & Sound Equip. Corp.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Taber Mfg. & Engr. Co.
 Track Audio, Inc. D 1-9

UMC Electronics Co. Broadcast Products Div.
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Wide Range Electronics

Demagnetizers, Limited Area Tape and Film

See Adv. Page

Wide Range Electronics192

Autodyne D 1-9
 Lita Broadcasting Distributors D 1-9
 Pentagon Industries, Inc.
 Track Audio, Inc. D 1-9
 Wide Range Electronics

Demodulators, Optical

Radiation Devices Co., Inc.
 Telemet a Geotel Co.
 Video Aids Corp. of Colorado

Demodulators, Video

See Adv. Page

Dynair Electronics, Inc.247
Harris Corp.17
Telemet.....189

Belar Electronics Lab., Inc.
 Blonder-Tongue Labs.
 Broadcast Communications Devices, Inc. D 8,9
 Catel Div. United Scientific Corp.
 Coastcom
 Comark Industries Inc.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Glentronix Ltd. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Javelin Electronics
 Kahn Communications, Inc.
 Marconi Instruments Div. of Marconi Electronics Inc.
 Optek
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Philips Test & Measuring Instruments, Inc.
 RCA Cablevision Systems
 Rohde & Schwarz Sales Co.
 SC Electronics, Inc.
 Scientific-Atlanta, Inc.
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 Townsend Associates, Inc.
 Unimedia Corp.
 Video Aids Corp. of Colorado

Detectors, Microwave

AILTECH Div. Cutler-Hammer Los Angeles Operation
 Alford Mfg. Co.
 Comark Industries Inc.
 Dielectric Communications A Unit of General Signal
 EEV Canada Ltd.
 Harris Corp. PRD Electronics Div.
 Lectionic Research Laboratories, Inc. D 1-9
 Maury Microwave Corp.
 Microwave Assoc. Inc.
 Mountain West Alarm D8
 The Narda Microwave Corporation
 Systron-Donner
 Tektronix Inc.
 Texscan Corp.
 Thomson-CSF Electron Tubes
 Weinschel Engineering Co.

Detectors, RF

See Adv. Page

Moseley Associates, Inc.23

Potomac Instruments, Inc.206

Alford Mfg. Co.
Bird Electronic Corp.
Blonder-Tongue Labs.
CCA Electronics Corp.
Comark Industries Inc.
Dielectric Communications A Unit of General Signal
Harris Corp. Broadcast Products Div.
Harris Corp. PRD Electronics Div.
Heath Co.
Kaitronics Corp.
Lectronic Research Laboratories, Inc. D 1-9
Maury Microwave Corp.
Micro Communications, Inc. Grenier Field
Microwave Assoc. Inc.
Moseley Associates, Inc.
The Narda Microwave Corporation
North American Radio Corp.
Potomac Instruments, Inc.
Systron-Donner
Tektronix Inc.
Telemet a Geotel Co.
Television Technology Corp.
Texscan Corp.
Thomson-CSF Electron Tubes
Tri-Tronics Professional Electronics
Weinschel Engineering Co.
Wide Band Engineering Co., Inc.

Detectors, Standing Wave
See Adv. Page

Moseley Associates, Inc. 23
Potomac Instruments, Inc.206

Bird Electronic Corp.
CCA Electronics Corp.
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
Harris Corp. PRD Electronics Div.
Lectronic Research Laboratories, Inc. D 1-9
Maury Microwave Corp.
Micro Communications, Inc. Grenier Field
Moseley Associates, Inc.
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
Texscan Corp.
Weinschel Engineering Co.

Detectors, Transmitter Quadrature Distortion
See Adv. Page
Telemet189

Telemet a Geotel Co.

Detectors, Video Presence
See Adv. Page

Colorado Video Inc.
Comark Industries Inc.
Di-Tech Inc.
GBC Closed Circuit TV Corp.
Javelin Electronics
Lenco Inc. Electronics Div.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
RCA Electro Optics and Devices
Richmond Hill Laboratories Ltd.
Rivers Associates, Inc.
Sigma Electronics, Inc.
Telemet a Geotel Co.

Diagnostic Systems, Digital Logic
See Adv. Page

Pinzone Communications Products Inc.256

Pinzone Communications Products Inc.

Differential Phase/Gain Measuring Sets
See Adv. Page

Datatek Corp. 65
Telemet189

Broadcast Communications Devices, Inc. D 8,9
Datatek Corp.
Harris Corp. Broadcast Products Div.
Landy Associates Inc. D 1,2
Potomac Instruments, Inc.
Tektronix Inc.
Tele-Measurements, Inc. D 2
Telemet a Geotel Co.

Digitizers, Color Video
See Adv. Page

Harris Corp. 17

Alford Mfg. Co.
CCA Electronics Corp.
C. S. P. Inc.
Cetec Broadcast Group
Coastcom
Comark Industries Inc.
Continental Electronics Mfg. Co.
Dielectric Communications A Unit of General Signal
Harris Corp. Broadcast Products Div.
Laird Telemedia Inc.
Micro Communications, Inc. Grenier Field
Microwave Assoc. Inc.
Mu-Del Electronics, Inc.
Multronics, Inc.
North American Radio Corp.
North Hills Electronics, Inc.
Phelps Dodge Communications Co.
RCA Broadcast Systems
RCA Cablevision Systems
SWR Inc.
Shively Laboratories, Inc.
Varian Associates, Inc. Electron Device Group
Wide Band Engineering Co., Inc.

Discs, Video
See Adv. Page
Eigen Video265

Ampex Corp.
Arvin/Echo Co.
Chyron Telesystems
Computer Magnetics Corp.
Eigen Video
Glentronix Ltd. D 1-9
Landy Associates Inc. D 1,2
Panasonic Company
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Technics by Panasonic
Teknekron/TRAX

Display Equipment, Titting

BJA Systems, Inc.
Broadcast Communications Devices, Inc. D 8,9
Chyron Telesystems
Comquip, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Landy Associates Inc. D 1,2
MPB Technologies Inc.
Reynolds/Leteron Co.
Tektronix Inc.
Telcom Research
Telemation, A Div. of Bell & Howell
Telescript, Inc.
Thomson-CSF Laboratories, Inc.
3M Co. Mincom Div.
Video Data Systems

Display Units, Digital
See Adv. Page

The BTX Corp. 90
Kaitronics Corp.252
Moseley Associates, Inc. 23

BJA Systems, Inc.
The BTX Corp.
Beta Technology, Inc.
Broadcast Communications Devices, Inc. D 8,9
Cetec Broadcast Group
Convergence Corp.
Digital Concepts Corp.
EEV Canada Ltd.
ESE
G.C. Electronics
H. M. Holzberg Associates, Inc. D 1,2,5
Ikegami Electronics (USA) Inc.
Javelin Electronics
Kaitronics Corp.
Kallman Associates, Inc.
Moseley Associates, Inc.
Motorola SPI
Newark Electronics D 1-9
Pinzone Communications Products Inc.
SC Electronics, Inc.
Scientific-Atlanta, Inc.
TSC Development Labs.
Tayburn Electronics, Inc.
Tektronix Inc.
Thomson-CSF Laboratories, Inc.
3M Co. Mincom Div.
Vamco Engineering
Video Data Systems

Display Units, Time-Temperature-ID

Boston Sound & Power Systems
Broadcast Communications Devices, Inc. D 8,9
ESE
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Javelin Electronics
Laird Telemedia Inc.
Merill Cable Equipment Corp.
Thomson-CSF Laboratories, Inc.
3M Co. Mincom Div.
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Video Data Systems

Dividers, Frequency

Broadcast Communications Devices, Inc. D 8,9
Maury Microwave Corp.
Microwave Assoc. Inc.
Motorola SPI

Dividers, Power
See Adv. Page

Moseley Associates, Inc. 23

Alford Mfg. Co.
Bird Electronic Corp.
Cetec Broadcast Group
Comark Industries Inc.
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
Harris Corp. PRD Electronics Div.
Lectronic Research Laboratories, Inc. D 1-9
Maury Microwave Corp.
Micro Communications, Inc. Grenier Field
Microwave Assoc. Inc.
Moseley Associates, Inc.
Mu-Del Electronics, Inc.
Multronics, Inc.
The Narda Microwave Corporation
North American Radio Corp.
North Hills Electronics, Inc.
Phelps Dodge Communications Co.
Scala Radio Corp.

Shively Laboratories, Inc.
Tektronix Inc.
Trompeter Electronics
Weinschel Engineering Co.
Wide Band Engineering Co., Inc.

Dividers, Voltage

AILTECH Div. Cutler-Hammer Los Angeles Operation
John Fluke Mfg. Co., Inc.
ITT Jennings
North Hills Electronics, Inc.
Tech Laboratories Inc.

Earth Station Antennas --See Antennas, TV Earth Station

Earth Stations, Down Terminal

Coastcom
Collins Div. Rockwell International
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Hughes Aircraft Co. Microwave Communications Products
Microdyne Corp.
Scientific-Atlanta, Inc.
TerraCom
Varian Associates, Inc. Electron Device Group
Varian/Beverly Micro-Link Products

Earth Stations, Up Terminal

Coastcom
Collins Div. Rockwell International
Harris Corp. Broadcast Products Div.
Hughes Aircraft Co. Microwave Communications Products
Scientific-Atlanta, Inc.
Varian Associates, Inc. Electron Device Group
Varian/Beverly Micro-Link Products

Edit Code Generators
See Adv. Page

The BTX Corp. 90
Central Dynamics Corp. 57
Datatron, Inc.111
Electro & Optical Systems Ltd. 81
Kaitronics Corp.252
Shintron Co. Inc.204
Skotel Corp.261
Time Tech Corp.263

Automated Processes, Inc.
The BTX Corp.
Beta Technology, Inc.
Broadcast Communications Devices, Inc. D 8,9
CMX Systems Div. of Orrox Corp.
Central Dynamics Corp.
Datametrics Inc.
Datatron, Inc.
Dyma Engineering, Inc.
EECO
Electro & Optical Systems Ltd.
Glentronix Ltd. D 1-9
H. M. Holzberg Associates, Inc. D 1,2,5
International Communications & Control Corp.
Kaitronics Corp.
Landy Associates Inc. D 1,2
Media Concepts, Inc. D 1-9
QSI Systems, Inc. D 1
Recortec Inc.
Shintron Co. Inc.
Skotel Corp.
System Associates
Telcom Research
Television Research International
Time Tech Corp.
Westlake Audio

Edit Code Receivers

	See Adv. Page
The BTX Corp.	90
Central Dynamics Corp.	57
Datatron, Inc.	111
Electro & Optical Systems Ltd.	81
Kaitronics Corp.	252
Shintron Co. Inc.	204
Skotel Corp.	261
Time Tech Corp.	263

The BTX Corp.
Beta Technology, Inc.
Broadcast Communications Devices, Inc. D 8,9
CMX Systems Div. of Orrox Corp.
Central Dynamics Corp.
Datametrics Inc.
Datatron, Inc.
Dyma Engineering, Inc.
EECO
ESE
Electro & Optical Systems Ltd.
Glentronix Ltd. D 1-9
H. M. Holzberg Associates, Inc. D 1,2,5
International Communications & Control Corp.
Kaitronics Corp.
Landy Associates Inc. D 1,2
Shintron Co. Inc.
Skotel Corp.
System Associates
Telcom Research
Television Research International
Time Tech Corp.
Westlake Audio

Editing Facilities

	See Adv. Page
KVC, Inc.	218

KVC, Inc.

Editors, Audio Tape

	See Adv. Page
Datatron, Inc.	111

AEG-Telefunken Magnetic Tape Recorder Dept.
Autodyne D 1-9
Automated Processes, Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Electronics, Inc.
CMX Systems Div. of Orrox Corp.
Central Dynamics Corp.
Comquip, Inc.
Datatron, Inc.
Dyma Engineering, Inc.
Fidelipac
Landy Associates Inc. D 1,2
Panasonic Company
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Technics by Panasonic
Track Audio, Inc. D 1-9

Editors, Film

Broadcast Communications Devices, Inc. D 8,9
The Camera Mart, Inc. D 1,2,3
Comquip, Inc.
Alan Gordon Enterprises Inc.
Image Devices Inc. D 1-9
Kalart Victor Corp.
Lipsner-Smith Corp.
Magnasync/Moviola Corp.
Neumade Products Corp.
Research Technology, Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Super8 Sound, Inc.
Victor Duncan, Inc. D 4,5,6,7

Editors, Video Tape

	See Adv. Page
CMX Systems	11
Central Dynamics Corp.	57
Consolidated Video Systems	79
Datatron, Inc.	111
Kaitronics Corp.	252
Sony Corp. of America	50-51

Ampex Corp.
Artists' Engineering Visual Communications Div.
Beta Technology, Inc.
Broadcast Communications Devices, Inc. D 8,9
CMX Systems Div. of Orrox Corp.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Computer Image Video Controllers
Dytek Industries, Inc.
Comquip, Inc.
Consolidated Video Systems
Convergence Corp.
Datatron, Inc.
Dyma Engineering, Inc.
Dytek Industries, Inc.
EECO
Electro & Optical Systems Ltd.
H. M. Holzberg Associates, Inc. D 1,2,5
US JVC Corp. Professional Video Div.
Kaitronics Corp.
Landy Associates Inc. D 1,2
Media Concepts, Inc. D 1-9
Panasonic Company
Panasonic Video Systems Div.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
RCA Broadcast Systems
Recortec Inc.
Sony Corp. of America VTR Div.
Spectra-Vision Corp.
Technics by Panasonic
Telcom Research
Tele-Measurements, Inc. D 2
Television Research International
Vamco Engineering
Video Aids Corp. of Colorado
Video Associates
Video Devices Co.
Videomedia

Educational Courses, Electronic

Heath Co.
Motorola SPI

Enclosures, Module Card Tray

Bayly Engineering Ltd.
Monroe Electronics, Inc.
Orange County Electronics Int'l., Inc.
Quad-Eight Electronics
ROH Corporation
Robins Broadcast & Sound Equip. Corp.
Scientific-Atlanta, Inc.
Tele-Measurements, Inc. D 2
Vector Electronic Co., Inc.

Encoding Systems, Quad

Sansui Electronics Corp.

Encoders, Color Video

	See Adv. Page
Panasonic Video Systems Div.	34-35

Amtron Corp.
Broadcast Video Systems, Ltd.
Chyron Telesystems
Cohu, Inc. Electronics Div.
Crosspoint Latch Corp.
Dyma Engineering, Inc.
Glentronix Ltd. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Ikegami Electronics (USA) Inc.
Landy Associates Inc. D 1,2

Lenco Inc. Electronics Div.
MPB Technologies Inc.
Marconi Electronics Inc.
Panasonic Video Systems Div.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Philips Test & Measuring Instruments, Inc.
Sony Corp. of America VTR Div.
Telemation, A Div. of Bell & Howell
Tele-Measurements, Inc. D 2
3M Co. Mincom Div.

Encoders, Four Channel Stereo

Sansui Electronics Corp.

Encoders, Tone

	See Adv. Page
Frequency Devices Inc.	246

American Microsignal Co.
Bayly Engineering Ltd.
Bogen Div. Lear Siegler, Inc.
Cetec Broadcast Group
Channellmatic, Inc.
Di-Tech Inc.
Frequency Devices Inc.
Gorman Redlich Mfg. Co.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Lampkin Lab. Inc.
Monroe Electronics, Inc.
Rivers Associates, Inc.
The Ken Schaffer Group, Inc.
Television Research International
UMC Electronics Co. Broadcast Products Div.
Vega Div. of Cetec Corp.

Encoder-Decoders, EBS

	See Adv. Page
Logitek Electronic Systems	188

Allied Broadcast Equipment D 1-9
American Microsignal Co.
Automated Broadcast Controls
Broadcast Communications Devices, Inc. D 8,9
ESE
Gorman Redlich Mfg. Co.
H. M. Holzberg Associates, Inc. D 1,2,5
Logitek Electronic Systems
Rivers Associates, Inc.
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Enhancers, Stereo Phase

Allied Broadcast Equipment D 1-9
Cetec Broadcast Group
H. M. Holzberg Associates, Inc. D 1,2,5
Rapid-Q, Edco Products, Inc.
Westlake Audio

Enhancers, TV Image

	See Adv. Page
Consolidated Video Systems	79
Microtime, Inc.	83
Siegel Electronics	70
3M Co.	58

Broadcast Communications Devices, Inc. D 8,9
The Camera Mart, Inc. D 1,2,3
Cohu, Inc. Electronics Div.
Consolidated Video Systems
Corning Glass Works
Digital Video Systems
Dynasciences Div. Whitaker Corp.
Yves Faroudja, Inc./Telegen
Glentronix Ltd. D 1-9
Harris Corp. Broadcast Products Div.

H. M. Holzberg Associates, Inc. D 1,2,5
Landy Associates Inc. D 1,2
Microtime, Inc.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Siegel Electronics
Tele-Measurements, Inc. D 2
Telemet a Geotel Co.
Television Research International
Thomson-CSF Laboratories, Inc.
3M Co. Mincom Div.

Equalizers, Audio Emphasis

See Adv. Page

Altec Lansing Sound Products	205
Audio & Design Recording Inc.	216
Audio Designs & Mfg.	98-99
Broadcast Component Dist. Communication Medias	200
Opamp Labs, Inc.	264
Pulse Techniques Inc.	264

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio & Design Recording Inc.
Audio Designs & Mfg.
Audio Distributor Inc. D 3, 4, 6, 7
Auditronics, Inc.
Autodyne D 1-9
Automated Processes, Inc.
Bayly Engineering Ltd.
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
The Camera Mart, Inc. D 1,2,3
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Dyma Engineering, Inc.
ESC Electronics Corp.
GLI Div. VSC
Gotham Audio Corp.
Heath Co.
Holland Electronics
H. M. Holzberg Associates, Inc. D 1,2,5
International Electro-Magnetics
K & L Pro Audio D, 1, 2, 5, 6
KLH Research & Development Corp.
KLH Burwen Research
Kahn Communications, Inc.
Landy Associates Inc. D 1,2
Maze Corp D6
McCurdy Radio Ind. Inc.
Micro-Trak Corp.
Modular Audio Products Unit of Modular Devices, Inc.
Rupert Neve, Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Orban Assoc. Inc.
Oregon Magnetics
Oregon Sound & Lights D 8,9
Panasonic Company
Pulse Techniques Inc.
Quad-Eight Electronics
ROH Corporation
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
Sansui Electronics Corp.
Shure Brothers Inc.
Sinai-Johnson D 8,9
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Spectra Sonics
Sphere Electronics
Studio Electronics D 3,4,7
Super8 Sound, Inc.
Superex Electronics Corp.
TM Systems, Inc.
TT Electronics, Inc.
Technics by Panasonic

Tele-Measurements, Inc. D 2
 Thomson-CSF Laboratories, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 United Recording Electronics
 Industries
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Westlake Audio

Equalizers, Vertical Aperture

See Adv. Page

Microtime, Inc. 83

Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Corning Glass Works
 Dynasciences Div. Whitaker Corp.
 ESC Electronics Corp.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Landy Associates Inc. D 1,2
 Microtime, Inc.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Thomson-CSF Laboratories, Inc.

Equalizers, Video

See Adv. Page

Datatek Corp. 65

Telemet 189

Allen Avionics
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Collins Television Services
 Communications Technology, Inc.
 Computer Magnetics Corp.
 Datatek Corp.
 Di-Tech Inc.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 ESC Electronics Corp.
 Grass Valley Group, Inc.
 Industrial Sciences
 International Communications &
 Control Corp.
 Kappa Networks, Inc.
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Microtime, Inc.
 Oregon Magnetics
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Richmond Hill Laboratories Ltd.
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.

Erasers, Magnetic --See
Demagnetizers, Bulk Tape, and
Heads, Erase Magnetic

Exciters, AM

See Adv. Page

Broadcast Component
Dist. Communication
Medias 200

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Collins Div. Rockwell International
 Continental Electronics Mfg. Co.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Kahn Communications, Inc.
 Marconi Communication Systems Ltd.

Maze Corp D6
 Philips Test & Measuring Instruments,
 Inc.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Exciters, FM

See Adv. Page

Broadcast Component
Dist. Communication
Medias 200

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 LPB Inc.
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McMartin Industries, Inc.
 North American Radio Corp.
 QEI Corp.
 RCA Broadcast Systems
 Rohde & Schwarz Sales Co.
 Singer Products Co., Inc.
 Sintronic Corp.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Val-Tronics, Inc. D2
 Versa Count Engineering
 Wilkinson Electronics, Inc.

Exciters, SCA

See Adv. Page

Moseley Associates,
Inc. 23

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 LPB Inc.
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McMartin Industries, Inc.
 Moseley Associates, Inc.
 QEI Corp.
 RCA Broadcast Systems
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Versa Count Engineering
 The Widget Works, Inc.
 Wilkinson Electronics, Inc.

Exciters, Stereo

See Adv. Page

Broadcast Component
Dist. Communication
Medias 200

Moseley Associates,
Inc. 23
Wilkinson Electronics,
Inc. 39
 AEL, Inc.

Allied Broadcast Equipment D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 Kahn Communications, Inc.
 LPB Inc.
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McMartin Industries, Inc.
 Moseley Associates, Inc.
 QEI Corp.
 RCA Broadcast Systems
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Val-Tronics, Inc. D2
 Versa Count Engineering
 Wilkinson Electronics, Inc.

Faders, Studio Lighting Control

See Adv. Page

Electro Controls 14
Waters Mfg. Inc. 214

Duncan Electronics, Inc.
 Electro Controls
 Hallikainen & Friends, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Kliegl Bros. Lighting
 Oregon Sound & Lights D 8,9
 Skirpan Lighting Control Corp.
 Theatre Techniques Inc.
 Waters Mfg. Inc.

Film Cleaner/Conditioner
Equipment

Lipsner-Smith Corp.
 Neumade Products Corp.
 Research Technology, Inc.

Film Inspection and Cleaning
Equipment

Houston Photo Products, Inc.
 Lipsner-Smith Corp.
 Neumade Products Corp.
 Research Technology, Inc.

Film, Photographic

Agfa-Gevaert Inc.
 Comquip, Inc.
 Eastman Kodak Co.
 Image Devices Inc. D 1-9

Film Chain Light Level Controls

Beston Electronics Inc.
 Cohu, Inc. Electronics Div.
 Comquip, Inc.
 Harris Corp. Broadcast Products Div.
 Industrial Sciences
 Laird Telemedia Inc.
 Specialized Industries, Inc.
 The Zei-Mark Corp.

Film Chain Systems

See Adv. Page

Buhl Optical Co. 248
Harris Corp. 17

Bell & Howell Audio Visual Div.
 Broadcast Communications Devices,
 Inc. D 8,9
 Buhl Optical Co.
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Comquip, Inc.
 Fernsen Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.

Ikegami Electronics (USA) Inc.
 Kalart Victor Corp.
 Laird Telemedia Inc.
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 RCA Broadcast Systems
 Sony Corp. of America VTR Div.
 Specialized Industries, Inc.
 Technics by Panasonic
 Telemation, A Div. of Bell & Howell
 Thomson-CSF Laboratories, Inc.
 Weather Scan, Inc. D
 The Zei-Mark Corp.

Film Processing Chemicals, Color

Agfa-Gevaert Inc.
 Eastman Kodak Co.
 Philip A. Hunt Chemical Corp.

Film Processing Services

Eastman Kodak Co.
 Houston Photo Products, Inc.
 Lipsner-Smith Corp.

Film Production, Videotape
Transfer

Cinema Products Corp.

Film Sound Transfer Equipment

The Camera Mart, Inc. D 1,2,3
 Comquip, Inc.
 Dolby Laboratories, Inc.
 Magna-Tech Electronic Co., Inc.
 Orange County Electronics Int'l., Inc.
 Quad-Eight Electronics
 RCA Broadcast Systems
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Super8 Sound, Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Wide Range Electronics

Filters, Active

See Adv. Page

Frequency Devices Inc. 246
Pulse Techniques Inc. 264
TT Electronics, Inc. 265

Allied Broadcast Equipment D 1-9
 American Microsignal Co.
 Amperex Electronic Corp. Slatersville
 Div.
 Comark Industries Inc.
 Crown International, Inc.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Frequency Devices Inc.
 Gotham Audio Corp.
 North Hills Electronics, Inc.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Pulse Techniques Inc.
 ROH Corporation
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Shure Brothers Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 TT Electronics, Inc.
 Technics by Panasonic
 Track Audio, Inc. D 1-9
 United Recording Electronics
 Industries
 Val-Tronics, Inc. D2
 Varian Associates, Inc. Electron Device
 Group
 The Widget Works, Inc.

Filters, Antenna

Allen Avionics

Bird Electronic Corp.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of
 General Signal
 Dyma Engineering, Inc.
 The Finney Co.
 G.C. Electronics
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 Merrill Cable Equipment Corp.
 Micro Communications, Inc. Grenier
 Field
 Microwave Assoc. Inc.
 North American Radio Corp.
 Nurad, Inc.
 Shively Laboratories, Inc.
 TT Electronics, Inc.
 Tayburn Electronics, Inc.
 Television Equipment Associates
 Texscan Corp.
 Varian/Beverly Micro-Link Products
 Wide Band Engineering Co., Inc.
 Winegard Television Systems

Filters, Audio

See Adv. Page
Frequency Devices Inc. 246
Pulse Techniques Inc. 264
TT Electronics, Inc. 265

Aitken Communications Inc.
 Allen Avionics
 Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Amber Electro Design, Ltd.
 Automated Broadcast Controls
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Coastcom
 Comark Industries Inc.
 Crown International, Inc.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 ESC Electronics Corp.
 Frequency Devices Inc.
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 IGM Div. of Northwestern Tech.
 K & L Pro Audio D, 1, 2, 5, 6
 Kappa Networks, Inc.
 Monroe Electronics, Inc.
 Rupert Neve, Inc.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Pulse Techniques Inc.
 QEI Corp.
 Quad-Eight Electronics
 RCA Broadcast Systems
 ROH Corporation
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Rohde & Schwarz Sales Co.
 Shure Brothers Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 TT Electronics, Inc.
 Technics by Panasonic
 Track Audio, Inc. D 1-9
 United Recording Electronics
 Industries
 Val-Tronics, Inc. D2
 Westlake Audio
 The Widget Works, Inc.

Filters, Noise

See Adv. Page
Frequency Devices Inc. 246
Pulse Techniques Inc. 264
TT Electronics, Inc. 265

Allied Broadcast Equipment D 1-9
 Boston Sound & Power Systems
 Cara Pacific Sales Co. D 8,9

Comark Industries Inc.
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 ESC Electronics Corp.
 The Finney Co.
 Frequency Devices Inc.
 G.C. Electronics
 Gotham Audio Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 KLH Research & Development Corp.
 KLH Burwen Research
 Kahn Communications, Inc.
 Orange County Electronics Int'l., Inc.
 Panasonic Company
 Pulse Techniques Inc.
 Quad-Eight Electronics
 Shure Brothers Inc.
 TT Electronics, Inc.
 Technics by Panasonic
 Tektronix Inc.
 United Recording Electronics
 Industries

Filters, Passive

See Adv. Page
Frequency Devices Inc. 246
Pulse Techniques Inc. 264
TT Electronics, Inc. 265
Telectric Co. 112

Allen Avionics
 Audio-Video Engineering Co.
 Bayly Engineering Ltd.
 Broadcast Video Systems, Ltd.
 Coastcom
 Comark Industries Inc.
 ESC Electronics Corp.
 The Finney Co.
 Frequency Devices Inc.
 K & L Pro Audio D, 1, 2, 5, 6
 Kappa Networks, Inc.
 Maury Microwave Corp.
 Merrill Cable Equipment Corp.
 Microwave Assoc. Inc.
 Mu-Del Electronics, Inc.
 Multronics, Inc.
 North Hills Electronics, Inc.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Pulse Techniques Inc.
 QEI Corp.
 Quad-Eight Electronics
 Robins Broadcast & Sound Equip.
 Corp.
 Shively Laboratories, Inc.
 Shure Brothers Inc.
 Sound Genesis D 8,9
 TT Electronics, Inc.
 Technics by Panasonic
 Tektronix Inc.
 Telectric Co.
 Television Equipment Associates
 Texscan Corp.
 Varian Associates, Inc. Electron Device
 Group
 Varian/Beverly Micro-Link Products
 Wide Band Engineering Co., Inc.

Filters, Sound Effect

See Adv. Page
Pulse Techniques Inc. 264

Allied Broadcast Equipment D 1-9
 Automated Processes, Inc.
 Cara Pacific Sales Co. D 8,9
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Rupert Neve, Inc.
 Orange County Electronics Int'l., Inc.
 Panasonic Company
 Pulse Techniques Inc.
 Richmond Sound Design, Ltd.
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 TT Electronics, Inc.
 Technics by Panasonic
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2

Filters, Variable and Fixed Tuned

See Adv. Page
Frequency Devices Inc. 246
TT Electronics, Inc. 265

Allied Broadcast Equipment D 1-9
 Amber Electro Design, Ltd.
 Automated Processes, Inc.
 Comark Industries Inc.
 The Finney Co.
 Frequency Devices Inc.
 Gotham Audio Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 Maury Microwave Corp.
 Merrill Cable Equipment Corp.
 Microwave Assoc. Inc.
 Multronics, Inc.
 North American Radio Corp.
 North Hills Electronics, Inc.
 Orange County Electronics Int'l., Inc.
 Panasonic Company
 Pulse Techniques Inc.
 Quad-Eight Electronics
 Robins Broadcast & Sound Equip.
 Corp.
 Shure Brothers Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Systron-Donner
 TT Electronics, Inc.
 Tayburn Electronics, Inc.
 Technics by Panasonic
 Texscan Corp.
 United Recording Electronics
 Industries
 Varian Associates, Inc. Electron Device
 Group
 Varian/Beverly Micro-Link Products
 Winegard Television Systems

Filters, Video

See Adv. Page
Allen Avionics 266
Audio-Video Engineering Co. 219
Datatek Corp. 65

Allen Avionics
 Audio-Video Engineering Co.
 Broadcast Video Systems, Ltd.
 Coastcom
 Comark Industries Inc.
 Datatek Corp.
 Dyma Engineering, Inc.
 ESC Electronics Corp.
 Yves Faroudja, Inc./Telegen
 Kappa Networks, Inc.
 North Hills Electronics, Inc.
 Panasonic Company
 TT Electronics, Inc.
 Tayburn Electronics, Inc.
 Technics by Panasonic
 Tektronix Inc.
 Television Equipment Associates
 Temtron Electronics D 1-9
 The Zei-Mark Corp.

Frame Storers, Digital

See Adv. Page
ADDA Corp. 107

ADDA Corp.
 The Camera Mart, Inc. D 1,2,3
 Digital Video Systems
 Dyma Engineering, Inc.
 Interand Corp. Telestrator Div.
 Landy Associates Inc. D 1,2
 Micro Consultants
 NEC America, Inc. Broadcasting Equip.
 Div.
 Vital Industries Inc.

Frame Storers, Floppy Disc

Arvin/Echo Co.
 Landy Associates Inc. D 1,2
 Teknekron/TRAX

Framers, Color

A. F. Associates, Inc.

Central Dynamics Corp.

Frequency Standards

John Fluke Mfg. Co., Inc.
 Maury Microwave Corp.
 Rohde & Schwarz Sales Co.

Generators, Audio Sine

See Adv. Page
Potomac Instruments, Inc. 207

Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Amber Electro Design, Ltd.
 Autodyne D 1-9
 Autogram Corp. D 7
 Automated Processes, Inc.
 B & K Precision Dynascan Corp.
 Bald Mountain Lab
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Electronics, Inc.
 Cara Pacific Sales Co. D 8,9
 Dyma Engineering, Inc.
 Frequency Devices Inc.
 Harris Corp. Broadcast Products Div.
 Hickok Elect. Instrument
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Opamp Labs, Inc.
 Philips Test & Measuring Instruments,
 Inc.
 Potomac Instruments, Inc.
 Quad-Eight Electronics
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Sound Technology
 Spectra Sonics
 TEAC Corp of America
 Tektronix Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Westlake Audio

Generators, Audio Sweep

See Adv. Page
Bald Mountain Lab 262

Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Amber Electro Design, Ltd.
 B & K Instruments Inc.
 Bald Mountain Lab
 Broadcast Communications Devices,
 Inc. D 8,9
 Cara Pacific Sales Co. D 8,9
 Dyma Engineering, Inc.
 Heath Co.
 Hickok Elect. Instrument
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Philips Test & Measuring Instruments,
 Inc.
 Rohde & Schwarz Sales Co.
 Tektronix Inc.
 Track Audio, Inc. D 1-9
 United Recording Electronics
 Industries

Generators, Background Color

See Adv. Page
American Data Corp. 7

American Data Corp. A North
American Philips Co.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Communications Technology, Inc.
Computer Image Video Controllers
Dytek Industries, Inc.
Crosspoint Latch Corp.
Digital Video Systems
Dytek Industries, Inc.
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Industrial Sciences
Lenco Inc. Electronics Div.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
Shintron Co. Inc.
Sigma Electronics, Inc.
Tektronix Inc.
Telemation, A Div. of Bell & Howell
Video Data Systems

Generators, Burst

See Adv. Page

Dynair Electronics, Inc. 251
Lenco Inc. 77

Amber Electro Design, Ltd.
American Microsignal Co.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Communications Technology, Inc.
Crosspoint Latch Corp.
Digital Video Systems
Dranz Engineering Labs., Inc.
Dynair Electronics, Inc.
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Industrial Sciences
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Sencore Inc.
Tektronix Inc.
Telemation, A Div. of Bell & Howell
Video Aids Corp. of Colorado

Generators, Color Bar

See Adv. Page

Lenco Inc. 77
**Panasonic Video
Systems Div. 34-35**

B & K Precision Dynascan Corp.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Cohu, Inc. Electronics Div.
Crosspoint Latch Corp.
Digital Video Systems
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
Heath Co.
Hickok Elect. Instrument
H. M. Holzberg Associates, Inc. D
1,2,5
Leader Instruments Corp.
Lectrotech Inc.
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Electronics Inc.
Panasonic Company
Panasonic Video Systems Div.
Philips Test & Measuring Instruments,
Inc.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Shintron Co. Inc.
Sigma Electronics, Inc.

Sinai-Johnson D 8,9
Technics by Panasonic
Tektronix Inc.
Tele-Measurements, Inc. D 2
Telemet a Geotel Co.
3M Co. Mincom Div.
Ultra Audio Pixtec

Generators, Color Sync

See Adv. Page

Dynair Electronics, Inc. 251
Lenco Inc. 77

Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Crosspoint Latch Corp.
Digital Video Systems
Dyma Engineering, Inc.
Dynair Electronics, Inc.
Dynasciences Div. Whitaker Corp.
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
International Communications &
Control Corp.
Landy Associates Inc. D 1,2
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Communication Systems Ltd.
Panasonic Company
Panasonic Video Systems Div.
Philips Test & Measuring Instruments,
Inc.
RCA Broadcast Systems
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Sencore Inc.
Sharp Electronics Corp.
Shintron Co. Inc.
Sigma Electronics, Inc.
Technics by Panasonic
Tektronix Inc.
Telemation, A Div. of Bell & Howell
Tele-Measurements, Inc. D 2
Telemet a Geotel Co.
3M Co. Mincom Div.
Ultra Audio Pixtec
Video Aids Corp. of Colorado
Video Components, Inc.
Viscount Industries Ltd.
Vital Industries Inc.

Generators, Convergence

Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
Kallman Associates, Inc.
Leader Instruments Corp.
Lectrotech Inc.
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sigma Electronics, Inc.
Sinai-Johnson D 8,9
Tektronix Inc.
Ultra Audio Pixtec
United Radio Supply Inc. D9

Generators, Cross Pulse

See Adv. Page

Siegel Electronics 70
Broadcast Communications Devices,
Inc. D 8,9
Harris Corp. Broadcast Products Div.
Leitch Video Ltd.
Siegel Electronics
Tektronix Inc.
Tele-Measurements, Inc. D 2
3M Co. Mincom Div.
Video Aids Corp. of Colorado
Video Components, Inc.

Generators, Digital Sync

See Adv. Page

ADDA Corp. 107
Leitch Video Ltd. 101
Lenco Inc. 77

ADDA Corp.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Crosspoint Latch Corp.
Digital Video Systems
Dyma Engineering, Inc.
Dynair Electronics, Inc.
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Industrial Sciences
International Communications &
Control Corp.
Landy Associates Inc. D 1,2
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Panasonic Company
RCA Broadcast Systems
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Sigma Electronics, Inc.
Technics by Panasonic
Telemation, A Div. of Bell & Howell
Video Data Systems
Vital Industries Inc.

Generators, Digital Video Effect

ADDA Corp.
Central Dynamics Corp.
Digital Video Systems
Grass Valley Group, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
MPB Technologies Inc.
NEC America, Inc. Broadcasting Equip.
Div.

Generators, Error Insertion

National Electrolab Ltd.
Val-Tronics, Inc. D2

Generators, FM Subcarrier

See Adv. Page

**Moseley Associates,
Inc. 23**

AEL, Inc.
Allied Broadcast Equipment D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Catel Div. United Scientific Corp.
Cetec Broadcast Group
Coastcom
Collins Div. Rockwell International
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marti Electronics
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Moseley Associates, Inc.
QEI Corp.
RCA Broadcast Systems
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Studio Electronics D 3,4,7
Tektronix Inc.
Tele-Measurements, Inc. D 2
The Widget Works, Inc.
Wilkinson Electronics, Inc.

Generators, Monoscope

See Adv. Page

Telemet 189

Telemet a Geotel Co.

Generators, NTSC Signal Test

See Adv. Page

**Asaca Corp. of
America 29**
Leitch Video Ltd. 101

Asaca Corp. of America
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Comquip, Inc.
Digital Video Systems
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
International Communications &
Control Corp.
Landy Associates Inc. D 1,2
Leader Instruments Corp.
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Electronics Inc.
Marconi Instruments Div. of Marconi
Electronics Inc.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Sigma Electronics, Inc.
Tektronix Inc.
Telemet a Geotel Co.
Ultra Audio Pixtec

Generators, Powered (Electric Motor)

Dyma Engineering, Inc.
Lampkin Lab. Inc.
North Wind Power Co.
Singer Products Co., Inc.

Generators, Powered (Gasoline Engine)

See Adv. Page

Harris Corp. 17

Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Comquip, Inc.
Dyma Engineering, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
J&D International, Elec. Div. Unit E-
East
Lampkin Lab. Inc.
Onan
Singer Products Co., Inc.
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7

Generators Powered (Solar Energy)

Solar Power Corp.

Generators, SCA

See Adv. Page

**Moseley Associates,
Inc. 23**
**Wilkinson Electronics,
Inc. 194**

AEL, Inc.
Allied Broadcast Equipment D 1-9
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Leader Instruments Corp.
Marti Electronics
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Micro Control Associates, Inc.
Moseley Associates, Inc.
QEI Corp.
Sencore Inc.

Singer Products Co., Inc.
Tektronix Inc.
Val-Tronics, Inc. D2
Versa Count Engineering
The Widget Works, Inc.
Wilkinson Electronics, Inc.

Generators, Safe Area

See Adv. Page

Broadcast Video Systems, Ltd. 56

Broadcast Video Systems, Ltd.

Generators, Signal AF

See Adv. Page

Bald Mountain Lab262
Potomac Instruments, Inc.207

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Amber Electro Design, Ltd.
Autodyne D 1-9
Automated Processes, Inc.
B & K Precision Dynascan Corp.
Bald Mountain Lab
Cara Pacific Sales Co. D 8,9
Delta Electronics Inc. (N.C.)
Dranetz Engineering Labs., Inc.
Dyma Engineering, Inc.
Frequency Devices Inc.
Heath Co.
Hickok Elect. Instrument
Ivie Electronics
Lampkin Lab. Inc.
Leader Instruments Corp.
Lectionic Research Laboratories, Inc.
D 1-9
Modular Audio Products Unit of
Modular Devices, Inc.
Opamp Labs, Inc.
Philips Test & Measuring Instruments,
Inc.
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sinai-Johnson D 8,9
Spectra Sonics
Tektronix Inc.
Telecommunications Technology
Val-Tronics, Inc. D2

Generators, Signal Dot Bar

Asaca Corp. of America
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Colorado Video Inc.
Grass Valley Group, Inc.
Heath Co.
Hickok Elect. Instrument
Kallman Associates, Inc.
Leader Instruments Corp.
Lectrotech Inc.
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sinai-Johnson D 8,9
Tektronix Inc.
Telemation, A Div. of Bell & Howell
Telemet a Geotel Co.

Generators, Signal Marker

AILTECH Div. Cutler-Hammer Los
Angeles Operation
B & K Precision Dynascan Corp.
Blonder-Tongue Labs.
Lectrotech Inc.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sinai-Johnson D 8,9
Tektronix Inc.

Generators, Signal Pulse

Dranetz Engineering Labs., Inc.
Lectionic Research Laboratories, Inc.
D 1-9
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Electronics Inc.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Systron-Donner
TM Systems, Inc.
Tektronix Inc.

Generators, Signal RF

See Adv. Page

Delta Electronics Inc. (Va.)191
Potomac Instruments, Inc.206

AILTECH Div. Cutler-Hammer Los
Angeles Operation
Allied Broadcast Equipment D 1-9
B & K Precision Dynascan Corp.
Blonder-Tongue Labs.
Boonton Electronics
Dana Laboratories, Inc. see-Racal-
Dana Instruments Inc.
Delta Electronics Inc. (Va.)
Engineering Associates
Harris Corp. PRD Electronics Div.
Heath Co.
Hickok Elect. Instrument
Lampkin Lab. Inc.
Leader Instruments Corp.
Lectionic Research Laboratories, Inc.
D 1-9
Marconi Instruments Div. of Marconi
Electronics Inc.
Microdyne Corp.
Philips Test & Measuring Instruments,
Inc.
Potomac Instruments, Inc.
Racal-Dana Instruments Inc.
Rohde & Schwarz Sales Co.
SPI-ITT Metrix Instruments Div.
Sadenco, Inc.
Scientific-Atlanta, Inc.
Sencore Inc.
Sinai-Johnson D 8,9
Tektronix Inc.
Texscan Corp.
Val-Tronics, Inc. D2
Weinschel Engineering Co.

Generators, Signal Square Wave

Allied Broadcast Equipment D 1-9
Amber Electro Design, Ltd.
B & K Precision Dynascan Corp.
Broadcast Communications Devices,
Inc. D 8,9
Cara Pacific Sales Co. D 8,9
Heath Co.
Hickok Elect. Instrument
Lectionic Research Laboratories, Inc.
D 1-9
Leitch Video Ltd.
Philips Test & Measuring Instruments,
Inc.
Rohde & Schwarz Sales Co.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sinai-Johnson D 8,9
Systron-Donner
Tektronix Inc.
Weinschel Engineering Co.

Generators, Signal TV Synchronizing

See Adv. Page

Philips Broadcast Equip Corp...... 66-67

Asaca Corp. of America
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Colorado Video Inc.
Dage-MTI, Inc.
Dynair Electronics, Inc.

Dynasciences Div. Whitaker Corp.
Grass Valley Group, Inc.
Industrial Sciences
Landy Associates Inc. D 1,2
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Philips Broadcast Equip Corp.
Philips Test & Measuring Instruments,
Inc.
Rohde & Schwarz Sales Co.
Sencore Inc.
Sigma Electronics, Inc.
Tektronix Inc.
Telemation, A Div. of Bell & Howell
Telemet a Geotel Co.
Ultra Audio Pixtec
Video Aids Corp. of Colorado

Generators, Signal VITS

Beta Technology, Inc.
Broadcast Communications Devices,
Inc. D 8,9
Harris Corp. Broadcast Products Div.
Industrial Sciences
Lenco Inc. Electronics Div.
Marconi Instruments Div. of Marconi
Electronics Inc.
Philips Test & Measuring Instruments,
Inc.
Rohde & Schwarz Sales Co.
Tektronix Inc.
Telemet a Geotel Co.

Generators, Special Effect

See Adv. Page

American Data Corp. 7
Dytek Industries, Inc.185
Viscount Industries Ltd......219

American Data Corp. A North
American Philips Co.
BJA Systems, Inc.
Beta Technology, Inc.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
The Camera Mart, Inc. D 1,2,3
Central Dynamics Corp.
Chyron Telesystems
Colorado Video Inc.
Communications Technology, Inc.
Computer Image Video Controllers
Dytek Industries, Inc.
Crosspoint Latch Corp.
Dage-MTI, Inc.
Digital Video Systems
Dynair Electronics, Inc.
Dynasciences Div. Whitaker Corp.
Dytek Industries, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
Ikegami Electronics (USA) Inc.
Industrial Sciences
Interand Corp. Telestrator Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Micro Consultants
Panasonic Company
Panasonic Video Systems Div.
Richmond Hill Laboratories Ltd.
Sharp Electronics Corp.
Shintron Co. Inc.
Sigma Electronics, Inc.
Technics by Panasonic
Tektronix Inc.
3M Co. Mincom Div.
Video Components, Inc.
Video Data Systems
Viscount Industries Ltd.
Weather Scan, Inc. D

Generators, Staircase

Broadcast Communications Devices,
Inc. D 8,9
Broadcast Video Systems, Ltd.
Colorado Video Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
International Communications &
Control Corp.

Leader Instruments Corp.
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Tektronix Inc.
Telemet a Geotel Co.

Generators, Stereo

See Adv. Page

Moseley Associates, Inc. 23
Wilkinson Electronics, Inc.194

AEL, Inc.
Allied Broadcast Equipment D 1-9
Boonton Electronics
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Catal Div. United Scientific Corp.
Cetec Broadcast Group
Collins Div. Rockwell International
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
Leader Instruments Corp.
Mastertone Co., Inc. D 4
Maze Corp D6
McMartin Industries, Inc.
Moseley Associates, Inc.
Philips Test & Measuring Instruments,
Inc.
QEI Corp.
Rohde & Schwarz Sales Co.
Sencore Inc.
Sound Genesis D 8,9
Sound Technology
Studio Electronics D 3,4,7
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Generators, Subcarrier

See Adv. Page

Micro Control Associates, Inc. 62
Moseley Associates, Inc. 23

ATV Research
Allied Broadcast Equipment D 1-9
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Consultants Corp. D 1-9
Broadcast Video Systems, Ltd.
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Cohu, Inc. Electronics Div.
Communications Technology, Inc.
Crosspoint Latch Corp.
Grass Valley Group, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Industrial Sciences
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Marti Electronics
McMartin Industries, Inc.
Merill Cable Equipment Corp.
Micro Control Associates, Inc.
Moseley Associates, Inc.
Philips Test & Measuring Instruments,
Inc.
Richmond Hill Laboratories Ltd.
Rohde & Schwarz Sales Co.
Shintron Co. Inc.
Sigma Electronics, Inc.
Telemation, A Div. of Bell & Howell
Val-Tronics, Inc. D2

Generators, Sync

See Adv. Page

Asaca Corp. of America..... 29
Dynair Electronics, Inc......251
Grass Valley Group, Inc...... 3
Harris Corp...... 17
Leitch Video Ltd......101
Lenco Inc......77

Asaca Corp. of America
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Colorado Video Inc.
 Crosspoint Latch Corp.
 Digital Video Systems
 Dynair Electronics, Inc.
 Dynasciences Div. Whitaker Corp.
 GBC Closed Circuit TV Corp.
 Grass Valley Group, Inc.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Ikegami Electronics (USA) Inc.
 Image Devices Inc. D 1-9
 Industrial Sciences
 International Communications & Control Corp.
 Javelin Electronics
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Nagra Magnetic Recorders, Inc.
 Panasonic Video Systems Div.
 Philips Test & Measuring Instruments, Inc.
 Richmond Hill Laboratories Ltd.
 Rohde & Schwarz Sales Co.
 Sencore Inc.
 Sharp Electronics Corp.
 Shintron Co. Inc.
 Sigma Electronics, Inc.
 Tektronix Inc.
 Telemation, A Div. of Bell & Howell
 Telemet a Geotel Co.
 3M Co. Mincom Div.
 Video Aids Corp. of Colorado
 Weather Scan, Inc. D

Generators, Thermoelectric

See Adv. Page

Teledyne Energy Systems.....215

Mastertone Co., Inc. D 4
 Prodelin Inc.
 Teledyne Energy Systems

Generators, Time Code (Reader)

See Adv. Page

The BTX Corp...... 24,90
CMX Systems..... 11
Central Dynamics Corp...... 57
Datametrics Inc...... 86
Datatron, Inc......111
Electro & Optical Systems Ltd...... 81
Gray Engineering Labs.....265
Kaitronics Corp......252
Shintron Co. Inc......204
Skotel Corp......261
Time Tech Corp......263

Allied Broadcast Equipment D 1-9
 Artists' Engineering Visual Communications Div.
 The BTX Corp.
 Beta Technology, Inc.
 Broadcast Communications Devices, Inc. D 8,9
 CMX Systems Div. of Orrox Corp.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Datametrics Inc.

Datatron, Inc.
 Dyma Engineering, Inc.
 EECO
 ESE
 Electro & Optical Systems Ltd.
 Glentronix Ltd. D 1-9
 Gray Engineering Labs
 H. M. Holzberg Associates, Inc. D 1,2,5
 International Communications & Control Corp.
 Kaitronics Corp.
 Laird Telemedia Inc.
 Landy Associates Inc. D 1,2
 Listec TV Equip. Corp.
 Recortec Inc.
 Scully Recording Instruments Div. of Dictaphone Corp.
 Shintron Co. Inc.
 Sigma Electronics, Inc.
 Skotel Corp.
 Spectra-Vision Corp.
 Systron-Donner
 Tektronix Inc.
 Telcom Research
 Television Research International
 Time Tech Corp.

Generators, Tone

See Adv. Page

Adcom Communications Inc...... 40
Bald Mountain Lab.....262
Broadcast Component Dist. Communication Medias.....200
Elcom Engineering Co......264

AILTECH Div. Cutler-Hammer Los Angeles Operation
 Adcom Communications Inc.
 Allied Broadcast Equipment D 1-9
 Amber Electro Design, Ltd.
 American Microsignal Co.
 Autogram Corp. D 7
 Automated Broadcast Controls
 Bald Mountain Lab
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Channelmatic, Inc.
 Consolidated Electronic Industries
 Di-Tech Inc.
 Dyma Engineering, Inc.
 Elcom Engineering Co.
 Frequency Devices Inc.
 Gorman Redlich Mfg. Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.
 Ivie Electronics
 Mastertone Co., Inc. D 4
 Opamp Labs, Inc.
 Rivers Associates, Inc.
 Robins Broadcast & Sound Equip. Corp.
 Shure Brothers Inc.
 Spectra Sonics
 Westlake Audio

Generators, Tone, EBS

See Adv. Page

Logitek Electronic Systems.....188

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 ESE
 Elcom Engineering Co.
 Gorman Redlich Mfg. Co.

H. M. Holzberg Associates, Inc. D 1,2,5
 Logitek Electronic Systems
 McMartin Industries, Inc.
 Rivers Associates, Inc.
 Time & Frequency Tech., Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Generators, VITS Inserter

Video Aids Corp. of Colorado

Generators, Video Carrier

Merill Cable Equipment Corp.
 Philips Test & Measuring Instruments, Inc.
 Rohde & Schwarz Sales Co.
 Sencore Inc.
 Tektronix Inc.

Generators, Video Sweep

See Adv. Page

Asaca Corp. of America..... 29
Datatek Corp......65
Telemet.....189

Asaca Corp. of America
 Broadcast Communications Devices, Inc. D 8,9
 Datatek Corp.
 Harris Corp. Broadcast Products Div.
 Landy Associates Inc. D 1,2
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc. D 1-9
 Lectrotech Inc.
 Lenco Inc. Electronics Div.
 Marconi Instruments Div. of Marconi Electronics Inc.
 Philips Test & Measuring Instruments, Inc.
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Tektronix Inc.
 Telemet a Geotel Co.
 Texscan Corp.

Graph Paper

United Recording Electronics Industries

Ground Straps

Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 Millard Metal Service Center, Inc.

Hand Trucks, ENG Equipment

The Camera Mart, Inc. D 1,2,3
 Comprehensive Video Supply Corp. D 1-9
 ENG Mfg. Co.
 Lee-Ray Industries, Inc.
 Victor Duncan, Inc. D 4,5,6,7

Head Alignment Gauges

See Adv. Page

Fidelipac.....213

Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Autodyne D 1-9
 Broadcast Cartridge Service D 7,8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Fidelipac
 Harris Corp. Broadcast Products Div.

Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Merlin Engineering Works, Inc.
 Nagra Magnetic Recorders, Inc.
 Pentagon Industries, Inc.
 Professional Audio Service D 1-9
 Sound Dynamics, Inc. D8, 9
 Videomagnetics, Inc.

Head Cleaning Products, Video

Broadcast Communications Devices, Inc. D 8,9
 Comprehensive Video Supply Corp. D 1-9
 K & L Pro Audio D. 1, 2, 5, 6
 Lita Broadcasting Distributors D 1-9
 Memorex Corp. Professional Products Group
 Miller-Stephenson Chemical Co., Inc.
 Nortronics Co., Inc.
 Sony Corp. of America VTR Div.
 3M Co. Magnetic Audio/Video Prod. Div.
 VIF International D 1-9
 Westlake Audio

Head Nest Rebuilding Services

Accurate Sound Co.
 International Electro-Magnetics
 Lipps Inc.
 Mastertone Co., Inc. D 4
 Minneapolis Magnetics, Inc.
 Taber Mfg. & Engr. Co.

Headphones, Announcers Earpiece

Allied Broadcast Equipment D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Electro-Voice Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D. 1, 2, 5, 6
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Media Concepts, Inc. D 1-9
 Neutrik
 Sennheiser Electronic
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studer Revox America
 Superex Electronics Corp.
 Television Equipment Associates
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 United Radio Supply Inc. D9
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Headphones, Broadcast Monitoring

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
Harris Corp...... 17

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9

Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 Koss Corp
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Maze Corp D6
 Media Concepts, Inc. D 1-9
 Miles Associates Div. Miles Products Ltd.
 Neutrik
 Newark Electronics D 1-9
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Professional Audio Service D 1-9
 Sennheiser Electronic
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Stanton Magnetics Inc.
 Studer Revox America
 Studio Electronics D 3,4,7
 Superex Electronics Corp.
 Technics by Panasonic
 Television Equipment Associates
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 United Radio Supply Inc. D9
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Westlake Audio
 Wilkinson Electronics, Inc.

Headphones, Mono

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Bell & Howell Audio Visual Div.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Everything Audio D 1-9
 G.C. Electronics
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Heath Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 Koss Corp
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Media Concepts, Inc. D 1-9
 Miles Associates Div. Miles Products Ltd.
 Nagra Magnetic Recorders, Inc.
 Newark Electronics D 1-9
 Oregon Sound & Lights D 8,9
 Professional Audio Service D 1-9
 Sennheiser Electronic
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Stanton Magnetics Inc.
 Studer Revox America
 Studio Electronics D 3,4,7
 Superex Electronics Corp.
 Television Equipment Associates
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9

UMC Electronics Co. Broadcast Products Div.
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Westlake Audio
 Wilkinson Electronics, Inc.

Headphones, Stereo

See Adv. Page
 Val-Tronics, Inc. 245

Allied Broadcast Equipment D 1-9
 Audio-Technica U.S. Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 G.C. Electronics
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Heath Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KLH Research & Development Corp.
 KLH Burwen Research
 Koss Corp
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Media Concepts, Inc. D 1-9
 Nagra Magnetic Recorders, Inc.
 Neutrik
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Professional Audio Service D 1-9
 Sansui Electronics Corp.
 Sennheiser Electronic
 Sinai-Johnson D 8,9
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Stanton Magnetics Inc.
 Studer Revox America
 Studio Electronics D 3,4,7
 Superex Electronics Corp.
 Technics by Panasonic
 Television Equipment Associates
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Weather Scan, Inc. D
 Westlake Audio
 Wilkinson Electronics, Inc.

Headphones with Announcers Microphone

Allied Broadcast Equipment D 1-9
 Autodyne D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 Koss Corp
 Lauderdale Electronic Labs D 1-9

Lita Broadcasting Distributors D 1-9
 Miles Associates Div. Miles Products Ltd.
 Neutrik
 Oregon Sound & Lights D 8,9
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Superex Electronics Corp.
 Television Equipment Associates
 Track Audio, Inc. D 1-9
 United Radio Supply Inc. D9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Heads, Audio Stack

Accurate Sound Co.
 Broadcast Communications Devices, Inc. D 8,9
 Computer Magnetics Corp.
 DB Company
 Grandy, Inc.
 International Electro-Magnetics
 Lipps Inc.
 Norton Associates Inc.
 Nortronics Co., Inc.
 Professional Audio Service D 1-9
 Saki Magnetics, Inc.
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Taber Mfg. & Engr. Co.
 Track Audio, Inc. D 1-9
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Westlake Audio

Heads, Contactor

Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D 1-9
 Lauderdale Electronic Labs D 1-9
 Lipps Inc.
 Nortronics Co., Inc.
 Professional Audio Service D 1-9
 Val-Tronics, Inc. D2

Heads, Erase Magnetic

Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Canon USA, Inc. Optics Div.
 Computer Magnetics Corp.
 DB Company
 Grandy, Inc.
 Grinnan Fixture Co. D 1-9
 International Electro-Magnetics
 Lipps Inc.
 Lita Broadcasting Distributors D 1-9
 Magna-Tech Electronic Co., Inc.
 Mastertone Co., Inc. D 4
 Minneapolis Magnetics, Inc.
 Norton Associates Inc.
 Nortronics Co., Inc.
 Professional Audio Service D 1-9
 Robins Broadcast & Sound Equip. Corp.
 Saki Magnetics, Inc.
 Sound Genesis D 8,9
 Spin Physics, Inc.
 Studio Electronics D 3,4,7
 Taber Mfg. & Engr. Co.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast Products Div.
 VIF International D 1-9
 Val-Tronics, Inc. D2

Heads, Film Stripe

See Adv. Page
 Cinema Products Corp. 9

Canon USA, Inc. Optics Div.
 Cinema Products Corp.
 Grandy, Inc.
 Image Devices Inc. D 1-9
 International Electro-Magnetics
 Lipps Inc.
 Magna-Tech Electronic Co., Inc.

Norton Associates Inc.
 Nortronics Co., Inc.
 Saki Magnetics, Inc.
 Sound Genesis D 8,9
 Victor Duncan, Inc. D 4,5,6,7

Heads, Reconditioned or Reconditioning Services for Audio and/or VTR Audio

See Adv. Page
 Taber Mfg. & Engr. Co. 211

Accurate Sound Co.
 Audio Distributor Inc. D 3, 4, 6, 7
 Broadcast Automation Associates Inc. D 1,2,5,6
 Computer Magnetics Corp.
 DB Company
 Electro Sound, Inc.
 Grandy, Inc.
 International Electro-Magnetics
 Lipps Inc.
 Lita Broadcasting Distributors D 1-9
 Minneapolis Magnetics, Inc.
 Nagra Magnetic Recorders, Inc.
 Norton Associates Inc.
 Saki Magnetics, Inc.
 Sound Dynamics, Inc. D8, 9
 Taber Mfg. & Engr. Co.
 VIF International D 1-9
 Victor Duncan, Inc. D 4,5,6,7

Heads, Reconditioned or Reconditioning Services for Video

See Adv. Page
 Spin Physics, Inc. 210
 Videomax Div. 1

Ampex Corp.
 Computer Magnetics Corp.
 Comquip, Inc.
 Glenitronix Ltd. D 1-9
 RCA Broadcast Systems
 Saki Magnetics, Inc.
 Spin Physics, Inc.
 Taber Mfg. & Engr. Co.
 Videomagnetics, Inc.
 Videomax Div. Orrox Corp.

Heads, Recorder Replacement

See Adv. Page
 Broadcast Component Dist. Communication Medias 200
 Spin Physics, Inc. 210
 Taber Mfg. & Engr. Co. 211
 Videomax Div. 1

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Ampro Broadcasting Inc.
 Audio Distributor Inc. D 3, 4, 6, 7
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Colorado Magnetics
 Computer Magnetics Corp.
 DB Company
 Electro Sound, Inc.
 Glenitronix Ltd. D 1-9
 Grandy, Inc.
 Grinnan Fixture Co. D 1-9
 International Electro-Magnetics
 K & L Pro Audio D, 1, 2, 5, 6
 Lipps Inc.
 Lita Broadcasting Distributors D 1-9
 Minneapolis Magnetics, Inc.
 Norton Associates Inc.
 Nortronics Co., Inc.
 Professional Audio Service D 1-9

Saki Magnetics, Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spin Physics, Inc.
 Studio Electronics D 3,4,7
 Taber Mfg. & Engr. Co.
 UMC Electronics Co. Broadcast
 Products Div.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Videomagnetics, Inc.
 Videomax Div. Orrox Corp.

Heads, Recording Magnetic

See Adv. Page

AEG-Telefunken201
Cinema Products Corp..... 9
Gotham Audio Corp.....201
Spin Physics, Inc.210
Taber Mfg. & Engr.
Co.211
Val-Tronics, Inc.....245
Videomax Div.1

AEG-Telefunken Magnetic Tape
 Recorder Dept.
 Accurate Sound Co.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 Canon USA, Inc. Optics Div.
 Cinema Products Corp.
 Colorado Magnetics
 Computer Magnetics Corp.
 DB Company
 Electro Sound, Inc.
 Glentronix Ltd. D 1-9
 Gotham Audio Corp.
 Grandy, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 International Electro-Magnetics
 K & L Pro Audio D, 1, 2, 5, 6
 Lipps Inc.
 Lita Broadcasting Distributors D 1-9
 Magna-Tech Electronic Co., Inc.
 Mastertone Co., Inc. D 4
 Minneapolis Magnetics, Inc.
 Nagra Magnetic Recorders, Inc.
 Norton Associates Inc.
 Nortronics Co., Inc.
 Professional Audio Service D 1-9
 Saki Magnetics, Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spin Physics, Inc.
 Studio Electronics D 3,4,7
 Taber Mfg. & Engr. Co.
 Track Audio, Inc. D 1-9
 UMC Electronics Co. Broadcast
 Products Div.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Videomagnetics, Inc.
 Videomax Div. Orrox Corp.

Heads, Video Recorder

See Adv. Page

Spin Physics, Inc.210
Videomax Div.1

Ampex Corp.
 Asaca Corp. of America
 Computer Magnetics Corp.
 Comquip, Inc.
 Glentronix Ltd. D 1-9
 Javelin Electronics
 K & L Pro Audio D, 1, 2, 5, 6
 Minneapolis Magnetics, Inc.
 RCA Broadcast Systems
 Spin Physics, Inc.
 Taber Mfg. & Engr. Co.
 Videomagnetics, Inc.
 Videomax Div. Orrox Corp.

Heat Exchangers

Electro Impulse, Inc.
 Harris Corp. Broadcast Products Div.
 Townsend Associates, Inc.

Heaters, Station Van

Valad Electric Heating Corp.

Hum Stop Coils, Video

See Adv. Page

**Audio-Video
 Engineering Co.219**

Audio-Video Engineering Co.
 Broadcast Communications Devices,
 Inc. D 8,9
 Dyma Engineering, Inc.
 North Hills Electronics, Inc.
 Pleasantville Labs
 Telemation, A Div. of Bell & Howell
 Video Aids Corp. of Colorado

Image Repositioners, Video

All Mobile Video, Inc.
 Digital Video Systems
 The Ken Schaffer Group, Inc.

**Industrial TV Systems --See also
 TV Systems, Closed Circuit**

ATV Research
 Blender-Tongue Labs.
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Catel Div. United Scientific Corp.
 Central Dynamics Corp.
 Cohu, Inc. Electronics Div.
 Colorado Video Inc.
 Communications Technology, Inc.
 Comquip, Inc.
 Dage-MTI, Inc.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Electro & Optical Systems Ltd.
 Fernseh Group Robert Bosch Corp.
 Imero Fiorentino Associates, Inc.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 International Nuclear Corp.
 Javelin Electronics
 Laird Telemedia Inc.
 Leitch Video Ltd.
 Lenzar Optics Corp.
 Media Concepts, Inc. D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Power-Optics Inc.
 SC Electronics, Inc.
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tektronix Inc.
 Tele-Cine Inc.
 Tele-Measurements, Inc. D 2
 Teltron Inc.
 Varian/Beverly Micro-Link Products
 Victor Duncan, Inc. D 4,5,6,7
 Videodetics Corp.

Isolators, Electro-Optical

Comprehensive Video Supply Corp. D
 1-9
 Motorola SPI
 Unimedia Corp.
 Video Aids Corp. of Colorado

Insulators, Antenna Base

See Adv. Page

**Decca Austin
 Insulators184**

Cetec Broadcast Group
 Continental Electronics Mfg. Co.
 Decca Austin Insulators
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5

Tiner Communications Service, Inc. D

Insulators, Guy Strain

See Adv. Page

**Decca Austin
 Insulators184**

Cetec Broadcast Group
 Continental Electronics Mfg. Co.
 Decca Austin Insulators
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Tiner Communications Service, Inc. D

**Integrated Circuits --See also
 Semiconductors**

See Adv. Page

Temtron Electronics250

Ampere Electronic Corp. Slatersville
 Div.
 Bayly Engineering Ltd.
 EEV Canada Ltd.
 Harris Corp. Broadcast Products Div.
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 Panasonic Company
 Technics by Panasonic
 Temtron Electronics D 1-9
 Thor Electronics Corp. D 1-9

Intercom Systems

See Adv. Page

ROH Corporation211
RTS Systems256

Allied Broadcast Equipment D 1-9
 Atlas Sound
 Audio Designs & Mfg.
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D
 1-9
 The Camera Mart, Inc. D 1,2,3
 Clear-Com Intercom Systems
 Collins Television Services
 Crosspoint Latch Corp.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Eddor Div. of P.A.C.
 Electro-Voice Inc.
 Fisher Berkeley Corp.
 Fisher Burke Professional Audio D 8
 G.C. Electronics
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 Landy Associates Inc. D 1,2
 McMartin Industries, Inc.
 Charles Moore
 Newark Electronics D 1-9
 Nova Corp.
 Olesen D 1-9
 Oregon Sound & Lights D 8,9
 Paso Sound Products Inc.
 ROH Corporation
 RTS Systems
 Rivers Associates, Inc.
 The Ken Schaffer Group, Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 System Associates
 Tele-Measurements, Inc. D 2
 Television Equipment Associates
 Theatre Techniques Inc.
 Thomson-CSF Laboratories, Inc.
 United Radio Supply Inc. D9
 Utah Scientific, Inc.

Video Aids Corp. of Colorado
 Ward-Beck Systems, Ltd.
 World Video Inc.

Isocouplers

See Adv. Page

Harris Corp.17
**Moseley Associates,
 Inc.23**

CCA Electronics Corp.
 C. S. P. Inc.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Mastertone Co., Inc. D 4
 Moseley Associates, Inc.
 Motorola SPI
 RCA Broadcast Systems
 Shively Laboratories, Inc.
 Val-Tronics, Inc. D2
 Video Aids Corp. of Colorado
 Video Components, Inc.
 Wilkinson Electronics, Inc.

ITFS Systems

Alford Mfg. Co.
 EMCCE Broadcast Products
 Varian Associates, Inc. Electron Device
 Group
 Varian/Beverly Micro-Link Products

Jack Panel Assemblies

See Adv. Page

Audio Designs & Mfg. 98-99
**Pro-Audio Specialties
 Co.114**
Telectric Co.112
Trompeter Electronics218

Allied Broadcast Equipment D 1-9
 Audio Accessories Inc.
 Audio Designs & Mfg.
 Audio Distributor Inc. D 3, 4, 6, 7
 Autodyne D 1-9
 Automated Processes, Inc.
 Bayly Engineering Ltd.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment & Supply Co. D
 1-9
 Bud Industries, Inc.
 CCA Electronics Corp.
 C. S. P. Inc.
 Dyma Engineering, Inc.
 Dynatech Data Systems
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Landy Associates Inc. D 1,2
 Mastertone Co., Inc. D 4
 McCurdy Radio Ind. Inc.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Potomac Instruments, Inc.
 Pro-Audio Specialties Co.
 Rex Rheostat & Co., Inc.
 Switchcraft Inc.
 Telectric Co.
 Trompeter Electronics
 Union Connector Co., Inc.
 United Radio Supply Inc. D9
 Ward-Beck Systems, Ltd.

Jacks, Meter Line

Delta Electronics Inc. (Va.)
 Newark Electronics D 1-9
 Sound Genesis D 8,9

Keyers, Video Insert

See Adv. Page

American Data Corp. 7

American Data Corp. A North
 American Philips Co.
 Autodyne D 1-9
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Chyron Telesystems
 Communications Technology, Inc.
 Computer Image Video Controllers
 Dytek Industries, Inc.
 Dynair Electronics, Inc.
 Grass Valley Group, Inc.
 Industrial Sciences
 Panasonic Company
 Shintron Co. Inc.
 Technics by Panasonic
 Thomson-CSF Laboratories, Inc.
 3M Co. Mincom Div.
 Video Devices Co.

Kits, Amplifier --See Amplifier
 Kits

Kits, Transmitter --See
 Transmitter Kits

Knobs, Control

See Adv. Page

**Alco Electronic
 Products, Inc.**222

Alco Electronic Products, Inc.
 G.C. Electronics
 P. R. Mallory & Co. Inc.
 Newark Electronics D 1-9
 Quad-Eight Electronics
 Singer Products Co., Inc.

**Lamps, Stage and Studio
 Replacement**

See Adv. Page

**Electronics Diversified,
 Inc.**199
Sitler's Supplies, Inc.254
Temtron Electronics250

Barbizon Electric
 Berkey-Colortran Inc.
 The Camera Mart, Inc. D 1,2,3
 Electronics Diversified, Inc.
 GTE Sylvania Inc. Lighting Products
 Group
 Kliegl Bros. Lighting
 Lauderdale Electronic Labs D 1-9
 Lumitrol, Ltd. D-Canada
 Newark Electronics D 1-9
 Olesen D 1-9
 Sitler's Supplies, Inc.
 Strand Century, Inc.
 Temtron Electronics D 1-9
 Victor Duncan, Inc. D 4,5,6,7

Leased Broadcast Equipment

See Adv. Page

**Broadcast Component
 Dist. Communication
 Medias**200
Collins Div. 31

A. F. Associates, Inc.
 Allied Broadcast Equipment D 1-9
 Ampro Broadcasting Inc.
 Angenieux Corp. of America
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equip. Leasing Co.
 CSI Electronics, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Comquip, Inc.
 D and S Corley Ltd.
 Editel Communications

Girnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Tapetronics Corp.
 NEC America, Inc. Broadcasting Equip.
 Div.
 Orange County Electronics Int'l., Inc.
 Pentagon Industries, Inc.
 Ramko Research Inc.
 Sound Genesis D 8,9
 Spectra Sonics
 Tele-Cine Inc.
 Val-Tronics, Inc. D2
 Varian Associates, Inc. Electron Device
 Group
 Wilkinson Electronics, Inc.

Lens Repair Services

See Adv. Page

**Angenieux Corp. of
 America**.....267

Angenieux Corp. of America
 The Camera Mart, inc. D 1,2,3
 Alan Gordon Enterprises Inc.
 Lita Broadcasting Distributors D 1-9
 Rank Precision Industries, Inc. (N.Y.)
 Tele-Cine Inc.

Lenses, Adaptor

Warren R. Smith Co.

Lenses, Optical Fixed

See Adv. Page

**Angenieux Corp. of
 America**..... 84-85
Fujinon Optical, Inc...... 116-117
Temtron Electronics250

ATV Research
 Angenieux Corp. of America
 Anixter-Mark
 Arriflex Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 Buhl Optical Co.
 C.R.V. Systems, Inc.
 Canon USA, Inc. Optics Div.
 Cinema Products Corp.
 Comquip, Inc.
 Cosmicar Lens Div. Asahi Precision
 Co., Ltd.
 Denson Electronic Corp. D 1-9
 Fujinon Optical, Inc.
 Alan Gordon Enterprises Inc.
 Image Devices Inc. D 1-9
 Javelin Electronics
 Lenzar Optics Corp.
 Lita Broadcasting Distributors D 1-9
 Panasonic Company
 Power-Optics Inc.
 Rank Precision Industries, Inc. (N.Y.)
 Schneider Corp. of America
 Specialized Industries, Inc.
 Technics by Panasonic
 Tele-Cine Inc.
 Temtron Electronics D 1-9
 Victor Duncan, Inc. D 4,5,6,7
 Weather Scan, Inc. D

Lenses, Optical Fixed Relay

See Adv. Page

**Angenieux Corp. of
 America**..... 84-85
Fujinon Optical, Inc...... 116-117

Angenieux Corp. of America
 Broadcast Communications Devices,
 Inc. D 8,9
 C.R.V. Systems, Inc.
 Canon USA, Inc. Optics Div.
 Comquip, Inc.
 Fujinon Optical, Inc.
 Javelin Electronics
 Lenzar Optics Corp.
 Lita Broadcasting Distributors D 1-9
 Rank Precision Industries, Inc. (N.Y.)

Jos. Schneider GmbH & Co. P.O. Box
 947
 Specialized Industries, Inc.
 Tele-Cine Inc.

Lenses, Optical Zoom

See Adv. Page

**Angenieux Corp. of
 America**.....21, 84-85
The Camera Mart, Inc. 74
Canon USA, Inc. 13
Cinema Products Corp...... 9
Fujinon Optical, Inc...... 116-117
Harris Corp. 17
**Panasonic Video
 Systems Div.**..... 34-35
Temtron Electronics250

ATV Research
 Angenieux Corp. of America
 Anixter-Mark
 Arriflex Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 Buhl Optical Co.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Canon USA, Inc. Optics Div.
 Cinecraft Int'l., Inc. Export Agents, D
 Cinema Products Corp.
 Comprehensive Video Supply Corp. D
 1-9
 Comquip, Inc.
 Cosmicar Lens Div. Asahi Precision
 Co., Ltd.
 Denson Electronic Corp. D 1-9
 Frezzolini Electronics, Inc.
 Fujinon Optical, Inc.
 Alan Gordon Enterprises Inc.
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 Javelin Electronics
 Lenzar Optics Corp.
 Lita Broadcasting Distributors D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 Power-Optics Inc.
 Rank Precision Industries, Inc. (N.Y.)
 Schneider Corp. of America
 Jos. Schneider GmbH & Co. P.O. Box
 947
 Specialized Industries, Inc.
 Technics by Panasonic
 Tele-Cine Inc.
 Tele-Measurements, Inc. D 2
 Temtron Electronics D 1-9
 Victor Duncan, Inc. D 4,5,6,7
 Weather Scan, Inc. D

Lighting, Preset Dimmer

See Adv. Page

Electro Controls..... 14
**Electronics Diversified,
 Inc.**199
**Skirpan Lighting
 Control Corp.** 64
Waters Mfg. Inc.214

Berkey-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Custom Audio Electronics
 Electro Controls
 Electronics Diversified, Inc.
 Janson Industries
 Kliegl Bros. Lighting
 Lumitrol, Ltd. D-Canada
 Olesen D 1-9
 Packaged Lighting Systems
 Skirpan Lighting Control Corp.
 Strand Century, Inc.
 Tele-Measurements, Inc. D 2
 Theatre Techniques Inc.
 Waters Mfg. Inc.

Lighting, TV Controls

See Adv. Page

Electro Controls..... 14
**Electronics Diversified,
 Inc.**199

**Packaged Lighting
 Systems**.....212
**Skirpan Lighting
 Control Corp.** 64
Waters Mfg. Inc.214

Berkey-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Electro Controls
 Electronics Diversified, Inc.
 Janson Industries
 Kliegl Bros. Lighting
 Lumitrol, Ltd. D-Canada
 Packaged Lighting Systems
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 SGL Waber Electric
 Skirpan Lighting Control Corp.
 Strand Century, Inc.
 System Associates
 Tele-Measurements, Inc. D 2
 Theatre Techniques Inc.
 Video Components, Inc.
 Waters Mfg. Inc.

Lighting, TV Portable System

See Adv. Page

**Electronics Diversified,
 Inc.**199
**Packaged Lighting
 Systems**.....212
**Skirpan Lighting
 Control Corp.** 64

Berkey-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Cine 60, Inc.
 Cinecraft Int'l., Inc. Export Agents, D
 Comprehensive Video Supply Corp. D
 1-9
 Comquip, Inc.
 Electronics Diversified, Inc.
 Frezzolini Electronics, Inc.
 GTE Sylvania Inc. Lighting Products
 Group
 The Great American Market
 Image Devices Inc. D 1-9
 Janson Industries
 Kliegl Bros. Lighting
 Lowel-Light
 Lumitrol, Ltd. D-Canada
 Packaged Lighting Systems
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Skirpan Lighting Control Corp.
 Strand Century, Inc.
 Super8 Sound, Inc.
 Tele-Measurements, Inc. D 2
 Theatre Techniques Inc.
 Union Connector Co., Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.
 Weather Scan, Inc. D

Lighting, TV Studio System

See Adv. Page

Electro Controls..... 14
**Electronics Diversified,
 Inc.**199
**Packaged Lighting
 Systems**.....212
**Skirpan Lighting
 Control Corp.** 64

Autodyne D 1-9
 Bardwell & McAlister
 Berkey-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Comquip, Inc.
 Dyma Engineering, Inc.
 Electro Controls
 Electronics Diversified, Inc.
 Imero Fiorentino Associates, Inc.
 The Great American Market
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 Janson Industries

KVC Video Systems Inc. D 1,2
 Kliegl Bros. Lighting
 Landy Associates Inc. D 1,2
 Lumitrol, Ltd. D-Canada
 Olesen D 1-9
 Oregon Sound & Lights D 8,9
 Packaged Lighting Systems
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Skirpan Lighting Control Corp.
 Strand Century, Inc.
 Tele-Measurements, Inc. D 2
 Theatre Techniques Inc.
 Union Connector Co., Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.
 Weather Scan, Inc. D

Lighting Hangers, Studio

Berkey-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Janson Industries
 Kliegl Bros. Lighting
 Lowel-Light
 Packaged Lighting Systems
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Strand Century, Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.

Lighting Transformers

See Adv. Page

Decca Austin
Insulators184
Hughy & Phillips Inc.222

Broadcast Communications Devices,
 Inc. D 8,9
 Decca Austin Insulators
 Harris Corp. Broadcast Products Div.
 Hughy & Phillips Inc.

Lightning Arresters

See Adv. Page

Wilkinson Electronics,
Inc.194

Dielectric Communications A Unit of
 General Signal
 Dyma Engineering, Inc.
 G.C. Electronics
 Harris Corp. Broadcast Products Div.
 Joslyn Electronic Sys.
 Lightning Elimination Assoc., Inc.
 MCG Electronics Inc.
 Saxton Products Inc.
 Transtector Systems Div. Konic
 International Corp.
 Wilkinson Electronics, Inc.

Lightning Protection Systems

Dyma Engineering, Inc.
 Joslyn Electronic Sys.
 Lightning Elimination Assoc., Inc.
 MCG Electronics Inc.
 Singer Products Co., Inc.
 Transtector Systems Div. Konic
 International Corp.
 Wilkinson Electronics, Inc.

Lights, HMI Ballast

Berkey-Colortran Inc.
 The Camera Mart, Inc. D 1,2,3
 The Great American Market
 Kliegl Bros. Lighting
 Olesen D 1-9
 Victor Duncan, Inc. D 4,5,6,7

Lights, On Air

See Adv. Page

Broadcast Component
Dist. Communication
Medias.....200
Harris Corp.17

Allied Broadcast Equipment D 1-9

Ampro Broadcasting Inc.
 Autodyne D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Communication Modifications, Inc.
 Communications, Ltd.
 Comprehensive Video Supply Corp. D
 1-9
 Fidelipac
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 LPB Inc.
 Lauderdale Electronic Labs D 1-9
 Lita Broadcasting Distributors D 1-9
 Track Audio, Inc. D 1-9

Lights, Portable, Battery and AC

Berkey-Colortran Inc.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cine 60, Inc.
 Cinecraft Int'l., Inc. Export Agents, D
 Cinema Products Corp.
 Dyma Engineering, Inc.
 Frezzolini Electronics, Inc.
 KVC Video Systems Inc. D 1,2
 Kliegl Bros. Lighting
 Lauderdale Electronic Labs D 1-9
 Lowel-Light
 Olesen D 1-9
 Packaged Lighting Systems
 Victor Duncan, Inc. D 4,5,6,7

Lights, Portable, Kit

See Adv. Page

Electronics Diversified,
Inc.199
Packaged Lighting
Systems.....212

Berkey-Colortran Inc.
 The Camera Mart, Inc. D 1,2,3
 Cine 60, Inc.
 Cinema Products Corp.
 Comprehensive Video Supply Corp. D
 1-9
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Electronics Diversified, Inc.
 The Great American Market
 Harris Corp. Broadcast Products Div.
 Kliegl Bros. Lighting
 Lowel-Light
 Olesen D 1-9
 Packaged Lighting Systems
 Strand Century, Inc.
 Victor Duncan, Inc. D 4,5,6,7

Lights, Studio Set

See Adv. Page

Electronics Diversified,
Inc.199
Harris Corp.17
Packaged Lighting
Systems.....212

Autodyne D 1-9
 Bardwell & McAlister
 Berkey-Colortran Inc.
 The Camera Mart, Inc. D 1,2,3
 Cinema Products Corp.
 Comquip, Inc.
 Dyma Engineering, Inc.
 Electronics Diversified, Inc.
 GTE Sylvania Inc. Lighting Products
 Group
 The Great American Market
 Harris Corp. Broadcast Products Div.
 KVC Video Systems Inc. D 1,2
 Kliegl Bros. Lighting
 Lumitrol, Ltd. D-Canada
 Olesen D 1-9
 Packaged Lighting Systems
 Sittler's Supplies, Inc.
 Strand Century, Inc.
 Studer Revox America
 Union Connector Co., Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Video Components, Inc.

Weather Scan, Inc. D

Lights, Tower Control

See Adv. Page

Elcom Engineering Co.266
Harris Corp.17
Hughy & Phillips Inc.222

CCA Electronics Corp.
 Cetec Broadcast Group
 Crouse Hinds Co.
 Elcom Engineering Co.
 Harris Corp. Broadcast Products Div.
 Hughy & Phillips Inc.
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Eric Small & Associates
 Tiner Communications Service, Inc. D

Lights, Tower Flasher --See
Tower Beacon Light Flashers

Lights, Tower Obstruction, Red -
--See also Tower Lights, High
Intensity Obstruction

Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Crouse Hinds Co.
 Elcom Engineering Co.
 Flash Technology Corp. of America
 Fort Worth Tower Co., Inc.
 Harris Corp. Broadcast Products Div.
 Hughy & Phillips Inc.
 Mastertone Co., Inc. D 4
 Swager Tower Corp.
 Tiner Communications Service, Inc. D
 Unarco-Rohn Div. of Unarco Ind., Inc.

Limiter Compressors

See Adv. Page

Audio & Design
Recording Inc.216
Autodyne267
Broadcast Component
Dist. Communication
Medias.....200
Elcom Engineering Co.266
Moseley Associates,
Inc.23
Orban Assoc. Inc.70
Pacific Recorders and
Engrg. Corp.26
Val-Tronics, Inc.245
Wilkinson Electronics,
Inc.194

Allied Broadcast Equipment D 1-9
 Audio & Design Recording Inc.
 Audio Distributor Inc. D 3, 4, 6, 7
 Autodyne D 1-9
 Automated Processes, Inc.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Comrex Corp.
 dbx, Inc.
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 Elcom Engineering Co.
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Inovonics
 International Communications &
 Control Corp.
 International Electro-Magnetics

K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Lauderdale Electronic Labs D 1-9
 Marti Electronics
 Mastertone Co., Inc. D 4
 Maze Corp D6
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Moseley Associates, Inc.
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Orban Assoc. Inc.
 Pacific Recorders and Engrg. Corp.
 QEI Corp.
 RCA Broadcast Systems
 Ramko Research Inc.
 Robins Broadcast & Sound Equip.
 Corp.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Thomson-CSF Laboratories, Inc.
 Track Audio, Inc. D 1-9
 United Recording Electronics
 Industries
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Wilkinson Electronics, Inc.

Line Surge Protectors

See Adv. Page

Wilkinson Electronics,
Inc.194

Bayly Engineering Ltd.
 Boston Sound & Power Systems
 Broadcast Consultants Corp. D 1-9
 Cetec Broadcast Group
 Dielectric Communications A Unit of
 General Signal
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Lauderdale Electronic Labs D 1-9
 Lightning Elimination Assoc., Inc.
 MCG Electronics Inc.
 Mastertone Co., Inc. D 4
 Ramko Research Inc.
 Temtron Electronics D 1-9
 Transtector Systems Div. Konic
 International Corp.
 Wilkinson Electronics, Inc.

Load Resistors, Coaxial

See Adv. Page

Bird Electronic Corp.265

Alford Mfg. Co.
 Bayly Engineering Ltd.
 Bird Electronic Corp.
 Dielectric Communications A Unit of
 General Signal
 Dyma Engineering, Inc.
 Electro Impulse, Inc.
 Harris Corp. PRD Electronics Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Maury Microwave Corp.
 Micro Communications, Inc. Grenier
 Field
 Rohde & Schwarz Sales Co.
 Weinschel Engineering Co.

Maintenance Services, AM

Applied Video Electronics, Inc. D 1-9
 Atlantic Research Corp.
 CSI Electronics, Inc.
 Communications, Ltd.
 Fisher Burke Professional Audio D 8
 Hallikainen & Friends, Inc.
 Fred A. Nudd Corp.
 Professional Audio Service D 1-9
 RCA Broadcast Systems
 Soll
 Tri-Tronics Professional Electronics

Maintenance Services, Cartridge Tape

Broadcast Cartridge Service D 7,8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Colorado Magnetics Communications, Ltd.
Mastertone Co., Inc. D 4
Professional Audio Service D 1-9
RCA Broadcast Systems

Maintenance Services, FM

Applied Video Electronics, Inc. D 1-9
Atlantic Research Corp.
CSI Electronics, Inc.
Comark Industries Inc. Communications, Ltd.
Fisher Burke Professional Audio D 8
Fort Worth Tower Co., Inc.
Hallikainen & Friends, Inc.
Fred A. Nudd Corp.
Professional Audio Service D 1-9
RCA Broadcast Systems
Soll
Tri-Tronics Professional Electronics

Maintenance Services, Microwave

Atlantic Research Corp.
Comark Industries Inc.
Farinon Electric
Fort Worth Tower Co., Inc.
Microwave Assoc. Inc.
Fred A. Nudd Corp.
Prodelin Inc.

Maintenance Services, TV

Applied Video Electronics, Inc. D 1-9
Atlantic Research Corp.
Comark Industries Inc.
Fort Worth Tower Co., Inc.
KVC Video Systems Inc. D 1,2
Fred A. Nudd Corp.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Pleasantville Labs
RCA Broadcast Systems
Soll
Townsend Associates, Inc.
Varian Associates, Inc. Electron Device Group

MDS Equipment, 2150 MHz

Alford Mfg. Co.
Bogner Broadcast Equipment Corp.
Texscan Corp.
Varian Associates, Inc. Electron Device Group
Varian/Beverly Micro-Link Products

Meters, Antenna Base

See Adv. Page

Delta Electronics Inc. (Va.)191
CCA Electronics Corp.
C. S. P. Inc.
Delta Electronics Inc. (Va.)
Harris Corp. Broadcast Products Div.

Meters, Antenna Impedence

Alford Mfg. Co.
Delta Electronics Inc. (Va.)
Leader Instruments Corp.
Val-Tronics, Inc. D2

Meters, Blanking Interval

See Adv. Page

Auburn Instruments262
Auburn Instruments

Meters, Burst Phase

Beta Technology, Inc.
Dranetz Engineering Labs., Inc.
Dyma Engineering, Inc.
Video Aids Corp. of Colorado

Meters, Distortion Measurement

Hewlett-Packard Co.

Meters, Field Strength AM and FM

See Adv. Page

Harris Corp.17
AILTECH Div. Cutler-Hammer Los Angeles Operation
Arvin CATV
CCA Electronics Corp.
Cetec Broadcast Group
Dyma Engineering, Inc.
Engineering Associates
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Texscan Corp.
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Meters, Field Strength TV-UHF

See Adv. Page

Harris Corp.17
Potomac Instruments, Inc.206
AEL, Inc.
AILTECH Div. Cutler-Hammer Los Angeles Operation
Arvin CATV
B & K Instruments Inc.
Blonder-Tongue Labs.
CCA Electronics Corp.
Dyma Engineering, Inc.
Engineering Associates
The Finney Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Merill Cable Equipment Corp.
Panasonic Company
Potomac Instruments, Inc.
Rohde & Schwarz Sales Co.
SPI-ITT Metrix Instruments Div.
Sadelco, Inc.
Sencore Inc.
Technics by Panasonic
Texscan Corp.
Val-Tronics, Inc. D2

Meters, Flutter and Wow

See Adv. Page

Potomac Instruments, Inc.206,207
B & K Instruments Inc.
Broadcast Communications Devices, Inc. D 8,9
Dyma Engineering, Inc.
EMT Franz VGmbH
Fidelipac
Gotham Audio Corp.
H. M. Holzberg Associates, Inc. D 1,2,5
Lauderdale Electronic Labs D 1-9
Leader Instruments Corp.
Potomac Instruments, Inc.
Professional Audio Service D 1-9
Val-Tronics, Inc. D2
Video Research Corp.

Meters, Frequency AF

AILTECH Div. Cutler-Hammer Los Angeles Operation
Amber Electro Design, Ltd.

Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.
Elcom Engineering Co.
Engineering Associates
Gotham Audio Corp.
Heath Co.
Hickok Elect. Instrument
Ivive Electronics
Lampkin Lab. Inc.
Lectronic Research Laboratories, Inc. D 1-9
Racal-Dana Instruments Inc.
Rohde & Schwarz Sales Co.
Rycom Instruments
SPI-ITT Metrix Instruments Div.
Sinai-Johnson D 8,9
Telecommunications Technology
Temtron Electronics D 1-9
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Meters, Frequency RF

AILTECH Div. Cutler-Hammer Los Angeles Operation
B & K Precision Dynascan Corp.
Belar Electronics Lab., Inc.
Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.
EIP Microwave
Elcom Engineering Co.
Engineering Associates
Harris Corp. Broadcast Products Div.
Harris Corp. PRD Electronics Div.
Heath Co.
Hickok Elect. Instrument
Lampkin Lab. Inc.
Lectronic Research Laboratories, Inc. D 1-9
Racal-Dana Instruments Inc.
Rohde & Schwarz Sales Co.
Rycom Instruments
SPI-ITT Metrix Instruments Div.
Sinai-Johnson D 8,9
Singer Products Co., Inc.
Systron-Donner
Val-Tronics, Inc. D2

Meters, Frequency Calibrating

Eidson Electronic Co.
Elcom Engineering Co.
Lampkin Lab. Inc.
Lectronic Research Laboratories, Inc. D 1-9
Newark Electronics D 1-9
Phillips Test & Measuring Instruments, Inc.

Meters, Grid Dip

Heath Co.
Leader Instruments Corp.

Meters, Intermodulation

See Adv. Page

Potomac Instruments, Inc.207
Amber Electro Design, Ltd.
Heath Co.
Marconi Instruments Div. of Marconi Electronics Inc.
Potomac Instruments, Inc.
Sound Technology
Track Audio, Inc. D 1-9

Meters, Line Voltage

Alco Electronic Products, Inc.
Dranetz Engineering Labs., Inc.
Gralex Industries
Ivive Electronics
Lectronic Research Laboratories, Inc. D 1-9
Sencore Inc.
United Radio Supply Inc. D9

Meters, Modulation

Allied Broadcast Equipment D 1-9
Belar Electronics Lab., Inc.
Boonton Electronics
Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.

Gotham Audio Corp.
Harris Corp. Broadcast Products Div.
The London Co.
Marconi Instruments Div. of Marconi Electronics Inc.
Racal-Dana Instruments Inc.
SPI-ITT Metrix Instruments Div.
Val-Tronics, Inc. D2

Meters, Panel Replacement

G.C. Electronics
Gralex Industries
United Radio Supply Inc. D9

Meters, Phase Angle

See Adv. Page

Harris Corp.17
Potomac Instruments, Inc.207

AILTECH Div. Cutler-Hammer Los Angeles Operation
B & K Instruments Inc.
Dranetz Engineering Labs., Inc.
Gorman Redlich Mfg. Co.
Harris Corp. Broadcast Products Div.
Harris Corp. PRD Electronics Div.
Lectronic Research Laboratories, Inc. D 1-9
Potomac Instruments, Inc.
SPI-ITT Metrix Instruments Div.
Video Aids Corp. of Colorado

Meters, Power

See Adv. Page

Electro Impulse, Inc.244
Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Bayly Engineering Ltd.
Bird Electronic Corp.
Boonton Electronics
Comprehensive Video Supply Corp. D 1-9
Dielectric Communications A Unit of General Signal
Dranetz Engineering Labs., Inc.
Electro Impulse, Inc.
Engineering Associates
Harris Corp. PRD Electronics Div.
Hickok Elect. Instrument
Lampkin Lab. Inc.
Leader Instruments Corp.
Lectronic Research Laboratories, Inc. D 1-9
The Narda Microwave Corporation
National Electrolab Ltd.
Newark Electronics D 1-9
Quad-Eight Electronics
Rohde & Schwarz Sales Co.
Singer Products Co., Inc.
Systron-Donner

Meters, RF

See Adv. Page

Bird Electronic Corp.265
Delta Electronics Inc. (Va.)191

Bird Electronic Corp.
Boonton Electronics
CCA Electronics Corp.
Communication Modifications, Inc.
Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.
Delta Electronics Inc. (Va.)
Lectronic Research Laboratories, Inc. D 1-9
Racal-Dana Instruments Inc.

Meters, Signal Level

AILTECH Div. Cutler-Hammer Los Angeles Operation
Belar Electronics Lab., Inc.
G.C. Electronics
Gotham Audio Corp.
Lectronic Research Laboratories, Inc. D 1-9
Merill Cable Equipment Corp.

Philips Test & Measuring Instruments, Inc.
 Pulse Dynamics Mfg. Corp. (PDMC)
 Quad-Eight Electronics
 Ramko Research Inc.
 Rycom Instruments
 Sadelco, Inc.
 Sansui Electronics Corp.
 Sencore Inc.
 Eric Small & Associates
 TEAC Corp of America
 TM Systems, Inc.
 Telecommunications Technology

Meters, Standing Wave

Bird Electronic Corp.
 CCA Electronics Corp.
 Dielectric Communications A Unit of General Signal
 Dyma Engineering, Inc.
 G.C. Electronics
 Harris Corp. PRD Electronics Div.
 Hickok Elect. Instrument
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc. D 1-9
 Micro Communications, Inc. Grenier Field
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.

Meters, Tape --See Tape Meters

Meters, VITS

Video Aids Corp. of Colorado

Meters, Video Level

Philips Test & Measuring Instruments, Inc.

Meters, Video Noise

See Adv. Page

Asaca Corp. of America..... 29

Asaca Corp. of America
 Broadcast Communications Devices, Inc. D 8,9
 Lenco Inc. Electronics Div.
 Rohde & Schwarz Sales Co.

Meters, Volt Ohm

B & K Precision Dynascan Corp.
 California Instruments
 Comprehensive Video Supply Corp. D 1-9
 Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.
 John Fluke Mfg. Co., Inc.
 G.C. Electronics
 Heath Co.
 Hickok Elect. Instrument
 Leader Instruments Corp.
 Newark Electronics D 1-9
 Racal-Dana Instruments Inc.
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Systron-Donner
 Tektronix Inc.
 United Radio Supply Inc. D9

Meters, VU

See Adv. Page

Audio Designs & Mfg. 98-99

Amber Electro Design, Ltd.
 Audio Designs & Mfg.
 Bayly Engineering Ltd.
 Electro & Optical Systems Ltd.
 G.C. Electronics
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 Lectronic Research Laboratories, Inc. D 1-9
 Listec TV Equip. Corp.

MICMIX Audio Products, Inc.
 Newark Electronics D 1-9
 Pulse Dynamics Mfg. Corp. (PDMC)
 Quad-Eight Electronics
 Ramko Research Inc.
 SPI-ITT Metrix Instruments Div.
 TEAC Corp of America
 TM Systems, Inc.
 Track Audio, Inc. D 1-9
 Ward-Beck Systems, Ltd.

Microphone Boom Reconditioning Services

Atlas Sound
 Television Products Co. Inc.

Microphone Cable Testers

See Adv. Page

Whirlwind Audio 42

Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 Lauderdale Electronic Labs D 1-9
 Lita Broadcasting Distributors D 1-9
 Shure Brothers Inc.
 Sound Genesis D 8,9
 Switchcraft Inc.
 United Radio Supply Inc. D9
 Whirlwind Audio
 Whirlwind Music

Microphone Splitters

See Adv. Page

Whirlwind Audio 42

Broadcast Communications Devices, Inc. D 8,9
 Comprehensive Video Supply Corp. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Oregon Sound & Lights D 8,9
 Sound Genesis D 8,9
 Switchcraft Inc.
 Track Audio, Inc. D 1-9
 Whirlwind Audio
 Whirlwind Music

Microphone Stands and Booms

See Adv. Page

Accurate Sound Co. 48
Altec Lansing Sound Products 205
Broadcast Component Dist. Communication Medias 200
Harris Corp. 17

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Atlas Sound
 Audio Distributor Inc. D 3, 4, 6, 7
 Audiotechniques Inc. D 1,2,3
 Autodyne D 1-9
 BSC Inc.
 Bayly Engineering Ltd.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Comprehensive Video Supply Corp. D 1-9
 Comquip, Inc.
 Ecor Div. of P.A.C.
 Everything Audio D 1-9

Fisher Burke Professional Audio D 8
 G.C. Electronics
 Gotham Audio Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Maze Corp D6
 Media Concepts, Inc. D 1-9
 Mineroff Electronics D 1,2,3,5,6
 Neutrik
 Walter Odemer Co. D 4,5,6,7,8,9
 Oregon Sound & Lights D 8,9
 Paso Sound Products Inc.
 RCA Broadcast Systems
 Sansui Electronics Corp.
 Sennheiser Electronic
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Strand Century, Inc.
 Studer Revox America
 Television Products Co. Inc.
 Track Audio, Inc. D 1-9
 Uher Corp.
 United Radio Supply Inc. D9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Weather Scan, Inc. D
 Westlake Audio
 Wilkinson Electronics, Inc.

Microphones, Boom

See Adv. Page

Accurate Sound Co. 48
Altec Lansing Sound Products 205

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Applied Video Electronics, Inc. D 1-9
 Audio-Technica U.S. Inc.
 Autodyne D 1-9
 Bayly Engineering Ltd.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Comquip, Inc.
 Denson Electronic Corp. D 1-9
 Dyma Engineering, Inc.
 Ecor Div. of P.A.C.
 Electro-Voice Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 G.C. Electronics
 Alan Gordon Enterprises Inc.
 Gotham Audio Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Martin Audio/Video D2
 Maze Corp D6
 Media Concepts, Inc. D 1-9
 Neutrik
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Paso Sound Products Inc.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 RCA Broadcast Systems
 Sansui Electronics Corp.
 Sennheiser Electronic
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sony Corp. of America VTR Div.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studer Revox America
 Studio Electronics D 3,4,7

Sennheiser Electronic
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studer Revox America
 Studio Electronics D 3,4,7
 Superex Electronics Corp.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Telex Communications, Inc.
 Temtron Electronics D 1-9
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Westlake Audio
 Wilkinson Electronics, Inc.

Microphones, Desk

See Adv. Page

Altec Lansing Sound Products 205
Audio-Technica U.S. Inc. 53
Broadcast Component Dist. Communication Medias 200
Sound Genesis 184

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Altec Lansing Sound Products
 Applied Video Electronics, Inc. D 1-9
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio-Technica U.S. Inc.
 Autodyne D 1-9
 Bayly Engineering Ltd.
 Bogen Div. Lear Siegler, Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Comprehensive Video Supply Corp. D 1-9
 Comquip, Inc.
 Dyma Engineering, Inc.
 Electro-Voice Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 GBC Closed Circuit TV Corp.
 G.C. Electronics
 Gotham Audio Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maze Corp D6
 Media Concepts, Inc. D 1-9
 Mineroff Electronics D 1,2,3,5,6
 Neutrik
 Walter Odemer Co. D 4,5,6,7,8,9
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Paso Sound Products Inc.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Professional Audio Service D 1-9
 RCA Broadcast Systems
 Sennheiser Electronic
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sony Corp. of America VTR Div.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studer Revox America
 Studio Electronics D 3,4,7

Superscope, Inc.
TEAC Corp of America
Technics by Panasonic
Tele-Measurements, Inc. D 2
Temtron Electronics D 1-9
Track Audio, Inc. D 1-9
Uher Corp.
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7
Weather Scan, Inc. D
Westlake Audio
Wilkinson Electronics, Inc.

Microphones, Floor

See Adv. Page

**Altec Lansing Sound
Products205
Sound Genesis184**

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio Distributor Inc. D 3, 4, 6, 7
Audio-Technica U.S. Inc.
Autodyne D 1-9
Bayly Engineering Ltd.
Bogen Div. Lear Siegler, Inc.
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Dyma Engineering, Inc.
Electro-Voice Inc.
Everything Audio D 1-9
Fisher Burke Professional Audio D 8
G.C. Electronics
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Image Devices Inc. D 1-9
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
Landy Associates Inc. D 1,2
Lita Broadcasting Distributors D 1-9
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Maze Corp D6
Media Concepts, Inc. D 1-9
Neutrik
Olesen D 1-9
Oregon Sound & Lights D 8,9
Panasonic Company
Paso Sound Products Inc.
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
Professional Audio Service D 1-9
RCA Broadcast Systems
Sennheiser Electronic
Shure Brothers Inc.
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Superscope, Inc.
TEAC Corp of America
Technics by Panasonic
Tele-Measurements, Inc. D 2
Track Audio, Inc. D 1-9
VIF International D 1-9
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7
Weather Scan, Inc. D
Westlake Audio
Wilkinson Electronics, Inc.

Microphones, Hand Held

See Adv. Page

**Altec Lansing Sound
Products205**

**Audio-Technica U.S.
Inc.53
Autodyne267
Broadcast Component
Dist. Communication
Medias200
Harris Corp.17
Sound Genesis184
Val-Tronics, Inc.245**

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Applied Video Electronics, Inc. D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Audio-Technica U.S. Inc.
Autodyne D 1-9
Bayly Engineering Ltd.
Bogen Div. Lear Siegler, Inc.
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Comquip, Inc.
Dyma Engineering, Inc.
Ecor Div. of P.A.C.
Electro-Voice Inc.
Everything Audio D 1-9
Fisher Burke Professional Audio D 8
G.C. Electronics
Alan Gordon Enterprises Inc.
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Image Devices Inc. D 1-9
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
Landy Associates Inc. D 1,2
Lita Broadcasting Distributors D 1-9
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Maze Corp D6
Media Concepts, Inc. D 1-9
Mineroff Electronics D 1,2,3,5,6
Neutrik
Newark Electronics D 1-9
Walter Odemer Co. D 4,5,6,7,8,9
Oregon Sound & Lights D 8,9
Panasonic Company
Paso Sound Products Inc.
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
Professional Audio Service D 1-9
Pulse Dynamics Mfg. Corp. (PDMC)
RCA Broadcast Systems
Sansui Electronics Corp.
The Ken Schaffer Group, Inc.
Sennheiser Electronic
Shure Brothers Inc.
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Superscope, Inc.
TEAC Corp of America
Technics by Panasonic
Tele-Measurements, Inc. D 2
Telex Communications, Inc.
Temtron Electronics D 1-9
Track Audio, Inc. D 1-9
Uher Corp.
United Radio Supply Inc. D9
VIF International D 1-9
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7
Weather Scan, Inc. D
Westlake Audio
Wilkinson Electronics, Inc.

Microphones, Lavalier

See Adv. Page

**Altec Lansing Sound
Products205
Audio-Technica U.S.
Inc.53
Electro-Voice Inc.78
Sound Genesis184**

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio-Technica U.S. Inc.
Autodyne D 1-9
Bayly Engineering Ltd.
Bogen Div. Lear Siegler, Inc.
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
The Camera Mart, Inc. D 1,2,3
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Comprehensive Video Supply Corp. D
1-9
Comquip, Inc.
Dyma Engineering, Inc.
Ecor Div. of P.A.C.
Electro-Voice Inc.
Everything Audio D 1-9
Fisher Burke Professional Audio D 8
G.C. Electronics
Alan Gordon Enterprises Inc.
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Image Devices Inc. D 1-9
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
Landy Associates Inc. D 1,2
Lita Broadcasting Distributors D 1-9
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Media Concepts, Inc. D 1-9
Nagra Magnetic Recorders, Inc.
Neutrik
Oregon Sound & Lights D 8,9
Paso Sound Products Inc.
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
Professional Audio Service D 1-9
RCA Broadcast Systems
The Ken Schaffer Group, Inc.
Sennheiser Electronic
Shure Brothers Inc.
Singer Products Co., Inc.
Sony Corp. of America VTR Div.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Superscope, Inc.
Tele-Measurements, Inc. D 2
Temtron Electronics D 1-9
Track Audio, Inc. D 1-9
United Radio Supply Inc. D9
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7
Weather Scan, Inc. D
Westlake Audio
Wilkinson Electronics, Inc.

**Microphones, Parabolic and
Shotgun**

See Adv. Page

Sound Genesis184

Allied Broadcast Equipment D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Autodyne D 1-9
Bayly Engineering Ltd.
Broadcast Communications Devices,
Inc. D 8,9

Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
Comprehensive Video Supply Corp. D
1-9
Comquip, Inc.
Dyma Engineering, Inc.
Electro-Voice Inc.
Everything Audio D 1-9
Fisher Burke Professional Audio D 8
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
H. M. Holzberg Associates, Inc. D
1,2,5
Image Devices Inc. D 1-9
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
Lita Broadcasting Distributors D 1-9
Mastertone Co., Inc. D 4
Neutrik
Oregon Sound & Lights D 8,9
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
Sennheiser Electronic
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9
VIF International D 1-9
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7
Westlake Audio

Microphones, Wireless

See Adv. Page

**HM Electronics, Inc.260
Sound Genesis184
Vega68**

Allied Broadcast Equipment D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Bayly Engineering Ltd.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
Cetec Broadcast Group
Comquip, Inc.
Comrex Corp.
Dyma Engineering, Inc.
Ecor Div. of P.A.C.
Electro-Voice Inc.
Alan Gordon Enterprises Inc.
Grinnan Fixture Co. D 1-9
HM Electronics, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
Ikegami Electronics (USA) Inc.
Image Devices Inc. D 1-9
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
LPB Inc.
Landy Associates Inc. D 1,2
Lita Broadcasting Distributors D 1-9
Oregon Sound & Lights D 8,9
Paso Sound Products Inc.
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
The Ken Schaffer Group, Inc.
Sennheiser Electronic
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Telex Communications, Inc.
Thomson-CSF Laboratories, Inc.
VIF International D 1-9
Val-Tronics, Inc. D2
Vega Div. of Cetec Corp.
Victor Duncan, Inc. D 4,5,6,7
Westlake Audio
Wilkinson Electronics, Inc.

**Microwave Antenna Towers,
ENG Van**

	See Adv. Page
VanLadder, Inc.	38
Dyma Engineering, Inc. ENG Mfg. Co. H. M. Holzberg Associates, Inc. D 1,2,5 Suda Seisakusho Co., Ltd. Nitsuko- Bldg. VanLadder, Inc. Wolf Coach Inc.	

Microwave Systems, ENG

	See Adv. Page
Harris Corp.	17
Moseley Associates, Inc.	23
Nurad, Inc.	113
All Mobile Video, Inc. Broadcast Communications Devices, Inc. D 8,9 Dyma Engineering, Inc. ENG Mfg. Co. Farinon Electric Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 Hughes Aircraft Co. Microwave Communications Products International Microwave Corp. Landy Associates Inc. D 1,2 Microwave Assoc. Inc. Moseley Associates, Inc. NEC America, Inc. Broadcasting Equip. Div. Nurad, Inc. Prodelin Inc. RCA Broadcast Systems Tayburn Electronics, Inc. Tele-Measurements, Inc. D 2 Temtron Electronics D 1-9 TerraCom Thomson-CSF Laboratories, Inc. Val-Tronics, Inc. D2	

Microwave Systems, STL

	See Adv. Page
Harris Corp.	17
International Microwave Corp.	216
Moseley Associates, Inc.	23
Nurad, Inc.	113
Allied Broadcast Equipment D 1-9 Broadcast Automation Associates Inc. D 1,2,5,6 Broadcast Communications Devices, Inc. D 8,9 Broadcast Consultants Corp. D 1-9 Cetec Broadcast Group Comark Industries Inc. Dyma Engineering, Inc. Farinon Electric GTE Lenkurt, Inc. Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 Hughes Aircraft Co. Microwave Communications Products International Microwave Corp. Marti Electronics Mastertone Co., Inc. D 4 Micro Communications, Inc. Grenier Field Micro Control Associates, Inc. Microwave Assoc. Inc. Moseley Associates, Inc. Nurad, Inc. Singer Products Co., Inc. Tayburn Electronics, Inc. Tele-Measurements, Inc. D 2 Temtron Electronics D 1-9 Tepco Corp. TerraCom Val-Tronics, Inc. D2 Varian/Beverly Micro-Link Products Wilkinson Electronics, Inc.	

Mixers --See also Consoles

	See Adv. Page
Altec Lansing Sound Products	205
Ampro Broadcasting Inc.	80
Audio Designs & Mfg.	98-99
Auditronics, Inc.	75
Broadcast Component Dist. Communication Medias	200
Harris Corp.	17
LPB Inc.	217
McCurdy Radio Ind. Inc.	IBC
Pacific Recorders and Engrg. Corp.	26
Quantum Audio Labs, Inc.	264
Russco Electronics Mfg. Inc.	16
Val-Tronics, Inc.	245
Wilkinson Electronics, Inc.	194
Accurate Sound Co. Allied Broadcast Equipment D 1-9 Altec Lansing Sound Products Ampro Broadcasting Inc. Audio Designs & Mfg. Auditronics, Inc. Autodyne D 1-9 Automated Processes, Inc. BSC Inc. Bayly Engineering Ltd. Bogen Div. Lear Siegler, Inc. Broadcast Automation Associates Inc. D 1,2,5,6 Broadcast Communications Devices, Inc. D 8,9 Broadcast Component Dist. Communication Medias D 1-9 Broadcast Consultants Corp. D 1-9 Broadcast Electronics, Inc. Broadcast Equipment Distributors D 1-9 CCA Electronics Corp. The Camera Mart, Inc. D 1,2,3 Central Dynamics Corp. Cetec Audio Cetec Broadcast Group Collins Television Services Computer Image Video Controllers Dytek Industries, Inc. Custom Audio Electronics Dage-MTI, Inc. Delta Electronics Inc. (N.C.) Dyma Engineering, Inc. Grass Valley Group, Inc. Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 K & L Pro Audio D, 1, 2, 5, 6 KVC Video Systems Inc. D 1,2 LPB Inc. James B. Lansing Sound, Inc. Lauderdale Electronic Labs D 1-9 Listec TV Equip. Corp. Martin Audio/Video D2 McCurdy Radio Ind. Inc. McMartin Industries, Inc. Media Concepts, Inc. D 1-9 Modular Audio Products Unit of Modular Devices, Inc. Charles Moore Nagra Magnetic Recorders, Inc. Rupert Neve, Inc. Oregon Magnetics Oregon Sound & Lights D 8,9 Pacific Recorders and Engrg. Corp. Paso Sound Products Inc. Peirce-Phelps, Inc. Video Systems Div. D 2,5 Pulse Dynamics Mfg. Corp. (PDMC) Quad-Eight Electronics Quantum Audio Labs, Inc. ROH Corporation Ramko Research Inc. Richmond Hill Laboratories Ltd. Richmond Sound Design, Ltd. Robins Broadcast & Sound Equip. Corp. Ross Video Ltd. Russco Electronics Mfg. Inc.	

Shure Brothers Inc. Sinai-Johnson D 8,9 Singer Products Co., Inc. Sono-Mag Corp. Sound Dynamics, Inc. D8, 9 Sound Genesis D 8,9 Spectra Sonics Sphere Electronics Studer Revox America Studio Electronics D 3,4,7 Superscope, Inc. Switchcraft Inc. TEAC Corp of America Tele-Measurements, Inc. D 2 Theatre Techniques Inc. Track Audio, Inc. D 1-9 Ultra Audio Pixtec United Radio Supply Inc. D9 United Recording Electronics Industries VIF International D 1-9 Val-Tronics, Inc. D2 Ward-Beck Systems, Ltd. Weather Scan, Inc. D Weinschel Engineering Co. Westlake Audio Wilkinson Electronics, Inc.
--

Mobile Communication Vans, TV

A. F. Associates, Inc. Atlantic Research Corp. CCA Electronics Corp. Comquip, Inc. Dyma Engineering, Inc. Editel Communications The Gerstenslager Co. Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 KVC Video Systems Inc. D 1,2 Marconi Communication Systems Ltd. Microwave Assoc. Inc. Nurad, Inc. Peirce-Phelps, Inc. Video Systems Div. D 2,5 Soil Tele-Measurements, Inc. D 2 Television Engineering Corp. TerraCom Wolf Coach Inc.
--

Modulators, TV

	See Adv. Page
Belar Electronics Lab., Inc.	259
Belar Electronics Lab., Inc. Blonder-Tongue Labs. Broadcast Communications Devices, Inc. D 8,9 Broadcast Video Systems, Ltd. CCA Electronics Corp. Catel Div. United Scientific Corp. Dynair Electronics, Inc. EMCEE Broadcast Products Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 Javelin Electronics KVC Video Systems Inc. D 1,2 Marconi Communication Systems Ltd. Media Concepts, Inc. D 1-9 Merill Cable Equipment Corp. Panasonic Company Peirce-Phelps, Inc. Video Systems Div. D 2,5 Philips Test & Measuring Instruments, Inc. RCA Cablevision Systems Rhode & Schwarz Sales Co. Scientific-Atlanta, Inc. Technics by Panasonic Tele-Measurements, Inc. D 2 Telemet a Geotol Co. UHF Associates Varian Associates, Inc. Electron Device Group Video Components, Inc.	

Monitor Controls, Remote

	See Adv. Page
Image Magnification, Inc.	214
Dyma Engineering, Inc. Gorman Redlich Mfg. Co. H. M. Holzberg Associates, Inc. D 1,2,5 Image Magnification, Inc. Unimedia Corp.	

Monitors, AM System

	See Adv. Page
Belar Electronics Lab., Inc.	259
Broadcast Component Dist. Communication Medias	200
Val-Tronics, Inc.	245

Allied Broadcast Equipment D 1-9 Automated Processes, Inc. Belar Electronics Lab., Inc. Broadcast Automation Associates Inc. D 1,2,5,6 Broadcast Communications Devices, Inc. D 8,9 Broadcast Component Dist. Communication Medias D 1-9 Broadcast Consultants Corp. D 1-9 Broadcast Equipment & Supply Co. D 1-9 CCA Electronics Corp. Cetec Broadcast Group Eidson Electronic Co. Gorman Redlich Mfg. Co. Grinnan Fixture Co. D 1-9 Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 K & L Pro Audio D, 1, 2, 5, 6 Lampkin Lab. Inc. Mastertone Co., Inc. D 4 Maze Corp D6 McKay Dymek Co. McMartin Industries, Inc. National Electrolab Ltd. QEI Corp. RCA Broadcast Systems ROH Corporation Singer Products Co., Inc. Sono-Mag Corp. Sound Dynamics, Inc. D8, 9 Sound Genesis D 8,9 Spectra Sonics Telemet a Geotol Co. Time & Frequency Tech., Inc. Track Audio, Inc. D 1-9 Val-Tronics, Inc. D2

Monitors, FM System

	See Adv. Page
Belar Electronics Lab., Inc.	259
Broadcast Component Dist. Communication Medias	200
Val-Tronics, Inc.	245
Allied Broadcast Equipment D 1-9 Automated Processes, Inc. Belar Electronics Lab., Inc. Broadcast Automation Associates Inc. D 1,2,5,6 Broadcast Communications Devices, Inc. D 8,9 Broadcast Component Dist. Communication Medias D 1-9 Broadcast Consultants Corp. D 1-9 Broadcast Equipment & Supply Co. D 1-9 CCA Electronics Corp. Cetec Broadcast Group Eidson Electronic Co. Fix Tune Solid State Electronics, Inc. Grinnan Fixture Co. D 1-9 Harris Corp. Broadcast Products Div. H. M. Holzberg Associates, Inc. D 1,2,5 K & L Pro Audio D, 1, 2, 5, 6	

Lampkin Lab. Inc.
Lita Broadcasting Distributors D 1-9
Mastertone Co., Inc. D 4
Maze Corp D6
McMartin Industries, Inc.
North American Radio Corp.
QEI Corp.
RCA Broadcast Systems
ROH Corporation
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Monitors, FM System SCA

See Adv. Page

Belar Electronics Lab., Inc.259
Val-Tronics, Inc......245

Allied Broadcast Equipment D 1-9
Belar Electronics Lab., Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Fix Tune Solid State Electronics, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Lita Broadcasting Distributors D 1-9
Mastertone Co., Inc. D 4
Maze Corp D6
McMartin Industries, Inc.
RCA Broadcast Systems
Singer Products Co., Inc.
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Monitors, Antenna Base Current

See Adv. Page

Delta Electronics Inc. (Va.)191
Potomac Instruments, Inc......206

CCA Electronics Corp.
Delta Electronics Inc. (Va.)
Gorman Redlich Mfg. Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Potomac Instruments, Inc.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2

Monitors, Antenna Sampling

See Adv. Page

Delta Electronics Inc. (Va.)191
Potomac Instruments, Inc......206
Val-Tronics, Inc......245

CCA Electronics Corp.
Delta Electronics Inc. (Va.)
Fisher Burke Professional Audio D 8
Gorman Redlich Mfg. Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Potomac Instruments, Inc.
Val-Tronics, Inc. D2
Wide Band Engineering Co., Inc.

Monitors, Directional Antenna

See Adv. Page

Potomac Instruments, Inc.207

Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Comark Industries Inc.
Delta Electronics Inc. (Va.)
Fisher Burke Professional Audio D 8
Gorman Redlich Mfg. Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Micro Communications, Inc. Grenier Field
Potomac Instruments, Inc.
Val-Tronics, Inc. D2

Monitors, Frequency

See Adv. Page

Belar Electronics Lab., Inc.259
Elcom Engineering Co.265

AILTECH Div. Cutler-Hammer Los Angeles Operation
Allied Broadcast Equipment D 1-9
Autodyne D 1-9
Belar Electronics Lab., Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Consultants Corp. D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Eidson Electronic Co.
Elcom Engineering Co.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
Lampkin Lab. Inc.
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Philips Test & Measuring Instruments, Inc.
RCA Broadcast Systems
Singer Products Co., Inc.
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Wilkinson Electronics, Inc.

Monitors, Modulation

See Adv. Page

Belar Electronics Lab., Inc.259
Val-Tronics, Inc......245
Wilkinson Electronics, Inc......194

Allied Broadcast Equipment D 1-9
Autodyne D 1-9
Belar Electronics Lab., Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Fisher Burke Professional Audio D 8
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Lampkin Lab. Inc.
Marconi Instruments Div. of Marconi Electronics Inc.
Mastertone Co., Inc. D 4
Maze Corp D6
McMartin Industries, Inc.
QEI Corp.
RCA Broadcast Systems
Singer Products Co., Inc.
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Monitors, Phase

See Adv. Page

Belar Electronics Lab., Inc.259
Potomac Instruments, Inc......207

Autodyne D 1-9
Belar Electronics Lab., Inc.
CCA Electronics Corp.
Cetec Broadcast Group
Delta Electronics Inc. (Va.)
Dranetz Engineering Labs., Inc.
Fisher Burke Professional Audio D 8
Gorman Redlich Mfg. Co.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Mastertone Co., Inc. D 4
Potomac Instruments, Inc.
Val-Tronics, Inc. D2

Monitors, Power

See Adv. Page

Belar Electronics Lab., Inc.259
Dranetz Engineering Labs., Inc.209
Moseley Associates, Inc.23

B & I Electronics, Inc.
Belar Electronics Lab., Inc.
Bird Electronic Corp.
CCA Electronics Corp.
Cetec Broadcast Group
Delta Electronics Inc. (Va.)
Dranetz Engineering Labs., Inc.
Fisher Burke Professional Audio D 8
Harris Corp. Broadcast Products Div.
Harris Corp. PRD Electronics Div.
Holland Electronics
Maze Corp D6
Moseley Associates, Inc.
Wide Band Engineering Co., Inc.

Monitors, Program Audio

See Adv. Page

Altec Lansing Sound Products205
Belar Electronics Lab., Inc.259
ROH Corporation211
Telemet.....189

Altec Lansing Sound Products
Amber Electro Design, Ltd.
Audio Designs & Mfg.
Audio Distributor Inc. D 3, 4, 6, 7
Autodyne D 1-9
Autogram Corp. D 7
Automated Processes, Inc.
B & I Electronics, Inc.
Belar Electronics Lab., Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment Distributors D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Collins Television Services
Comrex Corp.
Crown International, Inc.
Di-Tech Inc.
Dyma Engineering, Inc.
Electro-Voice Inc.
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
James B. Lansing Sound, Inc.
Marconi Communication Systems Ltd.
Marti Electronics
Maze Corp D6
Modular Audio Products Unit of Modular Devices, Inc.
Rupert Neve, Inc.
Orange County Electronics Int'l, Inc.
ROH Corporation

Robins Broadcast & Sound Equip. Corp.
Sennheiser Electronic
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Telemet a Geotel Co.
Track Audio, Inc. D 1-9
Ultra Audio Pixtec
Val-Tronics, Inc. D2
The Widget Works, Inc.

Monitors, RF Level

See Adv. Page

Belar Electronics Lab., Inc.259
Bird Electronic Corp......265

B & I Electronics, Inc.
Belar Electronics Lab., Inc.
Bird Electronic Corp.
CCA Electronics Corp.
Electro Impulse, Inc.
Fisher Burke Professional Audio D 8
Harris Corp. Broadcast Products Div.
North American Radio Corp.
Sound Dynamics, Inc. D8, 9
Tektronix Inc.
Track Audio, Inc. D 1-9
Wide Band Engineering Co., Inc.
The Widget Works, Inc.

Monitors, Set-up and Matching Equipment

B & I Electronics, Inc.
Power-Optics Inc.

Monitors, Stereo

See Adv. Page

Belar Electronics Lab., Inc.259
Broadcast Component Dist. Communication Medias.....200
Val-Tronics, Inc......245

Allied Broadcast Equipment D 1-9
Belar Electronics Lab., Inc.
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
K & L Pro Audio D, 1, 2, 5, 6
Mastertone Co., Inc. D 4
Maze Corp D6
McMartin Industries, Inc.
Modular Audio Products Unit of Modular Devices, Inc.
QEI Corp.
Sono-Mag Corp.
Sound Genesis D 8,9
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Monitors, TV System

See Adv. Page

Belar Electronics Lab., Inc.259
Harris Corp.17

Belar Electronics Lab., Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Video Systems, Ltd.
CCA Electronics Corp.
The Camera Mart, Inc. D 1,2,3
Cohu, Inc. Electronics Div.
Dyma Engineering, Inc.
Electrohome Ltd.
GBC Closed Circuit TV Corp.
Harris Corp. Broadcast Products Div.

H. M. Holzberg Associates, Inc. D 1,2,5
 US JVC Corp. Professional Video Div.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Marconi Communication Systems Ltd.
 Marconi Instruments Div. of Marconi Electronics Inc.
 Media Concepts, Inc. D 1-9
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 QSI Systems, Inc. D 1
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Track Audio, Inc. D 1-9
 Ultra Audio Pixtec
 World Video Inc.

Monitors, Video B&W

See Adv. Page

Electrohome Ltd. 28
Temtron Electronics 250

Asaca Corp. of America
 Ball Bros. Research Corp. Electronic Display Div.
 Beta Technology, Inc.
 Broadcast Communications Devices, Inc. D 8,9
 CCA Electronics Corp.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Cohu, Inc. Electronics Div.
 Comquip, Inc.
 Conrac Div. Conrac Corp.
 Dyma Engineering, Inc.
 Editel Communications
 Electro & Optical Systems Ltd.
 Electrohome Ltd.
 Fernseh Group Robert Bosch Corp.
 GBC Closed Circuit TV Corp.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Ikegami Electronics (USA) Inc.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Kallman Associates, Inc.
 Landy Associates Inc. D 1,2
 Lenco Inc. Electronics Div.
 Media Concepts, Inc. D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 QSI Systems, Inc. D 1
 RCA Broadcast Systems
 RCA Electro Optics and Devices
 Rohde & Schwarz Sales Co.
 SC Electronics, Inc.
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Telescript, Inc.
 Temtron Electronics D 1-9
 Unimedia Corp.
 Victor Duncan, Inc. D 4,5,6,7
 Video Aids Corp. of Colorado
 Videodetics Corp.
 Weather Scan, Inc. D

Monitors, Video Color

See Adv. Page

Electrohome Ltd. 28
Image Magnification, Inc. 214
Videotek, Inc. 190

Amtron Corp.
 Asaca Corp. of America
 Ball Bros. Research Corp. Electronic Display Div.
 Beta Technology, Inc.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 CCA Electronics Corp.
 C.R.V. Systems, Inc.
 The Camera Mart, Inc. D 1,2,3
 Comquip, Inc.

Conrac Div. Conrac Corp.
 Dyma Engineering, Inc.
 Editel Communications
 Electro & Optical Systems Ltd.
 Electrohome Ltd.
 Fernseh Group Robert Bosch Corp.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Ikegami Electronics (USA) Inc.
 Image Magnification, Inc.
 US JVC Corp. Professional Video Div.
 KVC Video Systems Inc. D 1,2
 Kallman Associates, Inc.
 Landy Associates Inc. D 1,2
 Media Concepts, Inc. D 1-9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Pleasantville Labs
 QSI Systems, Inc. D 1
 RCA Broadcast Systems
 Rohde & Schwarz Sales Co.
 SC Electronics, Inc.
 Sharp Electronics Corp.
 Sony Corp. of America VTR Div.
 Technics by Panasonic
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Unimedia Corp.
 Victor Duncan, Inc. D 4,5,6,7
 Video Aids Corp. of Colorado
 Videodetics Corp.
 Videotek, Inc.
 Weather Scan, Inc. D
 World Video Inc.

Monitors, Video Pulse Cross

Amtron Corp.
 Broadcast Communications Devices, Inc. D 8,9
 CCA Electronics Corp.
 The Camera Mart, Inc. D 1,2,3
 Conrac Div. Conrac Corp.
 Dyma Engineering, Inc.
 Electro & Optical Systems Ltd.
 Electrohome Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 KVC Video Systems Inc. D 1,2
 Lenco Inc. Electronics Div.
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 QSI Systems, Inc. D 1
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Unimedia Corp.
 Video Aids Corp. of Colorado
 World Video Inc.

Monitors, Waveform

See Adv. Page

Harris Corp. 17

Autodyne D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Video Systems, Ltd.
 CCA Electronics Corp.
 Electro & Optical Systems Ltd.
 Harris Corp. Broadcast Products Div.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Ikegami Electronics (USA) Inc.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Lenco Inc. Electronics Div.
 Marconi Communication Systems Ltd.
 Rohde & Schwarz Sales Co.
 Sharp Electronics Corp.
 Tektronix Inc.
 Tele-Measurements, Inc. D 2
 Ultra Audio Pixtec
 Weather Scan, Inc. D

Multicarrier Systems, FM

See Adv. Page

Moseley Associates, Inc. 23

Coastcom
 GTE Lenkurt, Inc.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Micro TV, Inc.
 Moseley Associates, Inc.
 Tele-Measurements, Inc. D 2

Multiplexers

See Adv. Page

Buhl Optical Co. 248
Harris Corp. 17
Moseley Associates, Inc. 23

Alford Mfg. Co.
 Bayly Engineering Ltd.
 Buhl Optical Co.
 Cetec Broadcast Group
 Coastcom
 Cohu, Inc. Electronics Div.
 Comark Industries Inc.
 Comquip, Inc.
 Dielectric Communications A Unit of General Signal
 GTE Lenkurt, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 KVC Video Systems Inc. D 1,2
 Kalart Victor Corp.
 Laird Telemedia Inc.
 Micro Communications, Inc. Grenier Field
 Micro TV, Inc.
 Moseley Associates, Inc.
 Motorola SPI
 Mu-Del Electronics, Inc.
 RCA Broadcast Systems
 Jos. Schneider GmbH & Co. P.O. Box 947
 Shively Laboratories, Inc.
 TT Electronics, Inc.
 Tektronix Inc.
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Video Components, Inc.
 Weather Scan, Inc. D
 The Zei-Mark Corp.

Narrow Band FM Equipment

See Adv. Page

Moseley Associates, Inc. 23

CSI Electronics, Inc.
 Coastcom
 Dielectric Communications A Unit of General Signal
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marti Electronics
 McMartin Industries, Inc.
 Moseley Associates, Inc.
 Panasonic Company
 Singer Products Co., Inc.
 Technics by Panasonic

Network Joiners

Broadcast Consultants Corp. D 1-9
 Cetec Broadcast Group
 ESE
 H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.

Networks, Matching Audio

Altec Lansing Sound Products
 Automated Processes, Inc.
 Fisher Burke Professional Audio D 8
 Orange County Electronics Int'l., Inc.
 Quad-Eight Electronics
 Robins Broadcast & Sound Equip. Corp.
 TT Electronics, Inc.

Tech Laboratories Inc.

Networks, Matching RF

See Adv. Page

C. S. P. Inc. 244

Alford Mfg. Co.
 CCA Electronics Corp.
 CSI Electronics, Inc.
 C. S. P. Inc.
 Cetec Broadcast Group
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of General Signal
 ESC Electronics Corp.
 Electro Impulse, Inc.
 Fisher Burke Professional Audio D 8
 Micro Communications, Inc. Grenier Field
 Multitronics, Inc.
 North American Radio Corp.
 North Hills Electronics, Inc.
 TT Electronics, Inc.
 Wide Band Engineering Co., Inc.

Networks, Mixing

Dielectric Communications A Unit of General Signal
 Orange County Electronics Int'l., Inc.
 Quad-Eight Electronics
 ROH Corporation
 Robins Broadcast & Sound Equip. Corp.
 Tech Laboratories Inc.

Networks, Phasing --See also Phasing Units

See Adv. Page

C. S. P. Inc. 244
Geleco Electronics Ltd. 254

AEL, Inc.
 Alford Mfg. Co.
 CCA Electronics Corp.
 CSI Electronics, Inc.
 C. S. P. Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of General Signal
 Fisher Burke Professional Audio D 8
 Geleco Electronics Ltd.
 Kahn Communications, Inc.
 Multitronics, Inc.
 North American Radio Corp.
 TT Electronics, Inc.

Noise Reduction Systems

See Adv. Page

Broadcast Component Dist. Communication Medias 200
Consolidated Video Systems 79
Harris Corp. 17
Inovonics 253
Microtime, Inc. 83
Thomson-CSF Laboratories, Inc. 46-47

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Audio Designs & Mfg.
 Autodyne D 1-9
 BSC Inc.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 CCA Electronics Corp.
 Consolidated Video Systems dbx, Inc.
 Dolby Laboratories, Inc.
 Dyma Engineering, Inc.
 Yves Faroudja, Inc./Telegen
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.

Heath Co.
 Inovonics
 K & L Pro Audio D, 1, 2, 5, 6
 Kahn Communications, Inc.
 Landy Associates Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Microtime, Inc.
 NEC America, Inc. Broadcasting Equip.
 Div.
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9
 Sound Genesis D 8,9
 Telemation, A Div. of Bell & Howell
 Thomson-CSF Laboratories, Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Westlake Audio

Oscillator Transformers

Nortronics Co., Inc.
 TT Electronics, Inc.
 Weinschel Engineering Co.

Oscillators, AM

See Adv. Page

Opamp Labs, Inc.....264

John Fluke Mfg. Co., Inc.
 Frequency Devices Inc.
 Heath Co.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 International Microwave Corp.
 Lampkin Lab. Inc.
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Microwave Assoc. Inc.
 Opamp Labs, Inc.
 Philips Test & Measuring Instruments,
 Inc.
 Rohde & Schwarz Sales Co.
 Singer Products Co., Inc.
 Val-Tronics, Inc. D2

Oscillators, FM

John Fluke Mfg. Co., Inc.
 Frequency Devices Inc.
 Heath Co.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Lectronic Research Laboratories, Inc.
 D 1-9
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Microwave Assoc. Inc.
 Rohde & Schwarz Sales Co.

Oscillators, Tone

See Adv. Page

Frequency Devices Inc.....246

Allied Broadcast Equipment D 1-9
 Broadcast Communications Devices,
 Inc. D 8,9
 Channelmatic, Inc.
 Dyma Engineering, Inc.
 Frequency Devices Inc.
 Gorman Redlich Mfg. Co.
 Hewlett-Packard Co.
 IGM Div. of Northwestern Tech.
 Microwave Assoc. Inc.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Monroe Electronics, Inc.
 Rupert Neve, Inc.
 Opamp Labs, Inc.
 Pulse Dynamics Mfg. Corp. (PDMC)
 Quad-Eight Electronics
 Rivers Associates, Inc.
 Robins Broadcast & Sound Equip.
 Corp.
 Spectra Sonics
 Sphere Electronics
 TM Systems, Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Ward-Beck Systems, Ltd.

Oscillators, TV

ATV Research
 Asaca Corp. of America
 Heath Co.
 Landy Associates Inc. D 1,2
 Lectrotech Inc.
 Leitch Video Ltd.
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Microwave Assoc. Inc.
 Rohde & Schwarz Sales Co.
 Tektronix Inc.

Oscilloscope Cameras

Comquip, Inc.
 Harris Corp. Broadcast Products Div.
 Lenzar Optics Corp.
 Philips Test & Measuring Instruments,
 Inc.
 Tektronix Inc.

Oscilloscope Vector Displays

Alford Mfg. Co.
 B & K Precision Dynascan Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 Comprehensive Video Supply Corp. D
 1-9
 Electro & Optical Systems Ltd.
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Landy Associates Inc. D 1,2
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Lectrotech Inc.
 Lenco Inc. Electronics Div.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Tektronix Inc.
 Ultra Audio Pixtec

Oscilloscopes, Dual Trace

B & K Precision Dynascan Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 Comquip, Inc.
 Gould Inc. Instruments Div.
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Hickok Elect. Instrument
 Hitachi Denshi America, Ltd.
 Landy Associates Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Lectrotech Inc.
 Philips Test & Measuring Instruments,
 Inc.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Tektronix Inc.

Oscilloscopes, Rack Type

Broadcast Communications Devices,
 Inc. D 8,9
 California Instruments
 Gould Inc. Instruments Div.
 Harris Corp. Broadcast Products Div.
 Hickok Elect. Instrument
 Landy Associates Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Lenco Inc. Electronics Div.
 Philips Test & Measuring Instruments,
 Inc.
 Sinai-Johnson D 8,9
 Tektronix Inc.

Oscilloscopes, Triggered Sweep

B & K Precision Dynascan Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 Gould Inc. Instruments Div.
 Harris Corp. Broadcast Products Div.
 Heath Co.

Hickok Elect. Instrument
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Lectrotech Inc.
 Newark Electronics D 1-9
 Philips Test & Measuring Instruments,
 Inc.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Singer Products Co., Inc.
 Tektronix Inc.
 United Radio Supply Inc. D9

Oscilloscopes, Wideband

Broadcast Communications Devices,
 Inc. D 8,9
 Dyma Engineering, Inc.
 Gould Inc. Instruments Div.
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Hickok Elect. Instrument
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Lectrotech Inc.
 Philips Test & Measuring Instruments,
 Inc.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Sinai-Johnson D 8,9
 Tektronix Inc.

Oscilloscopes with Plug-ins

Comquip, Inc.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Newark Electronics D 1-9
 SPI-ITT Metrix Instruments Div.
 Tektronix Inc.

**Parts and Components,
 Electronic Equipment**

See Adv. Page

Geleco Electronics Ltd.....254

Audodyne D 1-9
 Bayly Engineering Ltd.
 Broadcast Electronics, Inc.
 Corning Glass Works
 Geleco Electronics Ltd.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Lita Broadcasting Distributors D 1-9
 Microtran Co., Inc.
 Newark Electronics D 1-9
 Panasonic Company
 Sinai-Johnson D 8,9
 Technics by Panasonic
 Varian Associates, Inc. Electron Device
 Group
 Varian/Beverly Micro-Link Products
 Vector Electronic Co., Inc.

Patch Panels

See Adv. Page

Audio Designs & Mfg. 98-99
Dynair Electronics, Inc.249
Harris Corp.17
Pro-Audio Specialties
Co.114
Telectric Co.112
Trompeter Electronics218

Allied Broadcast Equipment D 1-9
 Audio Accessories Inc.
 Audio Designs & Mfg.
 Auditronics, Inc.
 Bayly Engineering Ltd.
 Berkeley-Colortran Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Comark Industries Inc.

Dielectric Communications A Unit of
 General Signal
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Dynatech Data Systems
 Glentronix Ltd. D 1-9
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 LPB Inc.
 Lita Broadcasting Distributors D 1-9
 Lumitrol, Ltd. D-Canada
 Micro Communications, Inc. Grenier
 Field
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Phelps Dodge Communications Co.
 Potomac Instruments, Inc.
 Pro-Audio Specialties Co.
 Prodelin Inc.
 Quad-Eight Electronics
 Rex Rheostat & Co., Inc.
 Shively Laboratories, Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Strand Century, Inc.
 Switchcraft Inc.
 TEAC Corp of America
 Telectric Co.
 Theatre Techniques Inc.
 Track Audio, Inc. D 1-9
 Trompeter Electronics
 Union Connector Co., Inc.
 Val-Tronics, Inc. D2
 Vector Electronic Co., Inc.

**Phase Converters, Single to
 Three Phase**

See Adv. Page

Harris Corp.17

California Instruments
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 Kay Industries, Inc.
 Val-Tronics, Inc. D2

Phase Enhancers, Stereo

Broadcast Automation Associates Inc.
 D 1,2,5,6
 EDCO Products, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Rapid-Q, Edco Products, Inc.

**Phasing Units --See also
 Networks, Phasing**

See Adv. Page

C. S. P. Inc.244
Geleco Electronics Ltd.....254

Alford Mfg. Co.
 CSI Electronics, Inc.
 C. S. P. Inc.
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Dielectric Communications A Unit of
 General Signal
 Eventide Clock Works Inc.
 Fisher Burke Professional Audio D 8
 Geleco Electronics Ltd.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Kahn Communications, Inc.
 Multronics, Inc.
 North American Radio Corp.
 Pacific Recorders and Engrg. Corp.
 TT Electronics, Inc.
 Track Audio, Inc. D 1-9
 Wilkinson Electronics, Inc.

**Plans, Broadcast Equipment
 Construction**

Don Britton Enterprises
 Broadcast Consultants Corp. D 1-9
 C. S. P. Inc.
 Harris Corp. Broadcast Products Div.

H. M. Holzberg Associates, Inc. D
1,2,5
Charles Moore
Suda Seisakusho Co., Ltd. Nitsuko-
Bldg.
Tele-Measurements, Inc. D 2
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Pointers, Video Screen

Central Dynamics Corp.
Industrial Sciences
Shintron Co. Inc.

Power Supplies, AC

See Adv. Page

Opamp Labs, Inc.264

AEL, Inc.
Altec Lansing Sound Products
California Instruments
Cetec Broadcast Group
Communication Modifications, Inc.
Delta Electronics Inc. (N.C.)
Engineering Associates
The Finney Co.
John Fluke Mfg. Co., Inc.
G.C. Electronics
Heath Co.
KVC Video Systems Inc. D 1,2
Kay Industries, Inc.
Lectronic Research Laboratories, Inc.
D 1-9
Merill Cable Equipment Corp.
Nagra Magnetic Recorders, Inc.
Opamp Labs, Inc.
Quad-Eight Electronics
Robins Broadcast & Sound Equip.
Corp.
Sencore Inc.
Singer Products Co., Inc.
Tektronix Inc.
Tele-Measurements, Inc. D 2
Versa Count Engineering
Wilmore Electronics Co., Inc.

Power Supplies, Precision

See Adv. Page

Opamp Labs, Inc.264

Altec Lansing Sound Products
B & K Precision Dynascan Corp.
Boston Sound & Power Systems
California Instruments
Engineering Associates
Frequency Devices Inc.
G.C. Electronics
Harris Corp. PRD Electronics Div.
Heath Co.
Lectronic Research Laboratories, Inc.
D 1-9
Lectrotech Inc.
Modular Audio Products Unit of
Modular Devices, Inc.
North Hills Electronics, Inc.
Opamp Labs, Inc.
Robins Broadcast & Sound Equip.
Corp.
Sinai-Johnson D 8,9
Spectra Sonics
Tektronix Inc.
Tele-Measurements, Inc. D 2
Ward-Beck Systems, Ltd.

Power Supplies, Standby

Kay Industries, Inc.
Lectronic Research Laboratories, Inc.
D 1-9
Robins Broadcast & Sound Equip.
Corp.
Tech Laboratories Inc.
Tele-Measurements, Inc. D 2
Versa Count Engineering
Wilmore Electronics Co., Inc.

Preamplifiers, Audio

See Adv. Page

Altec Lansing Sound Products205

**Logitek Electronic
Systems.....188**
RTS Systems256
**Russco Electronics
Mfg. Inc.16**
**Telex Communications,
Inc.8,100**
Val-Tronics, Inc.245

A & E by Osawa
Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
American Data Corp. A North
American Philips Co.
Audio Designs & Mfg.
Autodyne D 1-9
Autogram Corp. D 7
Automated Processes, Inc.
BGW Systems Inc.
Bayly Engineering Ltd.
Bell Audio Systems, Inc.
Blonder-Tongue Labs.
Bogen Div. Lear Siegler, Inc.
Boston Sound & Power Systems
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
Broadcast Equipment & Supply Co. D
1-9
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Collins Television Services
Comquip, Inc.
Crown International, Inc.
Delta Electronics Inc. (N.C.)
Dyma Engineering, Inc.
Dynair Electronics, Inc.
Elcom Engineering Co.
Electro Sound, Inc.
G.C. Electronics
GLI Div. VSC
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
Holland Electronics
H. M. Holzberg Associates, Inc. D
1,2,5
International Communications &
Control Corp.
International Nuclear Corp.
K & L Pro Audio D, 1, 2, 5, 6
Kaitronics Corp.
LPB Inc.
James B. Lansing Sound, Inc.
Lita Broadcasting Distributors D 1-9
Logitek Electronic Systems
Mastertone Co., Inc. D 4
Maze Corp D6
McCurdy Radio Ind. Inc.
McMartin Industries, Inc.
Micro-Trak Corp.
Modular Audio Products Unit of
Modular Devices, Inc.
Charles Moore
Motorola SPI
Nagra Magnetic Recorders, Inc.
Rupert Neve, Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Panasonic Company
Paso Sound Products Inc.
Pulse Dynamics Mfg. Corp. (PDMC)
QRK Electronic Products
Quad-Eight Electronics
RCA Broadcast Systems
ROH Corporation
RTS Systems
Ram Audio Systems, Inc.
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip.
Corp.
Russco Electronics Mfg. Inc.
Sansui Electronics Corp.
Shure Brothers Inc.
Sinai-Johnson D 8,9
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Spectra Sonics

Sphere Electronics
Stanton Magnetics Inc.
Studer Revox America
Studio Electronics D 3,4,7
Superex Electronics Corp.
Superscope, Inc.
TEAC Corp of America
Tape-Athon Corp.
Technics by Panasonic
Tele-Measurements, Inc. D 2
Telex Communications, Inc.
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
United Recording Electronics
Industries
VIF International D 1-9
Val-Tronics, Inc. D2
Westlake Audio
Wilkinson Electronics, Inc.

Preamplifiers, Limiter- Compressor

Allied Broadcast Equipment D 1-9
Automated Processes, Inc.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment Distributors D
1-9
Cara Pacific Sales Co. D 8,9
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
International Communications &
Control Corp.
K & L Pro Audio D, 1, 2, 5, 6
Modular Audio Products Unit of
Modular Devices, Inc.
Orange County Electronics Int'l., Inc.
Quad-Eight Electronics
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip.
Corp.
Singer Products Co., Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9
Ultra Audio Pixtec
Val-Tronics, Inc. D2

Preamplifiers, Microphone

See Adv. Page

Audio Designs & Mfg. 98-99
**Logitek Electronic
Systems.....188**
**Russco Electronics
Mfg. Inc.16**

Allied Broadcast Equipment D 1-9
Audio Designs & Mfg.
Autodyne D 1-9
Autogram Corp. D 7
Automated Processes, Inc.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment Distributors D
1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Collins Television Services
Dyma Engineering, Inc.
Edcor Div. of P.A.C.
Grinnan Fixture Co. D 1-9
Hallikainen & Friends, Inc.
Harris Corp. Broadcast Products Div.
Holland Electronics
H. M. Holzberg Associates, Inc. D
1,2,5
International Communications &
Control Corp.
K & L Pro Audio D, 1, 2, 5, 6
Lauderdale Electronic Labs D 1-9
Lita Broadcasting Distributors D 1-9
Logitek Electronic Systems
Media Concepts, Inc. D 1-9

Modular Audio Products Unit of
Modular Devices, Inc.
Charles Moore
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
QRK Electronic Products
Quad-Eight Electronics
ROH Corporation
RTS Systems
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip.
Corp.
Russco Electronics Mfg. Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
TEAC Corp of America
Tele-Measurements, Inc. D 2
Track Audio, Inc. D 1-9
United Recording Electronics
Industries
Val-Tronics, Inc. D2

Preamplifiers, Stereo

See Adv. Page

Audio Interface Inc.266

Logitek Electronic Systems.....188

Russco Electronics Mfg. Inc.16

A & E by Osawa
Allied Broadcast Equipment D 1-9
Audio Interface Inc.
Autodyne D 1-9
Automated Processes, Inc.
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment Distributors D
1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Dyma Engineering, Inc.
GLI Div. VSC
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
International Communications &
Control Corp.
K & L Pro Audio D, 1, 2, 5, 6
Lauderdale Electronic Labs D 1-9
Lita Broadcasting Distributors D 1-9
Logitek Electronic Systems
Modular Audio Products Unit of
Modular Devices, Inc.
Charles Moore
Newark Electronics D 1-9
Orange County Electronics Int'l., Inc.
Panasonic Company
QRK Electronic Products
Ram Audio Systems, Inc.
Ramko Research Inc.
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip.
Corp.
Russco Electronics Mfg. Inc.
Sansui Electronics Corp.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
TEAC Corp of America
Technics by Panasonic
Tele-Measurements, Inc. D 2
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Preamplifiers, Turntable

See Adv. Page

Audio Interface Inc.266

Broadcast Component Dist. Communication Medias200

Logitek Electronic Systems.....188

Ramko Research Inc. ..186-187

Russco Electronics Mfg. Inc.16

Wilkinson Electronics, Inc.194

A & E by Osawa
Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Audio Distributor Inc. D 3, 4, 6, 7
Audio Interface Inc.
Autodyne D 1-9
Automated Processes, Inc.
BGW Systems Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Dyma Engineering, Inc.
Elcom Engineering Co.
GLI Div. VSC
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
International Communications & Control Corp.
K & L Pro Audio D, 1, 2, 5, 6
LPB Inc.
Lita Broadcasting Distributors D 1-9
Logitek Electronic Systems
Mastertone Co., Inc. D 4
Maze Corp D6
McCurdy Radio Ind. Inc.
McMartin Industries, Inc.
Micro-Trak Corp.
Modular Audio Products Unit of Modular Devices, Inc.
Charles Moore
Rupert Neve, Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Oregon Sound & Lights D 8,9
Pinzone Communications Products Inc.
Professional Audio Service D 1-9
Pulse Dynamics Mfg. Corp. (PDMC)
QRK Electronic Products
Quad-Eight Electronics
ROH Corporation
Ram Audio Systems, Inc.
Ramko Research Inc.
Robins Broadcast & Sound Equip. Corp.
Russco Electronics Mfg. Inc.
Sansui Electronics Corp.
Shure Brothers Inc.
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Stanton Magnetics Inc.
Studio Electronics D 3,4,7
Tele-Measurements, Inc. D 2
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
United Recording Electronics Industries
Val-Tronics, Inc. D2
Westlake Audio
Wilkinson Electronics, Inc.

Preamplifiers, Video

Blonder-Tongue Labs.
Collins Television Services
H. M. Holzberg Associates, Inc. D 1,2,5
International Nuclear Corp.
Kaitronics Corp.
Lenco Inc. Electronics Div.
Microwave Assoc. Inc.
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Radiation Devices Co., Inc.
Tele-Measurements, Inc. D 2

Pressurization Equipment, Transmission Line

Allied Broadcast Equipment D 1-9
Andrew Corp.

Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cablewave Systems Inc.
Cetec Broadcast Group
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
General Cable Corp.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Micro Communications, Inc. Grenier Field
Prodelin Inc.
Wilkinson Electronics, Inc.

Probes, Oscilloscope

B & K Precision Dynascan Corp.
Broadcast Communications Devices, Inc. D 8,9
Heath Co.
Hickok Elect. Instrument
Lauderdale Electronic Labs D 1-9
Leader Instruments Corp.
Lectrotech Inc.
Philips Test & Measuring Instruments, Inc.
SPI-ITT Metrix Instruments Div.
Sinai-Johnson D 8,9
Tektronix Inc.

Processors, Bleach Regeneration

CPAC, Inc.

Processors, Electronic Still

ADDA Corp.

Processors, Film Color

Comquip, Inc.
Eastman Kodak Co.
Houston Fearless 76
Houston Photo Products, Inc.
Jamieson Film Co.

Processors, Pollution Control

CPAC, Inc.

Processors, Silver Recovery Unit

CPAC, Inc.
Eastman Kodak Co.
Houston Fearless 76
Houston Photo Products, Inc.

Processors, VTR

Convergence Corp.
Dynamics Div. Whitaker Corp.
Yves Faroudja, Inc./Telegen
Leitch Video Ltd.
Lenco Inc. Electronics Div.
Temtron Electronics D 1-9
3M Co. Mincom Div.

Production Systems, AM or FM Remote or Studio

See Adv. Page

Moseley Associates, Inc.23

Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Autodyne D 1-9
Automated Processes, Inc.
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Dyma Engineering, Inc.
Imero Fiorentino Associates, Inc.
Fisher Burke Professional Audio D 8
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Image Devices Inc. D 1-9
LPB Inc.
MICMIX Audio Products, Inc.

Mastertone Co., Inc. D 4
Maze Corp D6
Micro-Trak Corp.
Moseley Associates, Inc.
Orange County Electronics Int'l., Inc.
Robins Broadcast & Sound Equip. Corp.
Singer Products Co., Inc.
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
Val-Tronics, Inc. D2

Programmed Music

Broadcast Consultants Corp. D 1-9
The CnB Studios
CaVox Stereo Productions
Cetec Broadcast Group
Tape-Athon Corp.
VIF International D 1-9
Thomas Valentino Inc.

Programmer/Comparators

The BTX Corp.
ESE
Tape-Athon Corp.

Projectors, Patchboard/Thumbwheel

ESE
Harris Corp. Broadcast Products Div.
IGM Div. of Northwestern Tech.

Projector Lamps

See Adv. Page

Sitler's Supplies, Inc.254

Barbizon Electric
GTEsylvania Inc. Lighting Products Group
Image Devices Inc. D 1-9
Oregon Sound & Lights D 8,9
Sitler's Supplies, Inc.
Strand Century, Inc.
Varian Associates, Inc. Electron Device Group

Projectors, Film

See Adv. Page

**Harris Corp.17
Image Magnification, Inc.214
L-W International196**

Bell & Howell Audio Visual Div.
The Camera Mart, Inc. D 1,2,3
Canon USA, Inc. Optics Div.
Comquip, Inc.
Eastman Kodak Co.
GBC Closed Circuit TV Corp.
Harris Corp. Broadcast Products Div.
Image Devices Inc. D 1-9
Image Magnification, Inc.
KVC Video Systems Inc. D 1,2
Kalart Victor Corp.
L-W International
Laird Telemedia Inc.
Landy Associates Inc. D 1,2
Magna-Tech Electronic Co., Inc.
RCA Broadcast Systems
Studio Electronics D 3,4,7
Super8 Sound, Inc.
Video Components, Inc.
Weather Scan, Inc. D
The Zei-Mark Corp.

Projectors, Film Cassette Loading

Comquip, Inc.
RCA Broadcast Systems

Projectors, Film Rear

See Adv. Page

Image Magnification, Inc.214

Comquip, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Image Devices Inc. D 1-9
Image Magnification, Inc.
Ollesen D 1-9

Projectors, Slide

See Adv. Page

Harris Corp.17

Buhl Optical Co.
Comquip, Inc.
Eastman Kodak Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Image Devices Inc. D 1-9
KVC Video Systems Inc. D 1,2
Kliegl Bros. Lighting
Laird Telemedia Inc.
RCA Broadcast Systems
Spindler & Sauppe, Inc.
Weather Scan, Inc. D
The Zei-Mark Corp.

Projectors, TV Large Screen

See Adv. Page

**General Electric Co.93
Image Magnification, Inc.214**

Comquip, Inc.
Conrac Systems-East Div.
Electrohome Ltd.
GBC Closed Circuit TV Corp.
General Electric Co. Video Display Equip. Op.
H. M. Holzberg Associates, Inc. D 1,2,5
Ikegami Electronics (USA) Inc.
Image Magnification, Inc.
KVC Video Systems Inc. D 1,2
Kalart Victor Corp.
Panasonic Company
Peirce-Phelps, Inc. Video Systems Div. D 2,5
Sony Corp. of America VTR Div.
Technics by Panasonic
Tele-Measurements, Inc. D 2

Projectors, Video Test Slide

Comquip, Inc.
Spindler & Sauppe, Inc.

Prompters

KVC Video Systems Inc. D 1,2
Listec TV Equip. Corp.
Telescript, Inc.

Proof Workbook (For FCC test requirements)

Communications, Ltd.
Intertec Publishing Corp.

Pulse Assignment Systems

See Adv. Page

Central Dynamics Corp.57

Broadcast Video Systems, Ltd.
Central Dynamics Corp.
H. M. Holzberg Associates, Inc. D 1,2,5
Kaitronics Corp.
Lenco Inc. Electronics Div.
Television Research International

Purchasing Services, Broadcast Equipment

See Adv. Page

**Broadcast Equipment & Supply Co.208
Collins Div.31**

**Industrial Marketing
Advisory Services,
Inc. 121**

Allied Broadcast Equipment D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment & Supply Co. D
1-9
Collins Div. Rockwell International
Dyma Engineering, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
Industrial Marketing Advisory
Services, Inc.
Lita Broadcasting Distributors D 1-9
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Quadraphonic Systems

Belar Electronics Lab., Inc.
Catel Div. United Scientific Corp.
Cetec Audio
Heath Co.
KVC Video Systems Inc. D 1,2
Rupert Neve, Inc.
Quad-Eight Electronics
Sinai-Johnson D 8,9
Westlake Audio

Radar, Weather

Arvin/Echo Co.
Enterprise Electronics Corp.
Lectronic Research Laboratories, Inc.
D 1-9
Marconi Communication Systems Ltd.
Microwave Assoc. Inc.
TSC Development Labs.
Varian Associates, Inc. Electron Device
Group

Radomes

See Adv. Page

Nurad, Inc. 113

Andrew Corp.
Cetec Broadcast Group
Collins Div. Rockwell International
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Micro Communications, Inc. Grenier
Field
Nurad, Inc.
Prodelin Inc.
RF Systems, Inc.
Shively Laboratories, Inc.

Receivers, AM

See Adv. Page

**Broadcast Component
Dist. Communication
Medias 200**

**Delta Electronics Inc.
(Va.) 191**

**International
Microwave Corp. 216**

McKay Dymek Co. 252

Allied Broadcast Equipment D 1-9
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Component Dist.
Communication Medias D 1-9
Delta Electronics Inc. (Va.)
Elcom Engineering Co.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
International Microwave Corp.
Kahn Communications, Inc.
Lectronic Research Laboratories, Inc.
D 1-9
Marconi Instruments Div. of Marconi
Electronics Inc.
McKay Dymek Co.
McMartin Industries, Inc.
Micro Communications, Inc. Grenier
Field
National Electrolab Ltd.
Panasonic Company
Rivers Associates, Inc.

Singer Products Co., Inc.
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Tandberg of America, Inc.
Technics by Panasonic
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2

Receivers, Data

See Adv. Page

**Moseley Associates,
Inc. 23**

Coastcom
Electrohme Ltd.
H. M. Holzberg Associates, Inc. D
1,2,5
International Microwave Corp.
McMartin Industries, Inc.
Moseley Associates, Inc.
Radiation Devices Co., Inc.
TerraCom
The Widget Works, Inc.

Receivers, EBS

See Adv. Page

Harris Corp. 17
**Logitek Electronic
Systems 188**

Allied Broadcast Equipment D 1-9
American Microsignal Co.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Elcom Engineering Co.
Fix Tune Solid State Electronics, Inc.
Gorman Redlich Mfg. Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Landy Associates Inc. D 1,2
Lectronic Research Laboratories, Inc.
D 1-9
Logitek Electronic Systems
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Rivers Associates, Inc.
Time & Frequency Tech., Inc.
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Receivers, Earth Station

Microdyne Corp.

Receivers, FM

See Adv. Page

**Broadcast Component
Dist. Communication
Medias 200**

**International
Microwave Corp. 216**

**Johnson Electronics
Inc. 243**

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Bayly Engineering Ltd.
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Component Dist.
Communication Medias D 1-9
CCA Electronics Corp.
Cetel Div. United Scientific Corp.
Comrex Corp.
Electrohme Ltd.
Fix Tune Solid State Electronics, Inc.
GTE Lenkurt, Inc.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
Image Devices Inc. D 1-9
International Microwave Corp.
Johnson Electronics Inc.
K & L Pro Audio D, 1, 2, 5, 6
Lauderdale Electronic Labs D 1-9
Lectronic Research Laboratories, Inc.
D 1-9
Marconi Instruments Div. of Marconi
Electronics Inc.

Marti Electronics
McMartin Industries, Inc.
Micro Communications, Inc. Grenier
Field
Panasonic Company
Ramko Research Inc.
Rohde & Schwarz Sales Co.
Sansui Electronics Corp.
The Ken Schaffer Group, Inc.
Scientific Radio Systems, Inc.
Singer Products Co., Inc.
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Superscope, Inc.
Tandberg of America, Inc.
Technics by Panasonic
Temtron Electronics D 1-9
Track Audio, Inc. D 1-9
Tri-Tronics Professional Electronics
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Receivers, HF

See Adv. Page

McKay Dymek Co. 252

Allied Broadcast Equipment D 1-9
Collins Div. Rockwell International
Engineering Associates
Heath Co.
Lectronic Research Laboratories, Inc.
D 1-9
Marconi Electronics Inc.
Marconi Instruments Div. of Marconi
Electronics Inc.
McKay Dymek Co.
Rohde & Schwarz Sales Co.
Scientific Radio Systems, Inc.
Singer Products Co., Inc.

Receivers, Microwave

See Adv. Page

**International
Microwave Corp. 216**

Broadcast Consultants Corp. D 1-9
Collins Div. Rockwell International
Engineering Associates
Farinon Electric
H. M. Holzberg Associates, Inc. D
1,2,5
Hughes Aircraft Co. Microwave
Communications Products
International Microwave Corp.
Lectronic Research Laboratories, Inc.
D 1-9
Marti Electronics
Micro Control Associates, Inc.
Microdyne Corp.
Microwave Assoc. Inc.
Moseley Associates, Inc.
The Narda Microwave Corporation
Nurad, Inc.
Scientific-Atlanta, Inc.
Tayburn Electronics, Inc.
Tepco Corp.
TerraCom
Val-Tronics, Inc. D2
Varian Associates, Inc. Electron Device
Group
Varian/Beverly Micro-Link Products

Receivers, Multiplex

See Adv. Page

**International
Microwave Corp. 216**
**Moseley Associates,
Inc. 23**

Altec Lansing Sound Products
Beta Technology, Inc.
CCA Electronics Corp.
Coastcom
GTE Lenkurt, Inc.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
International Microwave Corp.
McMartin Industries, Inc.
Moseley Associates, Inc.
Singer Products Co., Inc.

Superscope, Inc.
Track Audio, Inc. D 1-9

Receivers, SCA

See Adv. Page

Harris Corp. 17

**Johnson Electronics
Inc. 243**

**Micro Control
Associates, Inc. 62**

CCA Electronics Corp.
Contel Mfg.
Ecor Div. of P.A.C.
Fix Tune Solid State Electronics, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Johnson Electronics Inc.
Marti Electronics
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Micro Control Associates, Inc.
Moseley Associates, Inc.
Rivers Associates, Inc.
Singer Products Co., Inc.
Track Audio, Inc. D 1-9

Receivers, Time Signal

Allied Broadcast Equipment D 1-9
Cetel Div. United Scientific Corp.
ESE
Elcom Engineering Co.
Electrohme Ltd.
H. M. Holzberg Associates, Inc. D
1,2,5

Receivers, TV Color

See Adv. Page

Electrohme Ltd. 28

**Image Magnification,
Inc. 214**

Broadcast Communications Devices,
Inc. D 8,9
The Camera Mart, Inc. D 1,2,3
Comquip, Inc.
Electrohme Ltd.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
Image Devices Inc. D 1-9
Image Magnification, Inc.
KVC Video Systems Inc. D 1,2
Landy Associates Inc. D 1,2
Media Concepts, Inc. D 1-9
Panasonic Company
Panasonic Video Systems Div.
Pleasantville Labs
QSI Systems, Inc. D 1
Rohde & Schwarz Sales Co.
Sharp Electronics Corp.
Sony Corp. of America VTR Div.
Technics by Panasonic
Tele-Measurements, Inc. D 2
Telescript, Inc.
Videodetics Corp.
Weather Scan, Inc. D

Receivers, TV Monochrome

Broadcast Communications Devices,
Inc. D 8,9
The Camera Mart, Inc. D 1,2,3
Electrohme Ltd.
Heath Co.
Landy Associates Inc. D 1,2
Media Concepts, Inc. D 1-9
Panasonic Company
QSI Systems, Inc. D 1
Sony Corp. of America VTR Div.
Technics by Panasonic
Telescript, Inc.
Videodetics Corp.
Weather Scan, Inc. D

**Receivers, 162.55 MHz
Weather**

See Adv. Page

**Scientific Radio
Systems, Inc.212**

Catel Div. United Scientific Corp.
Gorman Redlich Mfg. Co.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
Scientific Radio Systems, Inc.
Singer Products Co., Inc.

Recorder Amplifiers

See Adv. Page

**Inovonics255
Telex Communications,
Inc.8,100**

AEG-Telefunken Magnetic Tape
Recorder Dept.
Accurate Sound Co.
Autodyne D 1-9
Gould Inc. Instruments Div.
Harris Corp. Broadcast Products Div.
Inovonics
International Tapetronics Corp.
K & L Pro Audio D, 1, 2, 5, 6
Lauderdale Electronic Labs D 1-9
Telex Communications, Inc.
Val-Tronics, Inc. D2

Recorder Care Kits, Video

Allied Broadcast Equipment D 1-9
Broadcast Communications Devices,
Inc. D 8,9
Comprehensive Video Supply Corp. D
1-9
K & L Pro Audio D, 1, 2, 5, 6
Lauderdale Electronic Labs D 1-9
Lita Broadcasting Distributors D 1-9
Nortronics Co., Inc.

**Recorder Carrying Systems,
Videotape Portable**

Comquip, Inc.
Gruber Products Co.
H. M. Holzberg Associates, Inc. D
1,2,5
Javelin Electronics
K & H Products, Ltd.
KVC Video Systems Inc. D 1,2
Panasonic Company
Technics by Panasonic

**Recorder Clean Air Hoods,
Videotape**

Panasonic Video Systems Div.

**Recorder Drive Motor Power
Supply Units**

Dyma Engineering, Inc.

**Recorder Modifications, Reel
Servo**

See Adv. Page

**Inovonics255
VIF International255**

Accurate Sound Co.
Inovonics
Merlin Engineering Works, Inc.
Recortec Inc.
Scully Recording Instruments Div. of
Dictaphone Corp.
VIF International D 1-9

**Recorder Reconditioning,
Videotape**

A. F. Associates, Inc.
Applied Video Electronics, Inc. D 1-9
Comquip, Inc.
Lawhed, Ltd.
Merlin Engineering Works, Inc.

RCA Broadcast Systems
Siegel Electronics
Tele-Measurements, Inc. D 2

**Recorder Replacement Capstan
Assembly**

See Adv. Page

VIF International255

VIF International D 1-9

**Recorder Replacement
Electronics**

See Adv. Page

**Broadcast Component
Dist. Communication
Medias200
Inovonics255**

Accurate Sound Co.
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment Distributors D
1-9
Computer Magnetics Corp.
Inovonics
Lauderdale Electronic Labs D 1-9
Lawhed, Ltd.
Merlin Engineering Works, Inc.
Opamp Labs, Inc.
Orange County Electronics Int'l., Inc.
Recortec Inc.
Scully Recording Instruments Div. of
Dictaphone Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studio Electronics D 3,4,7
Tele-Measurements, Inc. D 2
Telex Communications, Inc.
Track Audio, Inc. D 1-9
VIF International D 1-9
Val-Tronics, Inc. D2
Video Memory Corp. c/o Recortec, Inc.
Westlake Audio

Recorder Replacement Motors

Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Mastertone Co., Inc. D 4
Merlin Engineering Works, Inc.
Scully Recording Instruments Div. of
Dictaphone Corp.
Sound Dynamics, Inc. D8, 9
UMC Electronics Co. Broadcast
Products Div.
VIF International D 1-9

**Recorder Tape Tension Controls,
Audio**

Inovonics
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9

**Recorder Tape Tension Controls,
VTR**

Accurate Sound Co.
Merlin Engineering Works, Inc.
Microtime, Inc.
Recortec Inc.
Tentel

Recorder Tape Tension Gauges

Comprehensive Video Supply Corp. D
1-9
Lauderdale Electronic Labs D 1-9
Tentel
VIF International D 1-9

**Recorder Velocity Error
Correctors**

Computer Magnetics Corp.
Digital Video Systems
The Ken Schaffer Group, Inc.

**Recorder V-Lock Helical
Attachments**

Merlin Engineering Works, Inc.
Oregon Magnetics

Recorders, Audio Cartridge

See Adv. Page

**Ampro Broadcasting
Inc.96
Autodyne267
Broadcast Component
Dist. Communication
Medias200
Contel Mfg.12
McCurdy Radio Ind.
Inc.IBC
Telex Communications,
Inc.8
Val-Tronics, Inc.245**

AEG-Telefunken Magnetic Tape
Recorder Dept.
Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Autodyne D 1-9
Automated Broadcast Controls
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
CCA Electronics Corp.
Cetec Broadcast Group
Consolidated Electronic Industries
Contel Mfg.
Dyma Engineering, Inc.
EDCO Products, Inc.
IGM Div. of Northwestern Tech.
International Electro-Magnetics
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
LPB Inc.
Landy Associates Inc. D 1,2
Lauderdale Electronic Labs D 1-9
Lita Broadcasting Distributors D 1-9
Maze Corp D6
McCurdy Radio Ind. Inc.
Panasonic Company
Professional Audio Service D 1-9
RCA Broadcast Systems
Ramko Research Inc.
Sound Dynamics, Inc. D8, 9
Studio Electronics D 3,4,7
Technics by Panasonic
Telex Communications, Inc.
Track Audio, Inc. D 1-9
UMC Electronics Co. Broadcast
Products Div.
Val-Tronics, Inc. D2
Video Research Corp.
Videodetics Corp.
Wilkinson Electronics, Inc.

Recorders, Audio Cassette

See Adv. Page

**Broadcast Component
Dist. Communication
Medias200
K & L Pro Audio254
Telex Communications,
Inc.8**

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
EDCO Products, Inc.
Eumig Lake Success Business Park
Heath Co.
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
Mineroff Electronics D 1,2,3,5,6
Walter Odemer Co. D 4,5,6,7,8,9
Oregon Sound & Lights D 8,9
Panasonic Company

Professional Audio Service D 1-9
Ramko Research Inc.
Rapid-Q, Edco Products, Inc.
Sinai-Johnson D 8,9
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Super8 Sound, Inc.
TEAC Corp of America
Technics by Panasonic
Telex Communications, Inc.
Track Audio, Inc. D 1-9
Uher Corp.
Victor Duncan, Inc. D 4,5,6,7
Video Research Corp.

**Recorders, Audio Multi-track
Reel**

See Adv. Page

**AEG-Telefunken201
Autodyne267
Broadcast Component
Dist. Communication
Medias200
Gotham Audio Corp.201
Otari Corp.203
Pacific Recorders and
Engrg. Corp.26
Scully Recording
Instruments32,33
Studer Revox America55**

AEG-Telefunken Magnetic Tape
Recorder Dept.
Allied Broadcast Equipment D 1-9
Ampex Corp.
Audio Distributor Inc. D 3, 4, 6, 7
Audio Marketing Ltd. D 1,2,3
Audiotechniques Inc. D 1,2,3
Autodyne D 1-9
Broadcast Communications Devices,
Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D
1-9
CCA Electronics Corp.
Cara Pacific Sales Co. D 8,9
Cetec Broadcast Group
Consolidated Electronic Industries
Dyma Engineering, Inc.
Everything Audio D 1-9
Gotham Audio Corp.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
International Electro-Magnetics
K & L Pro Audio D, 1, 2, 5, 6
Landy Associates Inc. D 1,2
Lauderdale Electronic Labs D 1-9
MCI, Inc.
Magnasync/Moviola Corp.
Maze Corp D6
McCurdy Radio Ind. Inc.
Rupert Neve, Inc.
Otari Corp.
Pacific Recorders and Engrg. Corp.
Panasonic Company
Scully Recording Instruments Div. of
Dictaphone Corp.
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
TEAC Corp of America
Technics by Panasonic
Track Audio, Inc. D 1-9
VIF International D 1-9
Val-Tronics, Inc. D2
Victor Duncan, Inc. D 4,5,6,7
Video Research Corp.

**Recorders, Audio Single Track,
Reel**

See Adv. Page

**Telex Communications,
Inc.100
Val-Tronics, Inc.245**

Allied Broadcast Equipment D 1-9
Audiotechniques Inc. D 1,2,3
Autodyne D 1-9

CCA Electronics Corp.
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 Micro-Trak Corp.
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Recorders, Audio Two and Four Track Reel

See Adv. Page

AEG-Telefunken201
Broadcast Component Dist. Communication Medias.....200
Gotham Audio Corp.....201
Harris Corp.17
International Tapetronics Corp.49
Otari Corp.203
Scully Recording Instruments..... 32,33
Studer Revox America 55
Telex Communications, Inc.100

AEG-Telefunken Magnetic Tape Recorder Dept.
 Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audiotechniques Inc. D 1,2,3
 Autodyne D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Consolidated Electronic Industries
 Dyma Engineering, Inc.
 Everything Audio D 1-9
 Fisher Burke Professional Audio D 8
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 International Electro-Magnetics
 International Tapetronics Corp.
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lauderdale Electronic Labs D 1-9
 MCI, Inc.
 McCurdy Radio Ind. Inc.
 Micro-Trak Corp.
 Mineroff Electronics D 1,2,3,5,6
 Nagra Magnetic Recorders, Inc.
 Rupert Neve, Inc.
 Walter Odemer Co. D 4,5,6,7,8,9
 Oregon Sound & Lights D 8,9
 Otari Corp.
 Panasonic Company
 Ramko Research Inc.
 Scully Recording Instruments Div. of Dictaphone Corp.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studer Revox America
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Tandberg of America, Inc.
 Technics by Panasonic
 Telex Communications, Inc.
 Track Audio, Inc. D 1-9
 Uher Corp.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Video Research Corp.
 Wilkinson Electronics, Inc.

Recorders, Camera Tape to Film

AEG-Telefunken Magnetic Tape Recorder Dept.
 Comquip, Inc.
 Flash Technology Corp. of America
 Image Devices Inc. D 1-9
 Teledyne Camera Systems
 Victor Duncan, Inc. D 4,5,6,7

Recorders, Film Magnetic Sound

Comquip, Inc.
 Image Devices Inc. D 1-9
 Magnasync/Moviola Corp.
 Magna-Tech Electronic Co., Inc.
 Opamp Labs, Inc.
 Quad-Eight Electronics
 RCA Broadcast Systems
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Super8 Sound, Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Wide Range Electronics

Recorders, Film Optical Sound

Opamp Labs, Inc.
 Wide Range Electronics

Recorders, Magnetic Tape Logging

See Adv. Page

Scully Recording Instruments..... 32,33

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 B & K Instruments Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.
 LPB Inc.
 Lauderdale Electronic Labs D 1-9
 Magnasync/Moviola Corp.
 Mastertone Co., Inc. D 4
 Nagra Magnetic Recorders, Inc.
 QSI Systems, Inc. D 1
 Scully Recording Instruments Div. of Dictaphone Corp.
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Genesis D 8,9
 Stancil-Hoffman Corp.
 Studer Revox America
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Telex Communications, Inc.
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Video Research Corp.
 Videodetics Corp.

Recorders, Paper Logging and Graphic

See Adv. Page

Moseley Associates, Inc. 23

B & K Instruments Inc.
 Broadcast Electronics, Inc.
 Datalogic-Rust Co.
 John Fluke Mfg. Co., Inc.
 Gould Inc. Instruments Div.
 Harris Corp. Broadcast Products Div.
 Heath Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Moseley Associates, Inc.

Philips Test & Measuring Instruments, Inc.
 Rohde & Schwarz Sales Co. Rust Corp.
 Scientif-Atlanta, Inc.
 Sono-Mag Corp.
 United Recording Electronics Industries

Recorders, Program Logging

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
Scully Recording Instruments..... 32,33

Accurate Sound Co.
 Allied Broadcast Equipment D 1-9
 Applied Video Electronics, Inc. D 1-9
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Component Dist. Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D 1-9
 Cetec Broadcast Group
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 IGM Div. of Northwestern Tech.
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Lauderdale Electronic Labs D 1-9
 QSI Systems, Inc. D 1
 Scully Recording Instruments Div. of Dictaphone Corp.
 Studio Electronics D 3,4,7
 TEAC Corp of America
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Videodetics Corp.

Recorders, Time Base Corrector

See Adv. Page

Microtime, Inc. 83

Ampex Corp.
 Broadcast Communications Devices, Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 H. M. Holzberg Associates, Inc. D 1,2,5
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Merlin Engineering Works, Inc.
 Microtime, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 Panasonic Company
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Siegel Electronics
 Technics by Panasonic

Recorders, Video Disc

See Adv. Page

Eigen Video265

Ampex Corp.
 Arvin/Echo Co.
 Dyma Engineering, Inc.
 Eigen Video
 H. M. Holzberg Associates, Inc. D 1,2,5
 Oktel Corp.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Teknekron/TRAX

Recorders, Video Kinescope

Comquip, Inc.
 Teledyne Camera Systems

Recorders, Video Slow Motion

See Adv. Page

Eigen Video265

A. F. Associates, Inc.
 Ampex Corp.
 Arvin/Echo Co.
 Autodyne D 1-9
 The Camera Mart, Inc. D 1,2,3
 Dyma Engineering, Inc.
 Eigen Video
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Oktel Corp.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 Recortec Inc.
 TEAC Corp of America
 Teknekron/TRAX
 Tele-Measurements, Inc. D 2
 Telescript, Inc.
 Video Memory Corp. c/o Recortec, Inc.

Recorders, Videotape Cartridge

All Mobile Video, Inc.
 The Camera Mart, Inc. D 1,2,3
 Comquip, Inc.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Image Devices Inc. D 1-9
 KVC Video Systems Inc. D 1,2
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 RCA Broadcast Systems
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Videodetics Corp.

Recorders, Videotape Cassette

See Adv. Page

The Camera Mart, Inc. 74

Broadcast Communications Devices, Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 US JVC Corp. Professional Video Div.
 KVC Video Systems Inc. D 1,2
 Landy Associates Inc. D 1,2
 Media Concepts, Inc. D 1-9
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 RCA Broadcast Systems
 Sony Corp. of America VTR Div.
 TEAC Corp of America
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 Telescript, Inc.
 Victor Duncan, Inc. D 4,5,6,7
 Videodetics Corp.
 Videomedia
 Weather Scan, Inc. D

Recorders, Videotape Helical

See Adv. Page

Philips Broadcast Equip Corp..... 66-67
Sony Corp. of America 50-51

All Mobile Video, Inc.
 Ampex Corp.
 Autodyne D 1-9
 Broadcast Communications Devices, Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Comquip, Inc.
 Dyma Engineering, Inc.
 Fernseh Group Robert Bosch Corp.
 Hitachi Denshi America, Ltd.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Ikegami Electronics (USA) Inc.
 International Video Corp.

US JVC Corp. Professional Video Div.
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Martin Audio/Video D2
 Media Concepts, Inc. D 1-9
 NEC America, Inc. Broadcasting Equip.
 Div.
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Philips Broadcast Equip Corp.
 QSI Systems, Inc. D 1
 RCA Broadcast Systems
 Recortec Inc.
 Sony Corp. of America VTR Div.
 TEAC Corp of America
 Tele-Measurements, Inc. D 2
 Victor Duncan, Inc. D 4,5,6,7
 Video Memory Corp. c/o Recortec, Inc.
 Videodetics Corp.

Recorders, Videotape Quad

See Adv. Page

A. F. Associates, Inc.120
Recortec Inc.256
 A. F. Associates, Inc.
 All Mobile Video, Inc.
 Ampex Corp.
 Asaca Corp. of America
 Comquip, Inc.
 KVC Video Systems Inc. D 1,2
 Martin Audio/Video D2
 Merlin Engineering Works, Inc.
 Philips Broadcast Equip Corp.
 RCA Broadcast Systems
 Recortec Inc.

Recording Services, Audio Tape

Accurate Sound Co.
 Audio Magnetics Corp.
 Mastertone Co., Inc. D 4
 Media Concepts, Inc. D 1-9
 Pentagon Industries, Inc.
 Professional Audio Service D 1-9
 Studio Electronics D 3,4,7
 Superscope, Inc.
 Tape-Athon Corp.
 Thomas Valentino Inc.
 Westlake Audio

Recording Services, Videotape to Film

KVC Video Systems Inc. D 1,2

Recording Synchronizers

See Adv. Page

The BTX Corp. 24
 AEG-Telefunken Magnetic Tape
 Recorder Dept.
 The BTX Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Dyma Engineering, Inc.
 EECO
 Magna-Tech Electronic Co., Inc.
 Nagra Magnetic Recorders, Inc.
 Westlake Audio

Reel Storage/Retrieval Systems, Film and VTR

See Adv. Page

Storeel Corp.259
Winsted Corp.221
 CMX Systems Div. of Orrox Corp.
 Comprehensive Video Supply Corp. D
 1-9
 Research Technology, Inc.
 Storeel Corp.
 Winsted Corp.

Reels, Cable and Mike

See Adv. Page

Clifford B. Hannay & Son, Inc. 86
 ENG Mfg. Co.
 Clifford B. Hannay & Son, Inc.
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 Media Concepts, Inc. D 1-9
 Westlake Audio

Reels, Magnetic Tape

See Adv. Page

Recording Supply Co. 90
3M Co. 69
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Magnetics Corp.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D
 1-9
 Capitoi Magnetic Products
 Cetec Broadcast Group
 Corning Glass Works
 Fuji Photo Film USA, Inc. Magnetic
 Products Dept.
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products
 Group
 Mineroff Electronics D 1,2,3,5,6
 Nagra Magnetic Recorders, Inc.
 Walter Odemer Co. D 4,5,6,7,8,9
 Panasonic Corp. company
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 Pentagon Industries, Inc.
 Professional Audio Service D 1-9
 Recording Supply Co.
 Sinai-Johnson D 8,9
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 3M Co. Magnetic Audio/Video Prod.
 Div.
 Track Audio, Inc. D 1-9
 Uher Corp.
 Weather Scan, Inc. D
 Westlake Audio
 Wilkinson Electronics, Inc.

Reels, Video Tape

See Adv. Page

3M Co. 69
 Comprehensive Video Supply Corp. D
 1-9
 Comquip, Inc.
 Corning Glass Works
 Fuji Photo Film USA, Inc. Magnetic
 Products Dept.
 Javelin Electronics
 K & L Pro Audio D, 1, 2, 5, 6
 KVC Video Systems Inc. D 1,2
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products
 Group
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 QSI Systems, Inc. D 1
 Recording Supply Co.
 Sony Corp. of America VTR Div.
 Studio Tape Exchange D 2,9
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 3M Co. Magnetic Audio/Video Prod.
 Div.

Track Audio, Inc. D 1-9
 Weather Scan, Inc. D

Reflectors, Passive

Fort Worth Tower Co., Inc.
 Image Devices Inc. D 1-9
 Suda Seisakusho Co., Ltd. Nitsuko-
 Bldg.
 Unarco-Rohn Div. of Unarco Ind., Inc.

Regulators, Voltage

See Adv. Page

Harris Corp. 17
Hitran Corp. 220
 Bayly Engineering Ltd.
 California Instruments
 Harris Corp. Broadcast Products Div.
 Hitran Corp.
 Kay Industries, Inc.
 Lectronic Research Laboratories, Inc.
 D 1-9
 Microtran Co., Inc.
 Motorola SPI
 Temtron Electronics D 1-9

Remote Antennas -- See Antennas, Remote

Remote Broadcast Cue Systems

See Adv. Page

Vega..... 68
 Broadcast Consultants Corp. D 1-9
 Comrex Corp.
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 McMartin Industries, Inc.
 Rivers Associates, Inc.
 Track Audio, Inc. D 1-9
 Vega Div. of Cetec Corp.

Remote Control Monitors, VIT

Broadcast Communications Devices,
 Inc. D 8,9
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Philips Test & Measuring Instruments,
 Inc.

Remote Control Systems

See Adv. Page

Delta Electronics Inc. (Va.)191
Harris Corp. 17
Kaitronics Corp.252
Logitek Electronic Systems.....188
Micro Control Associates, Inc. 62
Moseley Associates, Inc. 23
Time & Frequency Tech., Inc. 5
Utah Scientific, Inc. 22
Val-Tronics, Inc......245

Allied Broadcast Equipment D 1-9
 American Microsignal Co.
 Audio Distributor Inc. D 3, 4, 6, 7
 Bayly Engineering Ltd.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Datalogic-Rust Co.
 Delta Electronics Inc. (Va.)
 Dyma Engineering, Inc.
 Electro & Optical Systems Ltd.
 Energy Technology, Inc.
 Engineering Associates
 Fisher Burke Professional Audio D 8
 Hallikainen & Friends, Inc.

Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Image Magnification, Inc.
 Kaitronics Corp.
 Logitek Electronic Systems
 Marconi Communication Systems Ltd.
 Marconi Instruments Div. of Marconi
 Electronics Inc.
 Marti Electronics
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McMartin Industries, Inc.
 Micro Control Associates, Inc.
 Monroe Electronics, Inc.
 Moseley Associates, Inc.
 North American Radio Corp.
 Nurad, Inc.
 PWH Electronics
 Panasonic Company
 Power-Optics Inc.
 Pulse Dynamics Mfg. Corp. (PDMC)
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Rust Corp.
 Eric Small & Associates
 Sono-Mag Corp.
 Tayburn Electronics, Inc.
 Technics by Panasonic
 Tele-Cine Inc.
 Telecommunications Technology
 Time & Frequency Tech., Inc.
 Utah Scientific, Inc.
 Val-Tronics, Inc. D2
 Vamco Engineering
 Vega Div. of Cetec Corp.
 Wilkinson Electronics, Inc.

Remote Pickup Receivers

See Adv. Page

International Microwave Corp.216
Moseley Associates, Inc. 23
Wilkinson Electronics, Inc.194

Allied Broadcast Equipment D 1-9
 CCA Electronics Corp.
 Comrex Corp.
 Dyma Engineering, Inc.
 Farinon Electric
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 International Microwave Corp.
 Lita Broadcasting Distributors D 1-9
 Marti Electronics
 McMartin Industries, Inc.
 Microwave Assoc. Inc.
 Moseley Associates, Inc.
 Nurad, Inc.
 Rivers Associates, Inc.
 Singer Products Co., Inc.
 Telemet a Geotel Co.
 TerraCom
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Remote Pickup Systems, Radio

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
Comrex Corp.103
International Microwave Corp.216
Moseley Associates, Inc. 23
Val-Tronics, Inc......245
 Allied Broadcast Equipment D 1-9
 Audio Distributor Inc. D 3, 4, 6, 7
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Cetec Broadcast Group

Comrex Corp.
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 International Microwave Corp.
 Lita Broadcasting Distributors D 1-9
 Marti Electronics
 Mastertone Co., Inc. D 4
 Maze Corp D6
 McMartin Industries, Inc.
 Moseley Associates, Inc.
 Pulse Dynamics Mfg. Corp. (PDMC)
 Rivers Associates, Inc.
 Singer Products Co., Inc.
 TerraCom
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Remote Pickup Transmitters

See Adv. Page

Comrex Corp. 103
**International
 Microwave Corp.** 216
Marti Electronics 243
**Moseley Associates,
 Inc.** 23
**Wilkinson Electronics,
 Inc.** 194

Allied Broadcast Equipment D 1-9
 Comrex Corp.
 Dyma Engineering, Inc.
 Electronic Communication Consultants
 Farinon Electric
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 International Microwave Corp.
 Lita Broadcasting Distributors D 1-9
 Marti Electronics
 McMartin Industries, Inc.
 Microwave Assoc. Inc.
 Moseley Associates, Inc.
 Nurad, Inc.
 Rivers Associates, Inc.
 Singer Products Co., Inc.
 TerraCom
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Rental Equipment

See Adv. Page

KVC, Inc. 218
 KVC, Inc.

Reverberation Systems

See Adv. Page

**Broadcast Component
 Dist. Communication
 Medias** 200
Harris Corp. 17
**The Ken Schaffer
 Group, Inc.** 45
Val-Tronics, Inc. 245

Allied Broadcast Equipment D 1-9
 Audio Distributor Inc. D 3, 4, 6, 7
 B & K Instruments Inc.
 Bell Audio Systems, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment Distributors D
 1-9
 Dyma Engineering, Inc.
 EMT Franz VGmbH
 Eventide Clock Works Inc.
 Gotham Audio Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 MICMIX Audio Products, Inc.

Maze Corp D6
 Neutrik
 Opamp Labs, Inc.
 Orban Assoc. Inc.
 Quad-Eight Electronics
 Quantum Audio Labs, Inc.
 Robins Broadcast & Sound Equip.
 Corp.
 The Ken Schaffer Group, Inc.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2
 Westlake Audio

Rewinders, Film

Comquip, Inc.
 Image Devices Inc. D 1-9
 Kalart Victor Corp.
 Magnasync/Moviola Corp.
 Neumade Products Corp.
 Research Technology, Inc.
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7

Rewinders, Tape

See Adv. Page

Ramko Research Inc. .. 186-187

Allied Broadcast Equipment D 1-9
 Audico, Ltd.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Neumade Products Corp.
 Pentagon Industries, Inc.
 Ramko Research Inc.
 Recortec Inc.
 Singer Products Co., Inc.

Safety Devices, Ladder

Unarco-Rohn Div. of Unarco Ind., Inc.

Scramblers, Speech

Mountain West Alarm D8
 Panasonic Company
 Technics by Panasonic

Screens, Projection Front

Comquip, Inc.
 Eastman Kodak Co.
 KVC Video Systems Inc. D 1,2
 Raven Screen Corp.
 Telescript, Inc.

Screens, Projection Rear

Eastman Kodak Co.
 Image Devices Inc. D 1-9
 KVC Video Systems Inc. D 1,2
 Raven Screen Corp.
 Telescript, Inc.

Semiconductors, IC's

See Adv. Page

Temtron Electronics 250

Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 EEV Canada Ltd.
 G.C. Electronics
 Harris Corp. Broadcast Products Div.
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 Opamp Labs, Inc.
 Panasonic Company
 RCA Distributor & Special Products
 Div.
 RCA Solid State Div.

Technics by Panasonic
 Temtron Electronics D 1-9
 Thor Electronics Corp. D 1-9

**Semiconductors, Rectifier
 General**

See Adv. Page

Temtron Electronics 250

Amperex Electronic Corp. Slatersville
 Div.
 Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 EEV Canada Ltd.
 Electronic Devices, Inc.
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 RCA Distributor & Special Products
 Div.
 Singer Products Co., Inc.
 Temtron Electronics D 1-9
 Thor Electronics Corp. D 1-9
 United Radio Supply Inc. D9
 Varian Associates, Inc. Electron Device
 Group

**Semiconductors, Rectifier High
 Voltage Stack**

See Adv. Page

**Wilkinson Electronics,
 Inc.** 194

Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 EEV Canada Ltd.
 Electronic Devices, Inc.
 Grinnan Fixture Co. D 1-9
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 RCA Distributor & Special Products
 Div.
 RCA Solid State Div.
 Singer Products Co., Inc.
 Thor Electronics Corp. D 1-9
 Wilkinson Electronics, Inc.

Semiconductors, Rectifier Power

Amperex Electronic Corp. Slatersville
 Div.
 Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 EEV Canada Ltd.
 Electronic Devices, Inc.
 Grinnan Fixture Co. D 1-9
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 RCA Distributor & Special Products
 Div.
 RCA Solid State Div.
 Singer Products Co., Inc.
 Thor Electronics Corp. D 1-9
 United Radio Supply Inc. D9
 Wilkinson Electronics, Inc.

**Semiconductors, Rectifier Silicon
 Controlled-SCR**

Amperex Electronic Corp. Slatersville
 Div.
 Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 EEV Canada Ltd.
 G.C. Electronics
 Grinnan Fixture Co. D 1-9
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 Microwave Assoc. Inc.

Motorola SPI
 Newark Electronics D 1-9
 Panasonic Company
 RCA Distributor & Special Products
 Div.
 RCA Solid State Div.
 Singer Products Co., Inc.
 Technics by Panasonic
 Thor Electronics Corp. D 1-9
 United Radio Supply Inc. D9
 Varian Associates, Inc. Electron Device
 Group
 Wilkinson Electronics, Inc.

Semiconductors, Thyristor

Amperex Electronic Corp. Slatersville
 Div.
 Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 EEV Canada Ltd.
 G.C. Electronics
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 Motorola SPI
 Newark Electronics D 1-9
 Panasonic Company
 RCA Distributor & Special Products
 Div.
 RCA Solid State Div.
 Singer Products Co., Inc.
 Technics by Panasonic
 Thor Electronics Corp. D 1-9
 United Radio Supply Inc. D9

Semiconductors, Transistor AF

See Adv. Page

Temtron Electronics 250

Amperex Electronic Corp. Slatersville
 Div.
 Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 G.C. Electronics
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 Panasonic Company
 RCA Distributor & Special Products
 Div.
 Singer Products Co., Inc.
 Technics by Panasonic
 Temtron Electronics D 1-9
 Thor Electronics Corp. D 1-9

Semiconductors, Transistor FET

See Adv. Page

Temtron Electronics 250

Bayly Engineering Ltd.
 Calvert Electronics Inc. D 1-9
 Ceco Communications Inc.
 G.C. Electronics
 JSH Electronics, Inc.
 C. M. Levit Electronics D 1-9
 P. R. Mallory & Co. Inc.
 Microwave Assoc. Inc.
 Motorola SPI
 Newark Electronics D 1-9
 Panasonic Company
 RCA Distributor & Special Products
 Div.
 RCA Solid State Div.
 Singer Products Co., Inc.
 Technics by Panasonic
 Temtron Electronics D 1-9
 Thor Electronics Corp. D 1-9
 Varian Associates, Inc. Electron Device
 Group

**Semiconductors, Transistor
 General**

See Adv. Page

Temtron Electronics 250

Amperex Electronic Corp. Slatersville
 Div.

Bayly Engineering Ltd.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
G.C. Electronics
Harris Corp. Broadcast Products Div.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
Microwave Assoc. Inc.
Motorola SPI
Newark Electronics D 1-9
Panasonic Company
RCA Distributor & Special Products Div.
RCA Solid State Div.
Singer Products Co., Inc.
Technics by Panasonic
Temtron Electronics D 1-9
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9

Semiconductors, Transistor RF

Amperex Electronic Corp. Slatersville Div.
Bayly Engineering Ltd.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV Canada Ltd.
G.C. Electronics
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
Microwave Assoc. Inc.
Motorola SPI
Newark Electronics D 1-9
Panasonic Company
RCA Distributor & Special Products Div.
Singer Products Co., Inc.
Technics by Panasonic
Thor Electronics Corp. D 1-9
Varian Associates, Inc. Electron Device Group

Sensors, Tone

Allied Broadcast Equipment D 1-9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment Distributors D 1-9
Cetec Broadcast Group
Channelmatic, Inc.
Consolidated Electronic Industries
Dyma Engineering, Inc.
Frequency Devices Inc.
IGM Div. of Northwestern Tech.
Lita Broadcasting Distributors D 1-9
Monroe Electronics, Inc.
Rivers Associates, Inc.

Set-up Trucks

Cinema Products Corp.
Editel Communications
Harris Corp. Broadcast Products Div.
Storeel Corp.
Winsted Corp.

Shifters, Phase Microwave

Comark Industries Inc.
Dielectric Communications A Unit of General Signal
Electronic Research Laboratories, Inc. D 1-9
Maury Microwave Corp.
Micro Communications, Inc. Grenier Field
Microwave Assoc. Inc.
The Narda Microwave Corporation
Singer Products Co., Inc.
Systron-Donner
Tayburn Electronics, Inc.

Slow Scan TV Systems

Colorado Video Inc.
Dyma Engineering, Inc.
Interand Corp. Telestrator Div.
International Video Corp.
Javelin Electronics
NEC America, Inc. Broadcasting Equip. Div.
QSI Systems, Inc. D 1
Teltron Inc.

Sound Effect Systems

Audio Distributor Inc. D 3, 4, 6, 7
Cetec Audio
Eventide Clock Works Inc.
Everything Audio D 1-9
Gotham Audio Corp.
IGM Div. of Northwestern Tech.
MacKenzie Laboratories, Inc.
Orange County Electronics Int'l., Inc.
Richmond Sound Design, Ltd.
The Ken Schaffer Group, Inc.
Sound Genesis D 8,9
Track Audio, Inc. D 1-9
Thomas Valentino Inc.

Sound Systems, Automatic Level Control

See Adv. Page

Moseley Associates, Inc. 23

Broadcast Communications Devices, Inc. D 8,9
Broadcast Consultants Corp. D 1-9
Everything Audio D 1-9
Lita Broadcasting Distributors D 1-9
Media Concepts, Inc. D 1-9
Moseley Associates, Inc.
Orange County Electronics Int'l., Inc.
Robins Broadcast & Sound Equip. Corp.
Shure Brothers Inc.
Track Audio, Inc. D 1-9
United Recording Electronics Industries

Sound Systems, Outdoor

See Adv. Page

Whirlwind Music 42

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Atlas Sound
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9
Cara Pacific Sales Co. D 8,9
Ecor Div. of P.A.C.
Electro-Voice Inc.
Everything Audio D 1-9
Forsythe Audio Systems
G.C. Electronics
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
James B. Lansing Sound, Inc.
Lita Broadcasting Distributors D 1-9
Maze Corp D6
McMartin Industries, Inc.
Micro-Trak Corp.
Microwave Assoc. Inc.
Oregon Sound & Lights D 8,9
Paso Sound Products Inc.
Pulse Dynamics Mfg. Corp. (PDMC)
Quad-Eight Electronics
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
The Ken Schaffer Group, Inc.
Shure Brothers Inc.
Sound Genesis D 8,9
Spectra Sonics
Track Audio, Inc. D 1-9
United Radio Supply Inc. D9
Whirlwind Music

Sound Systems, Portable

See Adv. Page

Whirlwind Music 42

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Auratone Corp.
Automated Processes, Inc.
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9

Cara Pacific Sales Co. D 8,9
Comquip, Inc.
Ecor Div. of P.A.C.
Electro-Voice Inc.
Everything Audio D 1-9
GLI Div. VSC
Heath Co.
H. M. Holzberg Associates, Inc. D 1,2,5
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
James B. Lansing Sound, Inc.
Lita Broadcasting Distributors D 1-9
Maze Corp D6
McMartin Industries, Inc.
Media Concepts, Inc. D 1-9
Micro-Trak Corp.
Nagra Magnetic Recorders, Inc.
Rupert Neve, Inc.
Olesen D 1-9
Oregon Sound & Lights D 8,9
Panasonic Company
Paso Sound Products Inc.
Pulse Dynamics Mfg. Corp. (PDMC)
Quad-Eight Electronics
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
The Ken Schaffer Group, Inc.
Shure Brothers Inc.
Singer Products Co., Inc.
Sound Genesis D 8,9
Spectra Sonics
Tape-Athon Corp.
Technics by Panasonic
Track Audio, Inc. D 1-9
United Radio Supply Inc. D9
Whirlwind Music

Sound Systems, Studio

See Adv. Page

Altec Lansing Sound Products 205

Audio & Design Recording Inc. 216

Broadcast Component Dist. Communication Medias 200

Whirlwind Music 42

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Audio & Design Recording Inc.
Audio Distributor Inc. D 3, 4, 6, 7
Audio Marketing Ltd. D 1,2,3
Audiotechniques Inc. D 1,2,3
Auratone Corp.
Autodyne D 1-9
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Electronics, Inc.
Cara Pacific Sales Co. D 8,9
Cetec Audio
Cetec Broadcast Group
Crown International, Inc.
Delta Electronics Inc. (N.C.)
Dolby Laboratories, Inc.
Dyma Engineering, Inc.
Ecor Div. of P.A.C.
Electro-Voice Inc.
Everything Audio D 1-9
Fisher Burke Professional Audio D 8
GLI Div. VSC
Gotham Audio Corp.
Hartley Products Corp.
K & L Pro Audio D, 1, 2, 5, 6
KVC Video Systems Inc. D 1,2
James B. Lansing Sound, Inc.
Lita Broadcasting Distributors D 1-9
Magna-Tech Electronic Co., Inc.
Maze Corp D6
McMartin Industries, Inc.
Media Concepts, Inc. D 1-9
Micro-Trak Corp.
Modular Audio Products Unit of Modular Devices, Inc.
Orange County Electronics Int'l., Inc.
Panasonic Company
Paso Sound Products Inc.
Pulse Dynamics Mfg. Corp. (PDMC)
Quad-Eight Electronics

Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
The Ken Schaffer Group, Inc.
Shure Brothers Inc.
Singer Products Co., Inc.
Sound Genesis D 8,9
Spectra Sonics
Technics by Panasonic
Track Audio, Inc. D 1-9
Whirlwind Music

Sound Systems, Theater

See Adv. Page

Whirlwind Music 42

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Auratone Corp.
Automated Processes, Inc.
Bell Audio Systems, Inc.
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9
Comquip, Inc.
Delta Electronics Inc. (N.C.)
Dolby Laboratories, Inc.
Electro Sound, Inc.
Electro-Voice Inc.
Everything Audio D 1-9
GLI Div. VSC
Hartley Products Corp.
K & L Pro Audio D, 1, 2, 5, 6
James B. Lansing Sound, Inc.
Lita Broadcasting Distributors D 1-9
Maze Corp D6
Modular Audio Products Unit of Modular Devices, Inc.
Rupert Neve, Inc.
Orange County Electronics Int'l., Inc.
Panasonic Company
Paso Sound Products Inc.
Quad-Eight Electronics
Richmond Sound Design, Ltd.
Robins Broadcast & Sound Equip. Corp.
The Ken Schaffer Group, Inc.
Shure Brothers Inc.
Sinai-Johnson D 8,9
Sound Genesis D 8,9
Spectra Sonics
Technics by Panasonic
Track Audio, Inc. D 1-9
Ward-Beck Systems, Ltd.
Whirlwind Music

Speakers and Enclosures

See Adv. Page

Altec Lansing Sound Products 205

Auernheimer Laboratories & Co. 257

Autodyne 267

Broadcast Component Dist. Communication Medias 200

Harris Corp. 17

James B. Lansing Sound, Inc. 109

Val-Tronics, Inc. 245

Whirlwind Music 42

Allied Broadcast Equipment D 1-9
Altec Lansing Sound Products
Atlas Sound
Audio Distributor Inc. D 3, 4, 6, 7
Audio Marketing Ltd. D 1,2,3
Audiotechniques Inc. D 1,2,3
Auernheimer Laboratories & Co.
Auratone Corp.
Autodyne D 1-9
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.

Cara Pacific Sales Co. D 8,9
 Cetec Audio
 Cetec Broadcast Group
 Chartwell by Osawa
 Crown International, Inc.
 Electro-Voice Inc.
 Everything Audio D 1-9
 Forsythe Audio Systems
 G.C. Electronics
 GLI Div. VSC
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Hartley Products Corp.
 Heath Co.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Jensen Sound Laboratories Div. of
 Pemcor, Inc.
 K & L Pro Audio D, 1, 2, 5, 6
 KLH Research & Development Corp.
 KLH Burwen Research
 Koss Corp.
 James B. Lansing Sound, Inc.
 Lita Broadcasting Distributors D 1-9
 Maze Corp D6
 Micro-Trak Corp.
 Charles Moore
 Orange County Electronics Int'l., Inc.
 Oregon Sound & Lights D 8,9
 Panasonic Company
 Paso Sound Products Inc.
 Professional Audio Service D 1-9
 Pulse Dynamics Mfg. Corp. (PDMC)
 Ramko Research Inc.
 Rank Hi Fi (USA)
 Sansui Electronics Corp.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 Superscope, Inc.
 Technics by Panasonic
 Track Audio, Inc. D 1-9
 United Recording Electronics
 Industries
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Westlake Audio
 Whirlwind Music

Tepeco Corp.
 TerraCom
 Time & Frequency Tech., Inc.
 Val-Tronics, Inc. D2
 Varian/Beverly Micro-Link Products
 Wilkinson Electronics, Inc.

Stopwatches, Digital

Allied Broadcast Equipment D 1-9
 Broadcast Consultants Corp. D 1-9
 Dyma Engineering, Inc.
 ESE
 Everything Audio D 1-9
 Heath Co.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Image Devices Inc. D 1-9
 QSI Systems, Inc. D 1
 Jules Racine & Co., Inc.
 Track Audio, Inc. D 1-9
 Victor Duncan, Inc. D 4,5,6,7

Studio Design and Construction Services

See Adv. Page

Dyma Engineering, Inc. 267
Sound Genesis 184

A. F. Associates, Inc.
 Accurate Sound Co.
 Aderhold Construction Co.
 Applied Video Electronics, Inc. D 1-9
 Artists' Engineering Visual
 Communications Div.
 Audiotechniques Inc. D 1,2,3
 Berkey-Colortran Inc.
 The Camera Mart, Inc. D 1,2,3
 Communications, Ltd.
 Dyma Engineering, Inc.
 Electro & Optical Systems Ltd.
 Everything Audio D 1-9
 Imero Fiorentino Associates, Inc.
 Fisher Burke Professional Audio D 8
 Grinnan Fixture Co. D 1-9
 Hallikainen & Friends, Inc.
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 Orange County Electronics Int'l., Inc.
 Soll
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Television Engineering Corp.
 Track Audio, Inc. D 1-9
 Ultra Audio Pixtec
 Val-Tronics, Inc. D2
 Westlake Audio

Studio Scenery

Imero Fiorentino Associates, Inc.
 Janson Industries
 Logitek Electronic Systems
 Olesen D 1-9

Studio Systems, Audio

See Adv. Page

Cetec Broadcast Group 118
H. M. Holzberg Associates, Inc. 262
K & L Pro Audio 254
McCurdy Radio Ind. Inc. IBC
Whirlwind Music 42
 Accurate Sound Co.
 Artists' Engineering Visual
 Communications Div.
 Autodyne D 1-9
 Automated Processes, Inc.
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Cara Pacific Sales Co. D 8,9
 Cetec Broadcast Group
 Communications, Ltd.
 Custom Audio Electronics
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Eventide Clock Works Inc.
 Fisher Burke Professional Audio D 8

Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Magna-Tech Electronic Co., Inc.
 McCurdy Radio Ind. Inc.
 McMartin Industries, Inc.
 Media Concepts, Inc. D 1-9
 Micro-Trak Corp.
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Charles Moore
 Opamp Labs, Inc.
 Orange County Electronics Int'l., Inc.
 Panasonic Company
 Quad-Eight Electronics
 ROH Corporation
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.
 Sound Genesis D 8,9
 Spectra Sonics
 Studio Electronics D 3,4,7
 TEAC Corp of America
 Technics by Panasonic
 Track Audio, Inc. D 1-9
 Ultra Audio Pixtec
 Ward-Beck Systems, Ltd.
 Westlake Audio
 Whirlwind Music

Subcarrier Multiplex Equipment

See Adv. Page

Johnson Electronics Inc. 243
Moseley Associates, Inc. 23

Bayly Engineering Ltd.
 CCA Electronics Corp.
 Coastcom
 Colorado Video Inc.
 Farinon Electric
 GTE Lenkurt, Inc.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Johnson Electronics Inc.
 Marti Electronics
 McMartin Industries, Inc.
 Micro Control Associates, Inc.
 Micro TV, Inc.
 Moseley Associates, Inc.
 Rivers Associates, Inc.
 Tepeco Corp.
 TerraCom

Switchers, Production --See also Console listings

See Adv. Page

American Data Corp. 7
Central Dynamics Corp. 57
Dytek Industries, Inc. 185
Grass Valley Group, Inc. 3
LPB Inc. 217
Listec TV Equip. Corp. 258
McCurdy Radio Ind. Inc. IBC
Quantum Audio Labs, Inc. 264
Telemet 189
Viscount Industries Ltd. 219

Alco Electronic Products, Inc.
 American Data Corp. A North
 American Philips Co.
 Ampex Corp.
 Ampro Broadcasting Inc.
 Audio Distributor Inc. D 3, 4, 6, 7
 Auditronics, Inc.
 Automated Processes, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Video Systems, Ltd.
 C.R.V. Systems, Inc.

The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Cetec Audio
 Cetec Broadcast Group
 Communications Technology, Inc.
 Computer Image Video Controllers
 Dytex Industries, Inc.
 Dyma Engineering, Inc.
 Dynasciences Div. Whitaker Corp.
 Dytex Industries, Inc.
 Electro & Optical Systems Ltd.
 Glentronix Ltd. D 1-9
 Grass Valley Group, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Ikegami Electronics (USA) Inc.
 Industrial Sciences
 International Nuclear Corp.
 J&D International, Elec. Div. Unit E-
 East
 Javelin Electronics
 LPB Inc.
 Lenco Inc. Electronics Div.
 Listec TV Equip. Corp.
 Marconi Electronics Inc.
 McCurdy Radio Ind. Inc.
 Rupert Neve, Inc.
 Panasonic Company
 Panasonic Video Systems Div.
 Quantum Audio Labs, Inc.
 ROH Corporation
 Ramko Research Inc.
 Richmond Sound Design, Ltd.
 Robins Broadcast & Sound Equip.
 Corp.

Ross Video Ltd.
 Shintron Co. Inc.
 Sono-Mag Corp.
 Sony Corp. of America VTR Div.
 Tangent Systems, Inc.
 Technics by Panasonic
 Telemet a Geotek Co.
 3M Co. Mincom Div.
 Vamco Engineering
 Video Components, Inc.
 Viscount Industries Ltd.
 Vital Industries Inc.
 Ward-Beck Systems, Ltd.
 Weather Scan, Inc. D
 Yamaha International Corp.

Switchers, Routing

See Adv. Page

Central Dynamics Corp. 57
Datatek Corp. 65
Datatron, Inc. 111
Di-Tech Inc. 43
Dynair Electronics, Inc. 245, 249
Dytek Industries, Inc. 185
Grass Valley Group, Inc. 3,241
ROH Corporation 211
Ramko Research Inc. .. 186-187
3M Co. 89
Utah Scientific, Inc. 22
Viscount Industries Ltd. 219

American Data Corp. A North
 American Philips Co.
 Audio Designs & Mfg.
 Automated Processes, Inc.
 Broadcast Communications Devices,
 Inc. D 8,9
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Collins Television Services
 Communications Technology, Inc.
 Computer Image Video Controllers
 Dytex Industries, Inc.
 Datatek Corp.
 Datatron, Inc.
 Di-Tech Inc.
 Duca-Richardson Corp.
 Dyma Engineering, Inc.
 Dynair Electronics, Inc.
 Dynasciences Div. Whitaker Corp.
 Dytex Industries, Inc.
 EDCO Products, Inc.
 ENG Mfg. Co.
 Electro & Optical Systems Ltd.
 Grass Valley Group, Inc.

Holland Electronics
 H. M. Holzberg Associates, Inc. D
 1,2,5
 Industrial Sciences
 International Communications &
 Control Corp.
 J&D International, Elec. Div. Unit E-
 East
 Landy Associates Inc. D 1,2
 Lenco Inc. Electronics Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 ROH Corporation
 Ramko Research Inc.
 Rapid-Q, Edco Products, Inc.
 Sigma Electronics, Inc.
 System Associates
 Telemation, A Div. of Bell & Howell
 Telemet a Geotel Co.
 3M Co. Mincom Div.
 Utah Scientific, Inc.
 Vamco Engineering
 Videomedia
 Viscount Industries Ltd.
 Ward-Beck Systems, Ltd.

Switches, Coaxial

See Adv. Page
Harris Corp. 17
Micro Communications, Inc. 210

Alford Mfg. Co.
 Bird Electronic Corp.
 Blonder-Tongue Labs.
 Cetec Broadcast Group
 Comark Industries Inc.
 Communication Modifications, Inc.
 Delta Electronics Inc. (Va.)
 Dielectric Communications A Unit of
 General Signal
 Dyma Engineering, Inc.
 Dynatech Data Systems
 Electronic Inst. & Spec.
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 ITT Jennings
 Javelin Electronics
 Lectronic Research Laboratories, Inc.
 D 1-9
 Magnecraft Electric Co.
 Micro Communications, Inc. Grenier
 Field
 Microwave Assoc. Inc.
 RCA Cablevision Systems
 Richmond Hill Laboratories Ltd.
 Rohde & Schwarz Sales Co.
 SWR Inc.
 Shively Laboratories, Inc.
 Singer Products Co., Inc.
 Soll
 Systron-Donner
 Tele-Measurements, Inc. D 2
 Texscan Corp.
 Varian Associates, Inc. Electron Device
 Group
 Wide Band Engineering Co., Inc.

Switches, Crossbar

See Adv. Page
Dynair Electronics, Inc. 245

American Data Corp. A North
 American Philips Co.
 Communications Technology, Inc.
 Delta Electronics Inc. (Va.)
 Dynair Electronics, Inc.
 H. M. Holzberg Associates, Inc. D
 1,2,5
 ITT Jennings
 International Nuclear Corp.
 Richmond Hill Laboratories Ltd.
 Tele-Measurements, Inc. D 2
 Varian Associates, Inc. Electron Device
 Group

Switches, Power, Video Activated

Video Aids Corp. of Colorado

Switching Systems

See Adv. Page
American Data Corp. 7
Datek Corp. 65
Di-Tech Inc. 43
Dynair Electronics, Inc. 245,249,
 251
Dytek Industries, Inc. 185
Grass Valley Group, Inc. 3,241
Harris Corp. 17
ROH Corporation 211
Telemet 189
3M Co. 89
Utah Scientific, Inc. 22
Viscount Industries Ltd. 219

American Data Corp. A North
 American Philips Co.
 Auditronics, Inc.
 BSC Inc.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Central Dynamics Corp.
 Cetec Audio
 Cetec Broadcast Group
 Collins Television Services
 Communications Technology, Inc.
 Computer Image Video Controllers
 Dytek Industries, Inc.
 Datalogic-Rust Co.
 Datek Corp.
 Delta Electronics Inc. (Va.)
 Di-Tech Inc.
 Duca-Richardson Corp.
 Dynair Electronics, Inc.
 Dytek Industries, Inc.
 GTE Lenkurt, Inc.
 Glentronix Ltd. D 1-9
 Grass Valley Group, Inc.
 Harris Corp. Broadcast Products Div.
 Holland Electronics
 H. M. Holzberg Associates, Inc. D
 1,2,5
 IGM Div. of Northwestern Tech.
 Industrial Sciences
 International Nuclear Corp.
 Javelin Electronics
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Lenco Inc. Electronics Div.
 Marconi Electronics Inc.
 Mastertone Co., Inc. D 4
 McCurdy Radio Ind. Inc.
 Micro Communications, Inc. Grenier
 Field
 Modular Audio Products Unit of
 Modular Devices, Inc.
 Multronics, Inc.
 Opamp Labs, Inc.
 Panasonic Company
 ROH Corporation
 Richmond Hill Laboratories Ltd.
 Richmond Sound Design, Ltd.
 Rivers Associates, Inc.
 Ross Video Ltd.
 Rust Corp.
 Shintron Co. Inc.
 Sigma Electronics, Inc.
 Sono-Mag Corp.
 Sony Corp. of America VTR Div.
 Tangent Systems, Inc.
 Tech Laboratories Inc.
 Technics by Panasonic
 Tektronix Inc.
 Telecommunications Technology
 Telemation, A Div. of Bell & Howell
 Tele-Measurements, Inc. D 2
 Telemet a Geotel Co.
 3M Co. Mincom Div.
 Utah Scientific, Inc.
 Vamco Engineering
 Viscount Industries Ltd.
 Vital Industries Inc.
 Ward-Beck Systems, Ltd.

Synchronizers, Audio/Video

See Adv. Page
The BTX Corp. 24

AEG-Telefunken Magnetic Tape
 Recorder Dept.
 Ampex Corp.
 Automated Processes, Inc.
 The BTX Corp.
 Broadcast Communications Devices,
 Inc. D 8,9
 Central Dynamics Corp.
 Datametrics Inc.
 Dyma Engineering, Inc.
 EECO
 KVC Video Systems Inc. D 1,2
 Leitch Video Ltd.
 MCI, Inc.
 Magna-Tech Electronic Co., Inc.
 Sound Genesis D 8,9
 Telcom Research
 Tele-Measurements, Inc. D 2
 Westlake Audio

Synchronizer, Digital Video

See Adv. Page
ADDA Corp. 107
Consolidated Video Systems 79
Leitch Video Ltd. 101
Microtime, Inc. 83

ADDA Corp.
 Broadcast Video Systems, Ltd.
 Consolidated Video Systems
 Digital Video Systems
 Dyma Engineering, Inc.
 Grass Valley Group, Inc.
 Landy Associates Inc. D 1,2
 Leitch Video Ltd.
 Micro Consultants
 Microtime, Inc.
 NEC America, Inc. Broadcasting Equip.
 Div.
 Peirce-Phelps, Inc. Video Systems Div.
 D 2,5
 RCA Broadcast Systems
 Tele-Measurements, Inc. D 2
 Vital Industries Inc.

Synthesizers, FM Stereo

Allied Broadcast Equipment D 1-9
 Orban Assoc. Inc.
 Sound Genesis D 8,9
 Val-Tronics, Inc. D2

Systems Research and Development

See Adv. Page
Broadcast Equipment & Supply Co. 208
C.R.V. Systems, Inc. 265
Sound Genesis 184

A. F. Associates, Inc.
 Ampro Broadcasting Inc.
 Automation Electronics, Inc.
 Broadcast Equipment & Supply Co. D
 1-9
 Broadcast Video Systems, Ltd.
 C.R.V. Systems, Inc.
 Dielectric Communications A Unit of
 General Signal
 Digital Video Systems
 Electro & Optical Systems Ltd.
 Imero Fiorentino Associates, Inc.
 Fisher Burke Professional Audio D 8
 Hallikainen & Friends, Inc.
 Harris Corp. PRD Electronics Div.
 International Electro-Magnetics
 Lenco Inc. Electronics Div.
 Marconi Communication Systems Ltd.
 Merrill Cable Equipment Corp.
 Pacific Recorders and Engrg. Corp.
 Richmond Hill Laboratories Ltd.
 Rivers Associates, Inc.
 The Ken Schaffer Group, Inc.
 Sound Genesis D 8,9
 Telemet a Geotel Co.
 Videomedia

Tape, Magnetic Recording Audio

See Adv. Page
Broadcast Component Dist. Communication Medias 200
Recording Supply Co. 90
TDK Electronics Corp. 95
Val-Tronics, Inc. 245

Accurate Sound Co.
 Agfa-Gevaert Inc.
 Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Audio Distributor Inc. D 3, 4, 6, 7
 Audio Magnetics Corp.
 Autodyne D 1-9
 BSC Inc.
 Bonneville Productions Div. of
 Bonneville Int'l. Corp.
 Broadcast Automation Associates Inc.
 D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D
 1-9
 Broadcast Equipment & Supply Co. D
 1-9
 CCA Electronics Corp.
 Capitol Magnetic Products
 Cetec Broadcast Group
 Colorado Magnetics
 Comquip, Inc.
 Dimension 3 Recording Co.
 Fisher Burke Professional Audio D 8
 Fuji Photo Film USA, Inc. Magnetic
 Products Dept.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 P. R. Mallory & Co. Inc.
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products
 Group
 Nagra Magnetic Recorders, Inc.
 Newark Electronics D 1-9
 Panasonic Company
 Pentagon Industries, Inc.
 Professional Audio Service D 1-9
 Recording Supply Co.
 Sinai-Johnson D 8,9
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Studio Tape Exchange D 2,9
 Superscope, Inc.
 TDK Electronics Corp.
 Technics by Panasonic
 Tele-Measurements, Inc. D 2
 3M Co. Magnetic Audio/Video Prod.
 Div.
 Track Audio, Inc. D 1-9
 United Radio Supply Inc. D9
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7
 Video Tape Exchange Div. of Cine Film
 Exchange Inc. D 1-9
 Westlake Audio
 Wilkinson Electronics, Inc.

Tape, Magnetic Recording Audio Cartridge

See Adv. Page
Aristocart Div. 102
Harris Corp. 17
Professional Audio Service 265
Telex Communications, Inc. 8
Val-Tronics, Inc. 245

Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Aristocart Div. Western Broadcasting
 Co., Ltd.

Audio Distributor Inc. D 3, 4, 6, 7
 Audio Magnetics Corp.
 Autodyne D 1-9
 BSC Inc.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Cartridge Service D 7,8,9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Capitol Magnetic Products
 Cetec Broadcast Group
 Contel Mfg.
 Dimension 3 Recording Co.
 Fidelipac
 Fisher Burke Professional Audio D 8
 Fuji Photo Film USA, Inc. Magnetic Products Dept.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 LPB Inc.
 Landy Associates Inc. D 1,2
 Lita Broadcasting Distributors D 1-9
 P. R. Mallory & Co. Inc.
 Mastertone Co., Inc. D 4
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products Group
 Professional Audio Service D 1-9
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Dynamics, Inc. D8, 9
 Sound Genesis D 8,9
 Studio Electronics D 3,4,7
 Superscope, Inc.
 TDK Electronics Corp.
 Tele-Measurements, Inc. D 2
 Telex Communications, Inc.
 3M Co. Magnetic Audio/Video Prod. Div.
 Track Audio, Inc. D 1-9
 United Radio Supply Inc. D9
 Val-Tronics, Inc. D2
 Video Tape Exchange Div. of Cine Film Exchange Inc. D 1-9
 Wilkinson Electronics, Inc.

Tape, Magnetic Recording Computer

See Adv. Page

TDK Electronics Corp. 95

Asaca Corp. of America
 Fisher Burke Professional Audio D 8
 Fuji Photo Film USA, Inc. Magnetic Products Dept.
 KVC Video Systems Inc. D 1,2
 Memorex Corp. Professional Products Group
 Sono-Mag Corp.
 TDK Electronics Corp.

Tape, Magnetic Recording Test

See Adv. Page

Harris Corp. 17

Agfa-Gevaert Inc.
 Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Autodyne D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Fidelipac
 Fisher Burke Professional Audio D 8
 G.C. Electronics
 Gotham Audio Corp.
 Harris Corp. Broadcast Products Div.
 K & L Pro Audio D, 1, 2, 5, 6
 Lita Broadcasting Distributors D 1-9
 Mastertone Co., Inc. D 4
 Nagra Magnetic Recorders, Inc.
 Nortronics Co., Inc.
 Professional Audio Service D 1-9

Sono-Mag Corp.
 Sound Genesis D 8,9
 TEAC Corp of America
 Taber Mfg. & Engr. Co.
 Track Audio, Inc. D 1-9
 VIF International D 1-9
 Val-Tronics, Inc. D2
 Victor Duncan, Inc. D 4,5,6,7

Tape, Magnetic Recording Video

See Adv. Page

3M Co. 69
Video Tape Exchange Div. of Cine Film Exchange Inc. 264

Ampex Corp.
 BSC Inc.
 C.R.V. Systems, Inc.
 Comprehensive Video Supply Corp. D 1-9
 Comquip, Inc.
 Dimension 3 Recording Co.
 E. I. du Pont de Nemours & Co., Inc.
 Magnetic Products Div.
 Fisher Burke Professional Audio D 8
 Fuji Photo Film USA, Inc. Magnetic Products Dept.
 Hitachi Denshi America, Ltd.
 Image Devices Inc. D 1-9
 Javelin Electronics
 KVC Video Systems Inc. D 1,2
 Karex, Inc.
 Landy Associates Inc. D 1,2
 Martin Audio/Video D2
 Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products Group
 Panasonic Company
 Panasonic Video Systems Div.
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 QSI Systems, Inc. D 1
 Recording Supply Co.
 Sony Corp. of America VTR Div.
 Studio Tape Exchange D 2,9
 TDK Electronics Corp.
 TEAC Corp of America
 Technics by Panasonic
 Telcom Research
 Tele-Measurements, Inc. D 2
 Temtron Electronics D 1-9
 3M Co. Magnetic Audio/Video Prod. Div.
 Val-Tronics, Inc. D2
 The Video Tape Co.
 Video Tape Exchange Div. of Cine Film Exchange Inc. D 1-9
 Videodetics Corp.
 Weather Scan, Inc. D

Tape, Recording Logging

See Adv. Page

Harris Corp. 17
SoundScriber Magnetic Recording Co., Inc. 266

Ampex Corp.
 Broadcast Automation Associates Inc. D 1,2,5,6
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D 1-9
 Fisher Burke Professional Audio D 8
 Harris Corp. Broadcast Products Div.
 Recording Supply Co.
 Singer Products Co., Inc.
 Sono-Mag Corp.
 Sound Genesis D 8,9
 SoundScriber Magnetic Recording Co., Inc.
 Stancil-Hoffman Corp.
 Studio Electronics D 3,4,7
 Tele-Measurements, Inc. D 2
 3M Co. Magnetic Audio/Video Prod. Div.
 Val-Tronics, Inc. D2

Tape, Time Announced

See Adv. Page

Broadcast Component Dist. Communication Medias 200

Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment Distributors D 1-9
 Cetec Broadcast Group
 Harris Corp. Broadcast Products Div.
 IGM Div. of Northwestern Tech.
 Tape-Athon Corp.
 Tele-Measurements, Inc. D 2

Tape Addressors, Video

See Adv. Page

Recortec Inc. 259

Recortec Inc.
 Telcom Research

Tape Cartridge Loaders

See Adv. Page

Broadcast Component Dist. Communication Medias 200
Ramko Research Inc. .. 186-187

Allied Broadcast Equipment D 1-9
 Audico, Ltd.
 Autodyne D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Consultants Corp. D 1-9
 Broadcast Electronics, Inc.
 Broadcast Equipment Distributors D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 Electro Sound, Inc.
 Lita Broadcasting Distributors D 1-9
 Maze Corp D6
 Neumade Products Corp.
 Professional Audio Service D 1-9
 RCA Broadcast Systems
 Ramko Research Inc.
 Track Audio, Inc. D 1-9
 Val-Tronics, Inc. D2

Tape Cassette Loaders

See Adv. Page

Ramko Research Inc. .. 186-187

Allied Broadcast Equipment D 1-9
 Audico, Ltd.
 Lauderdale Electronic Labs D 1-9
 Ramko Research Inc.
 Recortec Inc.
 Studio Tape Exchange D 2,9
 Track Audio, Inc. D 1-9

Tape Cassettes, Audio

See Adv. Page

Recording Supply Co. 90
TDK Electronics Corp. 95
Telex Communications, Inc. 8

Allied Broadcast Equipment D 1-9
 Ampex Corp.
 Audio Magnetics Corp.
 Bonneville Productions Div. of Bonneville Int'l. Corp.
 Broadcast Communications Devices, Inc. D 8,9
 Broadcast Consultants Corp. D 1-9
 Capitol Magnetic Products
 Fisher Burke Professional Audio D 8
 Fuji Photo Film USA, Inc. Magnetic Products Dept.
 Image Devices Inc. D 1-9
 K & L Pro Audio D, 1, 2, 5, 6
 Karex, Inc.
 Martin Audio/Video D2
 Mastertone Co., Inc. D 4

Maxell Corp. of America
 Media Concepts, Inc. D 1-9
 Memorex Corp. Professional Products Group
 Newark Electronics D 1-9
 Panasonic Company
 Pentagon Industries, Inc.
 Recording Supply Co.
 Recortec Inc.
 Sinai-Johnson D 8,9
 Sound Genesis D 8,9
 Studio Tape Exchange D 2,9
 TDK Electronics Corp.
 Tandberg of America, Inc.
 Technics by Panasonic
 Telex Communications, Inc.
 3M Co. Magnetic Audio/Video Prod. Div.
 Track Audio, Inc. D 1-9
 United Radio Supply Inc. D9
 Video Tape Exchange Div. of Cine Film Exchange Inc. D 1-9
 Weather Scan, Inc. D

Tape Cassettes, Video

See Adv. Page

Sony Corp. of America 50-51
Video Tape Exchange Div. of Cine Film Exchange Inc. 264

Comprehensive Video Supply Corp. D 1-9
 Fuji Photo Film USA, Inc. Magnetic Products Dept.
 K & L Pro Audio D, 1, 2, 5, 6
 Memorex Corp. Professional Products Group
 Panasonic Video Systems Div.
 Recording Supply Co.
 Sony Corp. of America VTR Div.
 Studio Tape Exchange D 2,9
 TDK Electronics Corp.
 Technics by Panasonic
 Temtron Electronics D 1-9
 3M Co. Magnetic Audio/Video Prod. Div.
 Video Tape Exchange Div. of Cine Film Exchange Inc. D 1-9

Tape Cleaners

Audio Magnetics Corp.
 Broadcast Communications Devices, Inc. D 8,9
 Chyron Corp. Video Products Div.
 Fisher Burke Professional Audio D 8
 G.C. Electronics
 K & L Pro Audio D, 1, 2, 5, 6
 Lita Broadcasting Distributors D 1-9
 Martin Audio/Video D2
 Maxell Corp. of America
 Memorex Corp. Professional Products Group
 Nortronics Co., Inc.
 Nova Corp.
 Recortec Inc.
 Research Technology, Inc.
 Studio Tape Exchange D 2,9
 System Associates
 TEAC Corp of America
 Television Equipment Associates
 3M Co. Magnetic Audio/Video Prod. Div.
 Track Audio, Inc. D 1-9
 Weather Scan, Inc. D

Tape Conditioners, Video

See Adv. Page

Recortec Inc. 260

Chyron Corp. Video Products Div.
 Microtran Co., Inc.
 Nova Corp.
 Recortec Inc.
 Research Technology, Inc.
 Television Equipment Associates

Tape Deck and Turntable Speed Controls

Harris Corp. See Adv. Page **17**

Dyma Engineering, Inc.
Eventide Clock Works Inc.
Harris Corp. Broadcast Products Div.
QRK Electronic Products
Scully Recording Instruments Div. of Dictaphone Corp.
VIF International D 1-9

Tape Decks, Magnetic --See also Cartridge Machine listings

See Adv. Page
AEG-Telefunken **201**
Broadcast Component Dist. Communication Medias..... **200**
Gotham Audio Corp...... **201**
International Tapetronics Corp. **49**
Otari Corp. **203**
Scully Recording Instruments **32,33**
Telex Communications, Inc...... **100**

AEG-Telefunken Magnetic Tape Recorder Dept.
Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Audiotechniques Inc. D 1,2,3
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Cetec Broadcast Group
Eumig Lake Success Business Park
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
IGM Div. of Northwestern Tech.
International Electro-Magnetics
International Tapetronics Corp.
K & L Pro Audio D, 1, 2, 5, 6
LPB Inc.
Mastertone Co., Inc. D 4
Media Concepts, Inc. D 1-9
Nagra Magnetic Recorders, Inc.
Otari Corp.
Panasonic Company
Sansui Electronics Corp.
Scully Recording Instruments Div. of Dictaphone Corp.
Singer Products Co., Inc.
Sono-Mag Corp.
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
Superscope, Inc.
TEAC Corp of America
Tape-Athon Corp.
Technics by Panasonic
Telex Communications, Inc.
Track Audio, Inc. D 1-9
VIF International D 1-9
Val-Tronics, Inc. D2
Video Research Corp.
Wilkinson Electronics, Inc.

Tape Duplicators

See Adv. Page
Garner Industries **213**
KVC, Inc...... **218**

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Audico, Ltd.
Audio Distributor Inc. D 3, 4, 6, 7
Broadcast Automation Associates Inc. D 1,2,5,6
CaVox Stereo Productions

Cetec Audio
Electro Sound, Inc.
Fisher Burke Professional Audio D 8
Garner Industries
Grandy, Inc.
Grinnan Fixture Co. D 1-9
KVC, Inc.
KVC Video Systems Inc. D 1,2
Lita Broadcasting Distributors D 1-9
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Media Concepts, Inc. D 1-9
Microtime, Inc.
Otari Corp.
Panasonic Company
Panasonic Video Systems Div.
Pentagon Industries, Inc.
Recortec Inc.
Singer Products Co., Inc.
Sound Genesis D 8,9
Technics by Panasonic
Telex Communications, Inc.
Track Audio, Inc. D 1-9
Video Research Corp.

Tape Evaluators, Video

See Adv. Page
Recortec Inc. **258,261**

Chyron Corp. Video Products Div.
Comquip, Inc.
Kaitronics Corp.
Merlin Engineering Works, Inc.
Recortec Inc.
Studio Tape Exchange D 2,9
Television Equipment Associates

Tape Meters

See Adv. Page
Broadcast Component Dist. Communication Medias..... **200**

Broadcast Component Dist. Communication Medias D 1-9
Broadcast Equipment Distributors D 1-9
Martin Audio/Video D2
Nagra Magnetic Recorders, Inc.
Tentel

Tape Motion Controls, Audio

Accurate Sound Co.
Dyma Engineering, Inc.
Tape-Athon Corp.
Telcom Research

Tape Racks, Cartridge

See Adv. Page
McCurdy Radio Ind. Inc. **IBC**
Winsted Corp. **221**

Allied Broadcast Equipment D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Audio Magnetics Corp.
Autodyne D 1-9
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Cartridge Service D 7,8,9
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
Cetec Broadcast Group
Colorado Magnetics
Dyma Engineering, Inc.
Fidelipac
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
LPB Inc.
Lita Broadcasting Distributors D 1-9
Mastertone Co., Inc. D 4
McCurdy Radio Ind. Inc.
Micro-Trak Corp.

Charles Moore
Neumade Products Corp.
Professional Audio Service D 1-9
Research Technology, Inc.
Sound Dynamics, Inc. D8, 9
Storeel Corp.
Studio Electronics D 3,4,7
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Winsted Corp.

Tape Recording Accessories

See Adv. Page
Broadcast Component Dist. Communication Medias..... **200**
Recording Supply Co. **90**
Vamco Engineering **36**

AEG-Telefunken Magnetic Tape Recorder Dept.
Allied Broadcast Equipment D 1-9
Amplex Corp.
Ampro Broadcasting Inc.
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Capitol Magnetic Products
Cetec Broadcast Group
Comprehensive Video Supply Corp. D 1-9
Comquip, Inc.
Electro Sound, Inc.
Fidelipac
G.C. Electronics
LPB Inc.
Landy Associates Inc. D 1,2
Lahwed, Ltd.
Lita Broadcasting Distributors D 1-9
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Media Concepts, Inc. D 1-9
Memorex Corp. Professional Products Group
Micro-Trak Corp.
Microtran Co., Inc.
Nagra Magnetic Recorders, Inc.
Nortronics Co., Inc.
Nova Corp.
Panasonic Company
Pentagon Industries, Inc.
Professional Audio Service D 1-9
RCA Broadcast Systems
Ramko Research Inc.
Recording Supply Co.
Robins Broadcast & Sound Equip. Corp.
Scully Recording Instruments Div. of Dictaphone Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
TDK Electronics Corp.
TEAC Corp of America
Taber Mfg. & Engr. Co.
Technics by Panasonic
Telcom Research
Telex Communications, Inc.
Tentel
3M Co. Magnetic Audio/Video Prod. Div.
Track Audio, Inc. D 1-9
VIF International D 1-9
Vamco Engineering
Videomax Div. Orrox Corp.
Westlake Audio

Tape Splice Finders

See Adv. Page
Broadcast Component Dist. Communication Medias..... **200**

Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Autodyne D 1-9

Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Cetec Broadcast Group
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
International Tapetronics Corp.
Lita Broadcasting Distributors D 1-9
Recortec Inc.
Research Technology, Inc.
Track Audio, Inc. D 1-9
UMC Electronics Co. Broadcast Products Div.
Val-Tronics, Inc. D2

Tape Splicers

See Adv. Page
Broadcast Component Dist. Communication Medias..... **200**
Harris Corp. **17**

Allied Broadcast Equipment D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Autodyne D 1-9
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Colorado Magnetics
Comprehensive Video Supply Corp. D 1-9
Electro Sound, Inc.
Fidelipac
G.C. Electronics
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Image Devices Inc. D 1-9
K & L Pro Audio D, 1, 2, 5, 6
Lita Broadcasting Distributors D 1-9
Mastertone Co., Inc. D 4
Nagy Research Products
Neumade Products Corp.
Nortronics Co., Inc.
Professional Audio Service D 1-9
Research Technology, Inc.
Robins Broadcast & Sound Equip. Corp.
Sound Genesis D 8,9
Studer Revox America
Studio Electronics D 3,4,7
TEAC Corp of America
Track Audio, Inc. D 1-9
Victor Duncan, Inc. D 4,5,6,7

Tape Transport Reconditioning Services

See Adv. Page
International Tapetronics Corp. **49**

Accurate Sound Co.
Audiotechniques Inc. D 1,2,3
International Tapetronics Corp.
Merlin Engineering Works, Inc.
Sound Dynamics, Inc. D8, 9
Taber Mfg. & Engr. Co.

Tape Transports

See Adv. Page
AEG-Telefunken **201**
Broadcast Component Dist. Communication Medias..... **200**
Gotham Audio Corp...... **201**

Telex Communications, Inc. 8,100

AEG-Telefunken Magnetic Tape Recorder Dept.
Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Audio Distributor Inc. D 3, 4, 6, 7
Autodyne D 1-9
Broadcast Automation Associates Inc. D 1,2,5,6
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Cetec Broadcast Group
Comquip, Inc.
Electro Sound, Inc.
Gotham Audio Corp.
Grinnan Fixture Co. D 1-9
IGM Div. of Northwestern Tech.
International Electro-Magnetics
International Tapetronics Corp.
Lauderdale Electronic Labs D 1-9
Mastertone Co., Inc. D 4
McCurdy Radio Ind. Inc.
Media Concepts, Inc. D 1-9
Merlin Engineering Works, Inc.
Nagra Magnetic Recorders, Inc.
Pentagon Industries, Inc.
Sono-Mag Corp.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Studer Revox America
Tape-Athon Corp.
Telex Communications, Inc.
VIF International D 1-9
Video Research Corp.
Westlake Audio

Telephone Answering Equipment

See Adv. Page

Broadcast Component Dist. Communication Medias 200

Allied Broadcast Equipment D 1-9
Ampro Broadcasting Inc.
Autodyne D 1-9
Boston Sound & Power Systems
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Channelmatic, Inc.
Electronic Communication Consultants
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Lauderdale Electronic Labs D 1-9
Media Concepts, Inc. D 1-9
Monroe Electronics, Inc.
Panasonic Company
Technics by Panasonic

Telephone Tone Receivers

Bayly Engineering Ltd.
Channelmatic, Inc.
Frequency Devices Inc.
Monroe Electronics, Inc.
TM Systems, Inc.
Vega Div. of Cetec Corp.

Telephone Tone Transmitters

Bald Mountain Lab
Bayly Engineering Ltd.
Channelmatic, Inc.
Electronic Communication Consultants
Frequency Devices Inc.
Monroe Electronics, Inc.
TM Systems, Inc.
Vega Div. of Cetec Corp.

Teletype Noise Reducer Cabinets

Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
PSI Paperwork Systems, Inc.

Termination Units

See Adv. Page

Bird Electronic Corp. 265
Harris Corp. 17

Bird Electronic Corp.
CCA Electronics Corp.
Dielectric Communications A Unit of General Signal
Electro Impulse, Inc.
Harris Corp. Broadcast Products Div.
Holland Electronics
Industrial Sciences
Lectronic Research Laboratories, Inc. D 1-9
Micro Communications, Inc. Grenier Field
Systron-Donner

Test Chart Pattern Illuminators

The Camera Mart, Inc. D 1,2,3
Glentronix Ltd. D 1-9
H. M. Holzberg Associates, Inc. D 1,2,5
Landy Associates Inc. D 1,2
Specialized Industries, Inc.
Telecommunications Industries Ltd.
Tele-Measurements, Inc. D 2

Test Charts, Camera

ATV Research
The Camera Mart, Inc. D 1,2,3
Comprehensive Video Supply Corp. D 1-9
D and S Corley Ltd.
EEV Canada Ltd.
Glentronix Ltd. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Image Devices Inc. D 1-9
Landy Associates Inc. D 1,2
Marconi Communication Systems Ltd.
RCA Broadcast Systems
Telecommunications Industries Ltd.
Tele-Measurements, Inc. D 2
Ultra Audio Pixtec

Test Inserter/Readers, VIT

Philips Test & Measuring Instruments, Inc.
Television Equipment Associates
Time Tech Corp.

Test Probe/Meters, I.C. and Semiconductor Heat

Lectronic Research Laboratories, Inc. D 1-9
Newark Electronics D 1-9
Sinai-Johnson D 8,9

Test Records

Allied Broadcast Equipment D 1-9
B & K Instruments Inc.
Broadcast Consultants Corp. D 1-9
G.C. Electronics
Harris Corp. Broadcast Products Div.
Mastertone Co., Inc. D 4
Shure Brothers Inc.

Test Sets, Multifunction

See Adv. Page

Bald Mountain Lab 262
Harris Corp. 17
Lenco Inc. 77
Potomac Instruments, Inc. 207

Amber Electro Design, Ltd.
Bald Mountain Lab
Cara Pacific Sales Co. D 8,9
Dielectric Communications A Unit of General Signal
Harris Corp. Broadcast Products Div.
Lampkin Lab. Inc.
Lectronic Research Laboratories, Inc. D 1-9

Leitch Video Ltd.
Lenco Inc. Electronics Div.
Potomac Instruments, Inc.
Richmond Hill Laboratories Ltd.
Sadelco, Inc.
Singer Products Co., Inc.
Systron-Donner
TM Systems, Inc.
Telecommunications Technology
Telemet a Geotel Co.
Television Equipment Associates
Val-Tronics, Inc. D2

Test Sets, Vertical Interval

Broadcast Communications Devices, Inc. D 8,9
Lenco Inc. Electronics Div.
Marconi Instruments Div. of Marconi Electronics Inc.
Philips Test & Measuring Instruments, Inc.
Rohde & Schwarz Sales Co.
Telemet a Geotel Co.
Television Equipment Associates

Test Slides, Video

See Adv. Page

Harris Corp. 17

Comprehensive Video Supply Corp. D 1-9
D and S Corley Ltd.
Harris Corp. Broadcast Products Div.
Laird Telemedia Inc.
Landy Associates Inc. D 1,2
Marconi Electronics Inc.
Specialized Industries, Inc.
Telecommunications Industries Ltd.
Tele-Measurements, Inc. D 2

Test Tapes, Audio

See Adv. Page

Broadcast Component Dist. Communication Medias 200
Fidelipac 213
Standard Tape Laboratory, Inc. 10

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Ampex Corp.
Ampro Broadcasting Inc.
Audio Distributor Inc. D 3, 4, 6, 7
Autodyne D 1-9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Cetec Broadcast Group
Colorado Magnetics
Consolidated Electronic Industries
Fidelipac
Lita Broadcasting Distributors D 1-9
Martin Audio/Video D2
Mastertone Co., Inc. D 4
Nagra Magnetic Recorders, Inc.
Nortronics Co., Inc.
Pentagon Industries, Inc.
Professional Audio Service D 1-9
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Standard Tape Laboratory, Inc.
TDK Electronics Corp.
TEAC Corp of America
Taber Mfg. & Engr. Co.
Track Audio, Inc. D 1-9
VIF International D 1-9
Val-Tronics, Inc. D2
Westlake Audio

Testers, Demodulator/Detector

See Adv. Page

Telemet 189

Lectronic Research Laboratories, Inc. D 1-9

Philips Test & Measuring Instruments, Inc.
Telemet a Geotel Co.

Testers, Integrated Circuit

Heath Co.
Tektronix Inc.

Testers, Semiconductor

See Adv. Page

Datatron, Inc. 111

B & K Precision Dynascan Corp.
Datatron, Inc.
Delta Electronics Inc. (N.C.)
Harris Corp. PRD Electronics Div.
Heath Co.
Hickok Elect. Instrument
Lauderdale Electronic Labs D 1-9
Leader Instruments Corp.
Lectrotech Inc.
Rohde & Schwarz Sales Co.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sinai-Johnson D 8,9
Tektronix Inc.
United Radio Supply Inc. D9

Testers, Tape Recorder

See Adv. Page

Philips Broadcast Equip Corp. 66-67

Allied Broadcast Equipment D 1-9
Amber Electro Design, Ltd.
Autodyne D 1-9
Broadcast Aids, Inc.
Fidelipac
Lauderdale Electronic Labs D 1-9
Lita Broadcasting Distributors D 1-9
Marconi Instruments Div. of Marconi Electronics Inc.
Philips Broadcast Equip Corp.
Professional Audio Service D 1-9
Sound Dynamics, Inc. D8, 9
Tentel

Testers, Vacuum Tube

B & K Precision Dynascan Corp.
Heath Co.
Hickok Elect. Instrument
Lectronic Research Laboratories, Inc. D 1-9
Lectrotech Inc.
SPI-ITT Metrix Instruments Div.
Sencore Inc.
Sinai-Johnson D 8,9
Singer Products Co., Inc.
Television Equipment Associates
United Radio Supply Inc. D9

Textbooks, Communications

Comprehensive Video Supply Corp. D 1-9
Image Devices Inc. D 1-9
Opamp Labs, Inc.
Howard W. Sams & Co., Inc.
Ultra Audio Pixtec
United Radio Supply Inc. D9

Time Announcers

Allied Broadcast Equipment D 1-9
Beta Technology, Inc.
Broadcast Consultants Corp. D 1-9
Cetec Broadcast Group
Consolidated Electronic Industries
Hallikainen & Friends, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
Mastertone Co., Inc. D 4
Sono-Mag Corp.
Stancil-Hoffman Corp.
Tape-Athon Corp.

Time Base Correctors, Helical Scan and Quad

See Adv. Page

ADDA Corp......107
The Camera Mart, Inc......74
Consolidated Video Systems.....79
Microtime, Inc......83

ADDA Corp.
Ampex Corp.
Automation Techniques, Inc.
Broadcast Communications Devices, Inc. D 8,9
C.R.V. Systems, Inc.
The Camera Mart, Inc. D 1,2,3
Consolidated Video Systems
Digital Video Systems
Dyma Engineering, Inc.
Edutron, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Landy Associates Inc. D 1,2
Martin Audio/Video D2
Media Concepts, Inc. D 1-9
Merlin Engineering Works, Inc.
Micro Consultants
Microtime, Inc.
NEC America, Inc. Broadcasting Equip. Div.
Panasonic Company
Peirce-Phelps, Inc. Video Systems Div. D 2,5
RCA Broadcast Systems
Siegel Electronics
Sony Corp. of America VTR Div.
Technics by Panasonic

Timers, Blanking Interval

See Adv. Page

Marconi Instruments.....195
Marconi Instruments Div. of Marconi Electronics Inc.

Timers, Program

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
ESE.....257
Vamco Engineering.....36

Allied Broadcast Equipment D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Beta Technology, Inc.
Broadcast Aids, Inc.
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Conrac Corp. Cramer Div.
Digital Concepts Corp.
Dyma Engineering, Inc.
ESE
Glentronix Ltd. D 1-9
H. M. Holzberg Associates, Inc. D 1,2,5
IGM Div. of Northwestern Tech.
MacKenzie Laboratories, Inc.
PWH Electronics
Track Audio, Inc. D 1-9
Val-Tronics, Inc. D2
Vamco Engineering
Video Devices Co.

Timers, Videotape

See Adv. Page

Recortec Inc......257
Vamco Engineering.....36

Artists' Engineering Visual Communications Div.
Convergence Corp.
Digital Concepts Corp.
Martin Audio/Video D2
Merlin Engineering Works, Inc.
QSI Systems, Inc. D 1
Recortec Inc.
Vamco Engineering

Titling Systems

See Adv. Page

Knox Ltd......249
BJA Systems, Inc.
Beston Electronics Inc.
Broadcast Communications Devices, Inc. D 8,9
Chyron Telesystems
Interand Corp. Telestrator Div.
International Communications & Control Corp.
Knox Ltd.
Laird Telemedia Inc.
Listec TV Equip. Corp.
Media Concepts, Inc. D 1-9
Reynolds/Leteron Co.
Siegel Electronics
System Concepts Inc.
Telamation, A Div. of Bell & Howell
Thomson-CSF Laboratories, Inc.
3M Co. Mincom Div.
Video Data Systems

Tool Kits (Hand Tools)

Comprehensive Video Supply Corp. D 1-9
G.C. Electronics
Heath Co.
Image Devices Inc. D 1-9
Jensen Tools & Alloys D 1-9
Kager International
Martin Audio/Video D2
Mountain West Alarm D8
Sono-Mag Corp.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
United Radio Supply Inc. D9
Vector Electronic Co., Inc.

Tower Beacon Light Flashers

See Adv. Page

Hughey & Phillips Inc......222
SSAC Inc......266

CCA Electronics Corp.
Cetec Broadcast Group
Crouse Hinds Co.
EEV Canada Ltd.
Elcom Engineering Co.
Flash Technology Corp. of America
Harris Corp. Broadcast Products Div.
Heath Co.
Hughey & Phillips Inc.
Lauderdale Electronic Labs D 1-9
Mastertone Co., Inc. D 4
SSAC Inc.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.

Tower Guys --See Antenna and Tower Guys

Philadelphia Resins Corp.

Tower Installation and Services --See Antenna and Tower Installation and Services

Tower Light Failure Alarms

See Adv. Page

Hughey & Phillips Inc......222
Moseley Associates, Inc......23

Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Hughey & Phillips Inc.
Moseley Associates, Inc.

Tower Light Indicator Panels

See Adv. Page

Hughey & Phillips Inc......222
CCA Electronics Corp.
Crouse Hinds Co.
Fisher Burke Professional Audio D 8

GTE Sylvania Inc. Lighting Products Group
Harris Corp. Broadcast Products Div.
Hughey & Phillips Inc.
Mastertone Co., Inc. D 4

Tower Lighting Isolation Transformers

See Adv. Page

Hughey & Phillips Inc......222

CCA Electronics Corp.
Cetec Broadcast Group
Decca Austin Insulators
Fisher Burke Professional Audio D 8
Harris Corp. Broadcast Products Div.
Hughey & Phillips Inc.
Mastertone Co., Inc. D 4

Tower Lights, High Intensity Obstruction --See also Lights, Tower Obstruction, Red

See Adv. Page

Flash Technology Corp. of America.....110

Cetec Broadcast Group
Crouse Hinds Co.
Flash Technology Corp. of America
GTE Sylvania Inc. Lighting Products Group
Harris Corp. Broadcast Products Div.
Hughey & Phillips Inc.

Towers

See Adv. Page

CCA Electronics Corp......221
Harris Corp......17
Fred A. Nudd Corp......242
Stainless, Inc......94
Val-Tronics, Inc......245

Allied Tower Co., Inc.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
E-Z Way Products, Inc.
Fort Worth Tower Co., Inc.
G.C. Electronics
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Kline Iron & Steel Co.
Mastertone Co., Inc. D 4
Maze Corp D6
Fred A. Nudd Corp.
Sound Dynamics, Inc. D8, 9
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.
Up-Right Scaffolds
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Towers, Antenna Receiving

See Adv. Page

Stainless, Inc......94

Allied Tower Co., Inc.
Dyma Engineering, Inc.
E-Z Way Products, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Singer Products Co., Inc.
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.
United Radio Supply Inc. D9
Up-Right Scaffolds

Towers, Antenna Transmitting AM

See Adv. Page

Stainless, Inc......94

Allied Tower Co., Inc.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
E-Z Way Products, Inc.
Fort Worth Tower Co., Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Kline Iron & Steel Co.
Mastertone Co., Inc. D 4
RCA Broadcast Systems
Singer Products Co., Inc.
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.
Up-Right Scaffolds
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Towers, Antenna Transmitting FM

See Adv. Page

Stainless, Inc......94

Allied Tower Co., Inc.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
E-Z Way Products, Inc.
Fort Worth Tower Co., Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Kline Iron & Steel Co.
Mastertone Co., Inc. D 4
RCA Broadcast Systems
Singer Products Co., Inc.
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.
Up-Right Scaffolds
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Towers, Antenna Transmitting TV

See Adv. Page

Stainless, Inc......94

Allied Tower Co., Inc.
CCA Electronics Corp.
Cetec Broadcast Group
Dielectric Communications A Unit of General Signal
Dyma Engineering, Inc.
E-Z Way Products, Inc.
Fort Worth Tower Co., Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Kline Iron & Steel Co.
RCA Broadcast Systems
Singer Products Co., Inc.
Stainless, Inc.
Suda Seisakusho Co., Ltd. Nitsuko-Bldg.
Swager Tower Corp.
Tiner Communications Service, Inc. D
Unarco-Rohn Div. of Unarco Ind., Inc.
Up-Right Scaffolds
Val-Tronics, Inc. D2

Transformers, Audio

See Adv. Page

Jensen Transformers242
Whirlwind Audio42

Altec Lansing Sound Products
Automated Processes, Inc.
Bayly Engineering Ltd.
Bogen Div. Lear Siegler, Inc.
Broadcast Communications Devices,
Inc. D 8,9
Electro-Voice Inc.
Harris Corp. Broadcast Products Div.
Jensen Transformers
Lauderdale Electronic Labs D 1-9
Martin Audio/Video D2
Microtran Co., Inc.
Modular Audio Products Unit of
Modular Devices, Inc.
Charles Moore
Opamp Labs, Inc.
Orange County Electronics Int'l, Inc.
Oregon Sound & Lights D 8,9
Panasonic Company
Quad-Eight Electronics
Shure Brothers Inc.
Spectra Sonics
Studer Revox America
Technics by Panasonic
Westlake Audio
Whirlwind Audio
Whirlwind Music

Transformers, Line Level

Bayly Engineering Ltd.
Broadcast Communications Devices,
Inc. D 8,9
Harris Corp. Broadcast Products Div.
Lauderdale Electronic Labs D 1-9
Martin Audio/Video D2
Microtran Co., Inc.
Charles Moore
Opamp Labs, Inc.
Robins Broadcast & Sound Equip.
Corp.
Signal Transformer Co.

Transformers, RF Sampling

See Adv. Page

Delta Electronics Inc.
(Va.)191

Delta Electronics Inc. (Va.)
Harris Corp. Broadcast Products Div.
Multronics, Inc.
North Hills Electronics, Inc.
Signal Transformer Co.
Val-Tronics, Inc. D2

Translator Repair Parts

See Adv. Page

Television Technology
Corp.254

Acrodyne Industries Inc.
Television Technology Corp.
Tepeco Corp.

Translator Systems, High Power

See Adv. Page

Television Technology
Corp.254

Acrodyne Industries Inc.
CCA Electronics Corp.
Dielectric Communications A Unit of
General Signal
Dyma Engineering, Inc.
EMCEE Broadcast Products
H. M. Holzberg Associates, Inc. D
1,2,5
D. N. Latus & Co., Inc.
Television Technology Corp.

Translator Systems, Low Power

See Adv. Page

Howe-Yin Research Co.
Inc.208

Television Technology
Corp.254

Acrodyne Industries Inc.
CCA Electronics Corp.
Contel Mfg.
Dyma Engineering, Inc.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Howe-Yin Research Co. Inc.
Ikegami Electronics (USA) Inc.
D. N. Latus & Co., Inc.
Marconi Electronics Inc.
Rodelco Corp.
Rohde & Schwarz Sales Co.
Scientific-Atlanta, Inc.
Singer Products Co., Inc.
Television Technology Corp.
Tepeco Corp.
Versa Count Engineering

Translator Systems, TV

See Adv. Page

CCA Electronics Corp.221
Howe-Yin Research Co.
Inc.208

Television Technology
Corp.254

CCA Electronics Corp.
Howe-Yin Research Co. Inc.
Television Technology Corp.

Transmission Lines

See Adv. Page

Harris Corp.17
Micro Control
Associates, Inc.62
SWR Inc.41

Allied Broadcast Equipment D 1-9
Andrew Corp.
Belden Corp.
Broadcast Automation Associates Inc.
D 1,2,5,6
CCA Electronics Corp.
Cablewave Systems Inc.
Cetec Broadcast Group
Comark Industries Inc.
Continental Electronics Mfg. Co.
Dielectric Communications A Unit of
General Signal
Dyma Engineering, Inc.
The Finney Co.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Mastertone Co., Inc. D 4
Maury Microwave Corp.
Maze Corp D6
Micro Communications, Inc. Grenier
Field
Micro Control Associates, Inc.
Phelps Dodge Communications Co.
RCA Broadcast Systems
SWR Inc.
Saxton Products Inc.
Shively Laboratories, Inc.
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmission Sets

Amber Electro Design, Ltd.
Cablewave Systems Inc.
GTE Lenkurt, Inc.
Val-Tronics, Inc. D2

Transmission Systems, TV Audio

See Adv. Page

Farinon Electric71

Farinon Electric

Transmission Systems, TV Optical Carrier

See Adv. Page

Telemet189

American Laser Systems, Inc.
Telemet a Geotel Co.

Transmitter Kits

ATV Research
CSI Electronics, Inc.
Harris Corp. Broadcast Products Div.
Heath Co.
McMartin Industries, Inc.

Transmitter Modulation Controllers, Automatic

See Adv. Page

Delta Electronics Inc.
(Va.)191

CCA Electronics Corp.
Delta Electronics Inc. (Va.)
Dyma Engineering, Inc.

Transmitter Output Controllers, Automatic

CCA Electronics Corp.
Delta Electronics Inc. (Va.)
Dyma Engineering, Inc.

Transmitters, AM Carrier

See Adv. Page

Broadcast Component
Dist. Communication
Medias200
Sintronc Corp.105

Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Component Dist.
Communication Medias D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Communications, Ltd.
GTE Lenkurt, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
LPB Inc.
Mastertone Co., Inc. D 4
Maze Corp D6
North American Radio Corp.
Rivers Associates, Inc.
Singer Products Co., Inc.
Sintronc Corp.
Sound Dynamics, Inc. D8, 9

Transmitters, AM Low Power

See Adv. Page

Broadcast Component
Dist. Communication
Medias200

Broadcast Component Dist.
Communication Medias D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Communications, Ltd.
Grinnan Fixture Co. D 1-9
H. M. Holzberg Associates, Inc. D
1,2,5
Ikegami Electronics (USA) Inc.
International Microwave Corp.
LPB Inc.
Marconi Communication Systems Ltd.
Mastertone Co., Inc. D 4
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Wilkinson Electronics, Inc.

Transmitters, AM 250 Watt

See Adv. Page

Sintronc Corp.105

Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Singer Products Co., Inc.
Sintronc Corp.
Sound Dynamics, Inc. D8, 9
Wilkinson Electronics, Inc.

Transmitters, AM 500 Watt

See Adv. Page

Sintronc Corp.105

AEL, Inc.
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
Singer Products Co., Inc.
Sintronc Corp.
Wilkinson Electronics, Inc.

Transmitters, AM 1 kw

See Adv. Page

Sintronc Corp.105
Wilkinson Electronics,
Inc.194

Allied Broadcast Equipment D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Contel Mfg.
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
RCA Broadcast Systems
Singer Products Co., Inc.
Sintronc Corp.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, AM 2 kw

CCA Electronics Corp.
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Tele-Measurements, Inc. D 2

Transmitters, AM 2.5 kw

Allied Broadcast Equipment D 1-9
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International

Dyma Engineering, Inc.
Fisher Burke Professional Audio D 8
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
McMartin Industries, Inc.
Sound Dynamics, Inc. D8, 9
Tele-Measurements, Inc. D 2
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, AM 3 kw

Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
McMartin Industries, Inc.
RCA Broadcast Systems
Singer Products Co., Inc.
Wilkinson Electronics, Inc.

Transmitters, AM 5 kw

	See Adv. Page
Broadcast Component Dist. Communication Medias	200
Collins Div.	31
Continental Electronics Mfg. Co.	247
Sintrinsic Corp.	105
Wilkinson Electronics, Inc.	194

AEL, Inc.
Allied Broadcast Equipment D 1-9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Contel Mfg.
Continental Electronics Mfg. Co.
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Masterstone Co., Inc. D 4
McMartin Industries, Inc.
RCA Broadcast Systems
Singer Products Co., Inc.
Sintrinsic Corp.
Sound Dynamics, Inc. D8, 9
Temtron Electronics D 1-9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, AM 10 kw

	See Adv. Page
Broadcast Component Dist. Communication Medias	200
Continental Electronics Mfg. Co.	247
Sintrinsic Corp.	105
Wilkinson Electronics, Inc.	194

AEL, Inc.
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Contel Mfg.
Continental Electronics Mfg. Co.

Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Masterstone Co., Inc. D 4
McMartin Industries, Inc.
RCA Broadcast Systems
Singer Products Co., Inc.
Sintrinsic Corp.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, AM 15 kw

Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Singer Products Co., Inc.
Wilkinson Electronics, Inc.

Transmitters, AM 20 kw

	See Adv. Page
Wilkinson Electronics, Inc.	194

CCA Electronics Corp.
Collins Div. Rockwell International
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
McMartin Industries, Inc.
Sound Dynamics, Inc. D8, 9
Wilkinson Electronics, Inc.

Transmitters, AM 25 kw

Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Contel Mfg.
Continental Electronics Mfg. Co.
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Singer Products Co., Inc.
Wilkinson Electronics, Inc.

Transmitters, AM 50 kw

	See Adv. Page
Broadcast Component Dist. Communication Medias	200
Sintrinsic Corp.	105
Wilkinson Electronics, Inc.	194

AEL, Inc.
Bayly Engineering Ltd.
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Collins Div. Rockwell International
Continental Electronics Mfg. Co.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
North American Radio Corp.
RCA Broadcast Systems

Singer Products Co., Inc.
Sintrinsic Corp.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, AM over 50 kw

AEL, Inc.
Bayly Engineering Ltd.
CCA Electronics Corp.
CSI Electronics, Inc.
Continental Electronics Mfg. Co.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
North American Radio Corp.
Singer Products Co., Inc.

Transmitters, AM to order

	See Adv. Page
CCA Electronics Corp.	221
Cetec Broadcast Group	118
Collins Div.	31
Continental Electronics Mfg. Co.	247
Harris Corp.	17
Sintrinsic Corp.	105
Val-Tronics, Inc.	245

CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Continental Electronics Mfg. Co.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Maze Corp D6
McMartin Industries, Inc.
North American Radio Corp.
Singer Products Co., Inc.
Sintrinsic Corp.
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, FM 10 Watt

	See Adv. Page
Broadcast Component Dist. Communication Medias	200
Sintrinsic Corp.	105
Wilkinson Electronics, Inc.	194

AEL, Inc.
Allied Broadcast Equipment D 1-9
Bayly Engineering Ltd.
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Dyma Engineering, Inc.
GTE Lenkurt, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
LPB Inc.
Marconi Communication Systems Ltd.
Masterstone Co., Inc. D 4
McMartin Industries, Inc.
QEI Corp.
RCA Broadcast Systems
Rohde & Schwarz Sales Co.
Singer Products Co., Inc.
Sintrinsic Corp.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2
Versa Count Engineering
Wilkinson Electronics, Inc.

Transmitters, FM 40 Watt

Bayly Engineering Ltd.
CCA Electronics Corp.

Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Val-Tronics, Inc. D2

Transmitters, FM 50 Watt

AEL, Inc.
Allied Broadcast Equipment D 1-9
Bayly Engineering Ltd.
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Masterstone Co., Inc. D 4
McMartin Industries, Inc.
Rohde & Schwarz Sales Co.
Singer Products Co., Inc.
Versa Count Engineering
Wilkinson Electronics, Inc.

Transmitters, FM 100 Watt

	See Adv. Page
NEC America, Inc.	119
Wilkinson Electronics, Inc.	194

AEL, Inc.
Allied Broadcast Equipment D 1-9
Bayly Engineering Ltd.
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marti Electronics
Masterstone Co., Inc. D 4
McMartin Industries, Inc.
NEC America, Inc. Broadcasting Equip.
Div.
Scientific Radio Systems, Inc.
Singer Products Co., Inc.
Versa Count Engineering
Wilkinson Electronics, Inc.

Transmitters, FM 250 Watt

	See Adv. Page
NEC America, Inc.	119
Wilkinson Electronics, Inc.	194

AEL, Inc.
Bayly Engineering Ltd.
Broadcast Equipment & Supply Co. D
1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Marconi Communication Systems Ltd.
Marti Electronics
Masterstone Co., Inc. D 4
McMartin Industries, Inc.
NEC America, Inc. Broadcasting Equip.
Div.
North American Radio Corp.
Singer Products Co., Inc.
Versa Count Engineering
Wilkinson Electronics, Inc.

Transmitters, FM 500 Watt

	See Adv. Page
NEC America, Inc.	119
Wilkinson Electronics, Inc.	39,194

Bayly Engineering Ltd.

Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Wilkinson Electronics, Inc.

Transmitters, FM 1 kw

See Adv. Page

NEC America, Inc......119
Wilkinson Electronics, Inc...... 39,194

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 North American Radio Corp.
 RCA Broadcast Systems
 Scientific Radio Systems, Inc.
 Singer Products Co., Inc.
 Sintronic Corp.
 Sound Dynamics, Inc. D8, 9
 Tele-Measurements, Inc. D 2
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Transmitters, FM 1.5 kw

See Adv. Page

Sintronic Corp......105
Wilkinson Electronics, Inc......194

Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 CCA Electronics Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Singer Products Co., Inc.
 Sintronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 2 kw

See Adv. Page

Wilkinson Electronics, Inc...... 39,194

Bayly Engineering Ltd.
 CCA Electronics Corp.
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 McMartin Industries, Inc.
 Wilkinson Electronics, Inc.

Transmitters, FM 2.5 kw

See Adv. Page

Broadcast Component Dist. Communication Medias.....200

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 North American Radio Corp.
 Singer Products Co., Inc.
 Tele-Measurements, Inc. D 2
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Transmitters, FM 3 kw

See Adv. Page

NEC America, Inc......119

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Fisher Burke Professional Audio D 8
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Sintronic Corp.
 Sound Dynamics, Inc. D8, 9
 Val-Tronics, Inc. D2

Transmitters, FM 3.5 kw

See Adv. Page

Sintronic Corp......105

Allied Broadcast Equipment D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 McMartin Industries, Inc.
 Singer Products Co., Inc.
 Sintronic Corp.

Transmitters, FM 4 kw

See Adv. Page

Wilkinson Electronics, Inc......194

CCA Electronics Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Wilkinson Electronics, Inc.

Transmitters, FM 5 kw

See Adv. Page

NEC America, Inc......119
Sintronic Corp......105

Wilkinson Electronics, Inc......194

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Sintronic Corp.
 Sound Dynamics, Inc. D8, 9
 Temtron Electronics D 1-9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Transmitters, FM 7.5 kw

See Adv. Page

Wilkinson Electronics, Inc......194

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 Singer Products Co., Inc.
 Wilkinson Electronics, Inc.

Transmitters, FM 8 kw

CCA Electronics Corp.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 Val-Tronics, Inc. D2

Transmitters, FM 10 kw

See Adv. Page

Broadcast Component Dist. Communication Medias.....200
NEC America, Inc......119
Wilkinson Electronics, Inc......194

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Cetec Broadcast Group
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Marconi Communication Systems Ltd.
 Marconi Electronics Inc.
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Sintronic Corp.
 Val-Tronics, Inc. D2

Wilkinson Electronics, Inc.

Transmitters, FM 12 kw

See Adv. Page

Sintronic Corp......105

AEL, Inc.
 Allied Broadcast Equipment D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 McMartin Industries, Inc.
 Singer Products Co., Inc.
 Sintronic Corp.
 Sound Dynamics, Inc. D8, 9
 Val-Tronics, Inc. D2

Transmitters, FM 15 kw

See Adv. Page

Broadcast Component Dist. Communication Medias.....200

Allied Broadcast Equipment D 1-9
 Broadcast Component Dist.
 Communication Medias D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 McMartin Industries, Inc.
 Singer Products Co., Inc.

Transmitters, FM 20 kw

See Adv. Page

NEC America, Inc......119
Wilkinson Electronics, Inc......194

Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Broadcast Consultants Corp. D 1-9
 Broadcast Equipment & Supply Co. D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Collins Div. Rockwell International
 Dyma Engineering, Inc.
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Mastertone Co., Inc. D 4
 McMartin Industries, Inc.
 NEC America, Inc. Broadcasting Equip. Div.
 North American Radio Corp.
 RCA Broadcast Systems
 Singer Products Co., Inc.
 Sintronic Corp.
 Sound Dynamics, Inc. D8, 9
 Val-Tronics, Inc. D2
 Wilkinson Electronics, Inc.

Transmitters, FM 22.5 kw

Allied Broadcast Equipment D 1-9
 CCA Electronics Corp.
 CSI Electronics, Inc.
 Collins Div. Rockwell International
 Grinnan Fixture Co. D 1-9
 Harris Corp. Broadcast Products Div.
 McMartin Industries, Inc.
 Sintronic Corp.

Transmitters, FM 25 kw

See Adv. Page

Broadcast Component Dist. Communication Medias.....200

Wilkinson Electronics, Inc...... 194

AEL, Inc.
Allied Broadcast Equipment D 1-9
Broadcast Component Dist.
Communication Medias D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Dyma Engineering, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
McMartin Industries, Inc.
Singer Products Co., Inc.
Sintronic Corp.
Sound Dynamics, Inc. D8, 9
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, FM 27.5 kw
See Adv. Page

Sintronic Corp...... 194

CCA Electronics Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Singer Products Co., Inc.
Sintronic Corp.

Transmitters, FM 35 kw

Allied Broadcast Equipment D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
McMartin Industries, Inc.

Transmitters, FM 40 kw
See Adv. Page

Broadcast Component Dist. Communication Medias..... 200
NEC America, Inc...... 119

AEL, Inc.
Allied Broadcast Equipment D 1-9
Broadcast Component Dist.
Communication Medias D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Collins Div. Rockwell International
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Mastertone Co., Inc. D 4
McMartin Industries, Inc.
NEC America, Inc. Broadcasting Equip. Div.
North American Radio Corp.
RCA Broadcast Systems
Singer Products Co., Inc.
Sintronic Corp.
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

Transmitters, FM 50 kw
See Adv. Page

Broadcast Component Dist. Communication Medias..... 200
Wilkinson Electronics, Inc...... 194

AEL, Inc.
Allied Broadcast Equipment D 1-9
Broadcast Component Dist.
Communication Medias D 1-9
CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International

Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
McMartin Industries, Inc.
North American Radio Corp.
Singer Products Co., Inc.
Sintronic Corp.
Sound Dynamics, Inc. D8, 9
Wilkinson Electronics, Inc.

Transmitters, FM 55 kw
See Adv. Page

Sintronic Corp...... 194

CCA Electronics Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
McMartin Industries, Inc.
Sintronic Corp.
Val-Tronics, Inc. D2

Transmitters, FM 70 kw

CCA Electronics Corp.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.

Transmitters, FM 100 kw

CCA Electronics Corp.
CSI Electronics, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
North American Radio Corp.
Singer Products Co., Inc.

Transmitters, FM to order
See Adv. Page

CCA Electronics Corp...... 221
Cetec Broadcast Group..... 118
Collins Div...... 31
Harris Corp...... 17
Val-Tronics, Inc...... 245
Wilkinson Electronics, Inc...... 39

CCA Electronics Corp.
CSI Electronics, Inc.
Cetec Broadcast Group
Collins Div. Rockwell International
Fisher Burke Professional Audio D 8
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Maze Corp D6
McMartin Industries, Inc.
North American Radio Corp.
Rohde & Schwarz Sales Co.
Singer Products Co., Inc.
Sintronic Corp.
Val-Tronics, Inc. D2
Versa Count Engineering
Wilkinson Electronics, Inc.

Transmitters, HF to order
See Adv. Page

CCA Electronics Corp...... 221

CCA Electronics Corp.

Transmitters, TV Microwave
See Adv. Page

International Microwave Corp...... 216

EMCEE Broadcast Products
Farinon Electric
GTE Lenkurt, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Hughes Aircraft Co. Microwave Communications Products
International Microwave Corp.
Microwave Assoc. Inc.
Nurad, Inc.
RCA Broadcast Systems
Tayburn Electronics, Inc.
Tepco Corp.

TerraCom
Varian/Beverly Micro-Link Products

Transmitters, TV 1 Watt
See Adv. Page

Howe-Yin Research Co. Inc...... 218

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
GTE Lenkurt, Inc.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Howe-Yin Research Co. Inc.
Marconi Communication Systems Ltd.
Rohde & Schwarz Sales Co.
Tayburn Electronics, Inc.
Television Technology Corp.
Townsend Associates, Inc.
Varian/Beverly Micro-Link Products

Transmitters, TV 10 Watt
See Adv. Page

Howe-Yin Research Co. Inc...... 208

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
GTE Lenkurt, Inc.
Harris Corp. Broadcast Products Div.
Howe-Yin Research Co. Inc.
Marconi Communication Systems Ltd.
Rodelco Corp.
Tayburn Electronics, Inc.
Television Technology Corp.
Townsend Associates, Inc.
Varian/Beverly Micro-Link Products

Transmitters, TV 20 Watt

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Rodelco Corp.
Tayburn Electronics, Inc.
Television Technology Corp.

Transmitters, TV 60 Watt

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Rodelco Corp.

Transmitters, TV 100 Watt
See Adv. Page

Howe-Yin Research Co. Inc...... 208

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
Howe-Yin Research Co. Inc.
Marconi Communication Systems Ltd.
Rodelco Corp.
Television Technology Corp.
Varian/Beverly Micro-Link Products

Transmitters, TV 500 Watt

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.

Transmitters, TV 1 kw
See Adv. Page

Howe-Yin Research Co. Inc...... 208

NEC America, Inc...... 119
Philips Broadcast Equip. Corp...... 66-67

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Howe-Yin Research Co. Inc.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip. Div.
Philips Broadcast Equip Corp.
Townsend Associates, Inc.

Transmitters, TV 2 kw

Acrodyne Industries Inc.
CCA Electronics Corp.
EMCEE Broadcast Products
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.

Transmitters, TV 3 kw
See Adv. Page

Howe-Yin Research Co. Inc...... 208
NEC America, Inc...... 119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Howe-Yin Research Co. Inc.
NEC America, Inc. Broadcasting Equip. Div.

Transmitters, TV 5 kw
See Adv. Page

NEC America, Inc...... 119

Acrodyne Industries Inc.
CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip. Div.
Philips Broadcast Equip Corp.
Townsend Associates, Inc.

Transmitters, TV 6 kw

Acrodyne Industries Inc.
CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D 1,2,5
Marconi Communication Systems Ltd.
Philips Broadcast Equip Corp.

Transmitters, TV 10 kw

Acrodyne Industries Inc.
Bayly Engineering Ltd.
CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
Philips Broadcast Equip Corp.

Transmitters, TV 11 kw

Acrodyne Industries Inc.
CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Philips Broadcast Equip Corp.

Transmitters, TV 12 kw

Acrodyne Industries Inc.
CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Philips Broadcast Equip Corp.
Townsend Associates, Inc.

Transmitters, TV 12.5 kw

CCA Electronics Corp.

Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5

Transmitters, TV 15 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip
Div.
RCA Broadcast Systems

Transmitters, TV 24 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
NEC America, Inc. Broadcasting Equip.
Div.

Transmitters, TV 25 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip.
Div.
Philips Broadcast Equip Corp.
RCA Broadcast Systems
Townsend Associates, Inc.

Transmitters, TV 30 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip.
Div.
Philips Broadcast Equip Corp.
RCA Broadcast Systems
Townsend Associates, Inc.

Transmitters, TV 35 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip.
Div.
Philips Broadcast Equip Corp.
RCA Broadcast Systems

Transmitters, TV 50 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip.
Div.
Philips Broadcast Equip Corp.
RCA Broadcast Systems
Temtron Electronics D 1-9

Transmitters, TV 55 kw

See Adv. Page

NEC America, Inc......119

Philips Broadcast Equip Corp.

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip.
Div.
Philips Broadcast Equip Corp.
RCA Broadcast Systems
Townsend Associates, Inc.

Transmitters, TV 100 kw

See Adv. Page

NEC America, Inc......119

CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Marconi Communication Systems Ltd.
Marconi Electronics Inc.
NEC America, Inc. Broadcasting Equip.
Div.
RCA Broadcast Systems
Townsend Associates, Inc.

Transmitters, TV to order

See Adv. Page

CCA Electronics Corp.221
Harris Corp.17
Howe-Yin Research Co. Inc.208
Philips Broadcast Equip Corp.66-67
RCA Broadcast Systems.....27

Acrooyne Industries Inc.
CCA Electronics Corp.
Harris Corp. Broadcast Products Div.
Howe-Yin Research Co. Inc.
Marconi Communication Systems Ltd.
Philips Broadcast Equip Corp.
RCA Broadcast Systems
Tayburn Electronics, Inc.
Television Technology Corp.
Temtron Electronics D 1-9
Townsend Associates, Inc.

Tuners, AM

Allied Broadcast Equipment D 1-9
Dyma Engineering, Inc.
H. M. Holzberg Associates, Inc. D
1,2,5
K & L Pro Audio D, 1, 2, 5, 6
McKay Dymek Co.
McMartin Industries, Inc.
Micro-Trak Corp.
Ramko Research Inc.

Tuners, FM

Accurate Sound Co.
Allied Broadcast Equipment D 1-9
Collins Div. Rockwell International
Crown International, Inc.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
K & L Pro Audio D, 1, 2, 5, 6
Lauderdale Electronic Labs D 1-9
Martin Audio/Video D2
McMartin Industries, Inc.
Micro-Trak Corp.
Panasonic Company
Ram Audio Systems, Inc.
Ramko Research Inc.
SWR Inc.
Sansui Electronics Corp.
Sound Genesis D 8,9
TEAC Corp of America
Technics by Panasonic

Tuners, TV Audio

K & L Pro Audio D, 1, 2, 5, 6
McMartin Industries, Inc.
Rhoades National Corp.

Turnkey Equipment Installation Services

AEL, Inc.
A. F. Associates, Inc.
Applied Video Electronics, Inc. D 1-9
Atlantic Research Corp.
Beta Technology, Inc.
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
C.R.V. Systems, Inc.
Dyma Engineering, Inc.
EMCEE Broadcast Products
Farinon Electric
Fisher Burke Professional Audio D 8
GTE Lenkurt, Inc.
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
H. M. Holzberg Associates, Inc. D
1,2,5
Hughes Aircraft Co. Microwave
Communications Products
K & L Pro Audio D, 1, 2, 5, 6
Magna-Tech Electronic Co., Inc.
Marconi Communication Systems Ltd.
Maze Corp D6
Merill Cable Equipment Corp.
Microtime, Inc.
Microwave Assoc. Inc.
Pacific Recorders and Engrg. Corp.
RCA Broadcast Systems
RCA Cablevision Systems
Rivers Associates, Inc.
Soll
Spectra Sonics
Tele-Measurements, Inc. D 2
Track Audio, Inc. D 1-9
Ultra Audio Pixtec
Val-Tronics, Inc. D2
Westlake Audio
The Widget Works, Inc.

Turntable Speed Control --See Tape Deck and Turntable Speed Control

Turntables, Phonograph

See Adv. Page

Autodyne267
Broadcast Component Dist. Communication Medias.....200
Collins Div.31
Harris Corp.17
K & L Pro Audio.....254
Ramko Research Inc. ..186-187
Russco Electronics Mfg. Inc.16
Technics by Panasonic115
Val-Tronics, Inc......245

Allied Broadcast Equipment D 1-9
Audio Distributor Inc. D 3, 4, 6, 7
Audio Interface Inc.
Autodyne D 1-9
Broadcast Automation Associates Inc.
D 1,2,5,6
Broadcast Communications Devices, Inc. D 8,9
Broadcast Component Dist. Communication Medias D 1-9
Broadcast Consultants Corp. D 1-9
Broadcast Electronics, Inc.
Broadcast Equipment Distributors D 1-9
Broadcast Equipment & Supply Co. D 1-9
CCA Electronics Corp.
Cetec Broadcast Group
Collins Div. Rockwell International
Dyma Engineering, Inc.
EMT Franz VGmbH
Grinnan Fixture Co. D 1-9
Harris Corp. Broadcast Products Div.
Heath Co.
H. M. Holzberg Associates, Inc. D
1,2,5
K & L Pro Audio D, 1, 2, 5, 6
LPB Inc.
Martin Audio/Video D2
Mastertone Co., Inc. D 4
McCurdy Radio Ind. Inc.

Media Concepts, Inc. D 1-9
Micro-Trak Corp.
Oregon Sound & Lights D 8,9
Panasonic Company
Professional Audio Service D 1-9
QRK Electronic Products
RCA Broadcast Systems
Ramko Research Inc.
Russco Electronics Mfg. Inc.
Sansui Electronics Corp.
Singer Products Co., Inc.
Sound Dynamics, Inc. D8, 9
Sound Genesis D 8,9
Stanton Magnetics Inc.
TEAC Corp of America
Technics by Panasonic
Track Audio, Inc. D 1-9
UMC Electronics Co. Broadcast
Products Div.
Val-Tronics, Inc. D2
Wilkinson Electronics, Inc.

TV Systems, Closed Circuit

See Adv. Page

H. M. Holzberg Associates, Inc.262

A. F. Associates, Inc.
ATV Research
American Data Corp. A North
American Philips Co.
Berkey-Colortran Inc.
Broadcast Communications Devices, Inc. D 8,9
Broadcast Video Systems, Ltd.
Catel Div. United Scientific Corp.
Central Dynamics Corp.
Colorado Video Inc.
Communications Technology, Inc.
Comquip, Inc.
Dage-MTI, Inc.
Davis & Sanford Co. Inc.
Delta Electronics Inc. (N.C.)
Denson Electronic Corp. D 1-9
Dynair Electronics, Inc.
Fernseh Group Robert Bosch Corp.
GBC Closed Circuit TV Corp.
General Electric Co. ISO Div.
Hitachi Denshi America, Ltd.
H. M. Holzberg Associates, Inc. D
1,2,5
Ikegami Electronics (USA) Inc.
International Nuclear Corp.
Javelin Electronics
Laird Telemedia Inc.
Leitch Video Ltd.
Lenzar Optics Corp.
Marconi Electronics Inc.
Media Concepts, Inc. D 1-9
Merill Cable Equipment Corp.
Motorola Communications and
Electronics Inc.
Panasonic Company
Panasonic Video Systems Div.
Peirce-Phelps, Inc. Video Systems Div.
D 2,5
Philips Broadcast Equip Corp.
Power-Optics Inc.
QSI Systems, Inc. D 1
RCA Broadcast Systems
RCA Electro Optics and Devices
Technics by Panasonic
Tele-Cine Inc.
Tele-Measurements, Inc. D 2
Teltron Inc.
Temtron Electronics D 1-9
Varian/Beverly Micro-Link Products
Videodetics Corp.
Videomedia
Westinghouse Ind. & Gov't Tube Div.
Winegard Television Systems
The Zei-Mark Corp.

Used Broadcast Equipment

See Adv. Page

A. F. Associates, Inc.120
System Associates260
A. F. Associates, Inc.
System Associates

Vacuum Tube (Rectifier) Replacements, Solid State

Broadcast Consultants Corp. D 1-9
EEV Canada Ltd.
Electronic Devices, Inc.
H. M. Holzberg Associates, Inc. D 1,2,5
Newark Electronics D 1-9
Wilkinson Electronics, Inc.

Vacuum Tubes, Camera Image-Orthicon

See Adv. Page

EEV, Inc. 37
Temtron Electronics250

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
Comquip, Inc.
EEV, Inc.
EEV Canada Ltd.
English Electric Valve Co. Ltd.
Fernseh Group Robert Bosch Corp.
General Electric Co. ISO Div.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Teltron Inc.
Temtron Electronics D 1-9
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9

Vacuum Tubes, Camera Isocon

See Adv. Page

EEV, Inc. 37

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV, Inc.
EEV Canada Ltd.
English Electric Valve Co. Ltd.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Teltron Inc.
Thor Electronics Corp. D 1-9

Vacuum Tubes, Camera Leddicon

See Adv. Page

EEV, Inc. 37
Temtron Electronics250

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV, Inc.
EEV Canada Ltd.
English Electric Valve Co. Ltd.
RCA Distributor & Special Products Div.
Temtron Electronics D 1-9

Vacuum Tubes, Camera Newwicon

See Adv. Page

Temtron Electronics250

Amperex Electronic Corp. Slatersville Div.
Ceco Communications Inc.
GBC Closed Circuit TV Corp.
Temtron Electronics D 1-9

Vacuum Tubes, Camera Plumbicon

See Adv. Page

Amperex Electronic Corp. 18-19
Philips Broadcast Equip Corp. 66-67
Temtron Electronics250

Amperex Electronic Corp. Slatersville Div.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
GBC Closed Circuit TV Corp.
Harris Corp. Broadcast Products Div.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
Philips Broadcast Equip Corp.
Teltron Inc.
Temtron Electronics D 1-9
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9

Vacuum Tubes, Camera Saticon

See Adv. Page

RCA Electro Optics and Devices 73
Temtron Electronics250

Ceco Communications Inc.
Hitachi Denshi America, Ltd.
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Temtron Electronics D 1-9

Vacuum Tubes, Camera Silicon Array

See Adv. Page

EEV, Inc. 37
RCA Electro Optics and Devices 73
Temtron Electronics250

Amperex Electronic Corp. Slatersville Div.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV, Inc.
EEV Canada Ltd.
English Electric Valve Co. Ltd.
GBC Closed Circuit TV Corp.
General Electric Co. ISO Div.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Teltron Inc.
Temtron Electronics D 1-9
Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9
Westinghouse Ind. & Gov't Tube Div.

Vacuum Tubes, Camera Telicon

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
Teltron Inc.
Thor Electronics Corp. D 1-9

Vacuum Tubes, Camera Vidicon

See Adv. Page

EEV, Inc. 37
RCA Electro Optics and Devices 73
Temtron Electronics250

ATV Research
Amperex Electronic Corp. Slatersville Div.
Bayly Engineering Ltd.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV, Inc.
EEV Canada Ltd.
English Electric Valve Co. Ltd.
GBC Closed Circuit TV Corp.
General Electric Co. ISO Div.
Harris Corp. Broadcast Products Div.
Hitachi Denshi America, Ltd.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Teltron Inc.
Temtron Electronics D 1-9

Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9
Westinghouse Ind. & Gov't Tube Div.

Vacuum Tubes, Camera Vikon

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
Teltron Inc.
Thor Electronics Corp. D 1-9

Vacuum Tubes, Camera Vistacon

See Adv. Page

Temtron Electronics250

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Temtron Electronics D 1-9

Vacuum Tubes, Cathode Ray Oscilloscope

See Adv. Page

Temtron Electronics250
Val-Tronics, Inc......245

Amperex Electronic Corp. Slatersville Div.
Bayly Engineering Ltd.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV, Inc.
EEV Canada Ltd.
English Electric Valve Co. Ltd.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
Temtron Electronics D 1-9
Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9
Val-Tronics, Inc. D2

Vacuum Tubes, Cathode Ray TV Color

See Adv. Page

Temtron Electronics250

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
Temtron Electronics D 1-9
Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9

Vacuum Tubes, Cathode Ray TV Monochrome

See Adv. Page

Temtron Electronics250

Amperex Electronic Corp. Slatersville Div.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV Canada Ltd.
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Temtron Electronics D 1-9
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9

Vacuum Tubes, Rectifier

See Adv. Page

EEV, Inc. 37

RCA Distributor & Special Products Div. 87
Temtron Electronics250

Broadcast Consultants Corp. D 1-9
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EEV, Inc.
EEV Canada Ltd.
EIMAC Div. of Varian
English Electric Valve Co. Ltd.
JSH Electronics, Inc.
Lectronic Research Laboratories, Inc. D 1-9
C. M. Levit Electronics D 1-9
Lita Broadcasting Distributors D 1-9
Newark Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Temtron Electronics D 1-9
Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9
United Radio Supply Inc. D9
Varian Associates, Inc. Electron Device Group
Westinghouse Ind. & Gov't Tube Div.

Vacuum Tubes, Translator

See Adv. Page

Temtron Electronics250

Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
EIMAC Div. of Varian
JSH Electronics, Inc.
C. M. Levit Electronics D 1-9
Lita Broadcasting Distributors D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
RCA Power Tube Marketing
Television Technology Corp.
Temtron Electronics D 1-9
Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9

Vacuum Tubes, Transmitting

See Adv. Page

Calvert Electronics Inc......250
EEV, Inc. 37
RCA Distributor & Special Products Div. 87
Temtron Electronics250

Bayly Engineering Ltd.
Broadcast Consultants Corp. D 1-9
CCA Electronics Corp.
Calvert Electronics Inc. D 1-9
Ceco Communications Inc.
Cetec Broadcast Group Communications, Ltd.
Dyma Engineering, Inc.
EEV, Inc.
EEV Canada Ltd.
EIMAC Div. of Varian
Econco Broadcast Service Inc.
English Electric Valve Co. Ltd.
Harris Corp. Broadcast Products Div.
JSH Electronics, Inc.
Lectronic Research Laboratories, Inc. D 1-9
C. M. Levit Electronics D 1-9
Lita Broadcasting Distributors D 1-9
Newark Electronics D 1-9
RCA Distributor & Special Products Div.
RCA Electro Optics and Devices
Singer Products Co., Inc.
Temtron Electronics D 1-9
Thomson-CSF Electron Tubes
Thor Electronics Corp. D 1-9
Val-Tronics, Inc. D2
Varian Associates, Inc. Electron Device Group
Westinghouse Ind. & Gov't Tube Div.

Vacuum Tubes, Transmitting Rebuilt

See Adv. Page

Temtron Electronics250

Vacuum Tube Industries 263

Econco Broadcast Service Inc.
 Freeland Products Co.
 C. M. Levit Electronics D 1-9
 Lita Broadcasting Distributors D 1-9
 Temtron Electronics D 1-9
 Thor Electronics Corp. D 1-9
 Vacuum Tube Industries

Vector Displays, Color

See Adv. Page

Harris Corp. 17

Broadcast Video Systems, Ltd.
 The Camera Mart, Inc. D 1,2,3
 Harris Corp. Broadcast Products Div.
 Lectrotech Inc.
 Lenco Inc. Electronics Div.
 Tektronix Inc.
 Ultra Audio Pixtec
 Video Aids Corp. of Colorado

Viewfinders, Closed Circuit Camera

See Adv. Page

Panasonic Video Systems Div. 34 35

Javelin Electronics
 Martin Audio/Video D2
 Panasonic Video Systems Div.
 Tele-Measurements, Inc. D 2
 Weather Scan, Inc. D

Voltmeters, AC

B & K Instruments Inc.
 B & K Precision Dynascan Corp.
 Bayly Engineering Ltd.
 Boonton Electronics
 California Instruments
 Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.
 Dranetz Engineering Labs., Inc.
 John Fluke Mfg. Co., Inc.
 Gralex Industries
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Hickok Elect. Instrument
 ITT Jennings
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc. D 1-9

Lectrotech Inc.
 Philips Test & Measuring Instruments, Inc.
 Racal-Dana Instruments Inc.
 Rohde & Schwarz Sales Co.
 Rycom Instruments
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Systron-Donner
 Tektronix Inc.

Voltmeters, DC

B & K Instruments Inc.
 B & K Precision Dynascan Corp.
 California Instruments
 Dana Laboratories, Inc. see-Racal-Dana Instruments Inc.
 John Fluke Mfg. Co., Inc.
 Gralex Industries
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Hickok Elect. Instrument
 ITT Jennings
 Lauderdale Electronic Labs D 1-9
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc. D 1-9
 Lectrotech Inc.
 Philips Test & Measuring Instruments, Inc.
 Racal-Dana Instruments Inc.
 Rohde & Schwarz Sales Co.
 Rycom Instruments
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Systron-Donner
 Tektronix Inc.

Voltmeters, FET

B & K Precision Dynascan Corp.
 Dyma Engineering, Inc.
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Hickok Elect. Instrument
 Leader Instruments Corp.
 Lectrotech Inc.
 Newark Electronics D 1-9
 Philips Test & Measuring Instruments, Inc.
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.
 Sencore Inc.
 Sinai-Johnson D 8,9

Voltmeters, Vacuum Tube

B & K Precision Dynascan Corp.

Boonton Electronics
 Gralex Industries
 Heath Co.
 ITT Jennings
 Lectronic Research Laboratories, Inc. D 1-9
 Newark Electronics D 1-9
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.
 Sinai-Johnson D 8,9

Volt-ohm Meters See meters, Volt Ohm

Wattmeters

See Adv. Page

Bird Electronic Corp. 265

Allied Broadcast Equipment D 1-9
 Bayly Engineering Ltd.
 Bird Electronic Corp.
 Boonton Electronics
 CCA Electronics Corp.
 Dielectric Communications A Unit of General Signal
 Electro Impulse, Inc.
 Harris Corp. Broadcast Products Div.
 Heath Co.
 Hickok Elect. Instrument
 H. M. Holzberg Associates, Inc. D 1,2,5
 Lampkin Lab. Inc.
 Leader Instruments Corp.
 Lectronic Research Laboratories, Inc. D 1-9
 The London Co.
 Micro Communications, Inc. Grenier Field
 Rohde & Schwarz Sales Co.
 SPI-ITT Metrix Instruments Div.
 Singer Products Co., Inc.
 Val-Tronics, Inc. D2

Waveguides

Andrew Corp.
 Cablewave Systems Inc.
 Comark Industries Inc.
 Dielectric Communications A Unit of General Signal
 Harris Corp. Broadcast Products Div.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Lectronic Research Laboratories, Inc. D 1-9
 Maury Microwave Corp.
 Micro Communications, Inc. Grenier

Field
 Microwave Assoc. Inc.
 Nurad, Inc.
 RCA Broadcast Systems
 RF Systems, Inc.
 Singer Products Co., Inc.
 Systron-Donner

Weather Instruments

See Adv. Page

Scientific Radio Systems, Inc. 212
Texas Electronics 251

Broadcast Consultants Corp. D 1-9
 ESE
 Harris Corp. Broadcast Products Div.
 Heath Co.
 H. M. Holzberg Associates, Inc. D 1,2,5
 Mastertone Co., Inc. D 4
 Maze Corp D6
 Merrill Cable Equipment Corp.
 Scientific Radio Systems, Inc.
 Taylor Instrument Consumer Prod. Div. Sybron Corp.
 Texas Electronics
 Track Audio, Inc. D 1-9
 Weather Scan, Inc. D

Weather Radar --See Radar, Weather

Wiring and Cabling Services

Audio Accessories Inc.
 Belden Corp.
 Beta Technology, Inc.
 Boston Insulated Wire & Cable Co.
 C.R.V. Systems, Inc.
 Cablewave Systems Inc.
 Communications, Ltd.
 Dyma Engineering, Inc.
 Martin Audio/Video D2
 Peirce-Phelps, Inc. Video Systems Div. D 2,5
 RCA Broadcast Systems
 Rex Rheostat & Co., Inc.
 SGL Waber Electric
 The Ken Schaffer Group, Inc.
 Soll
 Sono-Mag Corp.
 Tele-Measurements, Inc. D 2
 Times Wire and Cable
 Union Connector Co., Inc.

Company Mailing Addresses Begin on Page 223

The
 New
 Yorkers
 Who
 Hustle
 the
 Wind.

176D



Street life in a metropolitan area often inspires genius. And that genius can be funneled two ways—good or bad.

The 11th Street Movement in Manhattan's Lower East Side has funneled their genius on the good side with a unique energy saving project involving windmills and solar panels.

This project is just part of the Emergency Energy Conservation Program operated by the Community Services Administration. CSA has established many demonstration programs designed to find new and better ways to help the poor and elderly cope with what for them is a continuing energy crisis.

The program has a broad base, covering everything from development of low cost solar heating and wind generators to experiments with energy conserving farming technologies.

But helping people help themselves isn't an easy task. Simply put, it demands community support—Your support and the support of local and state governments.

If you think this effort is worthwhile, take action, contact your local Community Action Agency or Community Services Administration Washington, D.C. 20506.

There are thousands of people who want to help themselves. Like the 11th Street Movement—they learned how to catch the wind, so they'll no longer be a victim of the elements.



Perpetual Power

The First & Only Battery System That Never Runs Down

It is a fact that every battery must eventually run down, and usually does during your most important shot. We have changed all that. The new Anton/Bauer battery system will never run out of power, not during your most important shot, not during any shot.

The First System Approach

There are a lot of companies that make batteries, but only Anton/Bauer makes a battery system. Consider what happens when a conventional battery runs down, the cameraman must remove the camera from his shoulder, find a place to put it down, unplug the camera cable from the battery, unbuckle the battery, put on a fresh battery, fumble with the camera cables and lift the camera back on his shoulder. Now consider what this means in terms of a lost shot or even worse, an eternity of dead air. **Now** consider the Anton/Bauer System.

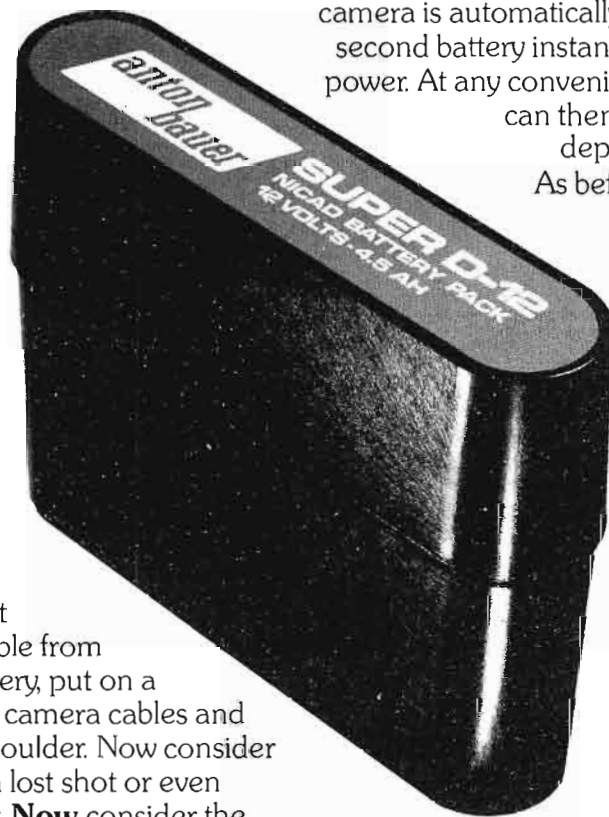
Quick-Change Modular System

Pull out the depleted battery module, push in a fresh one. The Anton/Bauer System is that simple and that direct. No plugs, no buckle, no fumbling. A fresh battery module in one second. But sometimes even one second is not good enough.

Perpetual Power

An important part of the Anton/Bauer System is our perpetual power belt which holds two battery modules. When the first is depleted, the camera is automatically, or manually switched to the second battery instantaneously without **any** loss of power. At any convenient moment, the cameraman can then take a second to replace the depleted battery with a fresh one.

As before, when the second battery is depleted the camera will now draw once again from the fresh battery in position 1. And so it goes... no missed shot, no dead air, perpetual power. But there is even more to the Anton/Bauer System, like a variety of charges to fit any application, a selection of battery holders for any shooting style and battery modules tailored to the specific power requirements of virtually every portable Video camera.



Anton/Bauer... the first to design a **Professional Battery System** for the Video Industry—modular design—rugged LEXAN cases—silverplated contacts—welded cell construction—

It all adds up to a system that does not run down, or let you down either. Write or call for complete brochure.

**anton
bauer**

Anton/Bauer Inc.

415 Howe Ave., Shelton, CT. 06484, (203) 735-3305

We're a little powerhouse.

represented nationally by:

VIDEO COMPONENTS INC. 601 south main street, spring valley, new york 10977 (914)356-3700 telex 996534

WE'RE KNOWN BY THE COMPANIES WE REP

September, 1978

Circle (107) on Reply Card

183

DECCA AUSTIN INSULATORS

A DIVISION OF DERAM LIMITED

- GUY STRAIN INSULATORS
- BASE INSULATORS
- ISOLATION TRANSFORMERS
- TRANSFORMER ENCLOSURES

71 Selby Road, Brampton, Ontario L6W 1K5, Canada

Telephone: (416) 457-8720 Telex: 06-97699

Cables: Decradar Toronto

Circle (108) on Reply Card

This should be enough reason to come to Sound Genesis:

Auditronics	Vega	UREI
Ampex	Crown	BGW
Otari	dbx	JBL
Electro-Voice	Dolby	Shure
Neumann	Eventide	Stanton
Sennheiser	Inovonics	Technics

But it's not enough for us.

That's why we maintain a large staff of trained audio professionals anxious to fill your needs within your budget. Whether you need a new mic or a complete system design and installation, stop by and let us show you why we have become the home of the Northern California audio scene.

Before you make a sound, listen to us.

sound genesis
San Francisco

Sound Genesis, 2001 Bryant St., San Francisco, CA 94110
(415) 285-8900/TWX: 910-372-7393

Circle (109) on Reply Card

Station- to-station

Metal foil sensor triggers alarm at end of tape

By Cliff Graff, WSGW/WIOG-FM,
Saginaw, MI

Our FM station, WIOG, uses a Schafer 902 automation system utilizing four Ampex 440 playback units. With the music format employed it is necessary to let each tape deck play the last selection before changing the tape. The necessity arose of having an alarm system that would indicate to the receptionist and also to the control room announcer that the tape had played the last selection. We decided to use a short metal foil strip on the underside of the tape at the end of the last musical selection to set off an alarm.

After checking with several equipment manufacturers, we couldn't locate a commercial sensor to mount on the Ampex units. The sensing units that were finally built were made from Switchcraft type-260 three-way standard phone plugs. The plastic end and the metal inside rod of the plug were removed and the insulated plastic inner sleeve was retained. The threaded and knurled part of the shaft on the lower end was turned down for better appearance. This was done by putting the shaft in a portable drill chuck and turning it down on a metal file.

To position the sensor, it was temporarily held in the proper place on the playback deck so the tape would just pass over the top of the sensor with a slight pressure in the "play" mode. With a pencil, the position was marked on the panel and a 3/16-inch hole was drilled in the center of the marked circle. A 2-inch, 6-32 bolt was then substituted for the removed center shaft with the flat head end making contact with the insulated end part of the phone plug. The plastic insulated sleeve was put on the threaded part of the bolt. Using a small insulated shoulder washer on the inside of the panel, the sensor was mounted on the panel so the lower part of the unit was making contact with the panel surface. With the sleeve and shoulder washer the end portion was insulated from the rest and could be electrically

continued on page 188

BROADCAST ENGINEERING



WHEN IT'S TIME TO SWITCH...

Then switch to the Video Controller

When Broadcast quality is required and cost versus performance is a must . . . take the time to evaluate the computer Image Video Controller . . . a product of Dytek Industries Inc. Models available starting as low as \$14,000 and up to \$80,000 depending on your individual needs.

QUALITY PRODUCTS ARE AVAILABLE FOR:

- Production
- Master Control
- Routing
- Computer Editing
- Automation
- Mobile Van Operations

STATE-OF-THE-ART FEATURES:

- (Available On Most Models)
- Multiple Level Keying Per M/E
 - Over 100 Wipe Effects
 - Rotary Wipes
 - Computer Interface
 - Image Compression
 - Status Mode Readouts
 - Automated Transition Control
 - ... And Many More

TOMORROW'S INNOVATIONS ... TODAY



**COMPUTER IMAGE
VIDEO CONTROLLER**

A PRODUCT OF **DYTEK**

INDUSTRIES INC.

2492 West Second Ave.
Denver, Colorado 80223
(303) 935-3514

Circle (110) on Reply Card

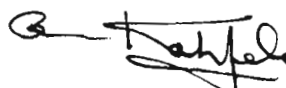
AUDIO EQUIPMENT THAT DEFIES COMPARISON — PRICE OR PERFORMANCE

The headline above is not just another hollow advertising claim. It is simply a statement of facts. A fact that started out as a goal over eight years ago and is the result of both an intensive developmental program and an ongoing awareness of your, the broadcasters, needs.

The products shown on these pages are but representative examples of over 150 items manufactured or sold thru RAMKO RESEARCH. From turntables, audio consoles, distribution amplifiers, and audio switchers to cart machines, tape winders and mic and line amplifiers.

We openly encourage your comparison with anything else on the market. Write, wire or call COLLECT for further information. Better yet, take advantage of our 2 week trial offer and prove us to yourself. We will both come out ahead.

Sincerely,



RAY KOHFELD
President/Director of Engineering

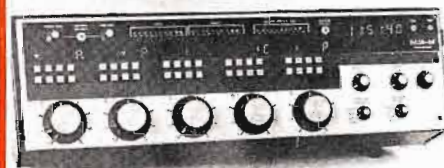


TURNTABLE PREAMPS. Leaders in their field. MP-8 & SP-8 — Bal. out; 0.05% dist.; 68dB gain; +8dBm out (+21dBm max); S/N —77dB down ref. to 12mv in @ 1kHz & +8dBm out. ±1dB RIAA, remote scratch & brilliance activation. Mono, stereo, table top, and rack mount versions. \$98 to \$166.

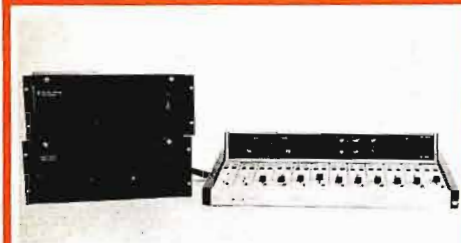
ESP-38 — Bal. out; 0.03% distortion; S/N, —85dB down referred to 12mv in @ 1kHz and +8dBm out; ±0.5dB RIAA; remote & local scratch, brilliance, rumble filter and mono activation; +8dBm out (+21dBm max.), +60dB gain. Left & right Hi/Lo equalization trimmers and recessed level controls. Built-in turntable remote start/stop relay. Stereo only. Price — \$325.



AUDIO DISTRIBUTION AMPLIFIERS. Available in 12 different rack and table top versions. All inputs and outputs may be used balanced or unbalanced and in any combination on the same amplifier. All outputs are individually amplifier isolated and will work into any load over 125 ohms without change in distortion or response. Response 10Hz to 30kHz, ±0.5 dB. Distortion 0.1% or less. Hum and Noise 98dB down referenced to +20dBm out. Channel separation —75dB. DA's start as low as \$145 for our 1x30 mass feed model, thru our 1x6 line and mic level units, to our modular 20x80 rack mount design. No need to pay more or settle for less. Price — \$145 to \$2,276.



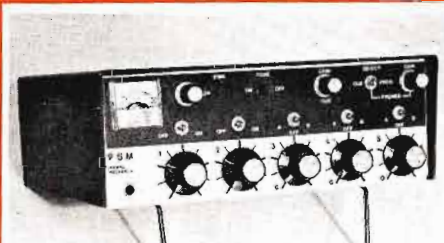
DC38 SERIES AUDIO CONSOLES. Outstanding versatility and advanced technology. Unparalleled features such as 4 inputs per mixer, high Z balanced bridging inputs accept mic level thru high level, patch-panel input gain select, DC control of all audio, back lit alpha numeric readouts above each mixer, solid state LED VU meters, dual channel (plus mono mixdown channel on stereo), solid state switching and muting for noiseless operation, selectable muting, plug in electronics, and optional built in Clock/Timer. Available mono or stereo and 5, 8, or 10 mixer versions. 4 year warranty with 2 week trial period. Price — \$2,400 to \$4,980.



DC-12 SERIES AUDIO CONSOLES. A remote control console with low profile control head and rack mount electronics that may be located up to 90 feet away. Features 2 inputs per mixer, silent illuminated touch switches, dual channel (plus mono mix down channel on stereo), solid state LED VU meters, DC control of all audio, patch panel input gain select, selectable solid state muting and switching, slide faders with dual cue entry and plug in electronics. Since the DC-12's are totally modular you may order any number of mixers and add on later. Twelve channels may be accommodated and an additional 8 may be added via the DC-12 extender. 4 year warranty. Price — \$4,700 to \$5,900.



SC-5, DC-5, & DC-8 SERIES AUDIO CONSOLES. This series of consoles, whether single or dual channel; table models or rack mount; 5 or 8 mixers, mono or stereo, feature illuminated touch-pad audio select switching, solid state LED VU meters, Simul-Q monitoring capability, full-range gain selects on each input, selectable solid state cue and monitor muting on all channels, and plug-in electronics. DC control of all audio with built-in relays for an-air lights and aux. muting. Options include 4 and 8 channel extenders, Simul-Q latching and remote control of AC equipment. These popular consoles have recently been up-dated to incorporate many new features. Price — \$864 to \$2,298.



PORTABLE CONSOLE. P5M — A full 5 mixer audio console in miniature. Bal. in & out, 8 inputs, 3 of which are mic/line selectable & individual compressors on mic channels #1 & #2. Tone gen., cue and monitor feed with gain controls & phones select with gain control. Last 3 channels equipped with Q switch & the first 2 channels provide muting. A folding stand is part of the unit and may be removed for rack mounting. +8dBm out nominally (+18dBm max); ±2dB, 20Hz to 20kHz; S/N —75dB high level and —62dB mic level. Max gain of 90dB and distortion of 0.3%. Compression/limiting range of 35dB and a slope of 50:1. 9 3/4" W x 9 1/2" D x 3 1/2" H. Price — \$545.



AUDIO ROUTER/ AMPLIFIER. The most versatile, feature loaded switcher on the market. Plug in cards for up to 16 inputs & 12 outputs. Each input has an amplifier and level adjust for attenuation and up to 17dB of gain. Output cards feature dual bal. 600 Ohm outputs, momentary BCD coded controls (may be slaved from other locations), LED output status lights show thru the front panel, and on-board mono/stereo select switch. A smoked plexiglass front panel allows the operator to tell the status of any output. Also on the front panel are 2 rows of silent momentary contact switches. One row for output selection & one row for input select. Contact RAMKO for further information and specs. Price — \$716 - \$2,108



LINE AMPLIFIERS. The ideal solution for your line level problems can be found in one of the 4 different models offered. LA-2 (table top or rack) and LA-5S/10M: mono or stereo, balanced or unbalanced high impedance inputs, +21dBm maximum input level, +21dBm maximum output into 600 ohm balanced line, frequency response +0 -1dB 10 Hz to 50kHz, distortion 0.008% at +8dBm out. The LA-2 is a 2 channel amplifier. The LA-5S/10M is a modular rack mount unit with up to 5 stereo or 10 mono channels. The LE-3 is a 3 channel mono line amplifier with equalization for high and low frequencies and is also modular. Gain of all units, variable to +20dB. Price — \$16 to \$469.



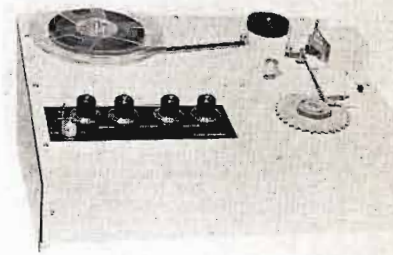
DUAL MIC COMPRESSOR/AMPLIFIERS. Portable dual mono & stereo mic limiters that amplify, mix, limit and control gain. The DML-dual mono is used where 2 separate mics must be independently amplified and compressed and mixed into a common 600 ohm output. Primary and backup batteries (or an optional AC supply). Includes tone generator & talkback ability. The DML-1S is an AC powered, stereo version. Input: -60dB nominal, -18dB max. Gain: 90dB max. Limiting Output Level: DML-2M, +10dBm. DML-1S, +18dBm or +8dBm. Balanced Inputs and Outputs. Dist.: 0.3%. Attack Time: 2 microseconds. Noise: 60dB below limiting output. Size 2 1/2" H x 5 1/4" W x 8 1/2" D. Price — \$239 to \$274.



MIC/LINE AMPLIFIERS. Dual function for microphone or line. The MLA series are ideal for remote broadcasts, churches, mixer expansion, and emergency situations. Front panel controls for mic or line selection and level. Mic input -60dB in for +4dBm out. Line input balanced bridging with gain variable +26dB. -18dBm in provides +8dBm out with an additional 13dBm of headroom. Distortion is 0.1% or less. Response: Mic channel ±2dB 20Hz to 20kHz. High level channel: ±1dB 5Hz to 30kHz. Inputs may be used bal. or unbal. XLR Mic connectors. Single or dual channel, table top or rack mount. Price — \$128 to \$195.



STUDIO MONITOR AMPLIFIERS. Exceptional reproduction with high performance and versatility. 7 different models to choose from. MA-7 (mono), MA-14 (stereo): 5W per channel into 8 ohms. Response: +0, -2dB 20 Hz to 19kHz at rated output. Distortion: 0.4% max. at 1kHz and rated output. Input: 5k unbalanced, 0.7V in for max. output. Table top or rack mount. SMA series: mono or stereo, table top or rack mount. 25W RMS per channel into 8 ohms. Inputs: high Z balanced bridging. Response: ±1dB 15Hz to 90kHz at rated output. Distortion: 0.6% at rated output. Built in muting circuit with input and output level controls and bass contour adjust. Price — \$96 to \$269.



AUTOMATIC CARTRIDGE & CASSETTE LOADER. Precision wind your own carts and cassettes and save up to 40% on reloading costs. The ACL-25/E is simple to use, just dial in the time desired and push the run switch. The ACL stops automatically, precisely to -0, +1 second of playback time. The exclusive playback speed selector ends mental gymnastics figuring tape length versus playback speed. Simply set the selector to 1 7/8, 3 3/4, or 7 1/2 i.p.s. and the ACL does the rest. An optional cassette adaptor enables you to wind both carts and cassettes on the same machine. An optional pancake adaptor is also available. The ACL-25/E has a nominal winding speed of 30 i.p.s. Price \$325.



TECHNIC PROFESSIONAL SERIES BY PANASONIC. Ramko Research is proud to be one of the largest distributors of this extraordinary equipment. The SP-10MKII and the SL-1500-MK2 Turntables have set new standards by which turntables will be judged for many years. These direct drive units with Quartz-phase locked speed control maintain speed within 0.002%. Wow and flutter is 0.025% WRMS and Rumble -73dB. Also available are reel to reel tape recorders, portable and fixed cassette R/P units, power amps, parametric equalizers, tuners, and a series of studio monitor speakers that will astound you with their phase-linear reproduction.

OTHER PRODUCTS OFFERED BY RAMKO

TELEX

Cart Machine

FIDELEPAC

Cartridges, erasers, storage racks, alignment carts, etc.

NAGY

Splicers

TECHNICS

Complete line

RAMKO RESEARCH

11355 "A" Folsom Blvd.
Rancho Cordova, Calif. 95670
(916) 635-3600

"YOUR KEY TO QUALITY"

Circle (111) on Reply Card

If you think broadcast equipment should be

- More dependable**
- Simpler to operate**
- Tailored to your needs**
- Easier to install and service**

you should check out Logitek. Our line includes:

- The industry's only **balanced-input, hum-rejecting** turntable preamps,
- A full line of **modular** audio consoles with options including equalization, reverb, built-in cue and headphone amps, and more,
- The first **auto-calibrating** digital remote control with simultaneous viewing of all readings, and,
- Amplifiers, EBS systems, clocks, scoreboards and **high-quality** custom accessories.

from the leaders in broadcast innovation

Logitek

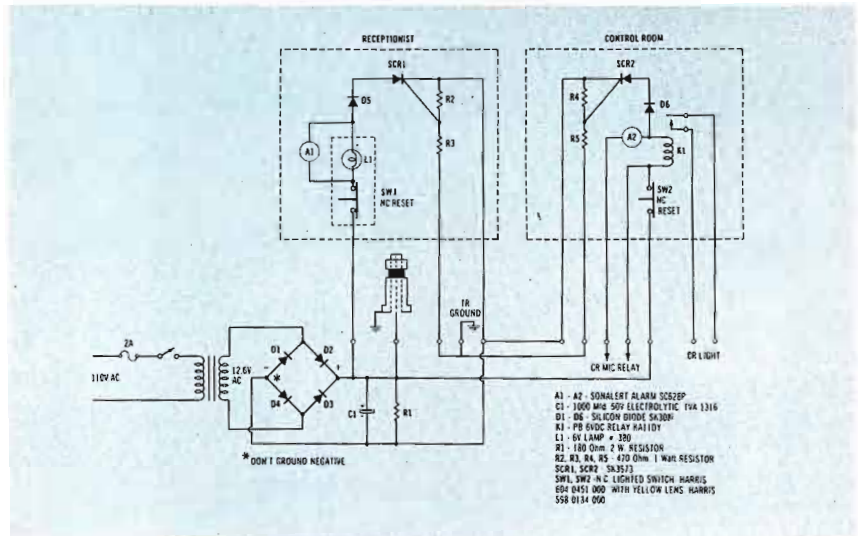
Electronic Systems

Post Office Box 25304
Houston, Texas 77005
(713) 523-7878

Circle (112) on Reply Card

Station-to-Station

continued from page 184



terminated on the inside of the panel with two 6-32 nuts and a terminal lug.

It just happened that the insulated part of the shaft and the grounded part junction were in the center of the passing tape, but if this is not the case in another type of tape playback, the addition of a couple washers or the application of a file to shorten it would make it right.

A 12 VDC power supply was made on a 3½-inch rack panel and mounted in the automation rack. The two SCR controlled alarms with reset switches were constructed, one for the receptionist and one for the control room. They both were made in BUD CU-2106A, 5¼ x 3 x 2

1/8-inch miniboxes. The one for the receptionist has rubber feet on it for setting on the table top. The one in the control room was mounted underneath the table top within reach of the announcer.

In this unit an octal socket and plug were mounted in one end of the minibox for connections for the red 110V, 75-watt light which was mounted over the clock and the mike relay connections and control wires.

SW1 and SW2 lighted NC switches were spares we had on hand for our Criterion Compacts. Any similar spring return switch could be used or if the visual feature is not desired, a NC switch could be used.

Relay circuit alerts operator of transmitter outage

By Randy Schell, chief engineer, KRGA-FM, Lake Charles, LA

From time to time, momentary power failures at our remote transmitter site knock us off the air. The power outages are usually short enough that by the time the operator notices that there is a problem, power has been restored, and all fail-safe indicators are back to normal. Standard procedure is then to blow the engineer out of bed with a hysterical phone call about transmitter explosions and broken-hearted fan clubs.

The solution was to provide the operator with an indication that a power failure had occurred and that the next logical step was to turn the transmitter back on. I was able to do so with a simple junk box gadget and one of the spare channels on my remote control unit. A

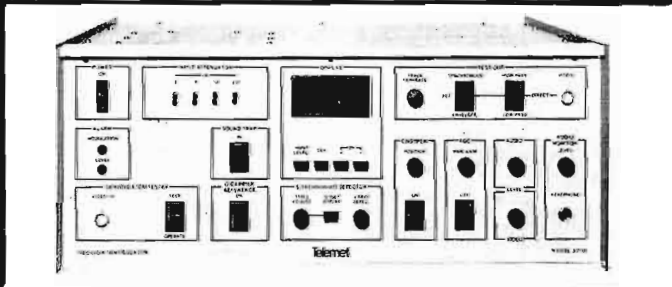
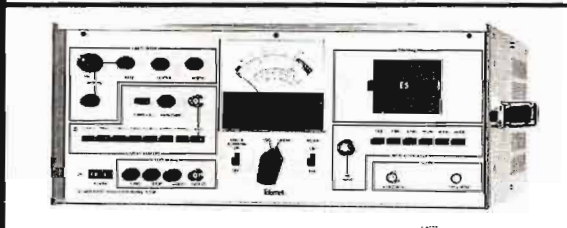
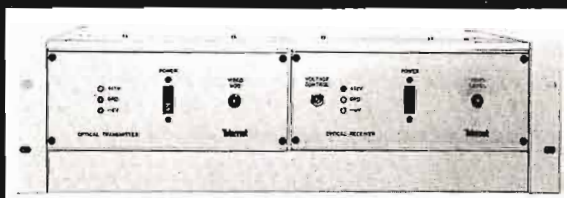
DPDT relay is wired in a latch configuration so that the battery circuit is open when the relay is energized.

A power failure drops out the relay and closes the battery circuit, providing the operator with a reading on the remote control unit. When the transmitter goes down, it's a simple procedure to check the "power failure channel" to determine whether a problem exists with the transmitter, or the utility company has gone out to lunch.

The only circuit values to consider, obviously, are the battery and relay coil. Since optimum full scale metering voltage on our remote control unit is 2 VDC, I used a D cell. The resultant readout is more

continued on page 190

From Distribution Amplifiers To Fiber Optics.



NOBODY DOES IT BETTER!

When Telemet sells broadcast equipment, it's designed and engineered specifically for broadcasters. With broadcast quality. Broadcast performance. And priced to fit within broadcasters' budgets. But that's nothing new for Telemet. We've been serving the needs of broadcasters for over 25 years, from the newest Fiber Optic transmission links to the most basic distribution amplifiers. For complete information on any of our broadcast products, use the coupon below, or call us directly.

TOP PHOTO: New Fiber Optic Transmission Link Transmitter/Receiver Model 4210.
CENTER: TV Sideband Analyzer Model 3706.
BOTTOM: New Precision Demodulator Model 3710.

Telemet



A GEOTEL COMPANY

185 Dixon Avenue
Amityville, L.I., New York 11701
Telephone (516) 842-2300
TWX 510-227-9850

Please send me information on the following:

- | | | |
|--|--|--|
| <input type="checkbox"/> Fiber Optic Transmission Systems | <input type="checkbox"/> Modulators | <input type="checkbox"/> Pulse Distribution Amplifiers |
| <input type="checkbox"/> Sideband Analyzers | <input type="checkbox"/> Demodulators—Fixed Frequency | <input type="checkbox"/> Clamper Amplifiers |
| <input type="checkbox"/> Video Test Signal Generators | <input type="checkbox"/> Demodulators—Variable Tuned | <input type="checkbox"/> Monoscope Generator |
| <input type="checkbox"/> Envelope Delay Test Set | <input type="checkbox"/> Video Signal Conditioners | <input type="checkbox"/> Video Routing Switchers |
| <input type="checkbox"/> Differential Phase and Gain Measuring Systems | <input type="checkbox"/> Audio Monitors | <input type="checkbox"/> Video Production Switchers |
| <input type="checkbox"/> Video Transmission—Cable Equalizing Systems | <input type="checkbox"/> Audio Distribution Amplifiers | <input type="checkbox"/> Chroma Keyer—RGB |
| <input type="checkbox"/> Video Sweep Generators | <input type="checkbox"/> Video Distribution Amplifiers | <input type="checkbox"/> Chroma Keyer Decoder—NTSC |

- Please send me your complete catalog.
 Please add my name to your technical bulletin mailing list.

Name _____ Title _____
Company _____
Address _____ City _____
State _____ Zip _____ Phone _____

Circle (113) on Reply Card

MOUNT UP!

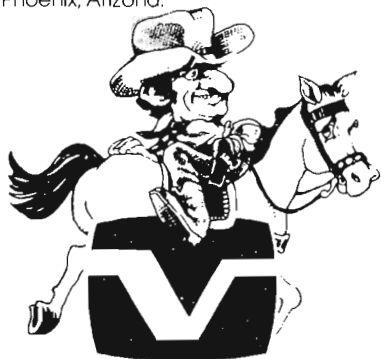
Videotek puts the 12-inch Rackmount Receiver/Monitor **BACK-IN-THE-RACK** again. Videotek's 12-inch Rackmount Receiver/Monitor fits in a standard 19-inch rack and requires only 14 inches of rack height.



Features of the RM-12R include DC restoration, 8 pin VTR Connector, E to E, Express Tuning and improved Trinitron Plus® phosphors. Also available is Videotek's 12-inch Rackmount Video/Monitor, Model VM-12R. Both the RM-12R and the VM-12R are in stock for immediate delivery from either the Pottstown center or the new Phoenix branch.

MOVE OUT!

Westward Ho! ... to Phoenix. Service and distribution of Videotek's complete line of closed circuit and professional color monitors will be provided to its West-of-the-Rockies accounts from Videotek's new branch office and distribution center in Phoenix, Arizona.



VIDEOTEK, INC.

125 North York Street
Pottstown, Pennsylvania 19464
Telephone (215) 327-2292

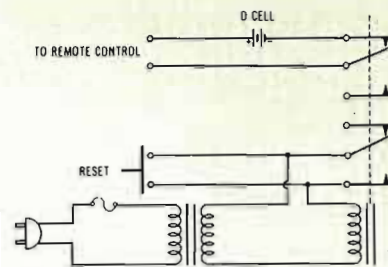
2115 West Mountain View Road, Suite 1
Phoenix, Arizona 85021
Telephone (602) 997-7523

Circle (114) on Reply Card

Station-to-Station

continued from page 188

than sufficient to let the operator know that he is definitely seeing a power failure indication. The only consideration made as far as the relay was concerned was that I wanted to use a low voltage coil. This makes it possible to reset the device from the studio site without the presence of 110V on the back of the remote control.



DA modification reduces gain, allows higher input

By Herbert Dean, Maine Public Broadcasting Network, University of Maine

When our FM studio acquired new audio distribution amplifiers, television inherited a sorely needed bucket of Ramko model 2080 DAs.

These units, as they stood, had too much gain, so I modified them. Also the + and - outputs were not balanced because the 500K-ohm "output balance adjust" pots had been replaced with fixed resistors.

To correct the output imbalance, we changed the 330K-ohm resistors to 200K-ohm on the non-inverting output IC sections. Then, we fed a 1000 Hz tone through the unit and checked audio output balance with an audio voltmeter, measuring each output to ground.

To lower the gain, we removed the 330K-ohm resistors on the input ICs and replaced them with 100K-ohm devices. To set the "CMR adjust" pot, we fed in a 1000 Hz, 0 dBm tone, from ground to both inputs tied together. Then we set the "output level adjust" pot to

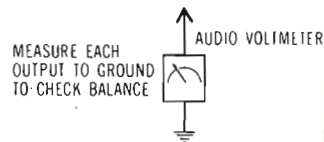
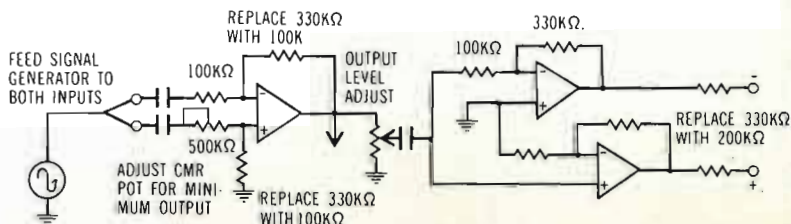
maximum and connected an audio voltmeter to an appropriate output. Then the CMR pot was adjusted for minimum output as measured on the audio voltmeter. It's touchy, and spraying the pot with contact cleaner will help.

When modified, these units have approximately 12 dB of gain, and can be comfortably turned down to a negative 5 dB gain. We bridged the inputs onto 600-ohm lines at 0 dBm, running unity gain, padding to lower any output. The maximum output level is 15 dBm before distortion starts to show.

For the cost of 12 half-watt resistors per card, and the time, this has made a very useful modification. As things worked out, next time around I would reduce gain even more by lowering the value of both feedback resistors in the output stages.

If you don't modify all the cards, be sure to mark them well.

continued on page 192



DELTA ELECTRONICS

NEW

AMC-1 AMPLITUDE MODULATION CONTROLLER – Provides automatic control of the modulation levels of an AM broadcast transmitter.

NEW

DPM-1 DIGITAL PANEL METER – Provides remote meter reading for Delta's RF ammeter systems. Up to 16 channels available with front panel pushbuttons.

Antenna Monitoring

AAM-1 ANALOG ANTENNA MONITOR – FCC type approved. Provides accurate true ratio and phase readings. Easy to interface with existing control systems. AAMH-1 provides hardwired remote control of AAM-1.

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; DAMX-1 to extend capacity of DAM-1 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.

OIB-3 OPERATING IMPEDANCE BRIDGE – The new OIB-3 features direct reading of 'R' to 1000 Ohms and 'X' to 900 Ohms. The OIB-3 also contains an integral rf amplifier.



RG-3 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.

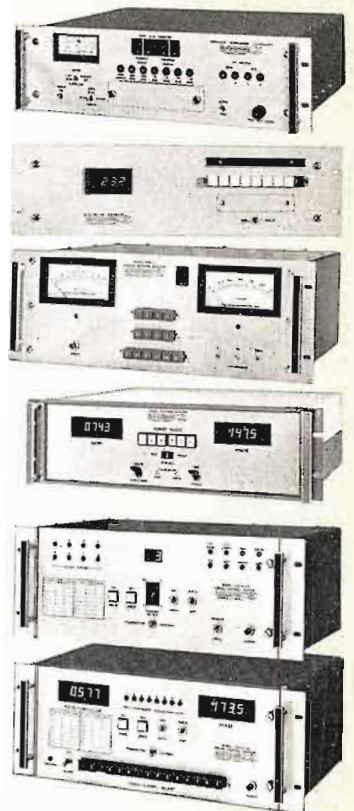
TCA-N-EX AND TCA-N-EXR SERIES RF AMMETERS – Equipped with output provisions for direct attachment of remote reading meters. Complies fully with new FCC regulations for remote metering.

Other Products

TCT-() 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-(); TCT-()H high voltage version.

6730 COAXIAL TRANSFER SWITCHES (for 1-5/8 in. 50-ohm transmission lines) – used to switch transmitters, transmission lines, antennas, dummy loads, and auxiliary equipment quickly and efficiently when failures occur, when operating procedure is changed, or during scheduled maintenance periods.

MJ-50 METER JACK – A make-before-break in line jack assembly that permits "hot" insertion of OIB-1 Bridge or Ammeters.



DELTA ELECTRONICS



5534 PORT ROYAL ROAD
SPRINGFIELD, VIRGINIA 22151
TELEPHONE: 703/321-9845 TWX: 710-831-0620

Circle (115) on Reply Card

Low Cost High Performance Professional Degaussers

- Save Time
- Save Tape and Film
- Save Money

WRE's wide range of degaussers are designed for years of dependable service for clean and simple erasure of magnetic film and tapes in just about any configuration.

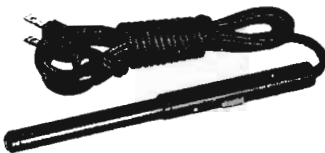
Backed by years of proven reliability, these units are the answer to cutting man-hours and reducing material costs by allowing reuse of prerecorded media.



TYPE 9205A Degausser is ideally suited for complete erasure of program and residual noise from video, audio, and data recording tape and magnetic film—in reels, cartridges and cassettes. This unit will bulk erase reels up to 2 inches thick and 17 inches in diameter. Available for 115 or 230 volt operation.



TYPE 642-21 Degausser is similar to the 9205A except it is limited to erasure of 10½ inch reels. This unit is recommended where size and cost are limiting factors.



TYPE 8905 Magnetic Erasing Pencil is an excellent tool for erasing limited, small areas of tape or film and for demagnetizing record/play heads. In program material, words, complete sentences, and even syllables may be erased. This unit is equipped with a press-to-operate switch on the handle.

MODEL 22-323-1 Foot Switch is a companion accessory to the bulk degaussers that allows convenient, "hands free" operation and provides a positive means of turning the degausser off immediately after use. This is a momentary acting switch and can help extend the life of the degausser.

If you're looking for a degausser with proven reliability that will save you time and money, call or write WRE today.



2119 Schuetz Road • St. Louis, Mo. 63141 U.S.A.
314 567-5366 • Telex: 442560

Station-to-Station

continued from page 190

Remote control/timer for several cart machines

By John E. Shepler, chief engineer, WROK/WZOK, Rockford, IL

Many radio stations face the common situation of how to hook up an electronic timer to several cart machines. Each machine must reset the timer when it starts.

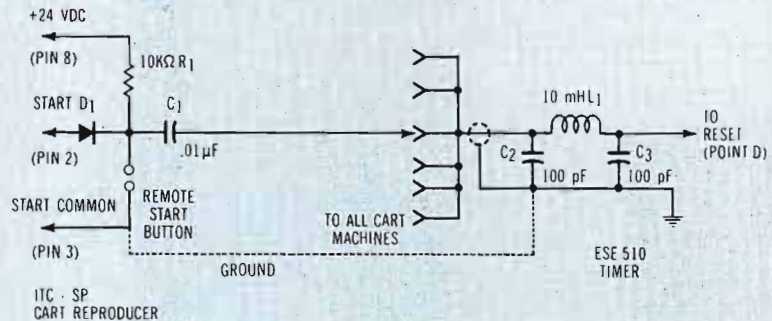
At WZOK, I believe we have developed a unique method to accomplish this using the circuitry shown. The timer is a very common one made by ESE. The cart machines are ITC single-play models, but the circuit should be adaptable to other makes.

The circuit, consisting of R1, D1 and C1, is constructed for each machine. The parts may be assembled inside of the plastic remote control plug supplied by ITC. The circuit consisting of L1, C2 and C3 is to filter RF and other electrical noise and is constructed inside the timer. The timer reset lines from each cart machine may then be connected at a junction box of some sort and fed to the input of the filtering network (C2). Be sure to use shielded wire for the reset lines

to avoid false triggering of the timer. The dotted ground line means that the cart machines and the clock are connected to station ground; but, to avoid ground loops, a wire is not necessarily connected directly between them.

The advantages of this circuit over other designs are: 1. The operation is completely silent, and there are no relay clicks for a microphone to pick up. 2. The remote start buttons will reset the timer. This can be handy for previewing cartridges without losing the elapsed time on a cartridge playing. If this feature is not desired, omit the diode (D1). 3. As many or few cart machines as desired may be hooked to the timer reset circuitry. 4. Other equipment, such as reel-to-reel recorders, may be similarly interfaced. The interface for an ITC-850 is identical to the circuit shown, but the pin numbers are different.

continued on page 194



We
said it to
AMPEX

VR-2000 & VR-1200

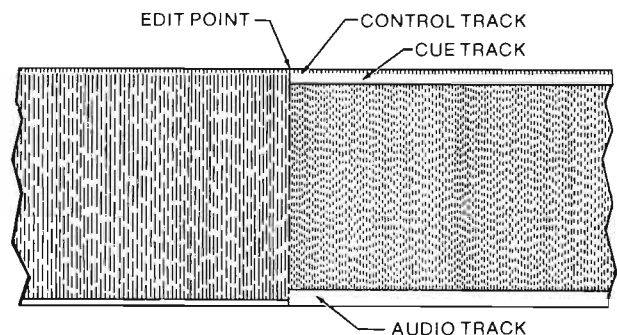
Now
we're
saying
it to
RCA!

TR-70 & TR-60

AFA says:

**BUZZ
OFF!**

**to the 960Hz. tone
in your video only edits**



If you've got it . . .
you know it! . . .
and AFA's unique
Gated Video Circuit
Module will get
rid of it.

Buzz tone during
video only edits on a
**VR 2000 or VR 1200 and
now on RCA TR 70 or
TR 60** can be stopped cold
with this all-digital, CMOS
module. Simple installa-
tion, RF turn-on, turn-off.
Used by major networks
and post production
operations.

For information, call or write: **A.F. ASSOCIATES, INC.**



AFA

A.F. ASSOCIATES, INC.

100 Stonehurst Court, Northvale, NJ 07647 ■ (201) 767-1000

2465 E. Bayshore, Suite 301, Palo Alto, CA 94303 ■ (415) 321-4823

Circle (117) on Reply Card

WILKINSON ELECTRONICS MANUFACTURES

- 10 WATT FM TRANSMITTERS*
- 100 WATT FM TRANSMITTERS*
- 250 WATT FM TRANSMITTERS*
- 500 WATT FM TRANSMITTERS*
- 1 KW FM TRANSMITTERS*
- 1.5 KW FM TRANSMITTERS*
- 2.0 KW FM TRANSMITTERS*
- 4 KW FM TRANSMITTERS*
- 5 KW FM TRANSMITTERS
- 7.5 KW FM TRANSMITTERS
- 10 KW FM TRANSMITTERS
- 20 KW FM TRANSMITTERS
- 25 KW FM TRANSMITTERS
- 50 KW FM TRANSMITTERS
- FM LINK TRANSMITTERS*
- FM RELAY RECEIVERS*
- STEREO & SCA GENERATORS*
- STEREO CONSOLES*
- 1 KW AM TRANSMITTERS
- 5 KW AM TRANSMITTERS
- 10 KW AM TRANSMITTERS
- 20 KW AM TRANSMITTERS
- 50 KW AM TRANSMITTERS
- MONAURAL AUDIO CONSOLES
- AM MODULATION MONITORS*
- AM RF AMPLIFIERS*
- LIMITING AMPLIFIERS*
- AGC AMPLIFIERS*
- TURNTABLE PREAMPLIFIERS*
- MONITORING AMPLIFIERS*
- REMOTE AMPLIFIERS*
- DISTRIBUTION AMPLIFIERS*
- LINE AMPLIFIERS*
- LIGHTNING PROTECTORS*
- SILICON RECTIFIER STACKS*
- AIR COOLED DUMMY LOADS -
15-25-50-30-KW-AM to UHF

* All Solid State

WILKINSON ELECTRONICS, INC.

701 CHESTNUT ST.
P.O. BOX 738
TRAINER, PA 19013
(215) 497-5100
TWX 510 669 3188

Station-to-Station

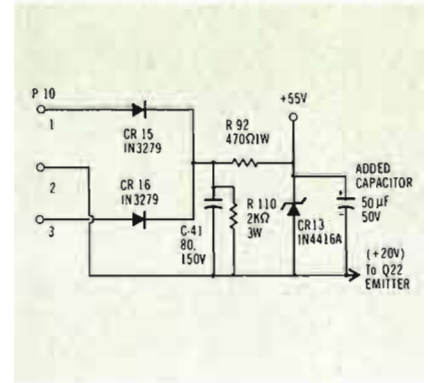
continued from page 192

Circuit mod cures video monitor picture problem

By John A. Bredesen, director of engineering, University of Wisconsin

We have experienced a problem with hum bars in the picture on our Ball Brothers TE-9 video monitors. Investigation showed a 2V ripple across Zener diode CR-13, the regulator for the piggy-back supply riding on top of the regulated 20V. This 35V, when added to the 20V, provides the higher voltage needed for Q4, the kine video driver.

The cure, which will also work on the model TE-12 monitor, was very simple; we added a 50 microfarad, 50V electrolytic capacitor directly across the Zener, CR-13.



Event indicator for TCR-100s is inexpensive

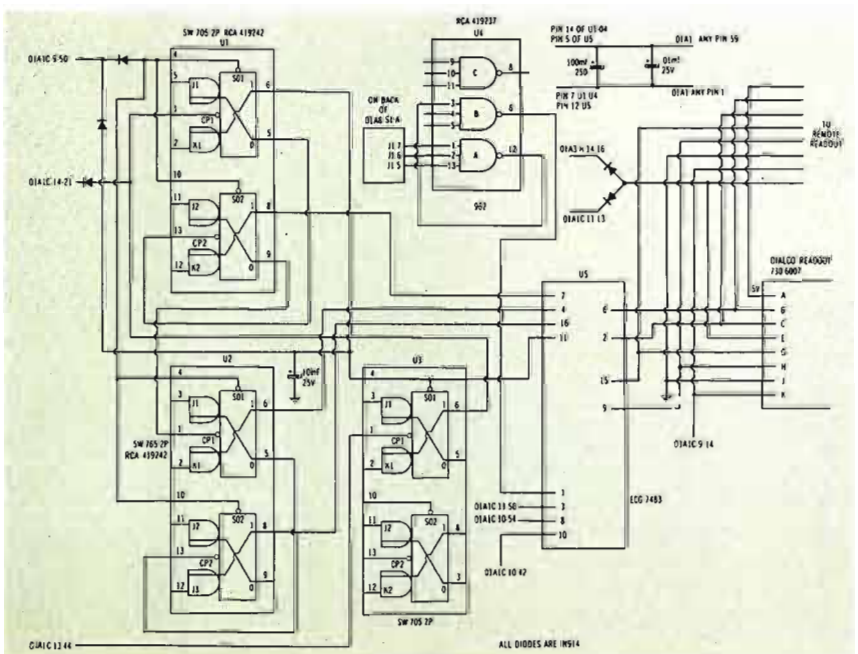
By Daniel L. Woods, engineering supervisor, WJXT-TV, Jacksonville, FL

Figure 1 shows an event indicator that I designed and built for a RCA Model TCR-100 Video Cartridge Recorder. The idea for this circuit comes from the fact that TCR-100's only know the first and last event in a sequence. If the machine does not know where it is in a sequence, neither will the operator loading it.

Many operators do not understand the functions of the TCR-100. They can reduce the number of events in a sequence accidentally while the

only indication is the amount dialed on the sequence thumbwheel. For example, an operator can advance the belt in automatic operation, and the TCR-100 counts each move as an event. The operator then flips the sequence thumbwheel to what is called for, thinking this is correct. Also, a rejected cartridge during the load cycle counts as an event. The end result is the TCR-100 stopping on air before expected.

continued on page 196



Circle (118) on Reply Card

Problems With “H” & “V” Blanking Measurements?

only
mi
has the
economical
pushbutton
answer!

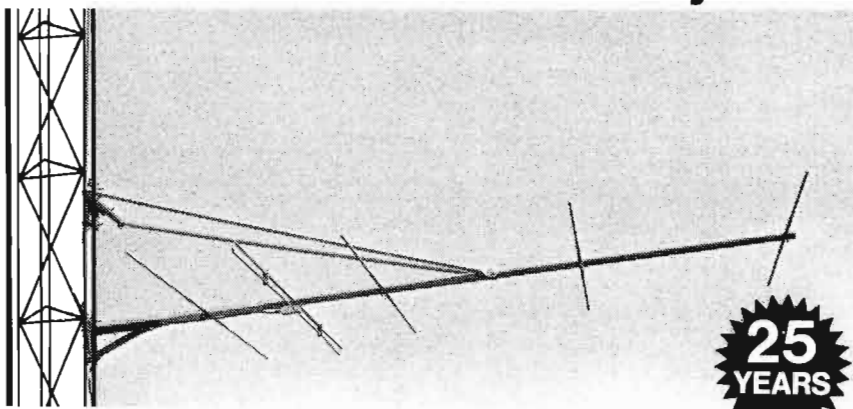


Get the complete picture and details
on the **mi** Television Interval Timer.

mi **MARCONI INSTRUMENTS**
DIVISION OF MARCONI ELECTRONICS INC.

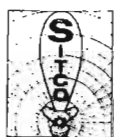
100 Stonehurst Court, Northvale, New Jersey 07647 • (201) 767-7250 • TWX: 710-991-9752
Circle (119) on Reply Card

**Phone or write
for our tower-mounted arrays.**



**You can get them in cantilevered
single bays, vertical stacks, stagger stacks
or stagger-stacked quads!**

For 25 years SITCO has designed arrays to withstand the severe elements of weather conditions and to give top performance throughout the world. All arrays are cut to channel and include all the required installation materials for mast or tower mounting. Phone or write today and give us your requirements. We'll give you the best arrays 25 years of experience can produce.



**SITCO
ANTENNAS**

10330 N.E. Marx St.
P.O. Box 20456
Portland, Oregon 97220
Phone: (503) 253-2000

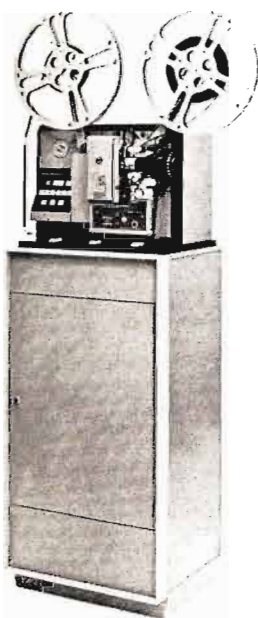
Circle (120) on Reply Card

FREEZE-FRAME & SLO-MO *"the easy way"*

ATHENA 4000

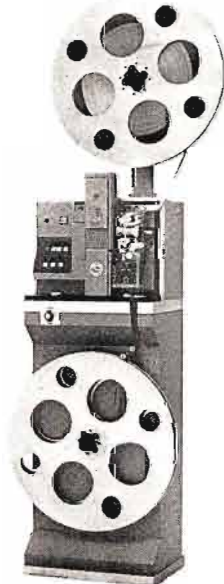


ATHENA 5000



**The Athenas give you
six more features
than the RCA TP-66
or the EK CT-500:
AT LOWER COST!**

1. Freeze-frame, instant start/stop, animation, slo-mo—all direct from film to tape by TV film chain.
2. Digital control CMOS circuitry for complete low-voltage remote control and/or computer control.
3. 115V 60 HZ or 220V 50 HZ
4. Modular digital design for easy service.
5. Extended 2-3 year warranty.
6. Insured against obsolescence—retrofitable to new design improvements and options.



Call or write Pat Smith, Dave Stern or Bob Lawrence for additional information and/or name of nearest dealer.



L-W INTERNATIONAL
6416 Variel Avenue
Woodland Hills, CA 91367 U.S.A.
Telephone: 213/348-8614

Circle (121) on Reply Card

Station-to-Station

continued from page 194

course, the operator blames the TCR-100, and the maintenance person goes bananas trying to find the intermittent problem that really is not there.

The circuit employs a flip-flop counter and a full adder with look-ahead carry. The only components not used in the TCR-100 are the full-adder IC and the Dialco readouts. The readouts come assembled on a PC board with the decoder-driver for \$15. It is .6 inch high, requiring only 5-volt power.

A binary full-adder can be used for subtraction if the subtrahend is complemented and added to the minuend. The carry in will always be high in this particular case, since the subtrahend will always be the same or less than the minuend.

The flip-flop counts the number of events in a sequence as they occur. The TCR-100's tape counter does the same, except it does not count the first event. U3 takes the first event indication from the TCR-100 and applies it to the counter. U3 is reset by the output of pin 6 of U1 going high for a count of one. The counter receives the available tape counter reset from the TCR-100.

U4 makes the most significant digit for the minuend input of the full adder. The TCR-100's sequence thumbwheels only have seven positions with 3-bit gray-code output. Positions 1 through 7 are normal gray code. Position 8 has a gray-code zero output. When all three bits are gray-code zero, U4's output goes high for the most significant digit.

The difference output of the full-adder is displayed on the readout as the number of events on the thumbwheel minus the number of events the TCR-100 has pulsed from the counter pulse circuitry. The readout actually counts down to zero as the events are run. The decimal point of the readout is triggered by the last event indication from the TCR-100.

We have one readout mounted on the blank EPIS panel, and another on the end of 110 feet of cable in master control near the switcher. The readouts are blanked out unless the TCR-100 is in the automatic and AB modes. The master-control switcher and the TCR-100 operator can both verify correct operation by observation of the readouts. The total parts cost of the entire circuit is approximately \$50. Ours paid for itself the first hour it was in operation.

continued on page 198

**NOW... The leading magazine
of broadcast technology,**

BROADCAST
engineering

**brings you an important
new technical tool...**

DIRECTIONAL ANTENNA HANDBOOK

by Robert A. Jones, PE

FCC Approved

ONLY \$12.95

Based on the recent **Broadcast Engineering** series, this 104 page volume focuses on the essentials of directional antennas then expands to encompass the entire arena of design, from a two tower array through twelve tower systems. Chapters cover such important areas as:

- Design of nighttime directional antennas.
 - Calculating RMS efficiency.
 - The FCC's Standard Method of calculating directional antennas for submission with FCC applications.
- Additional sections review the basic math used in calculations and provide tips on using computers and hand calculators for computation.

Whether you use a consultant or design your own systems, this book is an absolute must. Order yours today!

The Latest From The Leader In Broadcast Technology...
Broadcast Engineering's Directional Antenna Handbook
ONLY \$12.95

Directional Antenna Handbook



ORDER FORM

BROADCAST
engineering

P.O. Box 12901, Overland Park, KS 66212

Please send me _____ copies of the Directional Antenna Handbook at \$12.95 each. (Postage Included.)

My check or money order is enclosed.

Name _____

Address _____

City _____

State _____ Zip _____

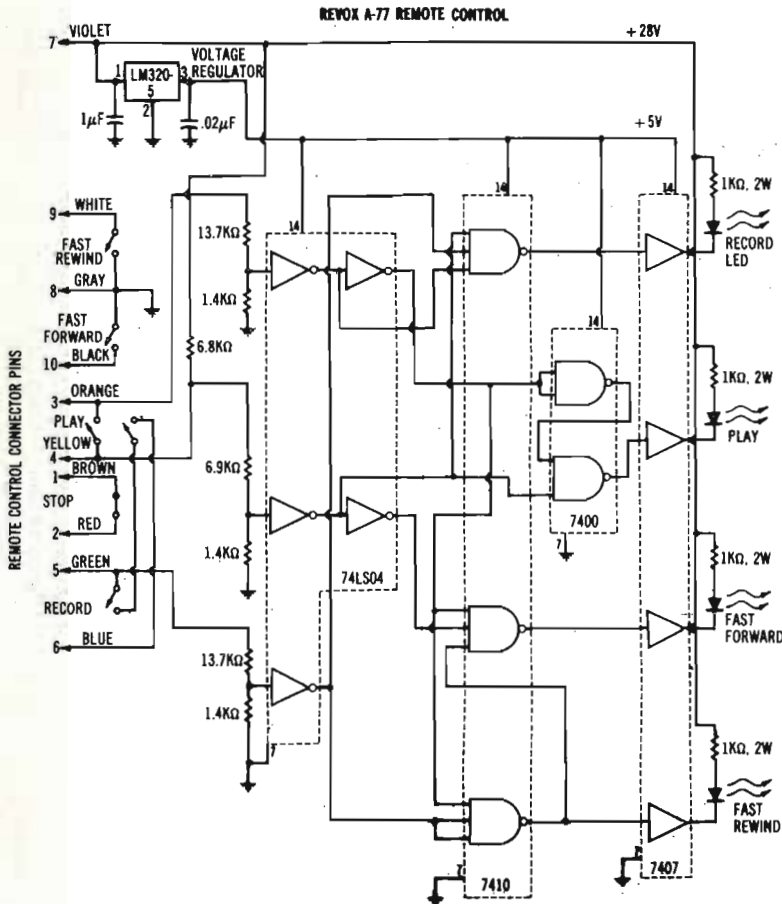
Revox remote control indicators

By Allen H. Burdick, KXTX-TV, Dallas, TX

A need arose for six sets of remote controls for our Revox A 77 tape machines at C.B.N. Northeast Radio. Due to space limitations, all six sets needed to be mounted in a 3½-inch rack panel. Because we had plans to tie the decks to an automation system in the future, remote indicators were deemed a necessity.

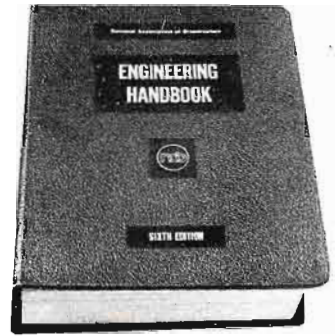
Today's logic chips have provided the functions needed with high reliability small size and for less than the cost of relays suggested in the past. Each set of remote controls and associated indicators derive their power from their associated Revox machine and are independent from one another. This allows flexibility concerning the

continued on page 200



Send us your
station-to-station

ideas. We'll pay you cash
or send you the NAB
Engineering Handbook.



If your equipment tips or other operating ideas are selected by **Broadcast Engineering** to appear in Station-to-Station, you will receive a \$30 minimum payment or a free copy of the prestigious *NAB Engineering Handbook*.

The latest *Handbook* contains over 1,000 pages and 1,000 illustrations covering every aspect of AM, FM and TV operation and maintenance: recommended procedures, fundamentals, standards, rules and how-to instructions.

Station-to-Station affords you an opportunity to share your expertise with readers throughout the industry: how you solved a nagging technical or production problem, modified a circuit for more flexibility, redesigned a studio or facility, developed new test procedures or employed an operating idea to save time and money. By sharing your knowledge, you'll share in the wealth of information contained in the *Handbook*.

Send your items to: Station-to-Station editor, Broadcast Engineering, P.O. Box 12901, Overland Park, KS 66212. Please indicate if you want to receive the *Handbook* or prefer to receive a check.

The *Handbook* can also be purchased directly from the NAB at \$30 a copy for NAB members and \$45 a copy for non-members. Write to: Station Services Dept., NAB, 1771 N Street, N.W., Washington, D.C. 20036.



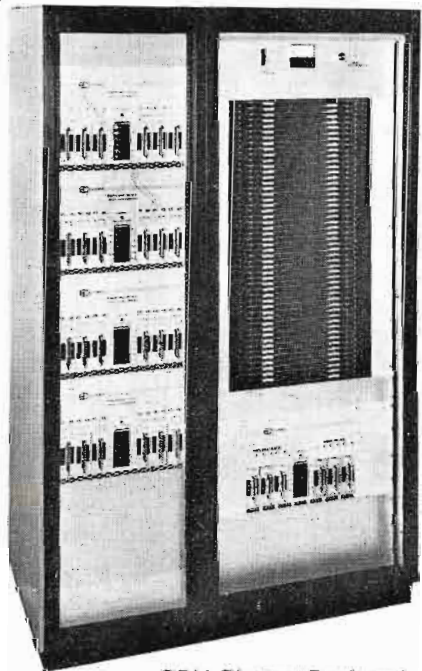
Electronics Diversified Inc.

EXPERTS IN LIGHTING CONTROL

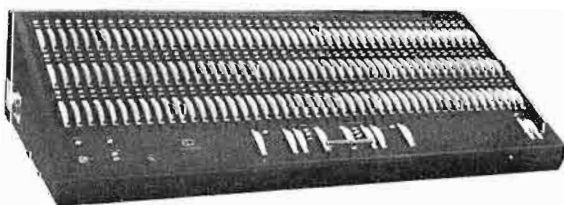
1675 N.W. 216TH

HILLSBORO, OREGON 97123

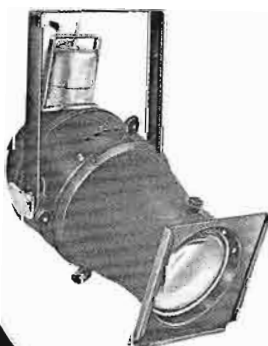
Professional Control



DBM Dimmer Bank and
Cross Connect Patch Panel



Desk Control Panel



Ellipsoidal
Incandescent

**Let us help you solve
your lighting problems.**

We invite your inquiries and will consult with you on any problems with which you may be faced. We have everything in lighting equipment. Brochures on request.

Write or Telephone:

(503) 645-5533

DIMMER BANK DBM5

Modular system: The plug-in units can be removed from the rack for maintenance without the use of any tools. The module can be removed under power without any damage to the units.

- *Modular Plug-In for easy service*
- *Magnetic Primary and Secondary Circuit Breaker*
- *Various Output Panels available*
- *Input wiring error indicator*
- *Convenience Outlet*
- *Less than 3% drift*
- *97% efficient*
- *No interaction*
- *No silver sand fuses*

DESK CONTROL CONSOLE

- "A" and "B" Subscenes
- Split Dipless Crossfader
- Independent Master
- Grand Master
- Black Out Switch
- White Controls and Switches
- Uncompensated Control Cable (1 ft. to 5000 ft. with no calibration)



Ellipsoidal
Quartz

Circle (123) on Reply Card

Broadcast
Component Distributors

BroadCom

Cartridge Machines

Audio Tape Cartridges
AGC Amplifiers
Compressing Amplifiers
Mic-Line Amplifiers
AM/FM Limiting Amplifiers
Reverb Systems
Monitor Amplifiers
Audio Distribution Amplifiers
Mixing Amplifiers
High Power Amplifiers
Antennas—AM/FM Transmitting
Tone Arms
Automation Systems
Cartridge Splice Finders
Alignment Tape & Accessories
Audio Consoles, Mono/Stereo/Multi
Channel
Audio Delay Equipment
Bulk Erasers—Audio & Video
Audio Splicing & Editing
Accessories
Equalizers

Sales-Service

▶ Scully

Recording Instruments

Program Loggers
Reel-to-Reel Tape Decks
Phono Pre-Amps
Microphones & Stands
Headphones
Phono Cartridges
Replacement Magnetic Heads
Monitor Speakers
AM/FM/FM Stereo Exciters
5 KW AM Transmitter
10 KW AM Transmitter
50 KW AM Transmitter
2.5 KW FM Transmitter
10 KW FM Transmitter
15 KW FM Transmitter
25 KW FM Transmitter
40 KW FM Transmitter
50 KW FM Transmitter

Equipment Leasing

Repair Service

Complete Studio Systems
Studio Furniture
AM/FM/FM Stereo
Monitoring Devices
Cartridge Tape Winders
Turntables
Sound Re-enforcement Mixers
Noise Reduction Systems
Remote Broadcast Systems
Tone Sensors & Generators
Recording Tape
Time Announce Tapes
Telephone Answering Equipment
Tape Timers
AM/FM/FM Stereo Receivers
"On-Air" Lights
Portable Tape Recorders
Educational Transmitters (10 W)
Carrier Current Systems
Digital Clocks & Chronographs
Recorder Replacement Electronics

24 Hour Parts Service

(215) 437-0607

Communication Medias

Tilghman at Jefferson, Allentown, PA 18102

Station-to-Station

continued from page 198

number of machines, machine down time and freedom from intermachine ground loops if the individual sub-system grounds are allowed to float.

Specifically TTL logic was chosen due to its very low cost and relative RF immunity. Either a low power or a low power schottky device must be used for the hex inverter (74LS04) package due to the low input bias current requirements of the logic input voltage dividers.

The output buffer must be a standard device due to the current sink requirements of the LEDs. The other chips can be any one of the 7400 series TTL family. Almost any LED can be used; however, the highlight output types are preferred.


A small heat sink is required for the five volt regulator, we used 1.5-inch by 2-inch pieces of aluminum from an old chassis.

With the addition of another chip, another logic input divider, etc., a stop indicator can easily be configured. It was felt, however, that to eliminate any possible operator confusion, a machine that was not in operation should have no lights lit.

A dummy plug can be purchased from Revox if you desire an extra. Belden #8456 is a nice ten-conductor cable that will fit with a little knife trim work on the plug.

This system has been in operation now for over a year without any failures. □

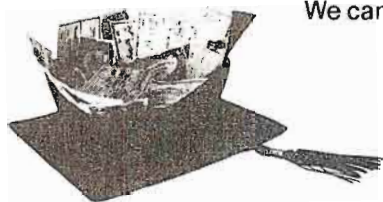
23 ways to help assure your company's future.

If you believe that a continuous flow of new ideas is absolutely necessary to assure your company's future—and the future of the country as well—then you'd better send  for this free booklet today.

It describes twenty-three different ways you can help guarantee a continuous flow of college-trained minds and college-based research—minds and research that have been responsible for many of the most important ideas of our times. Computers. Radio. Television. Synthetics. Antibiotics. The list is almost endless.

If you'd like a copy of *How Corporations Can Aid Colleges and Universities*, write on your company letterhead to Council for Financial Aid to Education, Inc., 680 Fifth Ave., New York, N.Y. 10019.

We can't afford to run out of ideas.



Council for Financial Aid to Education Inc.
680 Fifth Avenue, New York, NY 10019

A Public Service of This Magazine
& The Advertising Council



**Make America smarter.
Give to the college of your choice.**

Reliability in its most compact form the TELEFUNKEN "magnetophon" 15A Multi-Track: the complete system



Unprecedented flexibility and operating ease. A system approach to all accessories: a micro-processor based autolocator with 9-position memory and stop timer, remote track selectors and a capstan speed controller with crystal precise digital speed read-out. The TELEFUNKEN M15A multi-track. All in all a totally new generation of master recorders from the inventors of modern tape recording. Up to 32 tracks on 2" tape! 12 1/2" reel diameter capacity. Versions with the TELEFUNKEN "telcom c4" noise reduction system (built-in for up to 24 tracks). Readily upgradable to higher track configurations. Crystal locked 7.5/15 or 15/30 ips tape speeds, NAB/CCIR/AES switchable equalization and clock-timed record/erase functions to permit gap-less, inaudible electronic splicing. It's the recorder for the engineer who wants to pay for performance - not for gadgets: the experienced professional.

Please send me the brochure on
»magnetophon 15A
Multi-Track-Systems«

Name _____

Address _____

Telephone _____

GOTHAM
AUDIO CORPORATION

741 Washington Street
New York, NY: (212) 741-7411
1710 N. La Brea Ave.,
Hollywood, CA: (213) 874-4444
USA

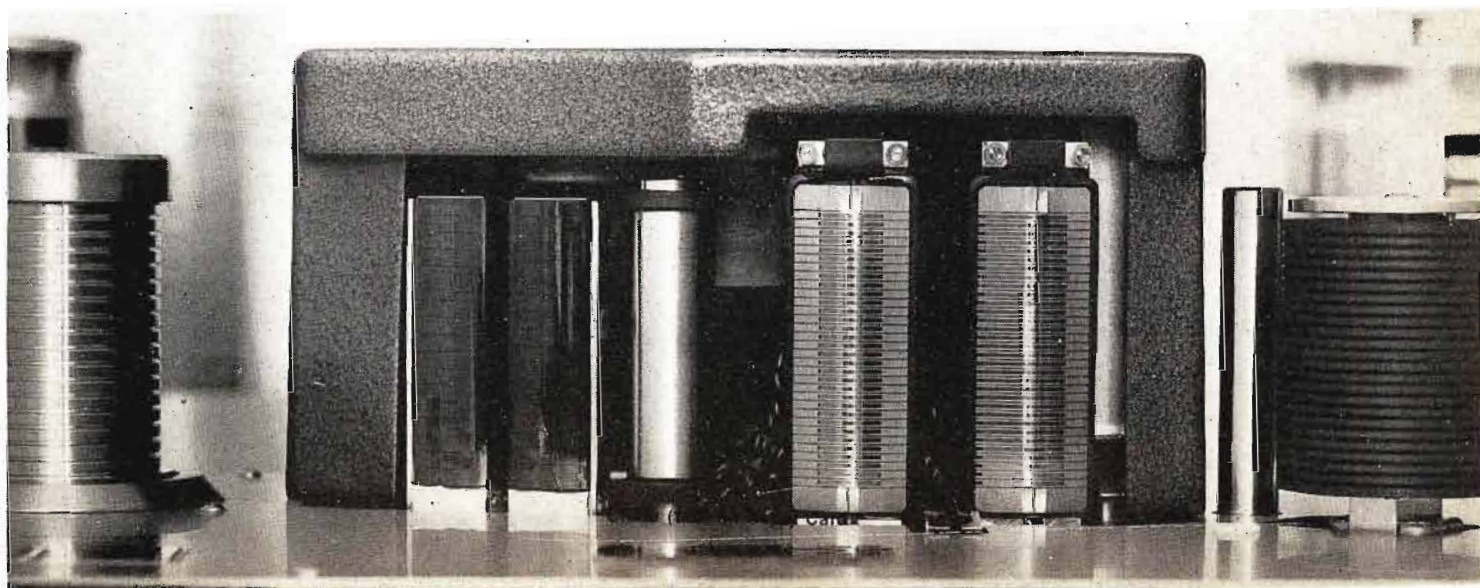
Hayden Laboratories Ltd.
Curchfield Road
Chalfont St. Peter, Bucks. SL9 9EW
Gerrards Cross 88447 (STD 02813)
U.K.

AEG-TELEFUNKEN
Magnetbandgeräte
P.O. Box 2154
D-7750 Konstanz
W.-Germany



**professional tape recorders
by AEG-TELEFUNKEN**

WAK 782 E



THE BONNEVILLE DA's

- Bridging (20k) Inputs
- Transformers In & Out
- Up to 30 dB of gain
- + 24 dBm Outputs
- Over 80 dB s/n at + 4 dBm Out

THE DA-6

1x6 expandable to 1x10



- General-purpose audio DA
- Continuous-short-circuit protection
- 600 or 150 ohm systems
- >60 dB isolation over 20-20 kHz
- Less than .5% THD, 30-20K, + 24 dBm
- Self-contained power supply

THE DA-10

Media Coverage/
Convention DA



- XLR Connectors—in and out
- Six line outputs *plus* four mic/line-selectable outputs
- Perfect for last-minute feeds at press conferences
- Other features as DA-6 above

THE LA-4

Line/Isolation Amplifier



- Four independent channels
- -80 dBm output noise
- Low Distortion
- + 4, + 8 and + 20 dBm VU Range Scales
- ±0.5 dB Response, 30-20 kHz
- Self-contained power supply

OTHER MODELS
AVAILABLE



BONNEVILLE PRODUCTIONS
A DIVISION OF
BONNEVILLE INTERNATIONAL CORPORATION

130 SOCIAL HALL AVENUE
SALT LAKE CITY, UTAH 84111
(801) 237-2400
TELEX/TWX 910-925-5266

Results of the FM signal processing survey

By Dennis Ciapura

As part of *Let's Preserve That Musical Timbre* in the April issue of **Broadcast Engineering**, a brief questionnaire was included which I hoped would provide some insight into why many FM stations sound the way they do. In listening to hundreds of FM stations around the country, I have often been amazed

at the lengths some stations have gone to gain every fraction of a decibel of loudness, often with a disastrous effect on the audio fidelity. So, some very basic questions arose.

Assuming that chief engineers of these stations would be at least as irritated as most listeners are if

continued on page 204

Surprisingly, only 2% of all
respondents think that most
FMs sound good!

FM SIGNAL PROCESSING QUESTIONNAIRE

My occupation is: Engineer Programming Mgr.

1. In my opinion most FMs sound:

<input type="checkbox"/> poor	<input type="checkbox"/> acceptable	<input type="checkbox"/> good		
			Yes	No
2. I agree that FM stations should be processed for best fidelity?
3. I feel that maximum loudness should be the primary objective?
4. How is your station set up?
 - A. Maximum loudness
 - B. Maximum fidelity
 - C. Compromise of both
5. Is the station's sound the result of programming dept. influence?
6. If yes to #5, would the engineering dept. have a different objective?
 - A. Less processing
 - B. More processing
7. Do you listen to your station often at home for entertainment?
8. Do you listen to other FM stations often?
9. Type of home stereo:
 - A. Very good component system (\$1000 +)
 - B. Moderate quality system (\$300 +)
 - C. Modest system (under \$300)
10. Size of your radio market small medium large

Name (optional) _____ Station (optional) _____

the best \$3000 two channel recorder for under \$2000*

EVERYTHING'S NEW about the MX-5050-B, except the price. We've held that at \$1795. You owe it to yourself to compare this all-new MX-5050-B with any recorder selling for up to \$3000, or more.

Besides all proven MX-5050 features, it's got:

- **New:** TTL/IC logic for noise free punch-in and punch-out.
- **New:** Three calibrated record levels, switch selectable: 185, 250, or 320 nWb/m.
- **New:** 24 dB headroom, with 28 dBm maximum output.
- **New:** Dc capstan servo standard, with $\pm 7\%$ speed control in record *and* reproduce.
- **New:** Three speeds, in field selectable speed pairs, $15\frac{7}{8}$ or $7\frac{1}{2}/3\frac{3}{4}$ ips with automatic equalization switching.
- **New:** Peak reading LED's plus standard VU meter.
- **New:** Pulsing LED indicator in Record ready.
- **New:** Return to zero memory feature for mix down.

And there's more. To get the full story, see your nearest Otari dealer or contact us today.

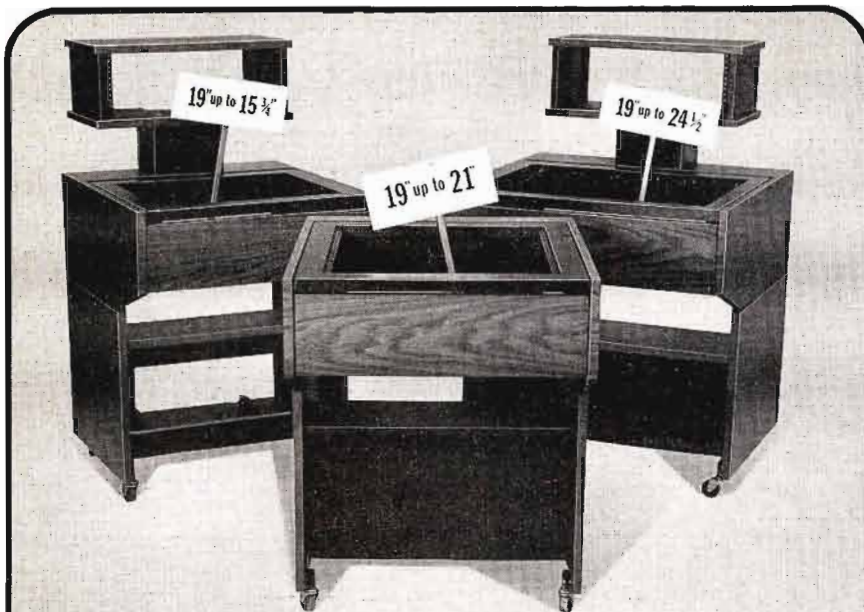
OTARI

Otari Corporation
981 Industrial Road, San Carlos, Calif. 94070
(415) 593-1648 TWX: 910-376-4890
MANUFACTURED BY OTARI ELECTRIC CO. TOKYO, JAPAN

all-new MX-5050-B



*\$1795, complete with Dc capstan servo.



A MATTER OF INCHES

Whatever your tape transport size, we offer a beautifully constructed and finished console. The RL 500, 600 or 700 (left to right) accepts MCI, Scully, Otari, Tascam, Ampex, etc. You name it and there's an RL console for it. And each incorporates the latest design features, including front panel access in both horizontal and vertical positions. Ask for details and pricing.

RUS LANG CORP.

247 Ash Street, Bridgeport, CT 06605 Telephone: 203 384 1266

Circle (128) on Reply Card

Go anywhere SMPTE Edit Code Generator and Companion Reader that will give you an instant shot list.



The only portable SMPTE Code Generator. Shintron Model 640 SMPTE Edit Code Generator.

- Goes anywhere with your ENG crew.
- Light and rugged. It attaches to your VTR and produces accurate edit code as you shoot important scenes.
- You cannot enjoy full advantages of ENG unless you have the 640 SMPTE Edit Code Generator.
- EBU European Standard version available.



Model 644 Edit Code Reader

When Shintron builds a new product, we think of our customers' convenience first. Good Edit Code Readers are a dime a dozen today, but which one can generate an instant shot list? The only one is Model 644 Edit Code Reader / Raster Display and Shot List printer.

SHINTRON Worldwide

Cambridge, MA 02142 USA
(617) 491-8700 / telex: 921497

Circle (129) on Reply Card

Processing survey

continued from page 202

they could hear the effects of over-processing, one might conclude that most chief engineers do not have very good stereo systems at home or do not listen to their own stations for entertainment.

On the other hand, if the chief engineers do have good quality monitoring equipment at home and are not happy with the sound, perhaps engineering at the station is influenced by other people. If so, would the chief engineers adjust the station for best fidelity rather than maximum loudness?

The questionnaire was designed to go directly to the heart of each question. Since the replies did not have to be signed (although some respondents did sign and give call letters), I felt the response from the letters would be very candid, and candid it was. I noted some trends that seemed to explain why some FM stations just don't sound as good as they could.

Response

A total of 80.4% of the respondents are engineers, while 13.7% are managers and 5.9% are programming people. Since the vast majority of people returning the questionnaire are engineers, the results are obviously reflecting an engineering point of view as well as an influence of **Broadcast Engineering's** high engineering readership.

Broadcasters who feel that most FMs have acceptable sound represent 52.1% of the total, while those who think most FMs sound poor amount to 44.9%. Surprisingly, only 2% of all respondents think that most FMs sound good! (Remember, these are broadcasters who are

continued on page 206

...most have sound
ranging from poor
to acceptable.

Heard Altec's latest?



It's another dynamic performance.

We're not bragging. Building sound systems with superb dynamic performance has been our profession for over 40 years—we wouldn't settle for anything less. Straight fact.

If your profession is centered around spending long hours in a broadcast studio, you can't afford to be distracted or fatigued by poor quality audio. You've got to have the best, distortion-free equipment available. Clean. Clear. Dynamic.

At Altec, we make a wide range of top quality

sound equipment—microphones, remote mixers, equalizers, monitors—that will help make a pleasure out of your demanding profession.

For further information on how Altec can add dynamic performance to your studio's sound system, write to: Altec Sound Products Division, Commercial Sales Dept.

Location photography courtesy of KEZY Radio, Anaheim, Ca.

1515 S. Manchester Ave., Anaheim, Calif. 92803 • 714/774-2900
ALTEC CORPORATION

ALTEC

the sound of experience.

Circle (130) on Reply Card

AGAIN & AGAIN POTOMAC INSTRUMENTS IS

PRODUCT INNOVATION
1ST

- First** FCC Approved Antenna Monitor
- First** Harmonic Reading Field Strength Meter for Standard Broadcast Stations
- First** Digital Antenna Monitor
- First** Frequency Synthesized RF Generator with Coherent Detector for RF Bridge Applications
- First** Solid State Combination VHF Field Strength Meter and RF Generator
- First** Audio Generator with these Features: L&R Outputs, Stereo Matrix Switch, IM Signal Source, Signal Leveling, Precision Attenuators, Mike and Line Source Impedance, Balanced and Unbalanced Outputs
- First** Audio Analyzer with these Features: L&R Inputs, Auto Leveling and Auto Nulling THD Analyzer, IMD Analyzer, Wow and Flutter Meter, Stereo Phase Meter, Differential Gain Meter

CONTACT US NOW FOR DESCRIPTIVE LITERATURE ON OUR COMPLETE LINE OF BROADCAST INSTRUMENTATION.

POTOMAC INSTRUMENTS

932 PHILADELPHIA AVE.
SILVER SPRING, MD 20910
(301) 589-2662

Circle (131) on Reply Card

YOUR BEST EMPLOYEE COULD BE DYING OF A MISCONCEPTION



One out of six of your employees has high blood pressure. Anyone from the mail boy on up to the chairman. Some of them might even realize it. But might not realize that high blood pressure can only be normalized if they stay on daily medication.

They might even be under the dangerous misconception that hypertension (the fancy name for high blood pressure) only occurs under stress situations. It doesn't.

For literature about these and other high blood pressure misconceptions, how to set up a company work session, or obtain a speaker, write to Jerry Wilson, The High Blood Pressure Information Center, 120/80 National Institutes of Health, Bethesda, MD 20014.

It's in your company's interest to do so. Because some of your best employees may have hypertension. And they can't give you their best for long, if they're laboring under a dangerous misconception.

NATIONAL
HIGH BLOOD PRESSURE
EDUCATION PROGRAM



A Public Service
of This Magazine
& The Advertising Council



HIGH BLOOD PRESSURE EDUCATION CAMPAIGN
BUSINESS PRESS AD NO. HBP-2957-78—4 5/8" x 5" (110 Screen)

BP-3-78

Processing survey

continued from page 204

critiquing the quality of their own industry's production.)

When asked if FM stations should be processed for best fidelity, 86.7% said yes. However, when asked if maximum loudness should be a primary objective, 97.7% said no. So, from this, one can conclude that while the vast majority of the respondents feel that fidelity is important, an even larger percentage are opposed to engineering for maximum loudness as a primary objective.

Influence

Of people who responded, 27.6% said their stations are engineered for maximum fidelity, 14.9% are set up for maximum loudness, and 57.4% are engineered for a compromise of both. Not too surprisingly, 55.3% of the broadcasters said the station's sound was the result of programming department influence. However, when asked if the engineering department would have a different objective, 80.9% said that they would employ less processing.

Next, I asked if the respondents listen to their station often at home for entertainment and 63.8% said they do. Of those who listen to their own stations at home, many must listen to the competition as well, with over 76% saying they listen to other FM stations often.

Broadcasters who have very good stereo systems in the \$1000+ price range amount to 44.7% of the total while those who have moderate-quality systems in the \$300 range represent 42.5%, and only 12.8% have modest systems worth under \$300. (In other words, 87.2% of the broadcasters have stereo systems in the \$300-and-up price category.) I feel the \$300 figure is a good

...while the vast majority
feel that fidelity is
important, an even larger
percentage are opposed to
engineering for maximum
loudness.

BROADCAST ENGINEERING

...if the engineer had his way, he would reconfigure the audio chain for better fidelity.

reference point in today's dollars because it describes the minimum type of system that usually will have good enough fidelity to make sonic imperfections annoying.

Market size

The largest group of respondents, 42.6%, work in medium-size markets. Broadcasters from large markets represent 29.8% of the total and small market broadcasters accounted for 27.6%.

I acknowledge that this survey is far from comprehensive and that the results may be interpreted differently by readers and analysts. However, the limited survey conducted does supply some interesting data and the results could be used to allow engineers and station managers to reconsider their priorities and how they wish to best serve their audience.

A direct conclusion appears to be that most FM stations are processed for a compromise between good fidelity and maximum loudness with the result that most have sound ranging from poor to acceptable. The programming director has a lot of influence on how the station is engineered. However, if the engineer had his way, he would reconfigure the audio chain for better fidelity, possibly because most broadcast engineers have good enough equipment at home and listen often enough to be unhappy with the sound of their station.

However, there are those who would review the same data and simply conclude that broadcasters who responded to **Broadcast Engineering's** questionnaires have good stereo, are interested in better audio fidelity, and as professionals, would like to engineer their own stations for better audio. So, it is up to you to decide whether we have succeeded in identifying the latest industry trend or merely described the typical **Broadcast Engineering** questionnaire respondent. □

FOR BROADCAST AUDIO MEASUREMENTS, if you compare features . . .

	Hewlett Packard 339A	Sound Technology 1710A	Potomac Instruments AT-51
AUDIO GENERATOR	Combined With Analyzer	Combined With Analyzer	Separate Unit
Intermodulation test signal	No	Option	Yes
Wow & Flutter test signal	No	No	Yes
Simultaneous L&R Outputs	No	No	Yes
600 ohms and 150 ohms Source	No	Yes	Yes
Stereo Matrix Switch (L,R, L+R, L-R)	No	No	Yes
Switch to remove signal and terminate line for S+N/N	No	Yes	Yes
10 dB, 1.0 dB, 0.1 dB Step Attenuators	No	Yes	Yes
AUDIO ANALYZER	Combined with Generator	Combined with Generator	Separate Unit
Harmonic Distortion Mode	Yes	Yes	Yes
Automatic Nulling	Yes	Yes	Yes
Automatic Set Level	Yes*	Option*	Yes
Intermodulation Distortion Mode	No	Option	Yes
AC Voltmeter Mode	Yes	Yes	Yes
Stereo Phase Meter Mode	No	No	Yes
L/R Amplitude Ratio Mode	No	No	Yes
Wow & Flutter Meter Mode	No	No	Yes
PRICE	\$1,900.00	\$3,695.00 ¹	\$2,295.00 ²

* Limited to 10 dB capture range.

¹Price includes options listed.

²Total price for Generator and Analyzer including protective covers and 4 test cables.



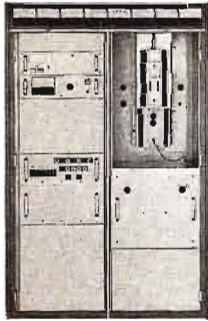
AT-51 AUDIO TEST SYSTEM

. . . there is only one logical choice!

POTOMAC INSTRUMENTS

932 PHILADELPHIA AVE.
SILVER SPRING, MD 20910
(301) 589-2662

Circle (133) on Reply Card



TX-1000B

INSTALL IT AND FORGET IT

That's what our customers do with their Howe-Yin Research VHF TV transmitters, linear amplifiers, and translators. It's because of reliability and quality—and minimized maintenance.



TX-100B

We have the transmitter, translator or linear amplifier to fit your application. Features:

- 1W, 10W, 100W, 300W, 1kW, 3kW
- Ultra linear, broadband quarter-wave, re-entrant type cavities
- Split or combined carrier transmitter models
- Local operation and remote control
- CMOS solid-state control circuitry
- Low level IF modulation
- Fault memory storing and displaying all overload conditions
- Solid-state drivers and modulator
- No neutralization
- Sliding drawers for easy access
- Extended tube live through conservative design

HYR

Howe-Yin Research

P.O. Box 3518, Fremont, CA 94538, USA (415) 656-9400 Telex: 34-0168

Circle (134) on Reply Card

Need it in a hurry?

We ship most catalog items from stock the same day an order is received.

Fast service and dependability is our standard. Request our free catalog of equipment and components.

We have 15 years of experience in serving the broadcaster's equipment requirements.

Broadcast Equipment & Supply Co.

P.O. BOX 3141
BRISTOL, TENNESSEE 37620
(615) 878-2531

Circle (135) on Reply Card



The society is looking forward to a busy and exciting winter with many chapters planning special membership drives to kick-off the season.

Final plans for regional conventions are being made: chapters 1, 2 and 22 to be held September 29 in Syracuse, New York; chapter 20 to be held October 12 and 13 in Pittsburgh, Pennsylvania; chapter 35 to be held October 24 through 26 in Louisville, Kentucky; and chapter 40 to be held October 27 through 29 in San Francisco, California.

Meetings for newly forming chapters have begun in the St. Louis area (contact Bill Martin, [314] 946-7755) and in Yakima, Washington (contact Dick Rose [509] 966-0391).

The following people have contacted the national office with an interest in starting a new chapter and would appreciate hearing from anyone in their areas who would like to participate: Albany, New York, Bill Humphrey, (518) 474-5823; Bryan, Texas, David Jones, (713) 822-1133; Cedar Rapids, Iowa, Rick Plummer, (319) 377-0612; Charleston, West Virginia, Mike Grady, (304) 925-4986; Cleveland, Ohio, Raymond Smith, (216) 344-3354; and Toledo, Ohio, Steven Molnar, (419) 535-0024.

The national office is busy processing new member applications as well as applications for the October certification exams that will be given in various cities throughout the country.

CHAPTER REPORTS

Chapter 3—Kansas

The June 13 meeting was held at KMUW, Wichita State University. The program, presented by Larry Driskill of Electro-Voice, was an overview of microphone selection, theory and application technique

SOCIETY OF
BROADCAST ENGINEERS, INC.
P.O. Box 50844, Indianapolis, Indiana 46250

and was combined with audio recordings to illustrate the results of microphone application. A tour of KMWU, the WSU public radio station, followed the meeting.

Chapter 5—Atlanta, Georgia

Bill Williams, lightwave transmission network manager for Southern Bell, presented the June 19 program on methods of using optical fibers to expand transmission capability through the use of light. Light is immune to cross talk and interference from any energy fields and will last longer than presently used materials.

Chapter 9—Phoenix, Arizona

The July 27 meeting was held at KTVK-TV and featured a program by Don Bowdish and Bruce Rayner of Grass Valley on the EMEM Microprocessor.

Chapter 11—Boston, Massachusetts

The June 20 meeting was held at the Boston Fish House in Newton. Ira Goldstone, Dave Underhill and Ross Kauffman of WCVB-TV gave a slide show and tour of the new remote van, the "Hippo", (see **Broadcast Engineering**, August 1978).

Chapter 14—Connecticut Valley

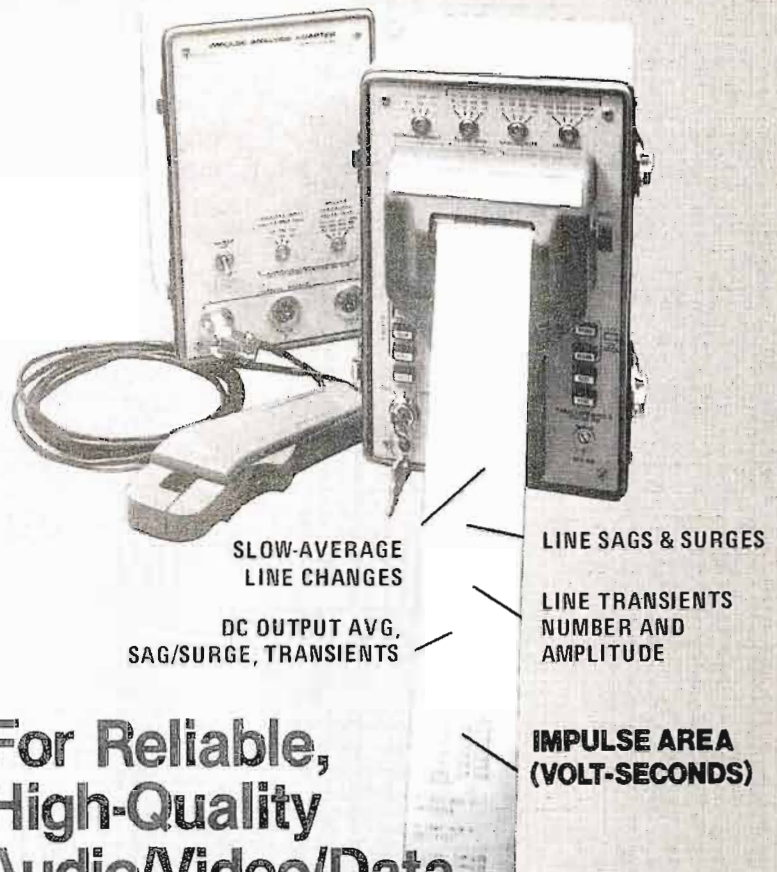
A dinner meeting, courtesy of Sam Schwartz of R & S Electronics, was held June 28 at Cavey's in Manchester. Information on the policy and direction of the FCC was presented by Gerry Sarno, regional director, and Vin Kanjanski, his assistant.

Chapter 21—Spokane, Washington

The technical meeting was held July 6 at KSPS. Reports given include: new satellite receiving antenna, receiver and program terminal by Ron Valley; videocassette account of erection of new KXLY-FM CP antenna by Mr. Wyatt; and high voltage cable terminations by Vince Hoffart.

Chapter 35—Kentucky

The second annual "State of the
continued on page 210



For Reliable, High-Quality Audio/Video/Data Transmission, get a complete Power-Line Diagnosis!

Two years ago, we brought you the first microprocessor-based line-disturbance analyzer (Series 606) — a breakthrough design that monitored and recorded sags, surges, slow-average drifts, and impulses on AC power lines. It changed the entire station-maintenance picture, from guessing to *knowing*. The Dranetz 606 is now the world leader in line-quality assurance. Thousands are in daily service.

Last year, we brought you a new design (Series 616), extending your diagnostic capability to monitoring both AC power input and DC power outputs, so that you could analyze the effectiveness of system power-supply regulators and filters. Once more, it swept the industry.

AND NOW we've created the ultimate diagnostic tool: a family of Impulse Analysis Adaptors that work with Series 606 Disturbance

Analyzers to give you *accurate, quantitative* measurements of the *strength* and the *direction* of the most disturbing (and elusive) of all line disturbances: *transient impulses*. Now you can measure, classify, and print records of such disturbances, expressed in terms of *volt-seconds* (energy content) of the transient impulse.

For complete technical data on these brand-new Series 6000 Adaptors, and the Series 600 Power Line Disturbance Analyzers themselves, plus valuable application notes, use the inquiry number, or call or write:
Dranetz Engineering Labs., Inc.
2385 South Clinton Avenue
South Plainfield, NJ 07080
(201) 755-7080

DRANETZ

Circle (136) on Reply Card

**Mark X or Mark XV or RCA HB/SHBP
Quad Video Head Refurbishing Service:**

SPIN PHYSICS WARRANTS YOU 1000 HOURS OF COMPATIBLE BROADCAST QUALITY PICTURES

LET SPIN PHYSICS PROVE to you how and why our refurbishing service with hot-pressed ferrite video heads not only saves you money but also provides superior performance.

SP **SPIN PHYSICS, INC.**
A KODAK COMPANY

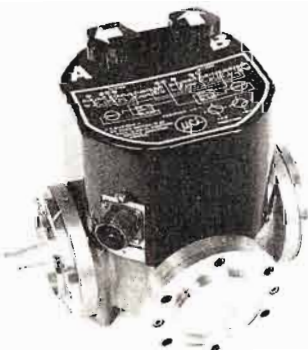
11633 Sorrento Valley Road, San Diego, California 92121

Telephone: 714-453-5410 Cable: SPINEX SANDIEGO TWX: 910-322-1737

EASTERN REGION Kent White 301-839-3218 NORTHEAST Ben Everett 301-730-6855
SOUTHEAST Knowlton Harrell 205-582-6572 MIDWEST Ray Kundrot 312-325-1009
CENTRAL Leroy Koonsman 214-245-1816 PACIFIC Ken Thompson 415-961-7794
SOUTHWEST Ed Gehle 805-964-3316 NORTHWEST Dave Franssens 916-332-0885
EUROPE Bill Kroon, Putten, The Netherlands (03418) 3689 or Telex (844) 47589

Circle (137) on Reply Card

COAXIAL TRANSFER SWITCH



- High Power Handling
- Very Fast Switching
- Remote Control
- Manual Override
- Independent Dual Interlock/Logic Systems

**MICRO COMMUNICATIONS INC.
GRENIER FIELD, P.O. BOX 4365
MANCHESTER, NH 03108**



Circle (138) on Reply Card

SBE

continued from page 209

Art Convention" will be held October 24-26 this year at the Ramada Inn Bluegrass Convention Center, Hurstbourne Lane, Louisville, Kentucky. The exhibit floor opens each day at noon and approximately 50 exhibitors are expected, including; Ampex, Grass Valley Group, Harris, RCA and Sony.

Chapter 39—Tampa Bay Area

The July 10 meeting was held at WFLA-TV and featured a demonstration of Insta-cam system and editing equipment. Also shown was a videocassette made at Cypress Gardens by the WFLA engineering crew.

Chapter 40—San Francisco Bay Area

The July 19 meeting was at KQED's earth-satellite station atop San Bruno Mountain. A tour of the terminal equipment and antenna was given by KQED's staff along with a discussion of the problems encountered with construction and anticipated advantages for the PBS network. The regional convention was set for October 27 to 29 at the LeBaron Hotel in San Jose.

Chapter 41—Central Pennsylvania

The summer social meeting was held July 20 at the Charles W. Baker estate on the Juniata River. The program "Field Engineering—Good for What Ale-s Ya!" included a demonstration of the effects of short term exposure to solar radiation and enjoyable stimuli on the morale of broadcast engineers.

Chapter 43—Sacramento, California

The July 25 meeting was held at KXTV Studio C. Kevin Dauphinee and Bob Peterson of Dolby Laboratories presented information and examples of Dolby noise reduction equipment.

Chapter 45—Charlotte, North Carolina

The July 10 meeting featured Carl Venters, general manager of WPTE-TV and Radio and state EBS chairman, who presented a program on

the current status of the EBS network.

Chapter 46—Baltimore, Maryland

The regular monthly luncheon/seminar was held June 21 in the Looking Glass Restaurant. Dave Grimes and Jerry Preston of Harris Corporation provided the program. Grimes defined the automation needs of AM and FM broadcast stations and led the listeners through the history of automation systems from basic task-oriented switching devices to micro-computers.

The program for the July 19 meeting was presented by Frank Rybak of Radiation Devices Company on the practicality of Fiber Optics for transmission of all types of signals. Equipment developed to date, fiber optics, splicers and associate conductors were also displayed.

Chapter 47—Los Angeles Area

The June 13 meeting was held at KNXT-TV in Hollywood. Mike Fehlig of Moseley Associates presented a program on aural STL basics. He explained the factors that contribute to a successful aural STL system path planning, antenna gain, polarization, etc.

The July 12 meeting was held in the Louis B. Mayer Theater at Loyola University in Westchester. Dick Burden, local broadcast consultant and Ed Greene, freelance mixer, presented a program on television audio which covered everything from production of a program to the transmission and reception.

Chapter 49—Springfield, Illinois

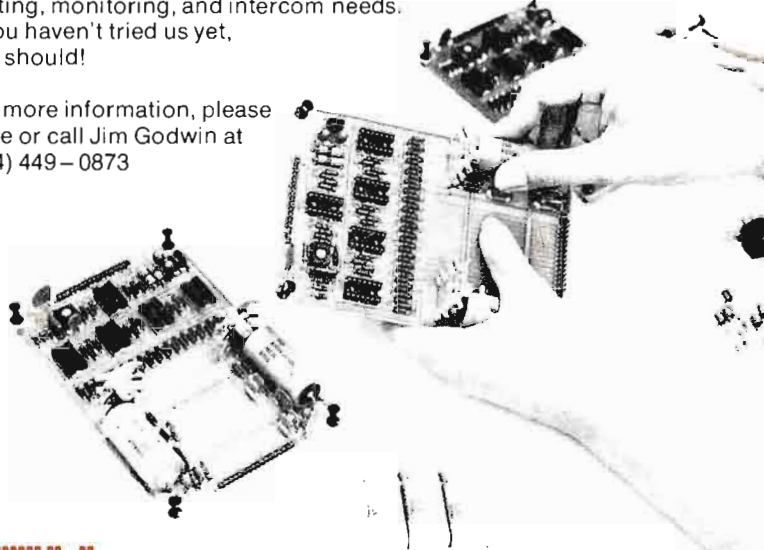
The program for the May 23 meeting was given by Wally Warren, product analyst from RCA. He discussed RCA's philosophy and activity in the development of FM broadcast equipment since the early days of Major Armstrong's introduction of the medium.

continued on page 212

It takes guts!

And OURS are carefully assembled using only the highest quality components. That's why more and more broadcasters are turning to ROH for their signal distribution, switching, routing, monitoring, and intercom needs. If you haven't tried us yet, you should!

For more information, please write or call Jim Godwin at (404) 449-0873



ROH CORPORATION

107 TECHNOLOGY PARK/ATLANTA NORCROSS, GA 30071

Circle (139) on Reply Card

Change
Sound to
Silence
with a



TABERASER

This rugged, heavy duty bulk tape eraser wipes sound from all magnetic tapes, cartridges, cassettes and magnetic film stock; handling up to 2".

It erases with minimum residual noise because the field automatically diminishes at the end of each 30-second cycle. A thermal control and blower keeps the unit below 71° C.

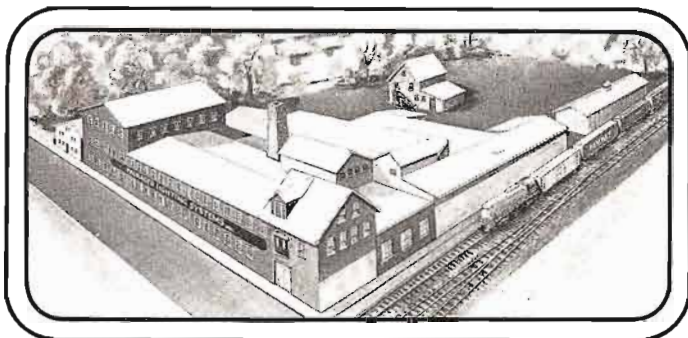
Available for 60Hz or 50Hz operation.

For the distributor in your area—Call or write:

TABER Manufacturing & Engineering Company
2081 Edison Ave. • San Leandro, Ca. 94577 • (415) 635-3831

Circle (140) on Reply Card

This is the home of Packaged Lighting Systems, Inc. serving the Broadcast Industry since 1964.



We manufacture the most advanced lighting instruments, electronic controls and electrified grid systems for studio and remote applications. We offer maximum economy without sacrifice of quality.

Just write or call us for our Free catalog

PLS PACKAGED LIGHTING SYSTEMS, INC.
GRANT STREET, P.O. BOX 285, WALDEN, NEW YORK 12586
PHONE: (914) 778-3515

Circle (141) on Reply Card

NOAA Warning Alarm Receiver

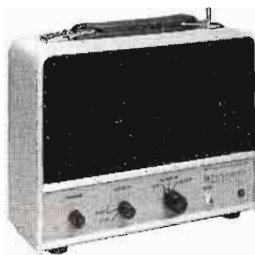
162.40 MHz—162.475 MHz—162.55 MHz

The sole government-operated radio system for communicating attack or disaster warnings directly to the general public!

Use the "institutional grade" receiver most used by NOAA, and designed and built by the same manufacturer as the NOAA WEATHER RADIO transmitters. Under NOAA contract 6-35384 and previous contracts, SRS provides the transmitters, antennas, and receivers for over 340 weather radio stations in the U.S. SRS has also supplied the receivers under separate orders to the Defense Civil Preparedness Agency, radio broadcast stations, Army Corps of Engineers, municipalities, NASA, power companies, etc.

- 162.40, 162.475, 162.55 MHz
- Warning Alarms
 - Single Tone
 - Up To Five Dual Tones (Sequential Or Simultaneous)
 - Relay Contacts For External Alarm
- AC With Internal Rechargeable Battery
- Optional Vox/Monitor Alarm
- Optional Field Strength Meter
- GSA Contract GS-OOS-44652

SR-401
RECEIVER



Scientific Radio Systems Inc.

367 ORCHARD ST. ■ ROCHESTER, N.Y. 14606

■ PHONE (716) 458-3733 ■ TELEX 978-368 ■ CABLE SIRAD ■ FTS 716-263-5700

AN EQUAL OPPORTUNITY EMPLOYER

Circle (142) on Reply Card

SBE

continued from page 211

Elections conducted at the June 27 meeting at Sangamon State University resulted in Jim Newbanks as chairman for a second term; Bob Miller, vice chairman; and Tom Brock, secretary-treasurer for the coming year. Bill Ellis showed slides and discussed the work done on the 1,580 foot Convocon tower at Bluffs, Illinois which collapsed during the Easter Sunday ice storm.

Chapter 50—Fort Collins, Colorado

The June 5 meeting at Colorado State University featured a discussion led by Jim French on some FCC reference books listing various engineering parameters. A Tektronix videotape on dynamic gain was presented with a discussion. Last meeting for the summer.

Chapter 51—Tri Cities, Washington

The June 1 meeting was a joint meeting with the Tri Cities Broadcast Council and was designed to bring both of the organizations into a closer working relationship. Bill Johnson and Bob Dietsch of the FCC discussed the reorganization of the field division of the FCC to create better efficiency and the subsequent improvement in the FCC's public image. They also discussed the FCC's view of the responsibilities of broadcast engineers.

Chapter 52—Central Ohio

The June 29 meeting was held at Warner's Westland Studio in Columbus and provided an opportunity to observe the Warner Cable System new studio facility.

Chapter 53—South Florida

The July 25 meeting, held in the studios of WCKT in Miami, featured Duane Tuttle of Adda Corporation who spoke on their electronic still store and demonstrated still store equipment. Alan Sternberg, operations manager at WCKT discussed production advantages of electronic storage. □

See page 236 for information on becoming a certified broadcast engineer.

zoom in!

.....
 This is the official column of the American Society of TV Cameramen (ASTVC). The ASTVC can be contacted by writing to: P.O. Box 296, Sparkill, NY 10976. (914) 359-5985.

Take 1...The SMPTE invites your participation

The Society of Motion Picture & Television Engineers has organized a committee titled Working Group on Control for Interface of Television Broadcast Studio Equipment.

The committee will make available to the industry an optional control interface for videotape recorders, film chains, character generators, still stores, audio tape decks, audio consoles, video switchers, frame synchronizers, time base correctors, noise reducers and digital effects.

This list is not intended to be rigorous or inclusive—only representative. The approach would be to have the industry reach an agreement on the style, protocol, format, and language of a digital communications scheme to permit all equipment in the industry to talk, listen and command, if necessary.

The SMPTE invites participation from all who are substantially concerned and who can contribute to the work.

The ASTVC suggests that those interested contact the chairman, Robert W. McAll, Vital Industries, 34 Autumn Lane, Hicksville, NY 11801.

Take 2...Digital Readout...or...

"What's New, Pussycat?"

(Editor's Note: The following article by Morton Morje, ASTVC's Associate Director of PR)

It has been learned on "good authority" that there is a concerted move on the part of the networks to protect the privacy of TV cameramen by granting them total anonymity. In effect this means that no matter how hard you may look at the credits following each and every studio production, you will never learn the true identity of those noble cameramen and women who have played some role (large or small) in the production of said program. There may, on occasion, be cover names indicated on the crawl such as the following examples: Coordinator of Cables: Timothy T. Tibia, or Current Conductor: Volta Grosso,

continued on page 214

For mono, stereo...AM, FM, TV...
ONLY FIDELIPAC® GIVES YOU A CHOICE



MODEL 300
 The most popular NAB cartridge...performance and price make it the mono broadcaster's first choice.



MASTER CART
 For the modern stereo broadcaster satisfied with nothing less than the ultimate in performance.



MODEL 350
 For use in stereo machines with inadequate tape guidance. The precision is provided by adjusting the cartridge.

AND, for extended play...Fidelipac's Models 600 and 1200.
 For details, contact your Fidelipac Distributor or



FIDELIPAC®

109 Gaiher Drive • Mt. Laurel, NJ 08057 • (609) 235-3511

© Trademark

Circle (143) on Reply Card

Perfection in duplicating.



The Garner 1056 High Speed Professional Tape Duplicator.

You'll get perfect dubs time after time with Garner's common capstan drive. It drives the master and 5 slaves at consistently the same speed. And Garner uses only glass bonded ferrite recording heads—which outwear ordinary metal heads 10 to 15 times. In addition to quality and accuracy, the 1056 is fast—2 minute tape loading and 60 ips duplicating speed. The 1056 has a 3-year mechanical and a 1-year electronic warranty. Garner is the choice of professionals. You'll see why.



Look to Garner for quality electronic audio and video products. For more information write or call:

GARNER INDUSTRIES

4200 N. 48th St., Lincoln, NE 68504
 Phone 402-464-5911

Circle (144) on Reply Card

IMI-3000

FEATURES

- Eliminates inconsistencies of multiple monitor viewing.
- Rear-screen projection either with mirrors or direct (with optional sweep reversal switches).
- No hook or loss of sync from 1/2", 3/4", 1" or 2" videotape inputs.
- Remote control operation.
- Solid-state electronics.
- Priced less than a replacement light value.
- Low cost CRT replacement.
- No projector operator required.
- Stable no-drift operation.
- Remote control includes RCA XL100 receiver monitor.
- Built-in tilt adjustments to 10°.
- Picture sizes 8, 10, 12, 14, 16, 18, 20 foot wide.
- Uses optics tubes and power of the magna image III.



PROJECTOR HEAD
WIDE ANGLE VIEWING ON STANDARD SCREENS

**\$9,800 Is The Price!
For A \$50,000 Picture
BIG-BRIGHT-COLOR
PICTURES**



RECEIVER/MONITOR
REMOTE CONTROL

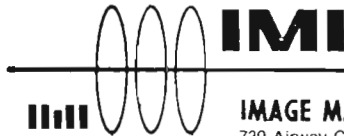


IMAGE MAGNIFICATION INC.

739 Airway Circle, New Smyrna Beach, Fla. 32069
(904) 427-5294

Circle (145) on Reply Card

Take a Waters Slim-line space-saver

New MM thin-line faders are great for small portable mixers or lighting consoles. Only half the width of conventional faders, our 3/4-inch wide MM series lets you build a lot of mixing or control capability into a limited space. No performance compromise, either. You get Waters' proprietary MystR[®] conductive plastic resistance elements. Glass-hard. Smooth. Long-lasting. You get Waters' computer-controlled curve shaping for highest tracking accuracy. And, you can choose 2 3/4-inch or 4-inch travel; 600 ohm or 10,000 ohm impedance; linear, audio, or true log characteristic. For complete information, circle the reader service card, or call Don Russell at (617) 358-2777.



WATERS MANUFACTURING, INC.
LONGFELLOW CENTER, WAYLAND, MA 01778

Circle (146) on Reply Card

Zoom in!

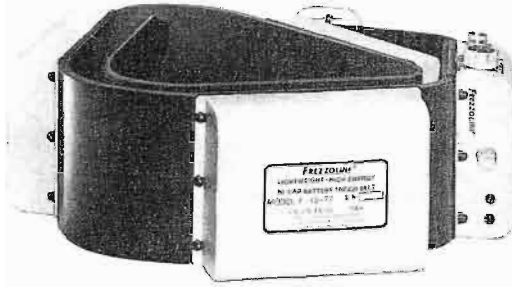
continued from page 213

or Writer's Assistant: Ima Penn-carrier, or Refreshment Researcher: "Fats" Victualis, or 3rd Assistant Production Assistant: Mary Louise Chutzpa, and on and on and on. We are pleased to let you in on this trade secret: those are camera-persons names that have just flashed by on your screen. The producers have gone to great length to insure the complete privacy of all concerned camera operators. We thank them for their thoughtfulness and our only fear is that the day may come when they decide they can no longer afford to give us this protection.

In the What's New department, we were delighted to receive the newly printed professional-aids produced by one of our Charter Corporate Sponsor members, Achro-Video Ltd. of West Nyack, NY, very hand tools of the trade, made even more attractive by virtue of the ASTVC logo emblazoned on the cover. These will be sent to all members (let us know if you need additional ones for colleagues). Vernon Dyer, our liaison member with the British Guild of TV Camera-men, writes and extends an invitation to any or all ASTVC members to join them at the upcoming IBC '78. (That's International Broadcasting Convention, for the benefit of you uninformed Yanks.) It will be held at Wembley near London (you remember Wembley; she had no sister) September 25th thru the 29th. If you plan on being in the UK about that time, and would like to take advantage of the very kind offer of help with your accommodations, etc., write to us and we will contact our cousins in the guild. We are sure you will find a most gracious welcome awaiting you. Wish we could go—tried flying once, but found we were much better at hopping (short distances only). Vern also asks if we would care to trade an ASTVC T-Shirt for a (slightly used) Guild T-Shirt. Inasmuch as we don't, as yet, have

Frezzi Belts® beat 'em all!

Re-charge
fully in
less than
1 hour.



Run
video
cameras
about
2 hours.

any such T-shirt, we wonder if you (our readers) would have anything that you would care to trade for a (British) Guild T-shirt (very slightly used)?...Fade to Black!

Take 3... Characters generating or What are they doing now?

ABC's Stu Goodman (and ASTVC's director of organizational liaison) is no longer ABC's. Stu has gone into his own production unit. If our information is correct, Stu is working on an underwater documentary. In any event, we hope that the new organization keeps its head above water and that all concerned do well!

Former member of the ASTVC board of directors, and one of TV's most eligible bachelors, John Cordone, has now settled into his new position as an ABC technical director, bidding goodbye to his zoom and focus handles. Jim Schoonmaker, our regional representative at WCIX-TV, and Bob Brooks, ASTVC's southeastern regional vice president at WPEC-TV, are busier than a one-handed cable-puller, planning the details for an upcoming ASTVC seminar in the Miami area. Bill Garrigus, our regional representative at WTVI, is asking interested operations people to contact him for new chapters in the Charlotte, NC area.

John Lehman at WSYR-TV writes, "Hope that Bob Brooks of PEC will do another article on lighting boards. Information that means anything to the people who have to use them, is hard to obtain." We believe that Bob will write some more informative material.

Vernon Dyer, The British Guild of Television Cameramen's liaison with the ASTVC, reminds us that their offer still goes, namely, to assist any and all ASTVC members who may happen to be in Great Britain at any time, and especially for the International Broadcasting Convention

continued on page 216

For hand-held video color cameras, hand-held lights,
16mm ciné cameras.

"Shoot all day without the need of any external power source." **Frezzi Belt battery packs** run **RCA TK-76, Ikegami HL-77 or 37 or Hitachi* SK-80 or FP-1020 (and others)** about **2** hours, or power **Sun Gun or Mini-Pro** lights.

*Hitachi Belt available only from Hitachi Denshi America, Ltd.

For information call (N.J. 201) 427-1160 (N.Y.C. 212) 594-2294



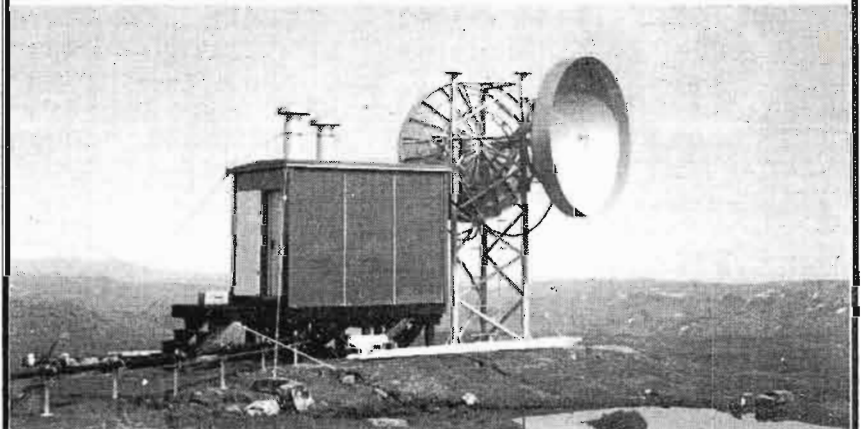
Frezzolini Electronics Inc.

7 Valley St. Hawthorne, N.J. 07506 USA

Made in U.S.A. See us at SMPTE/New York City, Booths 160-161

Circle (147) on Reply Card

A Rare Sight



YOU MAY NOT SEE IT FOR ANOTHER 10 MONTHS

When an installation such as this microwave station in Greenland is accessible for only a few months a year you need a dependable, remote power source. Inside the protective shelter **TELAN** thermoelectric generators are the sole source of power. For more information about **TELAN** please write us today.

TELEDYNE ENERGY SYSTEMS

110 W. Timonium Rd., Timonium, Md., 21093

Phone: 301-252-8220 Telex: 8-7780 Cable: TELISES

Circle (148) on Reply Card

International Microwave

A Broadcasters Market Place!

- ENG SYSTEMS
- STL LINKS
- FIXED POINT-TO-POINT
- A.M. & F.M. EQUIPMENT
- RF ANTENNA MOUNTED HEADS
- ALL SOLID STATE
- PLUG-IN MODULES
- DUAL CONVERSION RECEIVERS
- BROADCAST QUALITY VIDEO
- AUDIO & DATA OPTIONS
- AMPLIFIERS
- DOWN CONVERTERS

INTERNATIONAL MICROWAVE CORPORATION

COMMUNICATIONS SYSTEMS DIVISION
33 River Road / Cos Cob / CT 06807 / USA

Circle (149) on Reply Card

Zoom in!

continued from page 215

which is scheduled for September 25-29 at Wembley. Write us for all relevant data if you plan a visit to the United Kingdom. (Vern still is trying to swap a Guild T-shirt for anything resembling an ASTVC T-shirt. Any takers?)

Sol Bress (CBS) is off the honeymoon merry-go-round and on the commuter express from his cottage in Philadelphia to his engineering assignment in New York City...and back each evening. Who said cameramen don't know of love? Speaking of love, Al Brown has kissed Walter Cronkite's news program goodbye and has become a daily observer—through the viewfinder—of a CBS soap. He says it's a "challenge." So is six months in the slammer.

Maureen Mulvaney is doing a stint on NBC's new **America Alive** show in Radio City's studio 6A. For you youngsters, that was once the home of Perry Como and the late Fred Allen in the good old days of radio.

Collette Hunt, ABC videotaper, is wearing her pencils to the nub trying to come up with a new design for the information booklet for the ASTVC. Talented kid! (WOOPS! Forgive us N.O.W., we mean talented young lady.) Which reminds us, some bright young thing wrote advising us to change our name to the American Society of Camera-people and then he signed his letter John Doe, Chief Cameraman, WXXX-TV. It figures!

Take 4... ASTVC members to be offered group legal insurance

It's still in the negotiating stage, but there's a plan in the works to offer our membership a pre-paid legal plan—something like hospital/medical insurance. Further detailed information will be forthcoming in an ASTVC newsletter. Should you have any feelings on the proposal, jot down your thoughts and send them along to: Director, Member SVCS, ASTVC, Box 296, Sparkill, NY 10976... **fade to black!**



audio design recording

Manufacturers of the Highest Quality audio systems including —

- * Vocal Stresser (F769X-R)
- * Compex Limiter (F760X-RS)
- * Scamp System
- * Paragraphic Equalizer
- * Gemini Compact

Full details & Direct Representation from:

Gregg Audio Distributors
1019 N. Winchester
Chicago, Illinois 60622
(312) 252-8144

Nigel Branwell
P.O. Box 902
Marina, Calif. 93933
(408) 372-9036

Circle (150) on Reply Card

from blue bananas to sag tails

.....

40 days of boating?

I know you've heard enough from me but I'll give you one more anyway. Very often people are broken up by an odd unplanned combination of events. I was working at KCBS in San Francisco one morning when the George McManus feature, A Question of Religion, was followed by a commercial produced by bay area announcer Tom Campbell who was doing a hard sell spot for a boat dealer. It sounded like this: "And so those are the latest events to take place in the search for Noah's Ark, this is George McManus. Roar Roar (sound of outboard motor)! Let's go boating!!! Roy Trumbull, Laney College

Patchcord poetry

I had a high school boy training on some equipment for audio productions and was wondering just how well he was taking all the patching, riding-gain, miking, etc., when I discovered the following lyric that he had penned during a slow production. In a way, he's right:

The patch-cord by Gary Wilde

A Patch-cord is a long gray snake,
Twisting and turning through all the
grass blades and microphone
stands.

His life exists of being plugged into
and out of holes.

Is pulled by the plug, by the skin, or
end.

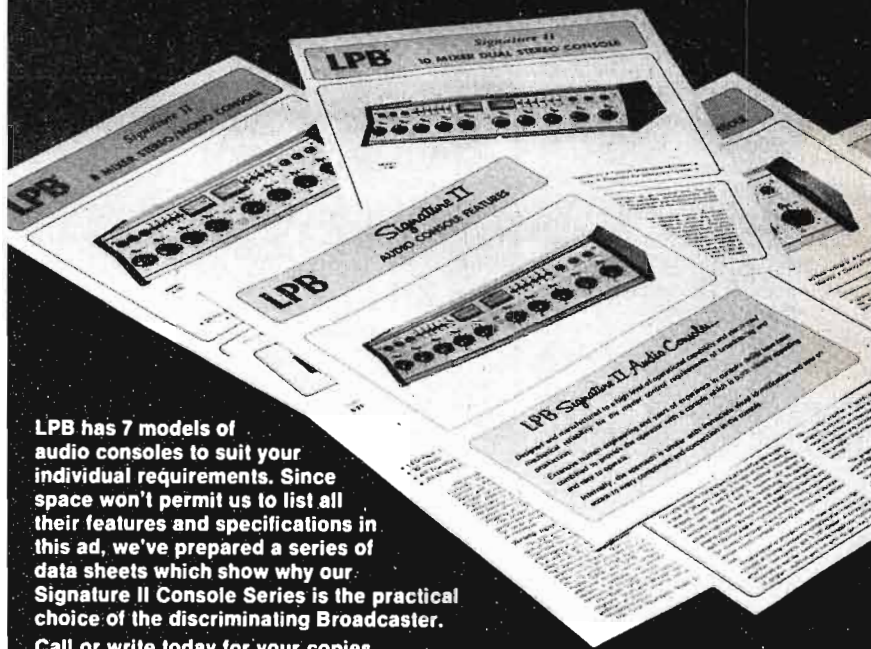
"How much longer must I live this
life?,"

He asked, his voice full of strife.
"Don't worry," said the recorder,
"You're doing fine."

But that night, he short-circuited;
And blew out his mind.

Dave Wall, Engineer, Waltronics

4, 5, 8, 10- Mono, Stereo!



LPB has 7 models of audio consoles to suit your individual requirements. Since space won't permit us to list all their features and specifications in this ad, we've prepared a series of data sheets which show why our Signature II Console Series is the practical choice of the discriminating Broadcaster. Call or write today for your copies.

LPB® LPB Inc.
520 Lincoln Highway, Frazer, PA 19355 (215) 644-1123

Circle (151) on Reply Card

How About That!

A Back Pack TV Camera
Battery With
250% More Power Output

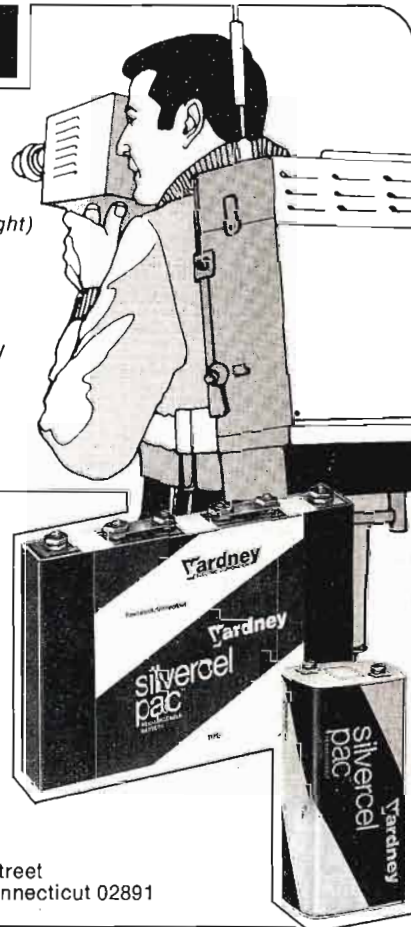
(At No Increase In Weight)

Specify
silvercel
By Yardney

Or, if Your Present Battery is
As Powerful As You Want It . . .
How Would You Like To Have It
At 1/3 rd Its Present Weight?

Silvercel rechargeable batteries pack the most useable power into the smallest and the lightest modular package. Used by all major manufacturers of TV Back Pack Cameras as original equipment, they offer the added advantage of a QUICK CHARGE without battery damage by the use of a quick pulse charge.

Silvercel (silver/zinc) rechargeable batteries — the recognized standard of excellence in power output for back pack TV cameras. Our technical assistance and catalog are yours for the asking.



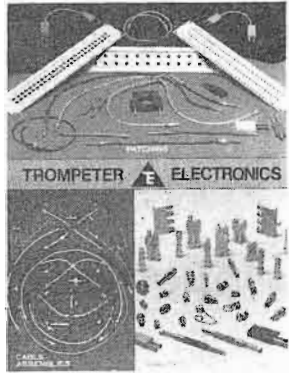
Yardney ELECTRIC CORPORATION 82 Mechanic Street
Pawcatuck, Connecticut 02891

Circle (152) on Reply Card

NEW FREE CATALOG

TROMPETER ELECTRONICS

has just published a new 40 page catalog T11, illustrating a complete line of coax, twinax, triax and quadax connectors, patch panels, plugs, jacks, patch cords, cable assemblies, networks and accessories. The catalog includes an eight page technical discussion of noise in cable systems.



SEND FOR YOUR FREE COPY TODAY.

TROMPETER ELECTRONICS, INC.

8936 Comanche Avenue, Chatsworth, CA. 91311
(213) 882-1020/TWX: 910-494-1210

Circle (153) on Reply Card

There are sources for rentals of
Industrial Video Equipment
There are sources for rentals of
Broadcast Video Equipment
There are sources for rentals of
Studio Production Equipment
There are sources for rentals of
Remote Production Equipment
There are sources for rentals of
Terminal and Processing Equipment
There are sources for rentals of
Editing and Duplicating Facilities

And then there is THE SOURCE

KVC, INC.

VIDEO SYSTEMS AND SERVICE



Whether you are doing a TV commercial, or a screen test; a concert (rock or symphony); a major sporting event or complete coverage of the Olympic Games;—Whether you need a single monitor or a complete production facility, mobile or portable, let KVC, Inc. share your responsibility.

Some of our recent credits include:

"THE ROLLING STONES SPECIAL"
"ART GARFUNKEL AT CARNEGIE HALL"
"JOURNEY SPECIAL" at the Palladium
World Professional Softball League
"WORLD SERIES," (in eight cities)
"MONTREAL OLYMPICS" (ABC Sports)
"BILL COSBY COMMERCIALS" (Ford Motors)
"AFTER SCHOOL SPECIAL" (NBC)
Tide "HIDDEN CAMERA" and "COCA COLA"
Commercials, and many more.

For Brochure and Rental Rates:
KVC, Inc., 215 Lexington Avenue
New York City, N.Y. 10016

the SOURCE for ALL your VIDEO needs RENTALS and SERVICES

Circle (154) on Reply Card

Industry news

continued from page 20

be left to the judgment of radio station licensees.

NAB pointed out that the commission has correctly held that it cannot involve itself in format changes without trampling the First Amendment and the no censorship provision (Section 325) of the Communications Act. The Act specifically forbids the commission to compare the relative values of the program formats involved in license transfers.

Television commercials solicited

Entries are now invited for the eighth annual United States and Canadian awards competition, the U.S. Television Commercials Festival has announced.

The festival is the world's largest competition devoted exclusively to competitive judging of television commercials. Last year over one thousand commercials were entered.

Eligible for entry are 16mm film or ¾-inch tape commercials produced or aired within the past year nationally, locally or regionally. Entries are placed in one of 73 subject categories and one of 12 production technique categories.

Deadline for entry is October 1, 1978 with awards to be presented in Chicago on November 16, 1978.

Additional information and entry forms may be obtained by writing the festival's headquarters at 1008 Bellwood Avenue, Bellwood, IL 60104.

NAB backs marketplace determination

The NAB, in comments filed with the FCC, agreed with the National Telecommunications and Information Administration's (NTIA) position that "distress sale" prices of broadcast stations should be determined by the marketplace instead of by the FCC.

The NAB said the commission should not consider attempting to determine a fair market value and what discount should be made in such cases. "The FCC has neither the expertise nor the statutory authority to promulgate permissible monetary boundaries for 'distress sales.' "

Revised broadcast forms

The FCC has issued a revised listing of acceptable editions of broadcast applications and report forms.

The following are now available for use:

- Form 303-R—Application for Renewal of License for Commercial AM or FM Radio Broadcast Station. (April 1978. December 1977 edition may also be used.)
- Form 309—Application for Authority to Construct or Make Changes in an International, Experimental Television, Experimental Facsimile, or Developmental Broadcast Station. (February 1978. June 1977 edition with EEO Supplement may also be used.)
- Form 311—Application for Renewal of an International, Experimental Television, Experimental Fac-

simile or a Developmental Broadcast Station License. (February 1978. February 1977 edition with EEO Supplement may also be used.)

In addition, the following forms require the addition of a revised EEO Supplement: 301, 303, 315, 340 and 342.

NAB asks for rehearing on WBAI case

In a friend-of-the-court filing, the NAB, along with other media organizations, has supported the Pacifica Foundation request that the U.S. Supreme Court rehear the "seven dirty words" case.

NAB also suggested that whether or not the rehearing is granted, the Court should clarify its opinion regarding Section 326 of the Communications Act.

FCC extends compliance date

The FCC has extended its compliance date for its new rules for remote pickup broadcast stations to June 1, 1979.

On June 29, 1976, the Commission amended its remote pickup rules requiring all such stations to meet authorized bandwidth and maximum frequency deviation specifications by August 31, 1978.

The commission said that because of the large number of units to be modified, it is not possible to bring all the equipment into compliance by August 31. The 9-month extension should allow licensees time to upgrade their equipment.

FCC begins PSA inquiry

The FCC has begun an inquiry into broadcasters' practices involving public service announcements (PSAs).

The questions to be considered fall into two general categories: (1) information about the present use of PSAs by broadcasters and (2) the possible role of PSAs.

In view of its particular concern with children's programming, the commission said the inquiry also would include questions on PSAs directed to children (under 12 years of age) and youth (from 12 to 18 years).

To gather more information, the commission asked for comments on 26 specific questions, such as:

- How many PSAs did a station usually air on a weekly basis?
- What criteria did broadcasters generally employ in determining which PSA to air?
- How useful were PSAs in serving the public?

Pointing out that its rules did not impose a PSA obligation on broadcasters but specified only that they proceed in good faith, the FCC invited comments as to whether a specific requirement should be imposed.

Comments are due October 23, and replies November 22.

STOP GROUND-LOOP HUM!

VIDEO HUM STOP COIL...HSC 1

Will ELIMINATE HUM and other INTERFERENCE in Video Lines caused by differences in Ground Potential.

- For Color and Black and White.
- FLAT-DC to 6.5 MHz.
- No Low-Freq. or Hi-Freq. Roll-off.
- No Differential Phase Distortion.
- No Differential Gain Distortion.
- No Envelope Delay.
- Passive Device - Failure Free-Low Price.
- Small Compact Package 4" x 4" x 2-1/4".

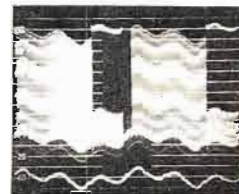
ELIMINATES HUM AND INTERFERENCE:

IN STUDIO

- Between Buildings
- On long runs in Buildings
- Between Studio and Transmitter
- On Incoming Telco circuits
- On Outgoing Telco circuits

IN FIELD

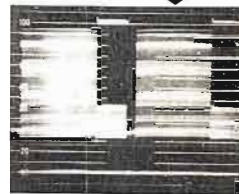
- Betw. Remote Truck and Telco
- Betw. Remote Truck and Microwave
- For Intertruck Hookup
- For VTR Units
- For Monitoring Lines



NEW!



\$140
F.O.B.
N.Y.



Available on
10 day free trial

AUDIO-VIDEO ENGINEERING COMPANY
65 Nancy Blvd., Merrick, N.Y. 11566
Tel. (516) 546-4239

Circle (155) on Reply Card

MODEL 1107 VIDEO SWITCHER

ENG?



HAVE
A
LOOK!

- 3 INPUTS, 2 BUSSES, VERT. INT. SWITCHING
- FULL COLOUR DELAY COMPENSATION
- MIX, WIPE, MIX OF EFFECTS, KEY, MATTE, WIPE OF KEY
- 22 STANDARD EFFECTS PATTERNS
- \$995

INCREDIBLE...
AND... OFF THE SHELF

ISCOUNT INDUSTRIES Ltd

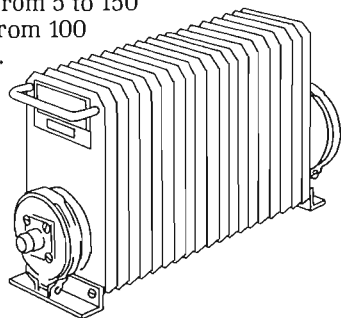
105 EAST 69th AVE., VANCOUVER, B.C.,
CANADA V5X 2W9 - PHONE (604) 327-9446 TELEX 04-508605

CALL OR WRITE FOR FULL DETAILS

Circle (156) on Reply Card.

Test with the professionals.

Our Terminating RF Loads are the choice of professional RF engineers everywhere. Dry loads available from 5 to 150 watts. Liquid loads from 100 watts to 10 kilowatts. Water cooled and heat exchanger type from 10 to 50 kilowatts. Larger special capacities available. All 50 ohms impedance.



RF loads for professionals.

For the name of your local distributor call toll free 800-341-9678

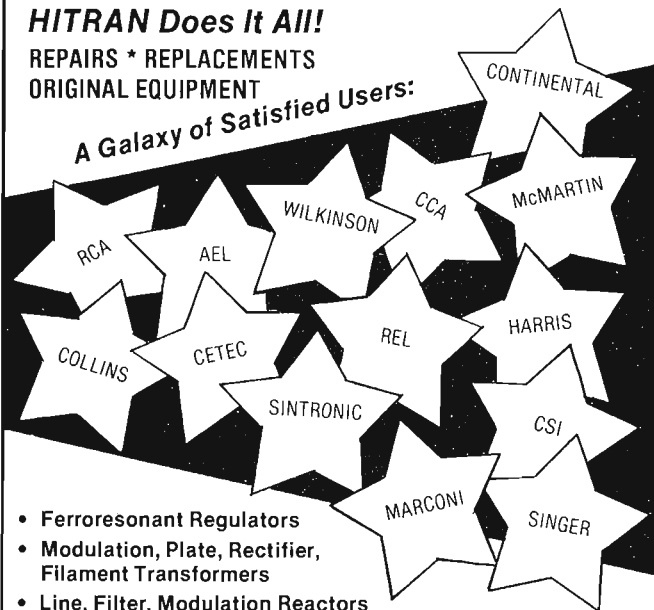
GS DIELECTRIC COMMUNICATIONS
A UNIT OF GENERAL SIGNAL
RAYMOND, MAINE 04071 • TEL 207-855-4555 • 800-341-9678

Circle (157) on Reply Card

When It Comes to POWER... HITRAN Does It All!

REPAIRS * REPLACEMENTS
ORIGINAL EQUIPMENT

A Galaxy of Satisfied Users:



- Ferroresonant Regulators
- Modulation, Plate, Rectifier, Filament Transformers
- Line, Filter, Modulation Reactors

Hitran has been producing superior equipment for 40 years... performance tested and proven! If we can be of assistance, please give us a call. We'd be delighted to talk to you.



HITRAN CORPORATION Est. 1939

ROUTE 31, FLEMINGTON, NEW JERSEY 08822 ■ (201) 782-5525

Member, American General Energy Group

Circle (158) on Reply Card

new literature

Wiring products

Panduit Corporation—An 8-page condensed catalog covering the full line of wiring products for electrical contractors is available free. Illustrated information is included on wiring products for industrial, commercial and residential construction and maintenance applications.

Circle (360) on Reply Card

Test equipment

U.S. Instrument Rental—This telecommunications catalog provides information on telecommunications test equipment available for rent or lease. The catalog includes state-of-the-art telecommunications test equipment for microwave, transmission, mobile radio, carrier, computer protocol, data communications, cable fault, VTRs, cameras and monitors, and general purpose testing requirements.

Circle (361) on Reply Card

Fiber optics

Information Gatekeepers—136-page *Fiber Optics Handbook and Market Guide* contains state-of-the-art papers on fibers, cables, detectors, sources, connectors, subsystems and systems. The handbook contains a listing of manufacturers and products of fiber optics and communications.

Circle (362) on Reply Card

Cables

Belden Corporation—180-page catalog documents standard product lines in seven individually indexed categories: multi-conductor cables; computer cables; bonded and laminated flexible flat cables; hookup wire; coaxial cables; convenience-packaged wire and cable products and assemblies; and shielded/unshielded cords and portable cordage.

Circle (363) on Reply Card

Video supplies

Comprehensive Video Supply Corporation—A 148-page catalog contains descriptions of all types of video supplies, accessories, tools and time-savers.

Circle (364) on Reply Card

Broadcast equipment

Cohu—Short-form catalog number 6-545 describes Cohu's current line of broadcast television products now available. It includes photographs and descriptions of all equipment with listings for processing and accessory equipment also.

Circle (365) on Reply Card

Leasing programs

U.S. Instrument Rentals—A 4-page brochure on the

advantages of leasing electronic test equipment. It shows examples of the different leasing programs available through U.S. Instrument Rentals to help with both financial and acquisition requirements.

Circle (366) on Reply Card

Test instruments

Leader Instrument Corporation—12-page booklet describes eight oscilloscope models with bandwidths from 4 to 30 MHz; eight professional audio instruments including two audio system analyzers; four multi-meters including digital and analog versions: 80 and 250 MHz frequency counters; three color bar generators including an NTSC model; an FM multiplex generator; LCR bridge and other general purpose instruments and accessories.

Circle (367) on Reply Card

Components

Sprague Products Company—Electronic Components Catalog C-564A covers 18 Sprague product categories and 253 Sprague component types, with more than 29,000 single product choices included. A table of contents and alpha-numeric index at the front of the 108-page book provide reference to the components for specific applications.

Circle (368) on Reply Card

Industrial catalog

Joseph Electronics—344-page industrial catalog features more than 80 product lines providing descriptions, technical specifications and pricing. It places special emphasis on test equipment, tools, PC supplies, and related products for lab and R&D markets.

Circle (369) on Reply Card

Filter catalog

TT Electronics—This filter catalog lists several million standard types. Most series types are available for frequencies from 100 Hz to 300 MHz.

Circle (370) on Reply Card

Packaging systems

ITT Cannon Electric—16-page catalog covers printed circuit and metal backpanel packaging systems. Brochure BPC-2 covers both printed circuit and metal plate backpanel packaging with 22 photographs, 19 drawings and a number of charts and graphs.

Circle (371) on Reply Card

Electronic kits

Heath Company—96-page catalog describes the latest
continued on page 222

CCA has them all!

AM Transmitters
FM Transmitters
UHF & VHF Transmitters
TV Translators
HF Transmitters
AM, FM, HF, TV Antennas
Audio Consoles
Studio Equipment
Towers and Accessories

CCA CCA Electronics Corporation
Box 5500 • Cherry Hill, N.J. 08034
Toll-free tel: 800-257-8171 • Telex: 845200

Circle (159) on Reply Card

Winsted



MODEL RC-84A
holds 84 RCA TCR-100
type cartridges



MODEL AC-108A
holds 108 AMPEX ACR-25
type cartridges

STORE TAPES in unused space with these "fit anywhere" units

Specially designed for modular storage of RCA and AMPEX tape cartridges! These low-cost Winsted space-savers put tapes at your fingertips; unique "Pick-Quik" access system makes tape removal fast and easy. For full-line catalog of video consoles, tape and film trucks, film and videotape storage systems, call toll-free or write:

THE WINSTED CORPORATION 8127 Pleasant Ave. So., Minneapolis, MN 55420
(612) 888-1957 Toll Free Number: 800 328-2962

Winsted

Circle (160) on Reply Card

TOWER WARNING LIGHTS



Complete Kits

New/Improved solid state microwave control for easier maintenance. Many special features. 300mm Beacons • Flashers • Obstruction Lights • Photo Controls • Isolation Transformers • Lamp Failure • Alarm Systems • Meets all FCC/FAA Regulations • Technical Support Provided.

HUGHEY & PHILLIPS

3050 N. California St., Burbank, CA 91504

Circle (161) on Reply Card

ALCOKNOB

COLLET KNOBS AND ACCESSORIES

Function, styling and simplicity of assembly were our main criteria in the development of this new knob series. Featuring a unique mounting technique which allows firm attachment to a shaft without the use of set screws.

ALCO has become a leading source for knobs in the USA . . . We offer the widest variety including many premium anodized aluminum and phenolic knobs.

Our new Collet Series fills industry needs for knobs with outstanding features at prices you can afford.

Three basic families are offered in a variety of size and style. Usefulness is further enhanced by a full line of accessories including dials, nut covers and many more.

All Knobs in this series are illustrated in our new 32-page catalog and are available "off-the-shelf" in production quantities. Call Customer Service for more detailed information.



ALCO ELECTRONIC PRODUCTS, INC.
1551 OSCEOLA STREET, NORTH ANDOVER, MA 01845 U.S.A.

Tel: (617) 685-4371

TWX: 710 342-0552

A SUBSIDIARY OF

AUGAT[®] INC.

Circle (162) on Reply Card

New Literature

continued from page 121

in electronic kits. Product categories for the kitbuilder include: amateur radio, color television, high-fidelity components, test instruments, digital clocks, weather instruments, personal computer systems, auto, marine and aircraft accessories and many products for home improvement and family entertainment.

Circle (372) on Reply Card

RF power sensor models

Bird Electronic Corporation—8-page brochure lists more than a hundred typical RF power sensor models available. RF and DC output signal characteristics, connector variations, physical form and frequency ranges listed afford an overview of parameters adaptable to individual OEM design requirements.

Circle (373) on Reply Card

RFI shielded cases

COMPAC—8-page catalog describes the line of RFI shielded cases and accessories, including a variety of blank cases, standard size cases and a custom series. Accessories described include circuit boards, feed-throughs, RF connectors, test cables, adapters, coaxial terminations and attenuators.

Circle (374) on Reply Card

Microwave products

RHG Electronics Laboratory—This catalog covers the complete line of MIC microwave and IF/RF products. 104 pages contain three sections of detailed technical data on IF amplifiers, MIC mixers and mixer preamps, and microwave relay links.

Circle (375) on Reply Card

Coaxial cables

Brand-Rex Company—A brochure on coaxial cables and electrical characteristics defines the cables' technical terms and electrical characteristics. The user then can select the most economical construction with the required dimensional and electrical properties. Eight pages of data and tables include construction, UL and military listings, and information on commercial, miniature air-spaced, and irradiated coaxial cables.

Circle (376) on Reply Card

DC power supply modules

High Voltage Electronics Corporation—Specification sheet WRM678 describes the WRM line of regulated high voltage DC power supply modules. General specifications, such as input, output, polarity, regulation and ripple are noted along with individual data on 50 specific WRM models. □

Circle (378) on Reply Card

BROADCAST ENGINEERING

MASTER INDEX

Manufacturers and Suppliers

A

ADDA Corp., 1671 Dell Ave., Campbell, Calif. 95008

Sheila M. Holmes, Mgr. Mktg. Admin. and Jesse Blount Jr., V/P (408) 379-1500

REGIONAL SALES CONTACTS:

United Media, Inc., 150 Old Adobe Way, Los Gatos, CA 95030 (408) 736-3600 Dick Reilly
 Didier/Denver, P.O. Box 1599, Evergreen, CO 80439 (303) 674-6000 Herb Didier
 ADDA Corp., 2693 Twigg Circle, Marietta, GA 30067 (404) 953-1500 Duane Tuttle
 Wiltronix, Inc., 5504 Waterway, Rockville, MD 20853 (301) 460-1454 Dwight L. Wilcox
 H. M. Dyer Electronics, 31185 Ten Mile Rd., Farmington Hills, MI 48024 (313) 478-2157 Mike Dyer
 Dyma Engineering, 213 Pueblo Del Sur, Taos, NM 87571 (505) 758-2686 Carroll G. Cunningham

A & E by Osawa, 521 Fifth Ave., New York, N.Y. 10017

AEG-Telefunken, Magnetic Tape Recorder Dept., P. O. Box 2154, D-7750 Konstanz, West Germany

AEL, Inc., Box 552, Lansdale, Pa. 19446

A. F. Associates, Inc., 100 Stonehurst Court, Northvale, N. J. 07647

Louis Siracugano, Arnold P. Ferolito (201) 767-1000

REGIONAL SALES CONTACTS:

A.F. Associates, Inc., 2465 E. Bayshore, Suite 301, Palo Alto, Calif. 94303 (415) 321-4823 Donald James

AILTECH Div. Cutler-Hammer, Los Angeles Operation, 5340 Alla Rd., Los Angeles, Calif. 90066

AMCO Engineering Co., 7333 W. Ainslie St., Chicago, Ill. 60656

ATV Research, 13th & Broadway, Dakota City, Neb. 68731

Accurate Sound Co., 114 5th Ave., Redwood City, Calif. 94063

Ron Newdell and Greg Sargent (415) 365-2843

REGIONAL SALES CONTACTS:

Accurate Sound Int'l. Sur 53 Num. 166 Col. Prado Ermita Mexico City, ZP13, D.F. Mexico (905) 532-0651 Javier Posada

Acrodyne Industries Inc., 21 Commerce Drive, Montgomeryville, Pa. 18936

Adcom Communications Inc., 26 Whipoorwill Rd., Bethel, Conn. 06801

Al Leon (203) 792-5491

REGIONAL SALES CONTACTS:

Adcom Communications Inc., 29-16 Connell Court, Toronto, Ont. Canada M8Z 5G7 (416) 251-3355 Peter McDonnell

Aderhold Construction Co., 3384 Peachtree Rd. N.E., Atlanta, Ga. 30326

Advance Industries, 2307 Bridgeport Dr., Sioux City, Iowa 51102

Agfa-Gevaert Inc., 275 N. Street, Teterboro, N.J. 07608

Aitken Communications Inc., 214 Harrison St., Taft, Cal. 93268

Alco Electronic Products, Inc., 1551 Osgood St., North Andover, Mass. 01845

Larry Murphy, C. J. Czapski (617) 685-4371

REGIONAL SALES CONTACTS:

Abacus Electronics Co., 1065 Terra Bella Ave., Mountain View, Calif. 94040 (415) 961-1500 Bill Flynn
 Acacia Sales/Irvine, Ca., 16591 Milliken, Irvine, CA 92714 (714) 549-0954 Joe Shields
 Acacia Sales, 1288 Hammerwood Ave., Sunnyvale, Calif. 94086 (408) 745-7200 Brian Bohnhoff
 Acacia Sales, 11111 W. 8th Ave., Lakewood, Colo. 80215 (303) 232-2882 Jerry Demerr
 Advanced Electronics, 54 West 45th St., New York, NY 10036 (212) 687-2224 Julius Nedortler
 Advent Electronics, 7110-17 N. Lyndon St., Rosemont, IL 60018 (312) 298-4210 Ray Jerez
 Advent Electronics, 24260 Indoplex Circle, Farmington Hills, Mich. 48018 (313) 477-1650 Mark Remser
 Almo Electronics, 9815 Roosevelt Blvd., Philadelphia, Pa. 19114 (215) 698-4000 Norman Green
 Arlington Electronics, 3636 Lee Hwy., Arlington, Va. 22207 (703) 524-2414 Harry Taylor

Arrow Electronic, 900 Broad Hollow Rd., Farmingdale, N.Y. 11735 (516) 694-6800 Steve Paulsen

A.S.I. Electronics, 1728-30 Whitehead Rd., Meadow Industrial Park, Baltimore, MD 21207 (301) 265-5100 Ben Freeland
 Atlantic Switch Controls, 520 Oakwood Ave., West Hartford, Conn. 06110 (203) 523-5259 Joe Lemanski
 Brill Electronics, 610 E. 10th St., Oakland, Calif. 94606 (415) 834-5888 Juan Santa Cruz

Broadline Electronics, 119 Marine St., Farmingdale, NY 11735 (516) 420-8320 Phillip Miller

CAM/RPC, 620 Alpha Dr., Pittsburgh, Pa. 15238 (412) 782-3770 Isabelle Michaelis

CNC Electronics, 480 New Boston Park, Woburn, MA 01801 (617) 933-5017 George Kakrides

California Switch & Signal, 13717 S. Normandie Ave., Gardena, CA 90249 (213) 770-2330 Bob Andrade

Capital Radio Wholesalers, 12270 Wilkins Ave., Rockville, MD 20852 (301) 881-2270 Clint Williams

Century Electronics, 537 Foundry Rd., Norristown, PA 19043 (215) 631-5400 Rich Tiska

Conectrix, Inc., 201 N. Gables Blvd., Wheeling, Ill. 60187 (312) 653-1460 Jack Farrah

Cramer Electronics, 85 Wells Ave., Newton, Mass. 02159 (617) 969-7700 Art Bassett

Dalis Electronic Supply, 917 N. 7th St., Phoenix, Ariz. 85006 (602) 258-8151 Tom Yola

Diplomat/Illinois, 2451 Brickvale Dr., Elk Grove Village, IL 60007 (312) 595-1000 Bob Zalenski

Dow Radio Co., 1759 E. Colorado Blvd., Pasadena, CA 91106 (213) 793-1195 R. Adams

Dunlap Electronics, 915 N. 'B' St., Sacramento, CA 95814 (415) 352-1933 John Minjack

Electric Switch, 2478 Fletcher Dr., Los Angeles, Calif. 90039 (213) 664-1141 George Reynolds

Components Dist., 1937 Republic Ave., San Leandro, Calif. 94577 (415) 352-5210 Dennis Dedora

Electronic Equipment, 741 Peninsula Blvd., Hempstead, N.Y. 11550 (516) 538-5510 Len Baron

Electronic Equipment, 4207 NW 24th St., Miami, FL 33142 (304) 871-3500 Stu Goldberg

Electronic Parts, 1212 S. Broadway, Denver, CO 80210 (303) 744-1992 Ron Fick

Electronic Supply, 800 N. Hudson, Oklahoma City, OK 73102 (405) 232-5215 Ron Thomas

Electronic Supply, 2486 Third St., Riverside, Calif. 92507 (714) 787-9220 Pat Long

Future Electronics, 12 Mercer Rd., Box 1035, Natick, Mass. 01760 (617) 879-0860 Alan Barroll

Future Electronics, 5647 Ferrier St., Montreal, Que. H4P 2K5 Canada (514) 735-5773 Sam Abrams

Future Electronics, 44 Fasken Dr., Unit 24, Rexdale, Ont. M9W 1K5 Canada (416) 675-7820 Kaytronics

Genesis, 1915 N. Bendix, South Bend, Ind. 46628 (219) 287-2911 Jim Sumption

Hamilton/Avnet, 4445 Sigma Rd., Dallas, TX 75240 (214) 661-8661 Kit Aiello

Harvey/Federal Electronics, Vestal Pkwy., Vestal, N.Y. 13850 (607) 748-8211 Gene Valenti

Hamilton/Avnet, 3939 Ann Arbor, Houston, TX 77063 (713) 780-1771 Ed Marshburn

Heiland Electronics, 18 Industrial Dr., Hudson, NH 03051 (603) 883-9536 Pete Hubbard

Hughes-Peters, 481 E. 11th Ave., Columbus, Ohio 43211 (614) 294-5351 John Vickers

Impact Sales, 66 Needham St., Newton, Mass. 02161 (617) 964-7740 Bob Monroe

Industrial Electronics, Gov. Sevier Hwy., Box 9125, Knoxville, Tenn. 37920 (615) 573-7135 Peter Holt

Interstate Electronics, 1330 E. First St., Wichita, KS 67214 (316) 264-6316 Ray Engstrand

K. A. Electronic Sales, 1220 Majesty Dr., Dallas, TX 75247 (214) 634-7870 Bryon Kirkwood

Kachina Electronics, 1425 N. 27th Lane, Phoenix, AZ 85009 (602) 269-6201 Jim Rosenfeld

Kirkman Electronics, 901 W. 2nd St., Winston-Salem, N.C. 27108 (919) 722-9131 Roger Kirkman

Land Electronics, 9 Rear Franklin St., Lynn, Mass. 01902 (617) 592-2220 Louis Bernstein

Lenert Co., 1420 Hutchins St., Houston, Tex. 77001 (713) 225-1465 John Riley

Lykes Electronics, 5426 W. Crenshaw, Tampa, Fla. 33622 (813) 886-6621 I & C

Marine Air Supply Co., 10233 Kensington Pkwy., Kensington, MD 20795 (301) 949-1353 Chuck Horne

Marsh Electronics, 1563 S. 101st St., Milwaukee, WI 53214 (414) 475-6000 Jim Banovich

Mid-Atlantic Electronics, Kor-Center E. H. I., Interstate Ind. Pk., Baltimore, N.J. 08030 (609) 931-5313 Herb Thomson

Mid-West Assoc., Inc., 225 S. 6th St., Rockford, Ill. 61108 (815) 962-8036 Howard Wilcox

Mock Electronics, 2310 Memorial Pkwy., Huntsville, AL 35801 (205) 539-2401 Vivian Mock

Newark Electronics, 500 N. Pulaski Rd., Chicago, Ill. 60624 (312) 638-4411 Pinky Lambert

Olive Electronic Supply, 9910 Page Blvd., St. Louis, Mo. 63132 (314) 426-4500 Jim Ellis

Pacific Switch Controls, 16122 Leadwell St., Van Nuys, Calif. 91406 (213) 873-4802 Bob Popell

Pattison Supply Co., 4550 Willow Pkwy., Cleveland, OH 44125 (216) 441-3000 Jim Mustack

Peerless Radio, 19 Wilbur St., Lynnbrook, N.Y. 11563 (516) 593-2121 Tom Griffin

Pioneer Washington, 9100 Gaither Rd., Gaithersburg, Md. 20760 (301) 948-0710 Jack Bendit

Pride Electronics, 115 Rome St., Farmingdale, NY 11735 (516) 293-4030 Paul Poto

Radio Equipment Co., 625 North 18th St., Omaha, Ne. 68102 (402) 341-7000 Charles Nestander

Ratel Electronics, 948 Benicia, Sunnyvale, CA 94086 (408) 739-9220 Frank Hickey

Ragon Electronics, 1136 W. Larpenteur St., St. Paul, Minn. 55113 (612) 488-0201 Russ Ragon

Reliance Merchandising, I-95 Industrial Pk., 651 Winks L., Cornwells Heights, Pa. 19020 (215) 638-8200 Hugh Gallagher

Sherman Electronic Supply, 720 San Pedro Ave., San Antonio, TX 78212 (512) 224-1001 Sonny Mayfield

Stotts-Friedman Co., 2600 E. River Rd., Dayton, Ohio 45439 (513) 298-5555 William Little

Summers Southland Supply, 510 S. Good Latimer Expy., Dallas, Tex. 75226 (214) 748-6533 Danny Smith

Summit Distributors, 916 Main St., Bullard, N.Y. 14202 (716) 884-3450 Jim Worley

Switch Controls, Inc., 7836 NW 72nd Ave., Miami, Fla. 33166 (305) 885-6727 Karl Swanson

Switching Devices, Inc., 2015 Burbank Blvd., Burbank, Calif. 91506 (213) 849-3211 Tim Bitting

Texaswitch, Inc., 2942 Congressman Lane, Dallas, Tex. 75220 (214) 357-1768 Joseph Jones

L. A. Varah, 2077 Albert St., Vancouver, B.C. V5Y 1C4 Canada (604) 873-3211 J. Dickenson

Welco, 1613 Colorado Blvd., Los Angeles, CA 90041 (213) 257-7588 Vic Deorize

Whitney Distributing Co., 6706 White-stone Rd., Baltimore, MD 21207 (301) 944-8080 Ivan Miller

Wilshire Electronics/NE, One Wilshire Rd., Burlington, Mass. 01803 (617) 272-8200 Frank Nelson

Wise Co., 28 Henry St., Greenwich, CT 06830 (203) 531-4880 Martin Blaustein

H. Young Jr. Co., 480 Neponset St., Canton, MA 02010 (617) 828-4880 Jim Harrod

Zack Electronics, 654 High St., Palo Alto, Calif. 94301 (415) 326-5432 John Woodside

Zepher Electronics, 647 Industry Dr., Seattle, Wash. 98188 (206) 575-0922 Bob Beckwith

Alexander Mfg. Co., Box 1645, Mason City, Iowa 50401

Richard Alexandres (515) 423-8955

Alford Mfg. Co., 15 Sixth Rd., Woburn, Mass. 01801

All Mobile Video, Inc., 415 W. 55th St., New York, N.Y. 10019

Allen Avionics, 224 E. 2nd St., Minneapolis, N.Y. 11501

Lester Jacobson (516) 248-8080

REGIONAL SALES CONTACTS:

Adtek Associates, 309 Town & Country Village, Palo Alto, Calif. 94301 (415) 323-5414 John Sessoms

Ashby Associates, Inc., 4130 Linden Ave., Suite 155, Dayton, Ohio 45432 (513) 252-5627

Chaco Sales, 1409 1/2 S. Belcher Rd., Clearwater, Fla. 33516 (813) 536-9503

Components West, Inc., Box 66581, Seattle, Wash. 98166 (206) 243-2133

Components West, Inc., 13540 N. W. Mill Creek Dr., Portland, Ore. 97229 (503) 643-5588

Dage Corp., International Sales, 757 Main St., Stamford, Conn. 06902 (203) 324-3123

Electro Tech Marketing Assoc., 3525 W. Peterson Ave., Suite T7, Chicago, Ill. 60659 (312) 588-4535

Engineering Services Co., 8420 Delmar Blvd., St. Louis, Mo. 63124 (314) 997-1515

Engineering Services Co., 7830 State Line Rd., Prairie Village, Kans. 66208 (913) 649-4000

Ken Haugen & Associates, Box 864, Anoka, Minn. 55303 (612) 421-3395

J. F. Hurlbut Co., 622 Gardena Court, Golden, Colo. 80401 (303) 279-7796

J. F. Hurlbut Co., 3605 S. Bannock St., Salt Lake City, Utah 84110 (801) 299-4034

D. J. Jones & Associates, 2104 N. Charles St., Baltimore, Md. 21218 (301) 752-0577

Nickerson Corp., Box 870, Kannapolis, N.C. 28081 (704) 938-4647

Nickerson Corp., 1549 Center Point Rd., Birmingham, Ala. 35215 (205) 854-6330

E. V. Roberts & Associates, Box 868, Culver City, Calif. 90230 (213) 870-9561

Allied Broadcast Equipment, D 1-9,
635 South E St., Richmond, Ind.
47374

Jim Jones (317) 962-8596

Allied Tower Co., Inc., Box 331, South
Houston, Tex. 77587

Altec Lansing Sound Products, 1515
S. Manchester, Anaheim, Calif.
92803

James Morrison (714) 774-2900

Amber Electro Design, Ltd., 4810
Jean Talon West, Montreal, Canada
H4P 2N5

Amco Engineering Co., 7333 W. Ains-
lie St., Chicago, Ill. 60656

American Data Corp., A North Ameri-
can Philips Co., 401 Wynn Dr. N.W.,
Huntsville, Ala. 35805

H. Bjorklund (205) 837-5180

REGIONAL SALES CONTACTS:

American Data, Southeast Region, 2219
Oakwana Rd. NE, Atlanta, Ga. 30345
(404) 633-2100 Joe Ryan, Regional Mgr.
American Data, Western Region, 3760 Ca-
huenga Blvd., N. Hollywood, Calif. 91604
(213) 760-3221 Don Cadora, Regional
Mgr.
American Data, Midwest Region, Box
27324, Indianapolis, IN 46227 (317)
784-3000 Jim Gardner, Regional Mgr.
American Data, Mid-Atlantic Region, 5504
Waterway, Rockville, Md. 20853 (301)
460-1454 Dwight Wilcox, Regional Mgr.
American Data, Northwest Region, P.O.
Box 23, Mercer Island, WA 98040 (206)
232-3550
American Data, Northeast Region, P.O. Box
452, New Hartford, CT 06057 (203)
379-7840 Bob Munzner, Regional Mgr.
Video Systems, 2000A Governor's Circle,
Houston, Tex. 77018 (713) 686-9651
Ben Wasterman

American Laser Systems, Inc., 999
North Sepulveda Blvd., El Segundo,
Calif. 90245

American Microsignal Co., 8431 Mon-
roe Ave., Stanton, Cal. 90680

Ampex Electronic Corp., Slatersville
Div., Box 278, Slatersville, R. I.
02876

Stanley Lovitz, Nat'l. Sales Mgr. (516)
931-6200

REGIONAL SALES CONTACTS:

Ampex Corp., Northeast Div., 230 Duffy
Ave., Hicksville, N.Y. 11802 (516)
931-6200 Stan Levitz
Ampex Corp., 13773 N. Central Expy.,
Suite 1228, Dallas, Tex. 75243 (214)
231-3481 Merle Arnold
Ampex Corp., 1G, 3300 N.E. Expy., At-
lanta, GA 30341 (404) 458-2519 Harry
Kozicki
Ampex Corp., 175 Scott St., Elk Grove
Village, Ill. 60007 (312) 640-2522 Ralph
E. Johnson
Ampex Corp., 3000 Scott Blvd, Suite
115, Santa Clara, Calif. 95050 (408)
249-1134 Ted Marchner

Ampex Corp., 401 Broadway, Red-
wood City, Cal. 94063

Ampro Broadcasting Inc., 850 Penn-
sylvania Blvd., Feasterville, Pa.
19047

Tom Creighton (215) 322-5100

REGIONAL SALES CONTACTS:

Broadcast Communications Devices, 5526
E. LaPalma Ave., Anaheim, CA 92807
(714) 528-9505 John Baumann
Broadcast Communications Devices, 1400
Coleman Ave., Suite H14, Santa Clara, CA
95050 (408) 984-6614 Tom Barnes
Didier/Denver, P.O. Box 1599, Evergreen,
CO 80439 (303) 674-6000 Herb Didier
Gray Communications, 5401 Southern
Comfort Blvd., Tampa, FL 33614 (813)
885-1411 Alan Jaster
Radford Associates, 3203 Lanier Dr., At-
lanta, GA 30319 (404) 237-6097 Lew
Radford

Allied Broadcasting Equipment, 635 South
E. St., Richmond, IN 47374 (317) 962-
8596 Jim Jones
Audiomedia Associates, P.O. Box 29264,
New Orleans, LA 70189 (504) 586-0140
Corey Meyer
Dyer Electronics, 31185 Ten Mile Rd., F-
armingham Hills, MI 48024 (313) 478-2157
Mike Dyer
Emmons Associates, 10700 Lyndale Ave.,
South, Minneapolis, MN 55420 (612)
881-1118 Keith Emmons
Holzberg Associates, P.O. Box 322,
Totowa, NJ 07512 (201) 256-0455 Herb
Holzberg
Singer Products Co., Inc., One World Trade
Center, Suite 2365, New York, NY 10048
(212) 432-1400 John Hayes
Westec Audio, 100 Riverside Dr., Apt. 5B,
New York, NY 10024 (212) 873-1166
Dick Maitland
Electronic Merchandising Enterprise, Inc.,
112 Buena Vista, High Point, NC 27260
(919) 869-3335 George Gold
Broadcast Communications Devices, 7150
SW Hampton St., Suite 131, Tigard, OR
97223 (503) 639-8223 John Odgers
Radford Associates, 1331 Otter Creek Rd.,
Nashville, TN 37215 (615) 373-0231
Lew Radford
Besco International, 3523 Whitehall Dr.,
Dallas, TX 75229 (214) 630-3600 Dick
Witkowski
David Green Broadcast Consultant, 21
North Wirt St., Leesburg, VA 22075 (703)
777-8660 David Green
Caldwell A/V Equipment Co., Ltd., 1080
Bellamy Rd., North, Scarborough, Ont. Can-
ada M1H 1H2 (416) 438-6230 Bruce
Buck

Amtron Corp., Box 1150, Aptos, Calif.
95003

Walther M. A. Andersen & Assoc.,
Inc., 4 Main St. Ext., Tariffville, Conn.
06081

Andrew Corp., 10500 W. 153rd St.,
Orland Park, Ill. 60462

H. Woodbury (312) 349-3300

REGIONAL SALES CONTACTS:

Andrew California Corp., 771 E. Maryland
Ave., Claremont, Calif. 91711 (714)
626-3505 T. Glab
Andrew California Corp., 701 Welch Rd.,
Palo Alto, Calif. 94304 (415) 323-3139
W. Sivratka
Andrew Corp., Box 938, Richardson, Tex.
75080 (214) 235-1279 R. Heltzer
Andrew Corp., 19502 Clubhouse Rd., Gar-
thersburg, Md. 20760 (301) 840-0540
Tom Hewlett
Andrew Corp., P.O. Box 207, Ridgewood,
N.J. 07451 (201) 652-1310 G. Dorsay
Andrew Corp., 451 E. 58th Ave., Denver,
Colo. 80216 (303) 534-1788 J. Gyurko
Andrew Corp., 594 Marrett Rd., Lexington,
Mass. 02173 (617) 862-0888

Angenieux Corp. of America, 1500
Ocean Ave., Bohemia, N. Y. 11716

Herb Van Driel, Broadcast Optics (516)
567-1800

REGIONAL SALES CONTACTS:

Angenieux Service Corp. of NY, 1500
Ocean Ave., Bohemia, N.Y. 11716 (516)
567-2424 Jeff Giordano, Service Mgr.
Angenieux Service Corp. of California,
13381 Beach Ave., Venice, Calif. 90291
(213) 821-5080 Ron Blanchard, Oper-
ations Mgr.
Angenieux Corp. of Canada, 4 Haven Hill
Square, Agincourt, Ont. M1V 1M4 Canada
(416) 291-2363 Tang Sum, Operations
Mgr.

Anixter-Mark, Box 123, Skokie, Ill.
60077

Anton/Bauer Inc., 415 Howe Ave.,
Shelton, Conn. 06484

Anvil Cases, 4128 Temple City Blvd.,
Rosemead, Calif. 91770

Applied Video Electronics, Inc., D 1-9,
Box 25, Brunswick, Ohio 44212

Aristocart Div., Western Broadcasting
Co., Ltd., 1960-505 Burrard St.,
Vancouver, Canada V7X 1M6

D. Kalmokoff (604) 522-2711

REGIONAL SALES CONTACTS:

Broadcast Supply West, 2711 Locust Ave.
W., Tacoma, Wash. 98466 (206) 565-
2301 Irv Law
David Green Associates, 21 N. Wirt, Lees-
burg, Va. 22075 (703) 777-8660 David
Green
McCurdy Radio, 108 Carnforth Rd., Tor-
onto, Ont. M4A 2L4 Canada (416)
751-6262
Seltech Equipment, 16 York Rd., Maiden-
head, Berks, England
Broadcast Cart Service, 11917 Laurel-
wood Dr., Suite 2, North Hollywood, Calif.
91604 (213) 985-3959 Bryant Ellis
Emmons Assoc., Inc., 10700 Lyndale Ave.,
Minneapolis, Minn. 55420 (612) 881-
1118 Keith Emmons
Radford Associates, 3203 Lanier Dr., At-
lanta, Ga. 30319 (404) 237-6097

Arriflex Corp., One Westchester Plaza,
Elmsford, N.Y. 10523

Artists' Engineering, Visual Communi-
cations Div., Box 11457, San Fran-
cisco, Calif. 94101

Arvin CATV, Box 200, Lancaster, Ohio
43130

Arvin/Echo Co., 485 E. Middlefield
Rd., Mountain View, Calif. 94043

Asaca Corp. of America, 1289 Rand
Rd., Des Plaines, Ill. 60016

T. Shigezaki (312) 298-4380

REGIONAL SALES CONTACTS:

Asaca Corp., Box 333, Londonderry, N.H.
03053 (603) 434-0890 Churchill Miller

Atlantic Research Corp., 5390 Chero-
kee Ave., Alexandria, Va. 22314

Atlas Sound, 10 Pomeroy Rd., Parsip-
pany, N.J. 07054

Auburn Instruments, 1127 Olympic
Way West, Seattle, Wash. 98119

Eric Aker (206) 285-7448

Audico, Ltd., 219 Crossen Ave., Elk
Grove Village, Ill. 60007

Audi-Cord Corp., Box 611, Normal, Ill.
61761

Audio Accessories Inc., 163 Water
Street, Keene, N.H. 03431

Audio & Design Recording Inc., Box
23047, Honolulu, Hawaii 96822

REGIONAL SALES CONTACTS:

Gregg Audio Distributors, 1019 N. Win-
chester, Chicago, IL 60622 (312) 252-
8144
Ngel Branwell, P.O. Box 902, Marina, CA
93933 (408) 372-9036

Audio Designs & Mfg., 16005 Stur-
geon, Roseville, Mich. 48066

Murray A. Shields (313) 778-8400

REGIONAL SALES CONTACTS:

Audio Designs & Mfg., 5151 SE 44th Rd.,
Ocala, FL 32670 (904) 694-4032 Jim P.
Sims

Audio Distributor Inc., D 3, 4, 6, 7,
2342 S. Division Ave., Grand Rap-
ids, Mich. 49507

Audio Interface Inc., 9025 Eton Ave.,
Ste. A, Canoga Park, Calif. 91304

Fujio Suganuma (213) 998-1082

Audio Magnetics Corp., 234 W. 146th
St., Gardena, Calif. 90248

Audio Marketing Ltd., D 1,2,3, 652
Glenbrook Rd., Stamford, Conn.
06906

Audio-Technica U.S. Inc., 33 Shiawas-
see Ave., Fairlawn, Ohio 44313

Paul McGuire (216) 836-0246

Audiotechniques Inc., D 1,2,3, 652
Glenbrook Rd., Stamford, Ct.
06906

Audio-Video Engineering Co., 65
Nancy Blvd., Merrick, N. Y. 11566

Rolf Drucker (516) 546-4239

Auditronics, Inc., 3750 Old Getwell
Rd., Memphis, Tenn. 38118

Stovall Kendrick (901) 362-1350

Auernheimer Laboratories & Co.,
4561 E. Florence Ave., Fresno, Calif.
93725

Curly Auernheimer (209) 442-1048

REGIONAL SALES CONTACTS:

Audio Specialties Co., 13416 Brookgreen,
Dallas, TX 75240 (214) 239-2230 Rich-
ard Moree
Broadcast Supply West, 2711 Locust Ave.,
W., Tacoma, WA 98466 (206) 565-2301
Irving Law
Grinnan Fixture Co., 16041 Georgetown
St., N.E., Minerva, OH 44657 (216)
862-2323 John Grinnan
Mar Electronics, 3521 E. LA. State Dr.,
Kenner, LA 70062 (504) 729-4524 Mig-
uel A. Reyes
ORK, 1568 N. Sierra Vista, Fresno, CA
93703 (209) 251-4213 Robert Sidwell
Sound Dynamics, P.O. Box 32055, San
Jose, CA 95152 (408) 926-3588 Ron
Lock

Aurate Corp., Box 698, Coronado,
Calif. 92118

Autodyne, D 1-9, Box 13036, Or-
lando, Fla. 32859

Bob Foley (305) 855-6868

Autogram Corp., D 7, Box 456, Plano,
Tex. 75074

Automated Broadcast Controls, 1110
Taft St., Rockville, Md. 20852

Automated Processes, Inc., 790 Park
Ave., Huntington, N.Y. 11743

Automation Electronics, Inc., 1001
South Street, Lafayette, Ind. 47905

Automation Techniques, Inc., 1846 N.
106th E Ave., Tulsa, Okla. 74116

B

B & I Electronics, Inc., Bldg. 128
Donaldson Center, Greenville, S. C.
29605

B & K Instruments Inc., 5111 W.
164th St., Cleveland, Ohio 44142

B & K Precision, Dynascan Corp.,
6460 W. Courtland, Chicago, Ill.
60635

BGW Systems Inc., 13130 S. Yukon
Ave., Hawthorne, Calif. 90250

BJA Systems, Inc., 666 Davisville Rd.,
Willow Grove, Pa. 19090

BSC Inc., 2932 River Rd., River Grove,
Ill. 60171

The BTX Corp., 438 Boston Post Rd.,
Weston, Mass. 02193

Ronald Barker, Dir. of Mktg. (617)
891-1239

REGIONAL SALES CONTACTS:

Video Systems Network, Inc., 12530 Be-
atrice St., Los Angeles, Calif. 90066 (213)
871-0677 Charles Brainard
Dyma Engineering, 213 Pueblo Del Sur,
Taos, NM 87571 (505) 758-2686 Carroll
Cunningham

Bald Mountain Lab, 230 Belleview Rd.,
Troy, N.Y. 12180

Robert S. Henry (518) 279-9753

REGIONAL SALES CONTACTS:

Northeast Broadcast Labs, 15 Charles St., Glen Falls, NY 12180 (518) 793-2181 Bill Bingham
Broadcast Electronics Inc., 4100 North 24th St., Quincy, IL 62301 (217) 224-9600

Ball Bros. Research Corp., Electronic Display Div., Box 43376, St. Paul, Minn. 55164

Barbizon Electric, 426 West 55th St., New York, N.Y. 10019

Bardwell & McAlister, 7269 Santa Monica Blvd., Hollywood, Calif. 90046

Bayly Engineering Ltd., 167 Hunt St., Ajax, Ont., Canada L1S 1P6

Belar Electronics Lab., Inc., Lancaster Ave. at Dorset, Devon, Pa. 19333
Arno M. Meyer (215) 687-5550

Belden Corp., Box 1327, Richmond, Ind. 47374

Bell & Howell, Audio Visual Div., 7100 McCormick Rd., Chicago, Ill. 60645

Bell Audio Systems, Inc., 994 Freeway Dr. N., Columbus, Ohio 43229

Berkey-Colortran Inc., 1015 Chestnut St., Burbank, Cal. 91502

Beston Electronics Inc., 903 S. Kansas Ave., Olathe, Kans. 66061

Beta Technology, Inc., 94 Verdi St., Farmingdale, N.Y. 11735

Bird Electronic Corp., 30303 Aurora Rd., Cleveland, Ohio 44139

W.L. Yochum, Sales Mgr. (216) 248-1200

REGIONAL SALES CONTACTS:

Bird Electronics Corp., Eastern, 800 Olde Hickory Rd., Lancaster, PA 17601 (717) 569-0467 Richard Tanczos
Bird Electronics, Western, 1188 E. Ojai Ave., Ojai, CA 93023 (805) 646-7255 Geo. Churper

Blonder-Tongue Labs., One Jake Brown Rd., Old Bridge, N.J. 08857

Bogen Div., Lear Siegler, Inc., Box 500, Paramus, N. J. 07652

Bogner Broadcast Equipment Corp., 401 Railroad Ave., Westbury, N. Y. 11590

Bonneville Productions, Div. of Bonneville Int'l. Corp., 130 Social Hall Ave., Salt Lake City, Utah 84111
Mike Collett (801) 237-2619

Boonton Electronics, Rt. 287 Smith Rd., Parsippany, N.J. 07054

Boston Insulated Wire & Cable Co., 65 Bay St., Boston, Mass. 02125

Boston Sound & Power Systems, 3 Fredith Rd., Weymouth, Mass. 02189

Brand-Rex Co., Box 498, Willimantic, Conn. 06226

Don Britton Enterprises, Drawer G, Waikiki, Hawaii 96815

Broadcast Aids, Inc., 20 Red Rose Dr., Levittown, Pa. 19056

Broadcast Automation Associates Inc., D 1,2,5,6, Box 277, Ft. Pierce, Fla. 33450

Broadcast Cartridge Service, D 7,8,9, Box 1790, N. Hollywood, Calif. 91604

Broadcast Communications Devices, Inc., D 8,9, 5526 E. La Palma Ave., Anaheim, Calif. 92807

Broadcast Component Dist. Communication Medias, D 1-9, Tilghman at Jefferson Sts., Allentown, Pa. 18102

Bill Davies (215) 437-0607

Broadcast Consultants Corp., D 1-9, Box 590, Leesburg, Va. 22075

Broadcast Electronics, Inc., Box 3606, Quincy, Ill. 62301
J.T. Malone, Sales Mgr. (217) 224-9600

Broadcast Equipment Distributors, D 1-9, Tilghman at Jefferson Sts., Allentown, Pa. 18102

Broadcast Equip. Leasing Co., 3612 Blvd. of Allies, Pittsburgh, Pa. 15213

Broadcast Equipment & Supply Co., D 1-9, Box 3141, Bristol, Tenn. 37620

Clifton Droke, Mgr. (615) 878-2531

Broadcast Video Systems, Ltd., 1050 Mc Nicol Ave., Agincourt, Ont., Canada M1W 2L8

Bert G. Verwey (416) 497-1020

Brown Electronic Labs, 1233 Somerset Dr., San Jose, CA 95132

Bud Industries, Inc., 4605 E. 355th St., Willoughby, Ohio 44094

Buhl Optical Co., 1009 Beech Ave., Pittsburgh, Pa. 15233

John Stapsy (412) 321-0076

C

CCA Electronics Corp., Box 5500 Broadcast Plaza, Cherry Hill, N.J. 08034

Stan Gobbi, TV Sales and Billy R. Emery, Radio Sales Toll free (800) 257-8171

CMX Systems, Div. of Orrox Corp., 3303 Scott Blvd., Santa Clara, Calif. 95050

Allan Behr (408) 988-2000

REGIONAL SALES CONTACTS:

CMX Systems, Western Region, 3303 Scott Blvd., Santa Clara, Calif. 95050 (408) 988-2000 Darrel Vincent, Mgr. CMX Systems, Eastern Region, Box 355, Springhouse, Pa. 19477 (212) 371-1122 Murray Beviz, Mgr. The Gene Sydduth Co., 845 39th S.E., Paris, Tex. 75460 (214) 785-5764 Gene Sydduth

The CnB Studios, 3415 Beresford Ave., Belmont, Calif. 94002

CPAC, Inc., 2364 Leicester Rd., Leicester, N. Y. 14481

C.R.V. Systems, Inc., 1901 Madison Ave., Huntington, W.Va. 25704

Stuart Underwood (304) 525-2633

CSI Electronics, Inc., 3800 S. Congress Ave., Boynton Beach, Fla. 33435

C. S. P. Inc., 203 Airport Rd., Doylestown, Pa. 18901

Cablewave Systems Inc., 60 Dodge Ave., North Haven, Conn. 06473

California Instruments, 5150 Convoy St., San Diego, Cal. 92111

Calvert Electronics Inc., D 1-9, 220 East 23rd St., New York, N. Y. 10010

Fred M. Samuel (212) 481-5300

REGIONAL SALES CONTACTS:

Calvert Electronics Inc., 1777 Hamilton Ave., Suite 104, San Jose, Calif. 95125 (408) 265-0521 Jack Fudim

The Camera Mart, Inc., D 1,2,3, 456 W. 55th St., New York, N.Y. 10019

Harold Rainy (212) 757-6977

Canon USA, Inc., Optics Div., 10 Nevada Dr., Lake Success, N. Y. 11042

Jack Keyes (516) 488-6700

REGIONAL SALES CONTACTS:

Canon U.S.A. Inc., 123 Paularino Ave. E., Costa Mesa, Calif. 92626 (714) 979-6000 H. Hirai
Canon U.S.A. Inc., 140 Industrial Ave., Elmhurst, Ill. 60126 (312) 833-3070 M. Miyazaki

Capitol Magnetic Products, 1750 North Vine St., Hollywood, Calif. 90028

Cara Pacific Sales Co., D 8,9, 4145 Via Marina, # 120, Marina Del Rey, Calif. 90291

JI Case, Davis Div., Box 9228, Wichita, Kans. 67277

Cases Inc., 1745 W. 134 St., Gardena, Calif. 90249

Catel Div., United Scientific Corp., 1400 D Stierlin Rd., Mt. View, Calif. 94043

CaVox Stereo Productions, 502 S. Isis, Inglewood, Calif. 90301

Ceco Communications Inc., 2115 Avenue X, Brooklyn, N.Y. 11235

Central Dynamics Corp., 331 W. Northwest Hwy., Palatine, Ill. 60067

Howard Shepherd, Dave Spindle, Midwest Region (312) 991-4720

REGIONAL SALES CONTACTS:

Central Dynamics Corp., Eastern Region, 230 Livingston St., Northvale, N.J. 07647 (201) 767-1300 R. DeBerardinis, Regional Sales Mgr.
Central Dynamics Corp., Western Region, 15130 Ventura Blvd., Sherman Oaks, Calif. 91403 (213) 789-0574 Vince Lyons, Regional Sales Mgr.

Cetec Audio, Box 3941, North Hollywood, Calif. 91605

Cetec Broadcast Group, 1110 Mark Ave., Carpinteria, Calif. 93013

Andy McClure and Jerry Clements (805) 684-7686

REGIONAL SALES CONTACTS:

2791 E. 14 Mile Rd., Suite 204, Sterling Heights, Mich. 48077 (313) 979-6320 Dave Hill
14 Snow Ave., West Babylon, N.Y. 11704 (516) 587-5579 Louis J. Bruno
401 Carver Dr., Bethlehem, Pa. 18017 (215) 423-8832 George Pupala, District Mgr.
Box 31, Marion, Va. 24354 (703) 783-2001 Bob Dix, District Mgr.
4018 Middlebury Dr., Pensacola, Fla. 32504 (904) 478-1181 Harry C. Simons III
10523 Maplegrove, Dallas, Tex. 75218 (214) 328-4944 Tom Copeland, District Mgr.
Box 2537, Grand Junction, Colo. 81501 (303) 243-5373 Dick Maynard, District Mgr.
Mike Shafer, District Mgr.

Cezar International, Ltd., 1211 Mcintosh, Sunnyvale, Calif. 94087

Channelmatic, Inc., 2232 Lindsay Michelle Dr., Alpine, Calif. 92001

Chartwell by Osawa, 521 Fifth Ave., New York, N.Y. 10017

Christie Electric Corp., 3410 W. 67th St., Los Angeles, Calif. 90043

Chyron Corp., Video Products Div., 223 Newtown Rd., Plainview, N.Y. 11803

Chyron Telesystems, 223 Newtown Rd., Plainview, N.Y. 11803

Cine 60, Inc., 630 9th Ave., New York, N.Y. 10036

Cinecraft Int'l., Inc., Export Agents, D, 11 Caesar Place, Moonachie, N.J. 07074

Cinema Products Corp., 2037 Granville Ave., Los Angeles, Calif. 90025

Gary Gross, V.P./National Mktg. (213) 478-0711

Clear-Com Intercom Systems, 759 Harrison St., San Francisco, Calif. 94107

Coastcom, 2312 Stanwell Dr., Concord, Calif. 94520

Cohu, Inc., Electronics Div., Box 623, San Diego, Cal. 92112

Collins Div., Rockwell International, Mail Station 406-240, Dallas, Tex. 75207

Jorge Bicocchi, Int'l Sales Coordinator, D. A. Senter, Mktg. Mgr. (214) 690-5495, (214) 690-5574

REGIONAL SALES CONTACTS:

Rockwell Int'l. Collins Broadcast Products, R. R. 2, Westport, N.Y. 12993 (518) 962-4567 John Ring
Rockwell Int'l. Collins Broadcast Products, Box 16, Newton, N.J. 07860 (201) 383-8797 Keith Leach
Rockwell Int'l. Collins Broadcast Products, Rt. 2, Box 12, Glenmore Dr., Rockford, Tenn. 37853 (615) 573-9717 R. C. Evans
Rockwell Int'l. Collins Broadcast Products, 2280 Rockcreek Trail, Birmingham, Ala. 35226 (205) 823-7048 Dave Hultsman
Rockwell Int'l. Collins Broadcast Products, 38780 Hartwell, Sterling Heights, Mich. 48077 (313) 979-6320 D. W. Hill
Rockwell Int'l. Collins Broadcast Products, 200C West Branch Rd., Maple Plain, N.J. 55359 (612) 479-2633 J. L. Littlejohn
Rockwell Int'l. Collins Broadcast Products, Rt. 1, Box 217-B, Oak Grove, Mo. 64075 (816) 443-2080 J. C. Shideler
Rockwell Int'l. Collins Broadcast Products, 1200 N. Alma Rd., Richardson, Tex. 75080 (214) 259-1440, 690-5424 W. R. Terry Sheffield
Rockwell Int'l. Collins Broadcast Products, 1450 W. Arroyo Dr., Yuma, Ariz. 85364 (602) 783-6380 Morris Courtright
Rockwell Int'l. Collins Broadcast Products, 1215 S.E. 73rd Ave., Portland, Ore. 97215 (503) 254-2818 T. T. Cauthers
Rockwell Int'l. Collins Broadcast Products, Box 2743, Fairbanks, Alaska 99707 (907) 452-6044 R. F. Cassidy
Applied Electronics Ltd., 299 Evans Ave., Toronto, Ont. M8Z 1K2 Canada (416) 252-3761 Bob Norton
Telvicom Ltee., 822 Halpern Ave., Dorval, Que. Canada (514) 631-9089 Raymond Quesnel
Applied Electronics, Ltd., Bay #1, 4519 12th St. N.E., Calgary, Alta. Canada (403) 277-8600 Tom Cuddy

Collins Television Services, 8688 Royal Dr., Noblesville, Ind. 46060

Colorado Magnetics, 4620 Milkweed Lane, Colorado Springs, Colo. 80917

Colorado Video Inc., Box 928, Boulder, Colo. 80306

Comark Industries Inc., Box 196, Westfield, Mass. 01085

Comet Sales, Box 4755, Springdale, Conn. 06907

Comex Systems Inc., Executive Dr., Hudson, NH 03051

Commercial Electronics, Inc., 880 Maude Ave., Mountain View, Calif. 94043 [415] 969-1910

REGIONAL SALES CONTACTS:

Color Cassettes, S.A. Calle America 173, Mexico 12DF Mexico (905) 544-5960 Deloy J. White

Dyma Engineering, Box 1697, Taos, N.M. 87571 (505) 759-2686 Carroll Cunningham

Emmons Associates, 10700 Lyndale Ave. S., Minneapolis, Minn. 55401 (612) 881-1118 Keith Emmons

Lake Systems, Box 65, 55 Chapel, Newton, Mass. 02160 (617) 244-6881 Frank De-Mayo

Nortec West, 325 W. 5th Ave., Vancouver, B.C. V5Y 1J6 Canada (604) 872-8525 B. Whitehouse, G. Pelly

Nortec West, 400 Tache, Suite 307, Winnipeg, Man., R2H 3C3 Canada (204) 247-7223 Mike Arbutnot

Nortec West, 7056 'A' Farrell Rd., Calgary, Alta. T2H 0T2 Canada (403) 252-8184 Ron Hill

Perspective Measurements, 8369 Vickers St., Suite D, San Diego, Calif. 92111 (714) 278-8931 Dick Sjoberg

Nucom Associates, Box 243, Edmonds, Wash. 98020 (206) 364-9911 John Nutting

Some Enchanted Evening Productions, 63, au. de Foulleuse, 92500 Rueil-Malmaison France David Niles

Ensoma, Apdo 60368, Chacoa 106, Caracas Venezuela George Carauaca

Arnold Barnes Assoc., Inc., 1300 E. Arapaho, Richardson, TX 75081 (214) 783-8400 Arnold Barnes

KVC, Inc., 770 Lexington Ave., New York, NY 10021 (212) 752-3690 Jerry Kravatz

Laser International Corp., 444 Saratoga Ave., Suite 40F, Santa Clara, CA 95050 (408) 249-3309 Ed Aleks

Omega Video, Inc., 14326 Isis Ave., Lawndale, CA 90260 (213) 670-9021 Russ Winselator or Dean Harrison

Pierce-Phelps, 2000 N. 59th St., Philadelphia, PA 19131 (215) 879-7180 Henry Grove

Pierce-Phelps, 10215 Fernwood Rd., Bethesda, MD 20034 (301) 530-9580 Mike Glenn

Roscor Corp., 6160 W. Oakton, Morton Grove, IL 60064 (312) 539-7700 Paul Roston

Signal Engineering & Sales, 720 South 23rd St., Birmingham, AL 35202 (205) 328-6431 Louis H. Plau

United Media, Inc., 155 San Lazaro, Sunnyvale, CA 94086 (408) 736-3600 Dick Reilly

Technical Video Systems, Inc., 245 Executive Park Blvd., Winston-Salem, NC 27103 (919) 768-9536 Jim Holladay

Video Equipment Corp. of America, 7377 Convoy Court, San Diego, CA 92111 (714) 278-4400 Bill Bennett

Magna-Techtronics, 14 Whiting St., Attarmon, N.S.W. 2064 Australia E.L. Lloyd

Electro Equip. Ltda., 29-30 C.J.31, Sao Paulo Brazil Arlindo Partiti

IVC, Asia Ltd., Ste. 1311, Ocean Centre, Tsimshatsui, Kowloon, Hong Kong China Kenneth Lam

Teleandina de Colombia, Apdo 53041, Bogota D.E. Colombia Herberto Guzman Estevez

EMI - Hayes, 252 Blyth Rd., Hayes, Middlesex UB3 1HW England 01-573-3888 Peter Baker

Commercial Radio Monitoring Co., Inc., 103 S. Market, Lee's Summit, Mo. 64063

Comm/Scope Co., Rt. 1, Box 199A, Catawba, N.C. 28609

Communication Modifications, Inc., 1205 San Luis Obispo Ave., Hayward, Calif. 94545

Communications, Ltd., 1601 N. Bristol St., Santa Ana, Calif. 92706

Communications Technology, Inc., 3070 Leeman Ferry Rd., Huntsville, Ala. 35801

Comprehensive Video Supply Corp., D 1-9, 148 Veterans Dr., Northvale, N.J. 07647

Computer Image Video Controllers, Dytek Industries, Inc., 2492 W. 2nd Ave., Denver, Colo. 80223

Computer Labs, 505 Edwardia Dr., Greensboro, N.C. 27409

Computer Magnetics Corp., 125 W. Providencia Ave., Burbank, Calif. 91502

Comquip, Inc., 366 S. Maple Ave., Glen Rock, N.J. 07452

Comrex Corp., 60 Union Ave., Sudbury, Mass. 01776

Conrac Corp., Cramer Div., Mill Rock Road, Old Saybrook, Conn. 06475

Conrac Div., Conrac Corp., 600 North Rimsdale Ave., Covina, Calif. 91722

Conrac Systems-East Div., 32 Fairfield Pl., West Caldwell, N.J. 07006

Consolidated Electronic Industries, 9721 Singleton Dr., Bethesda, Md. 20034

Consolidated Video Systems, 1255 E. Arques Ave., Sunnyvale, Calif. 94086

DeWitt Smith (215) 355-6642

REGIONAL SALES CONTACTS:

Consolidated Video Systems, Inc., 26 Whippoorwill Rd., Bethel, Conn. 06801 (203) 792-6290 Al Leon

Consolidated Video Systems, Inc., 1000 Independence Ave., Pella, Iowa 50219 (515) 628-9389 Clay Selthun

Consolidated Video Systems, Inc., 1255 E. Arques Ave., Sunnyvale, Calif. 94086 (408) 737-2100 Mike Lang

Consolidated Video Systems, Inc., 2693 Twigg Circle, Marietta, Ga. 30067 (404) 433-1570 Duane Tuttle

Adcom Electronics Ltd., 29-16 Connell Court, Toronto, Ont. M8Z 5T7 Canada (416) 251-3355 Peter McDonnell

Contel Mfg., 1620 W. 32nd Place, Hialeah, Fla. 33012

Frank Mestre (305) 822-1421

Continental Electronics Mfg. Co., Box 270879, Dallas, Texas 75227

Vernon Collins (214) 381-7161

Convergence Corp., 17935 Sky Park Circle #D, Irvine, Calif. 92714

Corning Glass Works, 3900 Electronics Dr., Raleigh, N. C. 27604

Cosmicar Lens Div., Asahi Precision Co., Ltd., 424 Higashi Oizumi, Nerima-Ku, Tokyo, Japan 177

Cox Data Services, Suite 100/Prado North, 5600 Roswell Rd., Atlanta, Ga. 30342

Crosspoint Latch Corp., 316 Broad Street, Summit, N.J. 07901

Crouse Hinds Co., Box 4999, Syracuse, N.Y. 13221

Crown International, Inc., Box 1000, Elkhart, Ind. 46515

Custom Audio Electronics, 2828 Stommel Rd., Ypsilanti, Mich. 48197

D

DB Company, 6325 DeSoto Ave., Woodland Hills, Calif. 91367

dbx, Inc., 71 Chapel St., Newton, Mass. 02195

D and S Corley Ltd., 80 Galaxy Blvd., Rexdale, Ont., Canada M9W 4Y8

Dage-MTI, Inc., 208 Wabash St., Michigan City, Ind. 46360

Dana Laboratories, Inc., see Racial-Dana Instruments Inc.,

Data Communications Corp., 3000 Directors Row, Memphis, Tenn. 38131

Datalogic-Rust Co., Box 273, Everett, Mass. 02149

Datametics Inc., 340 Fordham Road, Wilmington, Mass. 01887

Robert Kieser (617) 658-5410

Datatek Corp., 1166 W. Chestnut St., Union, N. J. 07083

Bob Rainey (201) 964-3656

REGIONAL SALES CONTACTS:

Broadcast Communications Devices, 5526 E. LaPalma Ave., Anaheim, CA 92807 (714) 528-9505 John Baumann

Didier/Denver, P.O. Box 1599, Evergreen, CO 80439 (303) 674-6000 Herb Didier

Landy Associates, 1890 E. Marlon Pike, Cherry Hill, NJ 08003 (609) 424-4660 James E. Landy

845 39th S.E., Pars. TX 75460 (214) 785-5764 E.T. Sudduth

Datatron, Inc., Box 11427, Santa Ana, Cal. 92711

Glen Powers (714) 540-9330

REGIONAL SALES CONTACTS:

United Media, Inc., 1571-D Parkway Loop, Tustin, CA 92680 (714) 731-3011 Robert Ricci

Datatron Int'l., 18-A Bridge St., Coversham, Reading Brookshire England RG4 8AA (0734) 479-013 Roger Bailey

J. Osawa & Co. Ltd., 2-8 Shibauro 4-Chome, Minato-Ku, Tokyo Japan 108 (03) 455-0111

Davis & Sanford Co. Inc., 24 Pleasant St., New Rochelle, N.Y. 10802

Decca Austin Insulators, 71 Selby Road, Brampton Ont., Canada L6W 1K5

W. O. Chamberlain (416) 457-8720

Delta Electronics Inc. (N.C.), 145 Fayette St., Winston Salem, N.C. 27101

Delta Electronics Inc. (Va.), Box 1508, Springfield, Va. 22151

Joseph Novak (703) 321-9845

Denson Electronic Corp., D 1-9, Box 85, Rockville, Conn. 06066

Dielectric Communications, A Unit of General Signal, Route 121, Raymond, Me. 04071

Stanley O. Thomas (800) 341-9678

REGIONAL SALES CONTACTS:

Douglas Electronics, 1118 So Staples, Corpus Christi, TX 78404 (512) 883-5103 Thomas Jackson

Enckson Sales, Inc., 2695 Villa Creek Dr., Dallas, TX 75234 (214) 243-6611 Lowell Erickson

Arva-Hudson, Inc., Box 1512, Bellevue, Wash. 98009 (206) 455-0773 Bob Hudson

Future Electronics, 5647 Fernier St., Montreal, Que. H4P 2K5 Canada (514) 735-5775 Martin Gordon

Future Electronics Corp., 44 Fasken Dr., Unit 24, Rexdale, Ont., Canada M9W 1K5 (416) 675-7820 Rick Hawron

L.A. Varah, Ltd., 2077 Alberta St., Vancouver B.C. Canada V5Y 1C4 (604) 873-3211 Norm MacPhail

Nivel Tecnico, SA, Apdo Postal 6-619, Mexico 6, D.F., Mexico (511) 17-59 Adolpho Rodriguez, Jr.

Scopes of California, 1928A So. Anaheim Blvd., Anaheim, CA 92805 (714) 772-0335 Ed Franchuk

O S Antennas, Inc., 5037B College Oak Dr., Sacramento, CA 95841 (209) 334-3039 Jim Quarles

Cal Com Systems, Inc., 2670 Bonaventura Dr., San Jose, CA 95134 (408) 262-7200 Jack Sharp

C-W Electronics, 1401 Blake St., Denver, CO 80202 (303) 893-5525 Grant Good

EME-3, Inc., 975 Whitmire Dr., Melbourne, FL 32935 (305) 259-2722 Karl Keck

Electronic Equipment, 4027 NW 24th St., Miami, FL 33142 (305) 871-3500 George Radell

West Indies Sales Co., Ltd. 7360 NW 66th St., Miami, FL 33166 Jack Benz

EME-II, Inc., 2522 Tangelwood Rd., Decatur, GA 30033 (404) 325-0165 Pete Scarborough

PLM Sales, 603 Pleasant Place, Streamwood, IL 60103 (312) 837-6406 Rich Kryczwy

Hurley Electronics, Inc., 1112 S. Casino Center, Las Vegas, NV 89104 (702) 384-5666 Mel North

C. H. Electronic Distributing, 209 Parker Ave., Clifton, NJ 07011 (201) 478-9700 Dave Denning

Electronic Module, 601 North Turner St., Hobbs, NM 88240 (505) 397-3022 Pete Anderson

Communications Technology Inc., 431 Windsor Rd., Rockville Centre, NY 11570 (516) 536-5320 Mike Harrison

Electronic Merchandising Enterprises, 112 Buena Vista, High Point, NC 27260 (919) 869-3335 George Gold

Hamtronics, Treviso, PA 19047 (215) 357-1400 Preston E. Funk

Digital Concepts Corp., 249 Route 46, Saddle Brook, N.J. 07662

Digital Video Systems, 519 McNicoll Ave., Willowdale, Ont., Canada M2H 2C9

Dimension 3 Recording Co., Box 326, New Milford, N.J. 07646

Ditch Witch, Div. of Charles Machine Works Inc., P.O. Box 66, Perry, Okla. 73077

Di-Tech Inc., 311 Wyandanch Ave., N. Babylon, N.Y. 11704

Tony Bollentino (516) 643-4040

Dolby Laboratories, Inc., 731 Sansome St., San Francisco, Calif. 94111

Dranetz Engineering Labs., Inc., 2385 S. Clinton Ave., South Plainfield, N.J. 07080

Duca-Richardson Corp., 11465 W. 48th Ave., Wheat Ridge, Colo. 80033

Duncan Electronics, Inc., 2865 Fairview Road, Costa Mesa, Calif. 92626

E. I. du Pont de Nemours & Co., Inc., Magnetic Products Div., Old du Pont Airport, Bldg. 1, Wilmington, Del. 19898

Dyma Engineering, Inc., Box 1697, Taos, N. M. 87571

C. G. Cunningham (505) 758-8886

REGIONAL SALES CONTACTS:

DYMA, 505 1/2 Centinela, Inglewood, Calif. 90302 (213) 674-2806

DYMA, 926 Wisteria Way, Dallas, Tex. 75080 (214) 235-8236

Dynair Electronics, Inc., 5275 Market St., San Diego, Cal. 92114

Robert A. Jacobs (714) 263-7711, Ext. 225

Dynasciences, Div. Whitaker Corp., Township Line Road, Blue Bell, Pa. 19422

Dynatech Data Systems, 7644 Dynatech Ct., Springfield, Va. 22153

Dytek Industries, Inc., 2492 W. 2nd Ave., Denver, Colo. 80223

Richard D. Rush, Pres. (303) 935-3514

REGIONAL SALES CONTACTS:

Didier/Denver, P.O. Box 1599, Evergreen, CO 80439 (303) 674-6000 H.N. Didier

Dytek Industries, Inc., 999 N. Sepulveda Blvd., Suite 314, El Segundo, CA 90245 (213) 640-2348 James C. Morrison

The Gene Sudduth Co., Inc., 845 39th S.E., Pars. TX 75460 (214) 785-5764 Gene Sudduth

E

EDCO Products, Inc., 680 Bizzell Dr., Lexington, Ky. 40504

ECCO, 1441 E. Chestnut Ave., Santa Ana, Calif. 92701

EEV, Inc., 7 Westchester Plaza, Elmsford, N.Y. 10523
Tom Soldano, RF Products and Dick Betts, Imaging Devices (914) 592-6050
REGIONAL SALES CONTACTS:
EEV, Canada Ltd., 67 Westmore Dr., Rexdale, Ont. Canada M9V 3Y6 (416) 745-9494 Bob Parkes
English Electric Valve Co. Ltd., Waterhouse Lane, Chelmsford England CM1 20U (0245) 61777 Mark Knight
EEV, Inc., 4206 Arbor Court, Independence, KY 41051 (606) 371-1284 Richard Bossert
EEV, Inc., 915 Congress St., New Orleans, LA 70117 (504) 945-5675 Roger Lewis
EEV, Inc., 3 Buckingham Rd., Natick, MA 01760 (617) 653-8300 Dan Green
EEV, Inc., 4727 Meyer Rd., North Tonawanda, NY 14120 (716) 625-8686 Len Barreca
EEV, Inc., 19001 40th Place N.E., Seattle, WA 98155 (206) 363-2200

EEV Canada Ltd., 67 Westmore Dr., Rexdale, Ont., Canada M9V 3Y6

EIMAC, Div. of Varian, 301 Industrial Way, San Carlos, Cal. 94070

EIP Microwave, 3230 Scott Blvd., Santa Clara, Calif. 95051

EMCEE Broadcast Products, P.O. Box 116, White Haven, Pa. 18661

EMT Franz VGmbH, Box 1520, D-763 Lahr, W. Germany

ENG Mfg. Co., 1009 C. Shary Circle, Concord, Calif. 94520

ESC Electronics Corp., 534 Bergen Blvd., Palisades Park, N. J. 07650

ESE, 505 1/2 Centinela, Inglewood, Calif. 90302
R. M. Mayers (213) 674-3021
REGIONAL SALES CONTACTS:
David Bain Associates, Box 1014, Port Washington, N.Y. 11050 (516) 883-4818 David Bain
H. M. Dyer Electronics, 31185 Ten Mile Rd., Farmington Hills, Mich. 48024 (313) 478-2157 Mike Dyer
Comad Communications, 91 Kelfield St., Rexdale, Ont. M9W 5A3 Canada (416) 245-1734 Emil Adamyk
Track Audio, Inc., 2134 S. 295th, Federal Way, Wash. 98003 (206) 941-2233 Brian Hayashi
David Green Broadcast Consultant, 21 N. Wirt St., Leesburg, Va. 22075 (703) 777-8660 David Green
Martin Audio, 320 W. 46th St., New York, N.Y. 10036 (212) 541-5900 Ed Tompkins
Allied Broadcast Equipment, 124 S. 6th St., Richmond, Ind. 47374 (317) 962-8596 Roy Ridge
Lauderdale Electronic Labs, 16 S.W. 13th St., Ft. Lauderdale, Fla. 33315 (305) 764-7755 Jeff Tibbitts
Ro-Cel Electronics, 731 Voice of the Theater Bldg., Pittsburgh, Pa. 15223 (412) 781-2326 Claire Rosenberger

E-Z Way Products, Inc., Box 22845, Tampa, Fla. 33622

Eastman Kodak Co., 343 State St., Rochester, N.Y. 14650

Econco Broadcast Service Inc., Rt. 2 Box 188, Woodland, Calif. 95695

Eddor Div. of P.A.C., 3030 Red Hill Ave., Costa Mesa, Calif. 92626

Editel Communications, 729 N. Highland, Hollywood, Calif. 90038

Edutron, Inc., 3700-B2 N.E. 53rd Ave., Gainesville, Fla. 32601

Eidson Electronic Co., Box 96, Temple, Tex. 76501

Eigen Video, Box 1027, Grass Valley, Calif. 95945
George Foster (916) 273-1341

Elcom Engineering Co., Box 10432, Santa Ana, Calif. 92711
Jim Lawrence (714) 544-5760

Electro Controls, 2975 S. 300 W., Salt Lake City, Utah 84115
Will Wiggins (801) 487-9861
REGIONAL SALES CONTACTS:
H. S. Eales Co., 8334 Kenyon Ave., Los Angeles, CA 90045 (213) 663-6925 Stan Eales
Aird & Winter, Inc., 2477 Flat Shoals Rd., Decatur, GA 30031 (404) 241-1822 Verlyn Branham
Suburban Associates, 1819 Excelsior Ave. West, Hopkin, MN 55343 (612) 935-7782 Tim Kudalis
Manny Ferris, 40 West 13th St., New York, NY 10011 (212) 675-0400 Manny Ferris
First Electric, Inc., 6400 West Park, Suite 289, Houston, TX 77057 (713) 789-9447 Bob Schemenaur
Ericksen Lighting Sales, 103 N. Ave., Hartland, WI 53029 (414) 367-5920 Art Ericksen
Distribulite Ltd., 3878 Chesswood Dr., Downsview, Ont. Canada M3J 2W6 (416) 630-7630 Cliff Patterson
Bernard Beaudoin & Assoc., Inc., 399 Henri Bourassa Ouest, Montreal, Que. Canada H3L 1P5 (514) 331-6080 Paul Gratton

Electro Impulse, Inc., Box 870, Red Bank, N.J. 07701
Mark Rubin (201) 741-0404

Electro & Optical Systems Ltd., 3015 Kennedy Rd., Scarborough, Ont., Canada N1V 1E7
A. M. Evans (416) 291-4492

Electro Sound, Inc., 160 San Gabriel Dr., Sunnyvale, Calif. 94086

Electrohome Ltd., 809 Wellington St. N., Kitchener, Ont., Canada N2G 4J6
Laird Weagand, Sales Mgr. (519) 744-7111

Electronic Communication Consultants, 1486 Main St., Agawam, Mass. 01001

Electronic Devices, Inc., 21 Gray Oaks Ave., Yonkers, N.Y. 10710

Electronic Inst. & Spec., 42 Pleasant St., Stoneham, Mass. 02180

Electronics Diversified, Inc., 1675 N.W. 216th, Hillsboro, Ore. 97123
Luis Walsh (503) 645-5533

Electro-Voice Inc., 600 Cecil St., Buchanan, Mich. 49107
Dave Rothfeld (616) 695-6831

Enclosure Corp., 4529 Adams Circle, Cornwell Heights, Pa. 19020

Energy Technology, Inc., Box Q, Las Cruces, N.M. 88001

Engineering Associates, 7567 Rt. 49A East, Arcanum, Ohio 45304

English Electric Valve Co. Ltd., Waterhouse Lane, Chelmsford, Essex England CM1 2QU

Enterprise Electronics Corp., Box 1216, Enterprise, Ala. 36330

Equipto Storage Systems, 225 S. Highland, Aurora, Ill. 60507

Eumig, Lake Success Business Park, 225 Community Dr., Great Neck, N.Y. 11026

Eventide Clock Works Inc., 265 West 54th St., New York, N. Y. 10019
Heather Wood (212) 581-9290
REGIONAL SALES CONTACTS:
Pacific Recorders & Engineering, 11100 Roselle St., San Diego, CA 92121 (714) 453-3255 Jack Williams
Lebow Labs Inc., 424 Cambridge St., Allston, MA 02134 (617) 782-0600 Bill Lewis
Ken Schaffer Group, 10 East 49th St., New York, NY 10019 (212) 371-2335 Ken Schaffer
Audio Innovators, 216 Blvd. of the Allies, Pittsburgh, PA 15222 (412) 391-6220 Norman Cleary

Everything Audio, D 1-9, 7037 Laurel Canyon Blvd., No. Hollywood, Calif. 91605

Farinon Electric, 1691 Bayport Ave., San Carlos, Calif. 94070
James Hurd (415) 592-4120
REGIONAL SALES CONTACTS:
Farinon Electric, P.O. Box 4738, Overland Park, KS 66204 (913) 492-6776 Carl Lasser
Farinon Electric, P.O. Box 6802, Bridgewater, NJ 08807 (201) 469-6740 Rick Schlack
Farinon Electric, P.O. Box 125, Fair Play, SC 29643 (803) 882-6391 John Eastman
Farinon Electric, 701 N. Post Oak Rd., Suite 223, Houston, TX 77024 (713) 688-5560 Art Joseph

Yves Faroudja, Inc./Telegen, 800 Welch Rd. #354, Palo Alto, Calif. 94304

Fernseh Group, Robert Bosch Corp., 279 Midland Ave., Saddle Brook, N.J. 07662

Fidelipac, 109 Gaither Dr., Mt. Laurel, N.J. 08057
Arthur Constantine (609) 235-3511

The Finney Co., 34 W. Interstate St., Bedford, Ohio 44146

Imero Fiorentino Associates, Inc., 10 West 66th St., New York, N. Y. 10023

Fisher Berkeley Corp., 5800 Christie Ave., Emeryville, Cal. 94608

Fisher Burke Professional Audio, D 8, Box 2468, Phoenix, Ariz. 85003

Fix Tune, Solid State Electronics, Inc., One W. 30th St., New York, N.Y. 10001

Flash Technology Corp. of America, 55 Lake St., Nashua, N. H. 03060
Lewis D. Wetzel (603) 883-6500
REGIONAL SALES CONTACTS:
Black & MacDonald, 101 Parliament St., Toronto, Ont. M5A 2Y7 Canada (416) 366-2541 Dennis Buckland

John Fluke Mfg. Co., Inc., Box 43210, Mountlake Terrace, Wash. 98043

Forsythe Audio Systems, 28 Acton St., Watertown, Mass. 02172

Fort Worth Tower Co., Inc., Box 8597, Ft. Worth, Tex. 76112

Freeland Products Co., 3233 Conti St., New Orleans, La. 70119

Frequency Devices Inc., 25 Locust St., Haverhill, Mass. 01830
Steven M. Ruscio (617) 374-0761

REGIONAL SALES CONTACTS:
CESCO, Box 2276, Seal Beach, Calif. 90740 (213) 430-9084 Jack Cairns
McReynolds Electronics, 1121 Platt Dr., Plano, TX 75023 (214) 424-2248 Dan McReynolds
O'Hara Associates, 36500 Weideman, Mt. Clemens, MI 48043 (313) 791-7140 Robert O'Hara

Frezzolini Electronics, Inc., 7 Valley St., Hawthorne, N. J. 07506
Jack Zink (201) 427-1160
REGIONAL SALES CONTACTS:
Export Agents: Cinecraft International, Inc., 11 Caesar Place, Moonachie, NJ 07074 (201) 939-0875
In Canada: Kingsway Film Equipment Ltd., 821 Kipling Ave., Toronto Ont., M8Z 5G8 Canada (416) 233-1101

Fuji Photo Film USA, Inc., Magnetic Products Dept., 350 5th Ave., 70th Floor, New York, N. Y. 10001

Fujinon Optical, Inc., 672 White Plains Rd., Scarsdale, N.Y. 10583
Sales Department (914) 472-9800

GBC Closed Circuit TV Corp., 315 Hudson St., New York, N.Y. 10013

G.C. Electronics, 400 S. Wyman St., Rockford, Ill. 61101

GLI Div. VSC, 2950 Northern Blvd., Long Island City, N.Y. 11101

GTE Lenkurt, Inc., 1105 County Road, San Carlos, Calif. 94070

GTE Sylvania Inc., Lighting Products Group, 100 Endicott St., Danvers, Mass. 01923

Garner Industries, 4200 No. 48th St., Lincoln, Nebr. 68504
Bruce A. Alderman (402) 464-5911

Geleco Electronics Ltd., 2 Thorncliffe park Dr., Unit 28, Toronto, Ont., Canada M4H 1H2

General Cable Corp., 500 West Putnam Ave., Greenwich, Conn. 06830

General Electric Co., ISO Div., 316 E. Ninth St., Owensboro, Ky. 42301

General Electric Co., Tubes/MW Devices, 316 E. Ninth St., Owensboro, Ky. 42301

General Electric Co., Video Display Equip. Op., Electronics Park 6-206, Syracuse, N. Y. 13221
Jerrod P. Gunderson, Mgr. Mktg. (315) 456-2562, 2533, 2179

General Time Service, Box 4067, Mesa, Ariz. 85201

The Gerstenslager Co., 1425 E. Bowman St., Wooster, Ohio 44691

Glenitron Ltd., D 1-9, 160 Duncan Mill Rd., Don Mills, Ont., Canada M3B 125

Alan Gordon Enterprises Inc., 1430 N. Cahuenga Blvd., Hollywood, Calif. 90028

Gorman Redlich Mfg. Co., 6 Curtis St., Athens, Ohio 45701

Gotham Audio Corp., 741 Washington St., New York, N.Y. 10014

Gould Inc., Instruments Div., 3631 Perkins Ave., Cleveland, Ohio 44114

Gralex Industries, 155 Marine St., Farmingdale, N. Y. 11735

Grandy, Inc., 1275 Bloomfield Ave.,
Fairfield, N.J. 07006

Grass Valley Group, Inc., P.O. Box
1114, Grass Valley, Cal. 95945

Robert E. Lynch, Nat'l Sls. Mgr. (916)
273-8421

REGIONAL SALES CONTACTS:

The Grass Valley Group, Inc. 1644 Tullie
Circle N.E., Suite 102, Atlanta, Ga. 30329
(404) 634-0521 Tom Sleeman
The Grass Valley Group, Inc. 3585 N. Lex-
ington Ave., Suite 374, Arden Hills, MN
55112 (612) 483-2594 Larry W. Ehn-
strom, Reg. Mgr.

The Grass Valley Group, Inc. 2639 Walnut
Hill Lane, Suite 143, Dallas, TX 75229
(214) 358-4229 John White, Reg. Mgr.
The Grass Valley Group, Inc. 4419 Van
Nuys Blvd., Suite 307, Sherman Oaks,
Calif. 91403 (213) 990-6172 Don Bowd-
ish

The Grass Valley Group, Inc. 810 W. Bris-
tol St., Suite E, Elkhart, Ind. 46514 (219)
264-0931 Louie Swift
The Grass Valley Group, Inc., Station Plaza
East, Great Neck, N.Y. 11021 (516)
487-1311 Bob Webb

Gray Engineering Labs, 504 West
Chapman Ave., Orange, Calif.
92668

Tom C. Clark (714) 838-4777

The Great American Market, Box 178,
Woodland Hills, Calif. 91364

Grinnan Fixture Co., D 1-9, 16041
Georgetown St. N.E., Minerva, Ohio
44657

Gruber Products Co., 5254 Jackman
Rd., Toledo, Ohio 43613

H

HM Electronics, Inc., 6151 Fairmount
Ave., San Diego, Calif. 92120

REGIONAL SALES CONTACTS:

A B and T Sales Corp., Jackson Creek Rd.,
P.O. Box 111, Grasonville, MD 21638
(301) 827-8046; 8909

A B and T Sales Corp., 1000 Valley Forge
Circle, King of Prussia, PA 19406 (215)
265-2028, 783-7220

John B. Anthony Co., 992 High Ridge Rd.,
Stamford, CT 06905 (203) 322-9202,
(212) 585-2027

CB Electronic Marketing, 6429 Iris Way,
Arvada, CO 80004 (303) 422-0561

Capital Communications Ind., P.O. Box
481, Olympia, WA 98507 (206) 943-
5378

The Collins Co., 10155 Plano Rd., Suite
10, Dallas, TX 75228 (214) 341-7866

The Collins Co., 3815 Richmond Ave.,
Suite 112, Houston, TX 77027 (713)
626-1293

Filmways Audio Services, 5540 Cleon
Ave., North Hollywood, CA 91601 (213)
877-9711

Fornistal-Young Sales Co., 7110 Oakland
Ave., St. Louis, MO 63117 (314) 645-
2360

Fornistal-Young Sales Co., 9010 East 50
Hiway, Kansas City, MO 64133 (816)
358-6771

Fornistal-Young Sales Co., 11312 Martha,
Omaha, NE 68124 (402) 333-0800

Fornistal-Young Sales Co., 6400 Hickman,
Lot 37, Des Moines, IA 50322

International Marketing Assn., 1220 W. Al-
ameda, Suite 109, Tempe, AZ 85282
(602) 894-1318

Kodo Associates, Inc., 8100 Penn Ave.
South, Minneapolis, MN 55431 (612)
881-1255

New/Era Sales, Inc., 316 South Range Line
Rd., Suite C, Carmel, IN 46032 (317)
844-4530

George Pettit Co., Inc., 5300A McDermott
Dr., Berkeley, IL 60163 (312) 261-0342,
0343

George Pettit Co., Inc., 505 Avondale Dr.,
East Peoria, IL 61611 (309) 699-3301

George Pettit Co., Inc., P.O. Box 54, River
Forest, IL 60305

Riley & Petchell Sales, Inc., 25700 Plym-
outh Rd., Detroit, MI 48239 (313)
937-3000

Riley & Petchell Sales, Inc., 401 Chippewa,
Buchanan, MI 49107 (616) 695-6365

Siera Marketing, Inc., 470 Aldo Ave.,
Santa Clara, CA 95050 (408) 988-2833

Maitland K. Smith, Inc., 2321 Fourth St.,
Suite 210, Tucker, GA 30084 (404)
939-3323

Maitland K. Smith, Inc., 5500 Carmel Rd.,
Charlotte, NC 28211 (704) 542-1352

Maitland K. Smith, Inc., One Blake Dr., Riv-
erside, AL 35135 (205) 884-1278

Sproch Sales, Inc., 3520 W. Broward Blvd.,
Ft. Lauderdale, FL 33312 (305) 587-
3792

Sproch Sales, Inc., 12 Anchor Way, Gulf
Harbour, New Port Richey, FL 33552
(813) 849-6067

VF Sales, Inc., 181 Worcester Rd., Natrick,
MA 01760 (617) 237-6544

Weller Electronic Sales, 5274 Sinclair Rd.,
Columbus, OH 43229 (614) 885-7819

Hallikainen & Friends, Inc., 340 Higu-
era, San Luis Obispo, Calif. 93401

Clifford B. Hannay & Son, Inc., 402
Main St., Westerlo, N.Y. 12193

Harris Corp., Broadcast Products Div.,
Box 4290, Quincy, Ill. 62301

Kenneth R. Schwenk (217) 222-8200

REGIONAL SALES CONTACTS:

2600 Virginia Ave. NW, 8th Fl., Washing-
ton, D.C. 20037 (202) 342-3946 Gene
Bidun, District Sales Mgr.

1866 Gatewood Dr., Montgomery, Ala.
36106 (205) 277-4377 Will Bone, Dis-
trict Sales Mgr.

Box 1015, Lancaster, Ohio 43130 (614)
687-1072 Tim Cook, District Sales Mgr.

7000 Regency Sq., Blvd., Suite 200,
Houston, Tex. 77036 (713) 977-2411

London T. England, District Sales
Box 6566, San Jose, Calif. 95150 (408)
998-8222 Dave M. Evans, District Sales
Mgr.

3320 Ivy Lane, Racine, Wis. 53402 (414)
639-7689 Robert Gorjanec, District Sales
Mgr.

11 Ridgcrest, Latham, N.Y. 12110 (518)
785-9144 Robert Hallenbeck, District
Sales Mgr.

10241 North 143rd, Waverly, Neb.
68462 (402) 786-2431 Galen L. Has-
singer, District Sales Mgr.

Box 1173, Maryland Heights, Mo. 63043
(217) 222-8200 Walt Rice

47 Wood Pond Rd., West Hartford, CT
06107 (203) 521-7050 Hal Kneller, Dis-
trict Sales Mgr.

12005 N.E. 35th St., Vancouver, Wash.
98662 (206) 256-7455 Gary L. Lake, Dis-
trict Sales Mgr.

7209 Stonehaven Dr., Columbia, S.C.
29209 (803) 776-2059 E. R. (Red)
Lowder, District Sales Mgr.

Box 958, Maccleddy, Fla. 32063 (904)
259-6475 Ivey Raulerson, District Sales
Mgr.

10960 Wilshire Blvd., Los Angeles, Calif.
90024 (213) 477-2577 Richard H. Stev-
ens, District Sales Mgr.

1021 North Hickory Place, Broken Arrow,
Okla. 74012 (918) 251-8808 Curtis A.
Lutz, District Sales Mgr.

Box 41, Morrow, Ga. 30260 (404)
961-6099 Walt Deen, District Sales Mgr.

7000 Regency Sq., Blvd., Suite 200,
Houston, Tex. 77036 (713) 977-2411

Vern Killion, District Sales Mgr.

10960 Wilshire Blvd., Los Angeles, Calif.
90024 (213) 477-2577 Tom O'Hara, Dis-
trict Sales Mgr.

2600 Virginia Ave. NW, 8th Fl., Washing-
ton, D.C. 20037 (202) 342-3946 Lew
Page, District Sales Mgr.

1802 Cottonwood, Holt, Mich. 48842
(517) 694-1223 Thomas G. Schoonover,
District Sales Mgr.

Harris Corp., Broadcast Products Div., 19
Lesmill Rd., Don Mills, Ont. M3B 2T3 Can-
ada (416) 441-2400 Robert J. Gauthier

Harris Corp., Broadcast Products Div., 212
Brunswick Blvd., Pointe-Claire, Que. H9R
1A6 Canada (514) 694-3371 Leo E. Gil-
beau and Vic A. Hosquet

Harris Corp., Broadcast Products Div.,
4603 Hunter's Ridge Dr. #20, Kentwood,
MI 49508 (616) 698-7820 William A.
Harland

Harris Corp., Broadcast Products Div., 16
Stoneheart Lane, Indianhead Park, IL
60525 (312) 246-0666 Charles Coyle

Harris Corp., Broadcast Products Div., 5
Flint Meadow Rd., Brookline, NH 03033
(603) 673-5700 Vern Russell

Harris Corp., PRD Electronics Div.,
6801 Jericho Turnpike, Syosset, N.
Y. 11791

Hartley Products Corp., 620 Island
Rd., Ramsey, N.J. 07446

Heath Co., Benton Harbor, Mich.
49022

Hewlett-Packard Co., 1507 Page Mill
Rd., Palo Alto, Calif. 94304

Hickok Elect. Instrument, 10514 Du-
pont Ave., Cleveland, Ohio 44108

Hitachi Denshi America, Ltd., 58-25
Brooklyn Queens Exp., Woodside,
N.Y. 11377

Bob Blair, Mktg. Mgr. (212) 898-1261

Hitran Corp., Route 31, Flemington,
N.J. 08822

John S. Hurst (201) 782-5525

Holland Electronics, 970 E. 92nd St.,
Brooklyn, N. Y. 11236

H. M. Holzberg Associates, Inc., D
1,2,5, Box 322, Totowa, N. J.
07511

Houston Fearless 76, 833 E. Walnut
St., Carson, Calif. 90746

Houston Photo Products, Inc., 655 E.
20th St., Yuma, Ariz. 85364

Howe-Yin Research Co. Inc., Box
3518, Fremont, Calif. 94538

Dana Sigler and Stephen T. Nicol (415)
656-9400

**Hughes Aircraft Co., Microwave Com-
munications Products**, Box 2999,
Torrance, Calif. 90509

Hughes & Phillips Inc., 3050 N. Cali-
fornia St., Burbank, Calif. 91504

C. E. Stephens, Sales Mgr. (213) 849-
1104

Philip A. Hunt Chemical Corp., Roose-
velt Place, Palisades Park, N.J.
07650

IGM, Div. of Northwestern Tech.,
4041 Home Rd., Bellingham, Wash.
98225

Nick Solberg (206) 733-4567

ITT Jennings, 970 McLaughlin Ave.,
San Jose, Cal. 95122

Ikegami Electronics (USA) Inc.,
29-19 39th Ave., Long Island City,
N.Y. 11101

Image Devices Inc., D 1-9, Box
610606, Miami, Fla. 33181

Image Magnification, Inc., 739 Airway
Circle, New Smyrna Beach, Fla.
32069

Don Quinlan (904) 427-5294

REGIONAL SALES CONTACTS:

Auscom Associates, P.O. Box 544, Glen
Rock, NJ 07452 (201) 447-6462 Dick
Wood

Auvinic, 1280 Lachine, St. Vincent De
Paul, Que. Canada H7C 2N7 (514)
661-5120 Murice Dupont

Esoma C.A., Apartado 60368, La Florida
Caracas Venezuela 74 77 74 Eloy Sardinias
FSG Vertrieb GMBH, 8042 Oberschlei-
sheim, Sonnen Strasse 5, Munich Germany
315-4091 P. Razisberger

Hoppman Corp., P.O. Box 1463, Spring-
field, Va 22151 (703) 321-8800 Ed Sum-
erville

Lerro Electronic Corp., 3125 N. Broad St.,
Philadelphia, PA 19132 (215) 223-8200
L. Lerro

Midwest Telecommunications, 1395 Air-
rail Ave., Virginia Beach, VA 23455 (804)
464-6256

NTSC Video Sales Ltd., Malton Postal Sta-
tion, P.O. Box 276, Mississauga, Ont. Can-
ada L4T 3B6 (416) 677-3332 Grayham
Scott

Norlasco Film Lab, Padre Mier 837 Pte.,
Monterrey N.L. Mexico 42-74-44 Geo.
Norlasco

PLL Video Systems, 3842 S. St. Louis,
Tulsa, Ok. 74105 (918) 749-4192 Larry
Lieberman

PSC Productions, 1754 Lisitana St., Hono-
lulu, HI 96813 (808) 537-1251 Michel
Tanaka

Planata S.A., Romero De Terreros 1007,
Mexico 12 D.F. Mexico 523-9272 Alberto
Algrami Y.

Roscor Corp., 6160 Oakton, Morton
Grove, IL 60053 (312) 966-3010 Mr.
Grossman

San Juan Electronics, 154 Ponce Deleon,
Stop 3, San Juan Puerto Rico 00906
(809) 725-3342 Miguel Cabrera

Signal Engineering Inc., 720 So. 23rd St.,
Birmingham, AL 35202 (205) 328-6431
Louis H. Plau

Robert Sly Electronics, 3415 N. Washing-
ton Blvd., Arlington, VA 22201 (703)
525-7272 Robert Natwick

Television Engineering Co., 519 Rudder
Rd., Fenton, MO 63026 (314) 343-5605
Jack Vines

Tri-Tronics Inc., 2921 W. Alameda Ave.,
Burbank, CA 91305 (213) 843-2170 Lyle
Bailey

**Industrial Marketing Advisory Ser-
vices, Inc.**, 2425 Wilson Blvd., Ar-
lington, Va. 22201

Steven B. Dana, Pres. (703) 525-0400

Industrial Sciences, Box 1495,
Gainesville, Fla. 32602

Innovative Television Equipment, Inc.,
P.O. Box 681, Woodland Hills, Cal.
91364

Inovonics, 503-B Vandell Way, Camp-
bell, Calif. 95008

J. B. Wood, Pres. (408) 374-8300

REGIONAL SALES CONTACTS:

Taber Mfg. & Eng., 2081 Edison Ave., San
Landro, Calif. 94577 (415) 635-3831

Accurate Sound, 114 5th Ave., Redwood
City, Calif. 94063 (415) 365-2843

Mel Audio/Video, 1122 E. Chevy Chase
Dr., Glendale, Calif. 91205 (213) 245-
7708

VIF International, 1151 Viscaino Ave.,
Sunnyvale, Calif. 94086 (408) 739-9740

Sound Dynamics, Box 32055, San Jose,
Calif. 95152 (408) 926-3588

Savco, Box 427, Richardson, Tex. 75080
(214) 234-1841

Communications Systems, Drawer C,
Cape Girardeau, Mo. 63701 (314)
334-6097

Inovonics, Box 1014, Port Washington,
N.Y. 11050 (516) 883-4818

Joel Associates, 528 River Rd., Teaneck,
N.J. 07666 (201) 836-8741

Lebow Labs, 424 Cambridge St., Allston,
Mass. 02134 (617) 782-0600

Broadcast Equip. & Supply, Box 314, Bris-
tol, Tenn. 37620 (615) 968-7342

The Harris Co., 1779 Tiggert Rd., Miami,
Fla. 33145 (305) 854-2002

John J. Harding Ltd., 2825 Valena St., Hon-
olulu, Hawaii 96819 (808) 841-0941

Broadcast Supply West, 2711 Locust Ave.
W., Tacoma, Wash. 98466 (206) 565-
2301

Track Audio, Inc., Box 24722, Seattle,
Wash. 98124 (206) 941-2233

Interdan Corp., Teletstrator Div., 450
E. Ohio St., Chicago, Ill. 60611

**International Communications, & Con-
trol Corp.**, Box 11749, Knoxville,
Tenn. 37919

International Electro-Magnetics, 350
Eric Dr., Palatine, Ill. 60067

International Microwave Corp., 33
River Rd., Cos Cob, Conn. 06807

International Nuclear Corp., 608
Norris Ave., Nashville, Tenn. 37204

International Tapetronics Corp., Box
241, Bloomington, Ill. 61701

John Abdnour, Direct Sales Mgr. and Karen
Ryder, Admin. Sales Mgr. (309) 828-1381

International Video Corp., 453 W.
Maude Ave., Sunnyvale, Calif.
94086

Intertec Publishing Corp., Box 12901, Overland Park, Ks 66212
Ivie Electronics, 500 West 1200 South, Orem, Utah 84057

J

J&D International, Elec. Div., Unit E-East, Interstate Industrial Park, Bellmawr, N.J. 08031
JSH Electronics, Inc., Box 2898, Culver City, Calif. 90230
US JVC Corp., Professional Video Div., 58-75 Queens Midtown Exp., Maspeth, N.Y. 11378
Jamieson Film Co., 6901 Forest Park Rd., Dallas, Texas 75235
Janson Industries, Box 6090, Canton, Ohio 44706
Javelin Electronics, 6357 Arizona Circle, Los Angeles, Calif. 90045
Jensen Sound Laboratories, Div. of Pempcor, Inc., 4136 N. United Pkwy., Schiller Park, Ill. 60176
Jensen Tools & Alloys, D 1-9, 1230 S. Priest Dr., Tempe, Ariz. 85281
Jensen Transformers, 1617 N. Fuller Ave., Hollywood, Calif. 90046
Deane Jensen (213) 876-0059

Johnson Electronics Inc., 62 S. Hwy. 17-92, Casselberry, Fla. 32707
Joslyn Electronic Sys., Box 817, Goleta, Cal. 93017

K

K & H Products, Ltd., Box 246, North Bennington, Vt. 05257
K & L Pro Audio, D, 1, 2, 5, 6, 75 N. Beacon St., Watertown, Mass. 02172
Karen Bengler (617) 926-6100

KLH Research & Development Corp., KLH Burwen Research, 145 University Ave., Westwood, Mass. 02090

KVC, Inc., 215 Lexington Ave., New York, N.Y. 10016
KVC Video Systems Inc., D 1, 2, 770 Lexington Ave., New York, N. Y. 10021

Kager International, 1180 S. Beverly Dr., Los Angeles, Calif. 90035
Kahn Communications, Inc., Box 591, Freeport, N.Y. 11520

Kaitronics Corp., 1540 Gilbreth Rd., Burlingame, Calif. 94010
Paul Tarrodachyck, V.P., Mktg. (408) 739-4262

Kalart Victor Corp., Hultenius St., Plainville, Conn. 06062
Kallman Associates, Inc., 2525 Hypey-ron Ave., Los Angeles, Calif. 90027
Kaman Sciences Corp., 1500 Garden of the Gods Rd., Colorado Springs, Colo. 80907

Kappa Networks, Inc., 165 Roosevelt Ave., Carteret, N.J. 07008
Karex, Inc., 1262 Lawrence Station Rd., Sunnyvale, Calif. 94086
Kay Elemetrics Corp., 12 BE Maple Ave., Pine Brook, N.J. 07058

Kay Industries, Inc., 604 N. Hill St., South Bend, Ind. 46617
Kings Electronics Co., Inc., 40 Marbledale Rd., Tuckahoe, N.Y. 10707
Kliegl Bros. Lighting, 32-32 48th Ave., Long Island City, N.Y. 11101
Kline Iron & Steel Co., Box 1013, Columbia, S.C. 29202
Knox Ltd., 16021 Industrial Dr., Gaithersburg, Md. 20760

Stan Michalski (301) 840-1930

REGIONAL SALES CONTACTS:

Wahlberg Associates, 79 Mystic St., Arlington, Mass. 02174 (617) 646-6967 Eric Wahlberg
Oscar Kraut, 530 D Grand St., New York, N.Y. 10002 (212) 228-5511
Control Assembly Corp., 1339 Sylvandell Dr., Pittsburgh, Pa. 15243 (412) 279-2264 W. E. Carter
Radlor Associates, 3203 Lanier Dr., Atlanta, Ga. 30319 (404) 237-6097 Lew Radlor
Bruce L. Dawson & Associates, P.O. Box 115, Prospect, KY 40059 (502) 228-4898 Bruce L. Dawson
H. M. Dyer Electronics, 31185 Ten Mile Rd., Farmington Hills, Mich. 48024 (313) 478-2157 Mike Dyer
Sudduth Mfg's Representatives, 845 39th SE, Paris, Tex. 75460 (214) 785-5764 Gene Sudduth
Omega Video, 14326 Isis Ave., Lawndale, Calif. 90260 (213) 679-9021 Rick Riegler
EMC Corp., 2979 Ualena St., Honolulu, Hawaii 96819 (808) 847-1138 Dave Caldwell
Comad Communications Ltd., 91 Kellfield St., Unit 5, Rexdale, Ont. M9W 5A3 Canada (416) 245-1734 Emil Adamyk
Furrer Marketing, 4, Cour Des Bastions, CH-1205 Geneva Switzerland (022) 20-5133 George Furrer
Lerro Electrical Corp., 3125 N. Broad St., Philadelphia, PA 19132 (215) 223-8200 Richard Murphy
EME, 112 Buena Vista, High Point, NC 27260 (919) 869-3335 George Gold
All Media Sales, 1535 Foxhill Rd., Naperville, IL 60540 (312) 420-0429 Ray Suddlow
8812 Santa Fe Lane, Overland Park, KS 66212 (913) 642-2993 Jim Grunder
Mile High, 6000 E. Evans, Bldg. 3, Suite G10, Denver, CO 80222 (303) 759-5841 Chuck Jones
Video-Mon Inc., 222 Truman NE, Albuquerque, NM 87108 (505) 265-8335 Garth Simms
Systems Communications, 880 Maude Ave., Mountain View, CA 94043 (415) 967-8229 Bob Herhusky
Fleehart & Sullivan Inc., 10109 Aurora Ave. N., Seattle, WA 98133 (206) 522-1533 Earl Fleehart
Sistemas Electronicas de Seguridad, 25 De Mayo 267, 1385 Buenos Aires Argentina Carlos Puleston
Telesco, 1 Dupont St., Plainview, NY 11803 (516) 433-6210 Gerald Lanier
Australian Video Engineering, 231-233 Victoria Rd., P.O. Box 248, Rydalmere NSW Australia 638-6400

Koss Corp., 4129 N. Port Washington Ave., Milwaukee, Wis. 53212

L

LPB Inc., 520 Lincoln Hwy., Frazer, Pa. 19355
Harry N. Larkin (215) 644-1123

REGIONAL SALES CONTACTS:

LPB/Burden Associates, 20944 Sherman Way, Canoga Park, CA 91303 (213) 340-4590 Richard W. Burden
MSC Electronics Ltd., 254 Wildcat Rd., Downsview, Ont. Canada M3J 2N5 (416) 661-4180

L-W International, 6416 Variel Ave., Woodland Hills, Calif. 91367
Pat Smith (213) 348-8614

Laird Telemidia Inc., 2125 S.W. Temple, Salt Lake City, Utah 84115

Lampkin Lab. Inc., Box 9048, Bradenton, Fla. 33506

Landy Associates Inc., D 1, 2, 1890 East Mariton Pike, Cherry Hill, N.J. 08003

Rus Lang Corp., 247 Ash St., Bridgeport, Conn. 06605
Frank Ruskay, Jr. (203) 384-1266

James B. Lansing Sound, Inc., 8500 Balboa Blvd., Northridge, Calif. 91329

Peter V. Horsman or Bob Taylor (213) 893-8411

REGIONAL SALES CONTACTS:

JBL, 3040 Charlevoix Dr., S.E., Grand Rapids, MI 49506 (616) 455-6270 Thomas Roseberry
JBL, 55 Ames Court, Plainview, NY 11803 (516) 822-2488 William V. Watkins
JBL, 1413 Leicester St., Garland, TX 75042 (214) 495-5415 Carl Cathcart

D. N. Latus & Co., Inc., Box 1720, Helena, Mont. 59601

Lauderdale Electronic Labs, D 1-9, 16 S.W. 13th St., Fort Lauderdale, Fla. 33315

Lahwed, Ltd., 388 Reed Rd., Broomall, Pa. 19008

Leader Instruments Corp., 151 DuPont St., Plainview, N.Y. 11803

Lectionic Research Laboratories, Inc., D 1-9, Atlantic & Ferry Avenues, Camden, N.J. 08104

Lectrotech Inc., 5810 N. Western Ave., Chicago, Ill. 60659

Lee-Ray industries, Inc., 38 E. First Ave., Mesa, Ariz. 85202

Leitch Video Ltd., 705 Progress, Unit 46, Scarborough, Ont., Canada M1H 2X1

J. Walter (416) 438-5060

REGIONAL SALES CONTACTS:

P.M. Electronics, Inc., 230 Mineola Blvd., Mineola, N.Y. 11501 (516) 248-4858 Paul Milazzo
Television Engineering Corp., 519 Rudder Rd., Fenton, Mo. 63026 (314) 343-5606 Jack Vines
D. A. Hill Enterprise, Box 2140, Scottsdale, Ariz. 85252 (602) 948-1075 David Hill
Didier/Denver, Box 1599, Evergreen, Colo. 80439 (303) 674-6000 Herb Didier
Willtronix Inc., 5504 Waterway, Rockville, Md., 20853 (301) 460-1454 Dwight L. Wilcox
Nortec West Ltd., 7056 B Farrell Rd. S.E., Calgary, Alta. T2H 0T2 Canada (403) 252-8141 Ron Hill
Nortec West Ltd., 325 West 5th Ave., Vancouver, B.C. V5Y 1J6 Canada (604) 872-8525 R. Whitehouse
Broadcast Video Systems Ltd., 1050 McNicoll Ave. E., Unit 15, Agincourt, Ont. M1W 2L8 Canada (416) 497-1020 Bert Verwey

Lenco Inc., Electronics Div., 300 N. Maryland St., Jackson, Mo. 63755
Richard N. Lawrence (314) 243-3147

REGIONAL SALES CONTACTS:

Lenco, Inc., Electronics Div., 13620 Littlecrest Dr., Dallas, Tex. 75234 (214) 421-0976 Lee L. Caput
Lenco, Inc., Midwest, P.O. Box 301, Atchison, KS 66002 (913) 367-1146 Menton L. Knold
Lenco, Inc., Northeast, 1 Elmwood Lane, Westport, CT 06880 (203) 226-4482 Robert N. Henson
Lenco, Inc., Southeast, 2390 Tiffany Circle, Decatur, GA 30035 (404) 288-2080 Arie H. Lawdrum Jr.

Lenzar Optics Corp., 210 Brant Rd., Lake Park, Fla. 33403

C. M. Levit Electronics, D 1-9, 200 Park Ave. S., New York, N.Y. 10003

Lightning Elimination Assoc., Inc., 12412 Benedict Ave., Downey, Calif. 90242

Lipps Inc., 1630 Euclid St., Santa Monica, Cal. 90404

Lipsner-Smith Corp., 4700 Chase St., Lincolnwood, Ill. 60646

Listec TV Equip. Corp., 39 Cain Dr., Plainville, N.Y. 11803

Bruce I. Ballantyne (516) 694-8963

REGIONAL SALES CONTACTS:

The Camera Mart, Inc., 456 W. 55th St., New York, NY 10019 (212) 757-6977 Kenneth Seelg
Marvin B. Jacobs Television Optics, 4527 San Fernando Rd., Unit 1, Glendale, CA 91204 (213) 244-0838 Marvin Jacobs or Howard Stucker
Klogl Audio/Video Co., 3381 Successful Way, Dayton, OH 45414 (513) 236-5500 Bob Johnson
Lykes Electronics Corp., 5426 W. Crenshaw St., Tampa, FL 33622 (813) 886-6621 Carlo McDaniel
M.P.C.S. Video Center, 514 W. 57th St., New York, NY 10019 (212) 586-3690 Henry Bornstein
Midwest Telecommunications, 15046 Bellway Dr., Dallas, TX 75240 (214) 387-2755 Jack Wood
Peirce-Phelps, Inc., 2000 N. 59th St., Philadelphia, PA 19131 (215) 879-7000 Peter Lambert
Radlor Associates, 3203 Lanier Dr., Atlanta, 11 30319 (404) 237-6097 Lew Radlor
Roscor Corp., 6160 W. Oakton St., Morton Grove, IL 60053 (312) 539-7700 Steve Deitch
SAVCO, P.O. Box 427, Richardson, TX 75080 (214) 234-1841 Nathan Hughes
Technical Video Systems, 245 Executive Park Blvd., Winston-Salem, NC 27103 (919) 768-9536 James E. Holladay
Video Images, 12200 W. Adler Lane, West Allis, WI 53214 (414) 475-0111 Tom Garalato
Video Systems, Inc., 2000A Governors Circle, Houston, TX 77092 (713) 686-9651 Mack McConathy

Lita Broadcasting Distributors, D 1-9, Box 440752, Miami, Fla. 33144

Logitek Electronic Systems, Box 25304, Houston, Texas 77005

L. Scott Hochberg and Eric M. Sisson (713) 523-7878

REGIONAL SALES CONTACTS:

108 Hillsboro, Greenfield, TN 38230 (901) 235-2943; 2201 R.W. 'Mo Mo' Moseley
Southwest Distributors, 13201 S. Windward Trail, Orland Park, IL 60462 (312) 448-4929

The London Co., 811 Sharon Drive, Cleveland, Ohio 44145

Lowel-Light, 421 W. 54th St., New York, N.Y. 10019

Lumitrol, Ltd., D-Canada, 400 Don Park Rd. (Unit 23), Markham, Ont., Canada L3R 1C6

M

MCI, Inc., 4007 N.E. 6th Ave., Ft. Lauderdale, Fla. 33334

MCG Electronics Inc., 160 Brook Ave., Deer Park, N.Y. 11729

MICMIX Audio Products, Inc., 2995 Ladybird Lane, Dallas, Texas 75220

MPB Technologies Inc., P.O. Box 160, Ste-Anne-de-Bellevue, Que., Canada H9X 3L5

MacKenzie Laboratories, Inc., 5507 N. Peck Road, Arcadia, Calif. 91006

Magnasync/Moviola Corp., 5539 Riverton Ave., North Hollywood, Calif. 91601

Magna-Tech Electronic Co., Inc., 630 Ninth Ave., New York, N.Y. 10036

Magnecraft Electric Co., 5575 N. Lynch Ave., Chicago, Ill. 60630
P. R. Mallory & Co. Inc., Box 1284, Indianapolis, Ind. 46201
Marconi Communication Systems Ltd., Marconi House, Chemsford, Essex, England CM1 1PL
Marconi Electronics Inc., 100 Stonehurst Ct., Northvale, N. J. 07647
Fred Bones (201) 767-7250

Marconi Instruments, Div. of Marconi Electronics Inc., 100 Stonehurst Ct., Northvale, N. J. 07647
Keith Elkins, Tony Ramsden (201) 767-7250

REGIONAL SALES CONTACTS:

*L&M Associates, 511 Victor St., Saddle Brook, N.J. 07662 (201) 854-1434 Bill Martin Silver
CEC, 1602 S. Parker Rd., Suite 102, Denver, CO 80231 (303) 751-3252 Richard Seery
S&S Associates, 4924 Hampden Lane, Bethesda, Md. 20014 (301) 654-1434 Bill Becker
Kenneth W. Meyers Co., 1242 Remington Rd., Schaumburg, Ill. 60195 (312) 882-4808 Ken Meyers
Ken Corp., 38 Montvale, Stoneham, Mass. 02180 (617) 438-5464 Sam Kenton
Lee Associates, 817 Wheeler Ave., Huntsville, Ala. 35801 (205) 533-5896 Steve Shelley
TASCO, 606 110th Ave. N.E., Suite 204, Bellevue, Wash. 98004 (206) 453-1414 Helbert Bartels
BRADENCO, 11500 Stemmons Freeway, Suite 113, Dallas, Tex. 75229 (214) 243-7261 Bob Braden
Moxon Electronics, 1440 S. State College Blvd., Anaheim, Calif. 92806 (714) 635-7600 Jim Jordan
John Robinson, 817 Fifth St., Santa Monica, Calif. 90403 (213) 451-9019 John Ro
Measurement Consultants, Inc., Box 966, Scottsdale, Ariz. 85252 (602) 994-9519 Dave Memegay
PAC, 11920 Grandview Rd., Grandview, Mo. 64030 (816) 763-4155 Daryl Booth*

Marti Electronics, Box 661, Cleburne, Tex. 76031

George Marti (817) 645-9163

REGIONAL SALES CONTACTS:

*Collins Radio Rockwell Int'l., 1200 N. Alma Rd., Richardson, TX 75080 (817) 996-5310 Dolores Palletr
Doug Cook & Assoc., 2184 Trent Rd., Columbus, OH 43229 (614) 471-4114 Doug Cook
Dyma Engineering, Route 1, Box 51, Taos, NM 87571 (505) 235-8930 Carol Cunningham
Electronics Industries, 19 E. Irving, Oshkosh, WI 54901 (414) 235-8930 Bud Tedley
Guarantee Radio Supply, 1314 Iturbide St., Laredo, TX 78040 (512) 723-6913 Manuel Flores
McMartin Industries, 4500 S. 76th St., Omaha, NE 68127 (402) 331-2000 Bill Swanson
RCA, Bldg. B-10, Front & Cooper Sts., Camden, NJ 08102 (609) 963-8000 V.W. Warren
Singer Products, One World Trade Center, Suite 2365, New York, NY 10048 (212) 432-1400 John Hullman*

Martin Audio Video, D2, 423 W. 55th St., New York, N.Y. 10019

Mastertone Co., Inc., D 4, 228 Fifth St., West Des Moines, Iowa 50265

Maury Microwave Corp., 8610 Helms Ave., Cucamonga, Calif. 91730

Maxell Corp. of America, 60 Oxford Dr., Moonachie, N. J. 07074

Maze Corp. D6, Box 6636, Birmingham, Ala. 35210

McCurdy Radio Ind. Inc., 1711 Carmen Dr., Elk Grove Village, Ill. 60007

Ron Mitchell, Ralph Gould (312) 640-7077

REGIONAL SALES CONTACTS:

*McCurdy Radio, 223 W. Saddle River Rd., Saddle River, N.J. 07458 (201) 327-0750 Cliff Rogers
McCurdy Radio, 108 Carnforth Rd., Toronto, Ont. M4A 2L4 Canada (416) 751-6262 Stan Maruno*

McKay Dymek Co., Box 5000, Claremont, Calif. 91711

Rena G. Goertz, Sales Coordinator (800) 472-1783 Outside CA: (800) 854-7769

McMartin Industries, Inc., 4500 South 76th St., Omaha, Neb. 68127

Media Concepts, Inc., D 1-9, Box 10745, St. Petersburg, Fla. 33733

Memorex Corp., Professional Products Group, 1200 Memorex Drive, Santa Clara, Cal. 95052

Merlin Engineering Works, Inc., 1880 Embarcadero, Palo Alto, Calif. 94303

Merill Cable Equipment Corp., Box 13741, Phoenix, Ariz. 85002

Micro Communications, Inc., Grenier Field, Box 4365, Manchester, N.H. 03108

Howard Bouldry (603) 624-4351

Micro Consultants, Box 10057, Palo Alto, Calif. 94303

Micro Control Associates, Inc., Box 13250, Arlington, Texas 76013

Robert E. Richards (817) 265-2912, 261-4889

Microdyne Corp., Box 1527, Rockville, Md. 20850

Micro TV, Inc., 3600 Conshohocken Ave., Philadelphia, Penn. 19131

Microtime, Inc., 1280 Blue Hills Ave., Bloomfield, Conn. 06002

Daniel J. Solie (203) 242-0761

REGIONAL SALES CONTACTS:

*Microtime, Inc., Southeast Region, 9771 N.W. 24th Court, Sunrise, Fla. 33322 (305) 741-9191 Philip M. Dubs, Sales Mgr.
Microtime, Inc., Broadcast & Canada Sales Div., 1280 Blue Hills Ave., Bloomfield, Conn. 06002 (203) 242-0761 Richard H. McLean, Mgr.
Microtime, Inc., International Sales Div., 1280 Blue Hills Ave., Bloomfield, Ct. 06002 (203) 242-0761 Neal Owens, Jr., Sales Mgr.
Microtime, Inc., Central Region, 6317 Aldrich Ave. S., Minneapolis, Minn. 55423 (612) 861-6228 William E. Baird, Sales Mgr.
Microtime, Inc., West Coast Region, 2351 Daphne Place, Fullerton, CA 92633 (714) 992-4332 Richard E. Lyons*

Micro-Trak Corp., 620 Race St., Holyoke, Mass. 01040

Microtran Co., Inc., Box 236, Valley Stream, N.Y. 11582

Microwave Assoc. Inc., South Ave., NW Industrial Prk., Burlington, Mass. 01803

Midwest Corp., Tele Communications Div., 3331 N.W. 82nd Ave., Miami, Fla. 33122

Ron Crockett, Mgr. and Elijah W. Midkiff, VP (304) 722-2921

REGIONAL SALES CONTACTS:

*Midwest Telecommunications, 3331 NW 82nd Ave., Miami, FL 33122 (305) 592-5355 Bill Dancy, Mgr.
Midwest Telecommunications, 1804 Cargo Court, Louisville, KY 40299 (502) 491-2888 Jerry Willingham
Midwest Telecommunications, 4937 Harford Ave., Beltsville, MD 10705 (301) 937-1890 Welby Smith, Mgr.*

*Midwest Telecommunications, 1150C W. 8th St., Cincinnati, OH 45203 (513) 651-1904 Dave Barnes, Mgr.
Midwest Telecommunications, 15046 Beltway Dr., Dallas, TX 75240 (214) 387-2755 Jack Wood, Mgr.
Midwest Telecommunications, 5200 Mitchelldale, Suite F28, Houston, TX 77092 (713) 686-9278 George Bates, Mgr.
Midwest Telecommunications, 1395 Air Rail Ave., Virginia Beach, VA 23455 (804) 464-6256 Kevin Zmarthie, Mgr.*

Miles Associates, Div. Miles Products Ltd., 240 Birmingham St., Toronto, Ont., Canada M8V 2C8

Millard Metal Service Center, Inc., Box 'O', Braintree, Mass. 02184

Miller-Stephenson Chemical Co., Inc., George Washington Hwy., Danbury, Conn. 06810

Mineroff Electronics, D 1,2,3,5,6, 94 Downing Rd., Valley Stream, N.Y. 11580

Minneapolis Magnetics, Inc., 8125 Pleasant Ave. S., Minneapolis, Minn. 55420

Modular Audio Products, Unit of Modular Devices, Inc., 50 Orville Dr., Bohemia, N. Y. 11716

Monroe Electronics, Inc., 100 Housel Ave., Lyndonville, N.Y. 14098

Charles Moore, Box 2023, Rocky Mount, N.C. 27801

Moseley Associates, Inc., 111 Castilian Drive, Goleta, Cal. 93017

Mark G. Fehlig (805) 968-9621

Motorola, Communications and Electronics Inc., 1301 E. Algonquin Rd., Schaumburg, Ill. 60196

Motorola SPI, Box 20912, Phoenix, Ariz. 85036

Mountain West Alarm, D8, Box 10780, Phoenix, Ariz. 85064

Mu-Del Electronics, Inc., 2426 Linden Lane, Silver Spring, Md. 20910

Multronics, Inc., 9005 Red Branch Rd., Columbia, Md. 21045

N

NEC America, Inc., Broadcasting Equip. Div., 130 Martin Lane, Elk Grove Village, Ill. 60007

Hugh F. Gillogly (312) 640-3792

REGIONAL SALES CONTACTS:

*AV Media, 6601 Huntly Rd., Columbus, Ohio 43229 (412) 279-6169 John McMullin
Technical Video Systems, Inc., 245 Olson St., Winston-Salem, N.C. 27103 (919) 768-9536 James E. Holladay
Broadcast Communications Devices, 5526 E. La Palma Ave., Anaheim, Calif. 92807 (714) 528-9505 John Baumann
Signal Engineering & Sales, Inc., 720 South 23rd St., Birmingham, AL 35202 (205) 328-6431 Louis Plau
RIA, Inc., 50 East Malvern, Salt Lake City, UT 84100 (801) 486-8822 Bob Bacon
Sound Systems, Inc., 42-12 28th St., L.I.C., NY 11101 (212) 786-4474 Fred Bergasstraser
Thalner Electronic Labs, 7235 Jackson Rd., Ann Arbor, MI 48103 (313) 761-4506 Bob Thalner
Todd Communications, 7360 Ohms Lane, Minneapolis, MN 55435 (612) 835-3080 John Klinworth
Video Equipment Corp. of America, 7377 Convoy Court, San Diego, CA 92111 (714) 278-4400 Bill Bennett
Video Systems, 2123 West Governors Circle, Houston, 44 77092 (713) 686-9651 Ralph Moore
NEC America, Eastern, 12 Lido Lane, Bedford, MA 01730 (617) 275-0396 Robert Curwin
Alpha Video & Electronics, Inc., B East Mall Plaza, Carnegie, Pa 15106 (412) 279-6169 Henry Lassage*

*Applied Electronics Ltd., 299 Evans Ave., Toronto, Ont. Canada M8Z 1K2 (416) 252-3761 Mike Steckly
Broadcast Communications Devices, 7100 SW Hampton St., Suite 118, Tigard, OR 97223 (503) 639-8223 John Odgers
Dyma Engineering, P.O. Box 1697, Taos, NM 87571 (505) 758-2686 Carroll Cunningham*

Nagra Magnetic Recorders, Inc., 19 W. 44th St., Room 715, New York, N.Y. 10036

Nagy Research Products, Box 289, McLean, Va. 22101

The Narda Microwave Corporation, 75 Commercial St., Plainview, N.Y. 11803

National Electrolab Ltd., 1536 Columbia St., North Vancouver, BC, Canada V7J 1A4

Terry C. Gould (604) 985-0511

Neumade Products Corp., 720 White Plains Rd., Scarsdale, N.Y. 10583

Neutrik, 91 McKee Dr., Mahwah, N.J. 07430

Rupert Neve, Inc., Berkshire Industrial Park, (203) 744-6230, Conn. 06801

Newark Electronics, D 1-9, 500 N. Pulaski Rd., Chicago, Ill. 60624

North American Radio Corp., 1300 E. Arapahoe Rd. #203, Richardson, Tex. 75081

North Hills Electronics, Inc., Alexander Pl., Glen Cove, N.Y. 11542

North Wind Power Co., Box 315, Warren, Vt. 05674

Norton Associates Inc., 10 Ditomas Court, Coppague, N.Y. 11726

Nortronics Co., Inc., 8101 Tenth Ave. N., Minneapolis, Minn. 55427

Nova Corp., Box 2121, Canoga Park, Calif. 91306

Fred A. Nudd Corp., Box 1743 Rt. 104, Ontario, N. Y. 14519

Rick Nudd (315) 524-2521

Nurad, Inc., 2165 Druid Park Dr., Baltimore, Md. 21211

Leslie K. Lear (301) 462-1700

REGIONAL SALES CONTACTS:

*RIA Corp., 50 E. Malvern Ave., Salt Lake City, Utah 84115 (801) 486-8822 Robert C. Bacon
H. M. Holzbreg Associates, Box 322, Totowa, N.J. 07511 (201) 256-0455 Herbert M. Holzbreg
Bennett Engineering Assoc., Inc., Box 76, Mercer Island, Wash. 98040 (206) 232-3550 Stanton D. Bennett
Radford Associates, 1331 Otter Creek Rd., Nashville, Tenn. 37215 (615) 373-0231 Ralph L. Hucaby
RIA Corp., 430 Garland, Lakewood, CO 80226 (202) 238-2593 Gary Atkins
RIA Corp., P.O. Box 1670, Cottonwood, AZ 86326 (602) 634-8065 Jack Daniels
Radford Associates, 3203 Lanier Dr., Atlanta, GA 30319 (404) 237-6097 Lew Radford*

O

Oak Industries, Inc., Crystal Lake, Ill. 60014

O'Connor Eng. Labs. Inc., 100 Kalmus Drive, Costa Mesa, Calif. 92626

K. Ferrell Forehand (714) 979-3993

Walter Odemer Co., D 4,5,6,7,8,9, 1516 W. Magnolia Blvd., Burbank, Calif. 91506

Oktel Corp., 490 Division St., Campbell, Calif. 95008
Oldham Tower Systems, 48 Bayou Dr., Indianola, Miss. 38751
Olesen, D 1-9, 1535 Ivar Ave., Hollywood, Calif. 90028
Onan, 1400 73rd Avenue NE, Minneapolis, Minn. 55432
Opamp Labs, Inc., 1033 N. Sycamore Ave., Los Angeles, Calif. 90038
B. Losmandy (213) 934-3566

Optek, 5526 E. La Palma Ave., Anaheim, Calif. 92807
Optima Enclosures, 2166 Mountain Industrial Blvd., Tucker, Ga. 30084
Orange County Electronics Int'l., Inc., 534 Berry St., Winnipeg, Man., Canada R3H 0R9
Orban Assoc. Inc., 645 Bryant St., San Francisco, Calif. 94107
Frank Santucci, Mktg. Mgr. (415) 957-1067

Oregon Magnetics, Box 13374, Portland, Ore. 97213
Oregon Sound & Lights, D 8,9, 1856 East 13th Ave., Eugene, Ore. 97403
Osawa & Co. (USA), Inc., 521 Fifth Ave., New York, N.Y. 10017
Otari Corp., 981 Industrial Rd., San Carlos, Calif. 94070
Low Barrett (415) 593-1648

P

PSI Paperwork Systems, Inc., Box 38, Bellingham, Wash. 98225
PWH Electronics, Box 435, Toronto, Ont. Canada M6H 4E3
Pacific Recorders and Engrg. Corp., 11100 Roselle St., San Diego, Calif. 92121
Jack Williams (714) 453-3255
Packaged Lighting Systems, Box 285 Grant St., Walden, N.Y. 12586
Hy and Lillian Hilzer (914) 778-3515

Panasonic Company, One Panasonic Way, Secaucus, N.J. 07094
Panasonic Video Systems Div., Box 1501, Secaucus, N.J. 07094
Alvin Barshop (201) 348-7683

REGIONAL SALES CONTACTS:

*Panasonic Video Systems Div., Northeast Area, 50 Meadowlands Pkwy., Secaucus, N.J. 07094 (201) 348-7627 Morris Washington, Regional Mgr.
Panasonic Video Systems Div., Southeast Area, #2 Meca Way, Duluth, Ga. 30136 (404) 448-5683 Leroy Wright, Regional Mgr.
Panasonic Video Systems Div., Midwest Area, 1098 Greenleaf Ave., Elk Grove Village, Ill. 60007 (312) 539-0710 Gary Olson, Regional Mgr.
Panasonic Video Systems Div., Southwest Area, 1825 Walnut Hill Lane, Irving, Tex. 75062 (214) 256-1388 Terry Conner, Regional Mgr.*

Paperwork Systems, Box 38, Bellingham, Wash. 98225
Paso Sound Products Inc., 14 First St., Pelham, N.Y. 10803
Peirce-Phelps, Inc., Video Systems Div. D 2,5, 2000 N. 59th St., Philadelphia, Pa. 19131

Pentagon Industries, Inc., 4751 N. Olcott Ave., Chicago, Ill. 60656
Pheips Dodge Communications Co., Rt. 79, Marlboro, N.J. 07746
Philadelphia Resins Corp., 20 Commerce Dr., Montgomeryville, Pa. 18936
Roely Stronski (215) 855-8450

REGIONAL SALES CONTACTS:

*Engineering Service Associates, 1500 Massachusetts Ave. N.W., Washington, D.C. 20005 (202) 659-8800 Richard Shamp
Jon B. Jolly, Inc., 5416 California Ave. S.W., Seattle, Wash. 98136
Gary Bartman, 5018 Spruce Forest, Houston, TX 77091 (713) 681-1954
The Heckerman Corp., 814 W. Hyde Park Blvd., Inglewood, Calif. 90302 (213) 678-2264 Fred Heckerman
Breit Tower Service, Dinner Key Marina, Miami, Fla. 33132 (305) 858-3143 Charles E. Breit
Tool-Tronics, Box 1611, Zephyrhills, Fla. 33599 (813) 782-7177 John Clanton
Taurus Industries, 188 South Blvd., Baton Rouge, La. 70808 (504) 383-9955 Dale Pearson
M.S.E. Engineering Systems, Ltd., 265 Canartic Dr., Downsview, Ont. M3J 2N7 Canada (416) 661-5646 Al Egerton*

Philips Broadcast Equip Corp., 91 McKee Dr., Mahwah, N. J. 07430
William E. Amos, V.P. Mktg. (201) 529-3800

REGIONAL SALES CONTACTS:

*Philips Broadcast Equip. Corp., Northeast Region, 91 McKee Dr., Mahwah, N.J. 07430 (201) 529-3800 Joseph Nigro
Philips Broadcast Equip. Corp., 3300 Northeast Expy., Suite 1G, Atlanta, Ga. 30341 (404) 458-0171 Gino Nappo, Regional Sales Mgr.
Philips Broadcast Equip. Corp., 15611 Fishport Rd., Prior Lake, MN 55372 (612) 447-6036 Jeffrey Clarine
Philips Broadcast Equip. Corp., Central Region, 801 Branding Iron S.E., Albuquerque, N.M. 87123 (505) 299-0583 Chuck Buzzard
Philips Broadcast Equip. Corp., Central Region, Norelco House, 7530 Frontage Rd., Skokie, Ill. 60076 (312) 679-8600 Harry Gladwin
Philips Broadcast Equip. Corp., Northwestern Region, 3760 Cahuena Blvd., North Hollywood, Calif. 91604 (213) 766-8185 Jerry Kraus and Michael Hart
Philips Broadcast Equip. Corp., Southwestern Region, 412 Roy Court, Keller, Tex. 76248 (817) 379-5484 Richard Bock*

Philips Test & Measuring Instruments, Inc., 85 McKee Dr., Mahwah, N. J. 07430

Photo Research, Div. of Kollmorgen Corp., 3000 N. Hollywood Way, Burbank, Cal. 91505

Pinzone Communications Products Inc., 10142 Fairmount Rd., Newbury, Ohio 44065
Basil Pinzone, Jr. (304) 296-4493

Pleasantville Labs, Box 15068, Baltimore, Md. 21208

Potomac Instruments, Inc., 932 Philadelphia Ave., Silver Spring, Md. 20910
David G. Harry (301) 589-8662

Power-Optics Inc., 1055 W. Germantown Pike, Fairview Village, Pa. 19409

Pro-Audio Specialties Co., 1291 Rand Rd., Des Plaines, Ill. 60016
Jerry Weyrich (312) 827-8388

Prodelin Inc., Box 131, Hightstown, N.J. 08520

Professional Audio Service, D 1-9, Box 1953, Fort Worth, Texas 76101
Jeanie Sims (817) 536-6254

Progressive Marketing, D 1-9, 75 Mt. Herman Rd., Scotts Valley, Calif. 95066

Pulse Dynamics Mfg. Corp., (PDMC), Box 355, Colchester, Ill. 62326

Pulse Techniques Inc., 1411 Palisade Ave., Teaneck, N.J. 07666
E. R. Shenk (201) 837-2575

Q

QEI Corp., Rt. 73, Kresson, N. J. 08053

QRK Electronic Products, 1568 N. Sierra Vista, Fresno, Calif. 93703

QSI Systems, Inc., D 1, 993 Watertown St., West Newton, Mass. 02165

Q-TV, 33 West 60th St., New York, N.Y. 10023

Quad-Eight Electronics, 11929 Vose St., North Hollywood, Calif. 91605

Quantum Audio Labs, Inc., 1905 Riverside Dr., Glendale, Calif. 91201
John Pritchett, Pres. (213) 841-0970

REGIONAL SALES CONTACTS:

*Coast Recording Equip. Supply, 6114 Santa Monica Blvd., Los Angeles, CA 90038 (213) 462-6058 Jerry Cabbage
Freedom Inc., 31675 Lahser Rd., Birmingham, MI 48010 (301) 646-1114 Bob Clemente
Sound Genesis, Inc., 2001 Bryant St., San Francisco, CA 94110 (415) 285-8900 Bob Ulias*

Quick-Set Inc., 3650 Woodhead Drive, Northbrook, Ill. 60062

R

RCA Broadcast Systems, Front and Cooper Streets, Camden, N.J. 08102

RCA Cablevision Systems, 7355 Fulton Ave., North Hollywood, Calif. 91605

RCA Distributor & Special Products Div., 2000 Clements Bridge Rd., Deptford, N.J. 08096

RCA Electro Optics and Devices, New Holland Ave., Lancaster, Pa. 17604

RCA Power Tube Marketing, Lancaster, Pa. 17604

RCA Solid State Div., Rt. 202, Somerville, N.J. 08876

RF Systems, Inc., 155 King St., Cohasset, Mass. 02025

ROH Corporation, 107 Technology Park, Norcross, Ga. 30092
James B. Godwin (404) 449-0873

REGIONAL SALES CONTACTS:

*Broadcast Communications Devices, Inc., 5526 E. LaPalma Ave., Anaheim, Calif. 92807 (714) 528-9505 John Baumann
Radlor Associates, 1331 Otter Creek Rd., Nashville, TN 37215 (615) 373-0231 Ralph Huacabee
Caldwell A/V Equipment Co., 1080 Bellamy Rd. North, Scarborough, Ont. M1H 1H2 Canada (416) 438-6230 Ron Skelly, David Strachan, Tony Sharpe
MARCUM, P.O. Box 66507, Scotts Valley, CA 95066 (404) 438-4237 Marty Jackson
Wiltronix Inc., 5504 Waterway Dr., Rockville, MD 20853 (301) 460-1454 Dwight Wilcox
Doug Cook Associates, 2182 Trent Rd., Columbus, Ohio 43229 (614) 471-4114 Doug Cook*

*Sound Solutions, 2971 E. 14 Mile Rd., Sterling Hgts., MI 48077 (313) 979-6320 Dave Hill
Didier/Denver, Box 1599, Evergreen, Colo. 80439 (303) 674-6000 Herb Didier
H. M. Dyer Electronics, 31185 Ten Mile Rd., Farmington Hills, Mich. 48024 (313) 478-2157 Mike Dyer, Dick Pinter
Emmons Associates, 10700 Lyndale Ave. South, Minneapolis, Minn. 55420 (612) 881-1118 Keith Emmons
Landy Associates, 1890 E. Marlton Pike, Rt. 70, Cherry Hill, N.J. 08003 (609) 424-4660 Jim Landy, Dick Fine
NBE, Inc., RR #2, Westport, N.Y. 12993 (518) 962-4567 John Ring
NU-COM Associates, 1916 N.E. Ballinger Way, Suite B, Seattle, Wash. 98155 (206) 364-9911 John Nutting
Radlor Associates, 3203 Lanier Dr., Atlanta, Ga. 30319 (404) 237-6097 Lou Radlor
Singer Products Co., Inc., One World Trade Center, Suite 2365, New York, N.Y. 10048 (212) 432-1400 Richard Stancio
The Gene Sudduth Co., 845 39th St. S.E., Paris, Tex. 75460 (214) 785-5764 Gene Sudduth
Television Engineering Corp., 519 Rudder Rd., Fenton, Mo. 63026 (314) 343-5605 Jack Vines*

RTS Systems, 4167 Fair Ave., North Hollywood, Calif. 91602
Doug Leighton (213) 980-0511

Racal-Dana Instruments Inc., 18912 Von Karman Ave., Irvine, Calif. 92715

Jules Racine & Co., Inc., 85 Executive Blvd., Elmsford, N.Y. 10523

Radiation Devices Co., Inc., Box 8450, Baltimore, Md. 21234

Ram Audio Systems, Inc., 17 Jansen St., Danbury, Conn. 06810

Ramko Research Inc., 11355 'A' Folsom Blvd., Rancho Cordova, Calif. 95670

Jack M. Ducart (916) 635-3600

REGIONAL SALES CONTACTS:

*Lumar Electronics, Inc., 5801 Annapolis Rd., Suite 430, Bladensburg, Md. 20710 (301) 864-0997 Steve Kincaid
Broadcast & Communications Consultant, 1300 Hill Rd., Boise, ID 83702 (208) 342-6902 Thomas Hill
Champagne Sales Co., 3645 Crooks Rd., Troy, MI 48084 (313) 649-4428 Bob Champagne
Doug Cook & Associates, 2185 Trent Rd., Columbus, 36 43229 (614) 471-4114 Doug Cook
Eastern Broadcast Supply, 42 Main St., Leominster, MA 01453 (617) 537-4706 Ron Dagenais
Emmons Associates, Inc., 10700 Lyndale Ave. South, Minneapolis, MN 55420 (612) 881-1118 Keith Emmons
Lumar Electronics Inc., 5801 Annapolis Rd., Suite 430, Bladensburg, MD 20710 (301) 864-0997 Steve Kincaid
Oakwood Audio Labs, 652 King Edward St., Winnipeg, Man. Canada R3H 0P2 (204) 786-6715
Oakwood Audio Labs, 10874 97th St., Edmonton, Alta Canada T5H 2M5 (403) 424-2186
Oakwood Audio Labs, 12-1638 Pandosy St., Kelowna, B.C. Canada V1Y 1P5 (604) 763-5222
M.Z.B. & Associates, 3701 Kirby, Suite 834, Houston, TX 77097
M.Z.B. & Associates, P.O. Box 401905, Dallas, TX 75240 (214) 233-5535 Darryl Parker
Repelect, P.O. Box 7102, Tampa, FL 33603 (813) 227-5051 John Goveau
Roscom, Inc., P.O. Box 54129, Atlanta, GA 30308 (404) 577-4689 Bob Stewart
Southern Coastal Marketing Svc., Inc., 3844 Wellington Court, Charlotte, NC 28211 (704) 366-7727 Bob Cauthen*

Rank Hi Fi (USA), 20 Bushes Lane, Elmwood Park, N.J. 07407

Rank Precision Industries, Inc., (Ill.) Rank Cintel Div., 411 E. Jarvis Ave., Des Plaines, Ill. 60018

- Rank Precision Industries, Inc. (N.Y.),** 260 No. Rte. 303, West Nyack, N. Y. 10994
- Rapid-Q, Edo Products, Inc.,** 680 Bizzell Dr., Lexington, Ky. 40504
- Raven Screen Corp.,** 124 East 124th St., New York, N.Y. 10035
- Recording Supply Co.,** 1233 Rand Rd., Des Plaines, Ill. 60616
Ray Kaiser (213) 297-0955
- Recortec Inc.,** 777 Palomar Ave., Sun-nyvale, Calif. 94086
Sidney B. McCollum (408) 735-8821
- Research Technology, Inc.,** 4700 Chase, Lincolnwood, Ill. 60646
- Rex Rheostat & Co., Inc.,** 149 Babylon Turnpike, Roosevelt, N. Y. 11575
- Reynolds/Leteron Co.,** 13425 Wyan-dotte St., North Hollywood, Calif. 91605
- Rhoades National Corp.,** Box 817, Hendersonville, Tenn. 37075
- Richmond Hill Laboratories Ltd.,** 1240 Ellesmere Rd., Scarborough, Ont., Canada M1P 2X4
- Richmond Sound Design, Ltd.,** 1234 W. 6th Ave., Vancouver, B.C., Canada V6H 1A5
- Rivers Associates, Inc.,** Box 58, Leom-inster, Mass. 01453
- Robins Broadcast & Sound Equip. Corp.,** 75 Austin Blvd., Commack, N. Y. 11725
- Rodelco Corp.,** 356 A Comac Road, Deer Park, N.Y. 11729
- Rohde & Schwarz Sales Co.,** 14 Gloria Lane, Fairfield, N.J. 07006
- Roll-A-Reel, 7881 Reading Rd.,** Cin-cinnati, Ohio 45237
- Roscor Corp., D3, 4, 6160 Oakton,** Morton Grove, Ill. 60053
- Ross Video Ltd.,** 9 Iroquois Plaza, Iroquois, Ont., Canada K0E 1K0
- Russco Electronics Mfg. Inc.,** 5690 E. Shields, Fresno, Calif. 93727
Russell C. Friend, Barbara Davis (209) 291-5591
- Rust Corp.,** Box 273, Everett, Mass. 02149
- Rycom Instruments, 9351 E. 59th St.,** Raytown, Mo. 64133
- S**
- SC Electronics, Inc.,** 530 Fifth Ave., N.W., St. Paul, Minn. 55112
- SGL Waber Electric, 300 Harvard** Ave., Westville, N. J. 08093
- SPI-ITT, Metrix Instruments Div., P.O.** Box 30, 74010 Anancy, France
- SSAC Inc.,** Box 395, Liverpool, N.Y. 13088
David Lawrie (315) 622-1000
- REGIONAL SALES CONTACTS:**
Antenna & Tower Specialist, 4310 S. Barns, Oklahoma City, OK 73119 (405) 685-2314 Mark Wagstoff
Broadcast Equip. & Supply, P.O. Box 3141, Bristol, TN 37620 (615) 878-2531 Cliff Droke
Communications Facilities, P.O. Box 98, Lexington Park, MN 20853 (301) 862-1777 Samuel Leach
Lauderdale Electric Labs, 16 S.W. 13th St., Ft. Lauderdale, FL 33315 (305) 764-7755 Irene Linne
U.S. Tower Service, 677 S. Lawn Lane, Rockville, MD 20850 Norm Jeweler
- SWR Inc.,** Box 215, Goffstown, N.H. 03045
Jack Kruger (603) 497-3000
- Sadelco, Inc.,** 299 Park Ave., Wee-hawken, N. J. 07087
- Saki Magnetics, Inc.,** 1649 - 12th St., Santa Monica, Calif. 90404
- Howard W. Sams & Co., Inc.,** 4300 West 62nd St., Indianapolis, Ind. 46268
- Sansui Electronics Corp.,** 55-11 Queens Blvd., Woodside, N. Y. 11377
- Satin by Osawa,** 521 Fifth Ave., New York, N.Y. 10017
- Saxton Products Inc.,** 215 N. Route 303, Congers, N.Y. 10920
- Scala Radio Corp.,** 1970 Republic Ave., San Leandro, Cal. 94577
- The Ken Schaffer Group, Inc.,** 10 East 49th St., New York, N.Y. 10017
Michael Stone (212) 371-2335
- Schneider Corp. of America,** 185 Wil-lis Ave., Mineola, N. Y. 11501
- Jos. Schneider GmbH & Co., P.O. Box** 947, D-6550 Bad Kreuznach, West Germany
- Scientific-Atlanta, Inc.,** 3845 Plea-santdale Rd., Atlanta, Ga. 30340
- Scientific Radio Systems, Inc.,** 367 Orchard St., Rochester, N.Y. 14606
Neal E. Garman (716) 458-3733
- Scientific Systems, Inc.,** 5 Donsen Lane, Scotch Plains, N.J. 07076
- Scully Recording Instruments, Div. of** Dictaphone Corp., 475 Ellis St., Mountain View, Calif. 94040
Homer Hull (415) 968-8389
- REGIONAL SALES CONTACTS:**
Scully Recording Instruments, 285 County Rd., Tenally, N.J. 07670 (201) 568-4414 Bill Hamilton
Scully Recording Instruments, 1005 8th Ave. S., Nashville, Tenn. 37203 (615) 244-1546 Bill Shute
Scully Recording Instruments, 3434 W. Peterson Ave., Chicago, Ill. 60645 (312) 563-7878 Gareth Nelson
Scully Recording Instruments, 548 Kings-ley Dr., Los Angeles, Calif. 90020 (213) 380-7980 Phil Flad
- Sencore Inc.,** 3200 Sencore Drive, Sioux Falls, S. D. 57107
- Sennheiser Electronic, 10 West 37th** St., New York, N. Y. 10018
- Shalco, Inc.,** Hwy. 301 South, P.O. Box 1089, Smithfield, N.C. 27577
M. D. Sutton (919) 934-3135
- REGIONAL SALES CONTACTS:**
Audio Distributors, Inc., 2432 Division Ave., South, Grand Rapids, MI 49507 (616) 452-1596
Braydon Electro Ltd., 2925 De Miniac St. Laurent, Montreal, Que. Canada H4S 1L8 (514) 332-5650 Don MacKenzie
Broadcast Equipment & Supply Co., P.O. Box 3141, Bristol, TN 37620 (615) 878-2531 Clifton Drake
Harvey Electronics, 60 Crossways Park, Woodbury, NY 11797 (516) 921-8700 John Fariello
Philadelphia Electronics, 112 N. 12th St., Philadelphia, PA 19107 (215) 568-3001 David C. Shaw
Southeast Electronics, 1125 Rosselle St., Jacksonville, FL 32203 (904) 921-8700 H. Clark Overton
United Radio, Inc., Summit Rd. & Reinhold Dr., Cincinnati, OH 45237 (513) 761-4030 Russ Kuler
Wholesale Electronics, 2809 Ross Ave., Dallas, TX 75201 (214) 824-3001
- Sharp Electronics Corp.,** 10 Keystone Place, Paramus, N.J. 07652
- Shintron Co. Inc.,** 144 Rogers St., Cambridge, Mass. 02142
Eckhard Konkel, Peter Choi (617) 491-8700
- Shively Laboratories, Inc.,** Route 302, Raymond, Me. 04071
- Shure Brothers Inc.,** 222 Hartrey Ave., Evanston, Ill. 60204
- Siegel Electronics,** Box 66, Ft. Hamil-ton Station, Brooklyn, N.Y. 11209
- Sigma Electronics, Inc.,** 1830 State St., East Petersburg, Pa. 17520
- Signal Transformer Co.,** 500 Bayview Avenue, Inwood, N.Y. 11696
- Sinai-Johnson, D 8,9,** Box 5218, Red-wood City, Calif. 94063
- Singer Products Co., Inc.,** One World Trade Center Suite 2365, New York, N.Y. 10048
- Sintron Corp.,** 212 Welsh Pool Rd., Lionville, Pa. 19353
T. R. Humphrey, VP, Marketing (215) 363-0444
- REGIONAL SALES CONTACTS:**
Bob Amos & Assoc., Box 3247, Irving, TX 76061 (214) 252-1161 Bob Amos
Mastertone Co., First Nat'l Bank Bldg., West Des Moines, IA 50265 (515) 225-6122 Dick Blacketer
Radford Associates, 3203 Lanier Dr., At-lanta, Ga. 30319 (404) 237-6097 Lew Radford
Radford Associates, 1331 Otter Creek Rd., Nashville, Tenn. 37215 (615) 373-0231 Ralph L. Hucaby
H. M. Dyer Electronics, 31185 Ten Mile Dr., Farmington Hills, Mich. 48024 (313) 478-2157 Mike Dyer
- Sitco Antenna Co.,** Box 20456, Portland, Ore. 97220
- Sitler's Supplies, Inc.,** Box 10-B, Wash-ington, Iowa 52353
Wm C. Sitler (319) 653-2123
- Skirpan Lighting Control Corp.,** 61-03 32nd Avenue, Woodside, N.Y. 11377
Robert Benson (212) 274-7222
- Skotel Corp.,** 1445 Provencher, Bros-sard, Que. Canada J4W 1Z3
Stephen Scott (514) 676-1813
- Eric Small & Associates,** 680 Beach St., Suite 365, San Francisco, Calif. 94109
- Warren R. Smith Co.,** 8-09 Fern St., Fairlawn, N.J. 07410
- Solar Power Corp.,** 20 Cabot Rd., Woburn, Mass. 01801
- Soll,** 401 East 74th St., New York, N.Y., 10021
- Sono-Mag Corp.,** 1005 W. Washington St., Bloomington, Ill. 61701
- Sony Corp. of America, VTR Div.,** 9 W. 57th St., New York, N.Y. 10019
Phil Stack, Video Products (212) 371-5800
- REGIONAL SALES CONTACTS:**
Sony Corp. of America, West, 700 W. Artesia Blvd., Compton, Calif. 90222 (213) 537-4300 Bob Mueller
Sony Corp. of America, Eastern, 47-47 Van Dam St., L.I.C., N.Y. 11101 (212) 361-8600 Roy Raymond
Sony Corp. of America, Northwestern, 230 W. Hill Place, Brisbane, Calif. 94005 (415) 467-4900 Mat Ceterski, video
- Sony Corp. of America, Southwestern, 9004 Ambassador Row, Dallas, Texas 75247 (214) 631-3431 Bill Hanlow, video*
Sony Corp. of America, Southeastern, 2300 Peachford Rd., Atlanta, Ga. 30338 (404) 451-7501 Lee Manning, video
Sony Corp. of America, North Central, 22791 Hestip Dr., Novi, Mich. 48050 (313) 348-3500 George Currie
Sony Corp. of America, Midwest, 6801 W. Jarvis St., Niles, Ill. 60648 (312) 792-3600 Jerry Brinacombe
- Sound Dynamics, Inc., D8, 9,** Box 32055, San Jose, Calif. 95152
- Sound Genesis, D 8,9,** 2001 Bryant St., San Francisco, Calif. 94110
David Angress (415) 285-8900
- Sound Technology,** 1400 Dell Ave., Camp-bell, Calif. 95008
Michael S. Hogue (408) 378-6540
- REGIONAL SALES CONTACTS:**
R. A. Albrecht & Co., 4379 Orion Rd., Box 410, Rochester, Mich. 48063 (313) 652-2520 Dick Albrecht
Fidelicom, Box 80644, Atlanta, Ga. 30366 (404) 458-3616 Mort Liebman
Henry Joncas Co., 12058 Lake City Way N.E., Seattle, Wash. 98125 (206) 363-9200 Henry Joncas
Kodo Associates, Inc., 8100 Penn Ave. S., Minneapolis, Minn. 55431 (612) 881-1255 Kodo Kawamura
Charles Lucas Sales Co., Box 24632, Dal-las, Tex. 75224 (214) 330-8181 Charles Lucas
Maish Sales, 500 Madison St., Box 186, Mulberry, Ind. 46058 (317) 296-2322 Charles Maish
William Menezes & Associates, Box 7070, Overland Park, Kans. 66207 (913) 649-2680 Bill Menezes
McCabe, Hedlund & Givan, Box 4, Oakdale, Mass. 01539 (617) 835-3161 Frank Mc-Cabe
Partridge Electronic Sales, Box 21205, Salt Lake City, Utah 84121 (801) 272-3131 Clark Partridge
Elmark Co., 2559 Huntingdon Pike, Hun-tingdon Valley, Pa. 19006 (215) 947-0750 Mark Pitkow
Repelect, 3706 Ola Ave., Box 7102, Tampa, Fla. 33603 (813) 227-5051 John Govreau
T. R. Moore & Assoc., 8513 Springboro Pike, Miamisburg, OH 45342 (513) 433-0762 Bob Moore
The Invaly W. Rose Group, 8137 Ridgeway Ave., Skokie, Ill. 60076 (312) 674-6790 Irving Rose
Shea Sales, 552 Prospect St., Maplewood, N.J. 07070 (201) 762-2382 Tom Shea
- SoundScriber Magnetic Recording Co., Inc.,** 85 Willow St., New Haven, Conn. 06511
Lawrence Acampora (203) 624-5179
- REGIONAL SALES CONTACTS:**
Broadcast Advertisers Reports Inc., Chest-nut at 5th St., Darby, PA 19023 (215) 534-3030 Frank Dougherty
Richards Recording Systems, Inc., 177 Essex St., Lynnfield, MA 01940 (617) 232-8300 Richard Duremus
Syntonic Technology Inc., 570 Alpha Dr., Pittsburgh, PA 15238 (412) 782-3710 Bill Waugam
- Specialized Industries, Inc.,** 6565 Santa Monica Blvd., Los Angeles, Calif. 90038
- Spectra Sonics,** 3750 Airport Rd., Ogden, Utah 84403
- Spectra-Vision Corp.,** 1528 Belfield Ave., Philadelphia, Pa. 19141
- Sphere Electronics,** 20201A Prairie, Chatsworth, Calif. 91311
- Spindler & Sauppe, Inc.,** 13034 Sati-coy St., North Hollywood, Cal. 91605
- Spin Physics, Inc.,** 11633 Sorrento Valley Rd., San Diego, Calif. 92121
Gene Long (714) 453-5410

REGIONAL SALES CONTACTS:

Spin Physics, Inc., Box 253, Columbia, Md. 21045 (301) 730-6855 Ben Everett
 Spin Physics, Inc., 1414 Northridge, Carrollton, Tex. 75006 (214) 245-1816 LeRoy Koonsman
 Spin Physics, Inc., 2 S. 063 Valley Rd., Lombard, Ill. 60148 (312) 620-6845 Ray Kundrot
 Spin Physics, Inc., 1969 Scott Lane, Los Altos, Calif. 94022 (415) 961-7794 Ken Thompson
 Spin Physics, Inc., 5629 Woodforest Dr., Sacramento, Calif. 95842 (916) 332-0885 Dave Franssens
 Spin Physics, Inc., 1286 Camino Palomera, Santa Barbara, Calif. 93111 (805) 964-3316 Ed Gehle
 Spin Physics, Inc., Spriederweg 11, Putten Netherlands (03418) 3689 William Kroon
 Spin Physics, Inc., 420 Kiskonko Turn, Oxon Hill, MD 20022 (301) 839-3218 R. Kent White, Reg. Mgr.
 Spin Physics, Inc., P.O. Box 177, Guntersville, AL 35976 (205) 582-6572 Knowlton Harrell, Sr. Eng. Rep.

Stainless, Inc., Third & Montgomery Sts., North Wales, Pa. 19454

Jess C. Rodriguez (215) 699-4871

Stancil-Hoffman Corp., 921 N. Highland, Hollywood, Calif. 90038

Standard Tape Laboratory, Inc., 26120 Eden Landing Rd. #5, Hayward, Calif. 94545

Frank Lennert (415) 786-3546

Stanton Magnetics Inc., Terminal Drive, Plainview, N.Y. 11803

Pete Bidwell, Prod. Mgr. (516) 681-0200

Stantron Div., 6914 Beck Ave., North Hollywood, Calif. 91605

Storeel Corp., 4993 New Peachtree Rd., Atlanta, Ga. 30341

Ruth E. Schaeffer (404) 458-3280

Strand Century, Inc., 20 Bushes Lane, Elmwood Park, N. J. 07407

Studer Revox America, 1819 Broadway, Nashville, Tenn. 37203

Raymond M. Urdike (615) 329-9576

REGIONAL SALES CONTACTS:

Studer Revox America, Inc., 155 Avenue of the Americas, New York, N.Y. 10013 (212) 255-4462 Frederick C. Layn
 Studer Revox America, Inc., 14046 Burbank Blvd., Van Nuys, Calif. 91401 (213) 780-4234 William Van Doren

Studio Electronics, D 3,4,7, 3252 West Foster, Chicago, Ill. 60625

Studio Tape Exchange, D 2,9, 630 9th Ave., 8th Floor, New York, N.Y. 10036

Suda Seisakusho Co., Ltd., Nit-suko-Bldg., 6-14-13, Ginza, Chuo-ku, Tokyo, Japan 104

Super8 Sound, Inc., 95 Harvey St., Cambridge, Mass. 02140

Superex Electronics Corp., 151 Ludlow St., Yonkers, N.Y. 10705

Superscope, Inc., 20525 Nordhoff St., Chatsworth, Calif. 91311

Surcom Associates, 305 Wisconsin Ave., Oceanside, Calif. 92054

August J. Link (714) 722-6162

Swager Tower Corp., Box 656, Fremont, Ind. 46737

Switchcraft Inc., 5555 N. Elston Ave., Chicago, Ill. 60630

Gerry Mills (312) 792-2700

System Associates, 6117 Reseda Blvd., Ste. 205, Reseda, Calif. 91335

Walter A. Shubin & Billy Seidel (213) 344-3552

System Concepts Inc., 395 Ironwood Dr., Salt Lake City, Utah 84115

Systron-Donner, 10 Systron Dr., Concord, Calif. 94518

T

TDK Electronics Corp., 755 Eastgate Blvd., Garden City, N. Y. 11530

Bud Berger (516) 746-0880

TEAC Corp of America, 7733 Telegraph Rd., Montebello, Cal. 90640

TM Systems, Inc., 25 Allen St., Bridgeport, Conn. 06604

TSC Development Labs., 2217 Purdue Ave., Los Angeles, Calif. 90064

TT Electronics, Inc., 2214 S. Barry Ave., Los Angeles, Calif. 90064

S. J. Sodaro (213) 478-8224

REGIONAL SALES CONTACTS:

Sodaro Co., Box 180, Culver City, Calif. 90230 (213) 478-7733 J. F. Sodaro

Taber Mfg. & Engr. Co., 2081 Edison Ave., San Leandro, Cal. 94577

Robert H. Kearns, Mkt. Mgr. (415) 635-3831

Tandberg of America, Inc., Labriola Court, Armonk, N. Y. 10504

Tangent Systems, Inc., 2810 S. 24th St., Phoenix, Ariz. 85034

Tape City, Inc., 404 Park Avenue South, New York, N. Y. 10016

Tape-Athon Corp., Box 814, Inglewood, Cal. 90301

Tayburn Electronics, Inc., 6106 Avenida Encinas, Carlsbad, Calif. 92008

Taylor Instrument, Consumer Prod. Div. Sybron Corp., Arden, N.C. 28704

Tech Laboratories Inc., Bergen & Edsall Bldvs., Palisades Park, N.J. 07650

REGIONAL SALES CONTACTS:

P. H. Jameson, Box 247, Magnolia, Ark. 71753 (501) 234-3778

Held & Mollard, 3995 E. Bayshore Dr., Palo Alto, Calif. 94303 (415) 965-9321

Spectrum Assoc., 1823 E. 17th St., Santa Ana, Calif. 92701 (213) 323-0603

Inverness Mktg., 14 Inverness Dr. E., Englewood, Colo. 80110 (303) 770-2300

NBS Assoc., Main St., New Preston, Conn. 06777 (203) 868-0501

Reynolds & Assoc., 476 N. A1A, Satellite Beach, Fla. 32937 (305) 773-4700

Grady Duckett Sales, Box 29067, Atlanta, Ga. 30358 (404) 451-3529

Crimson Eng. Co., Box 286, Glenview, Ill. 60025 (312) 724-1780

Habco Electronics, 603 Allegheny Ave., Towson, Md. 21204 (301) 825-9637

Norwood Scroggs Co., 2221 Arbor Hills Rd., Jackson, Mich. 49201 (517) 750-1170

Quantum Sales, 7710 Computer Ave., Minneapolis, Minn. 55435 (612) 831-8583

Bob Cameron, Inc., 2352 Linwood Ave., Ft. Lee, N.J. 07024 (201) 461-2595

Floyd W. Churchill, Box 43, Haddonfield, N.J. 08033 (609) 429-7871

Net Sales, Box 7485, Rochester, N.Y. 14615 (716) 467-4538

L. K. Haner Assoc., Box 101, Commack, N.Y. 11725 (516) 864-2220

A. C. Wahl & Assoc., Box 15220, Cincinnati, Ohio 42515 (513) 761-5500

SPS Electronics, 12025 N.W. Thompson Rd., Portland, Ore. 97229 (503) 645-3769

Waggoner-Verhill Assoc., 3550 Laketon Rd., Pittsburgh, Pa. 15235 (412) 241-5202

Southwest Elect., Inc., 9226 Markville Dr., Dallas, Tex. 75243 (214) 690-9881

Southwest Elect., Inc., Box 35353, Houston, Tex. 77035 (713) 729-1670

Solid State Engr., Box 355, Sta. NDG, Montreal, Que. Canada (514) 481-3313

ab Elektronic Enheter, Torogatan 13, Enskede Sweden 08/48 4839

Repac Elect. Ltd., Box 18053, Tel-Aviv Israel 7771 151617

Technics by Panasonic, One Panasonic Way, Secaucus, N.J. 07094

Teknekon/TRAX, 2121 Allston Way, Berkeley, Calif. 94704

Tektronix Inc., Box 500, Beaverton, Ore. 97077

Telcom Research, 1163 King Road, Burlington, Ont., Canada L7R 3X5

Tele-Cine Inc., 5434 Merrick Rd., Massapequa, N.Y. 11758

Telecommunications Industries Ltd., 6335 Homewood Ave., Suite 204, Los Angeles, Calif. 90028

Telecommunications Technology, 555 Del Rey Ave., Sunnyvale, Calif. 94086

Telectric Co., 1218 Venice Blvd., Los Angeles, CA 90006

Teledyne Camera Systems, 131 N. Fifth Ave., Arcadia, Calif. 91006

Teledyne Energy Systems, 110 W. Timonium Rd., Timonium, Md. 21093

Paul I. Bessert (301) 252-8220

REGIONAL SALES CONTACTS:

Warren H. Davis Co., 1810 Fair Oaks Ave., Pasadena, Calif. 91030 (213) 680-1166

Warren H. Davis

C. T. Carlberg & Assoc., 3177, Albuquerque, N.M. 87110 (505) 265-1579 Carl Carlberg

The Cunningham Co., 4400 Spring Valley Rd. #101, Dallas, Texas 75240 (214) 233-4303 Mike O'Shaughnessy

Charles T. Morgan Co., Inc., 500 Maple St., Hathorne, Mass. 01937 (617) 774-3215

Steve Lunn

Davis Associates, 123, Littleton, Colo. 80120 (303) 795-1400 Donald Davis

The Cunningham Co., 9440 Old Katy Road, Ste. 100, Houston, Texas 77055 (713) 461-4197 John Cunningham

Communications Engineering, Inc., 3350 Mt. View Dr., Anchorage, AK 99504 (907) 272-3591 Lloyd Morris

Mechron Engineering Products Ltd., 2437 Kalarad Ave., Ottawa Ont. Canada K1V 8B9 (613) 733-3855 Ron Whiting

Simson-Maxwell, 1380 West 6th Ave., Vancouver BC Canada V6H 1A7 (604) 736-5431 Will Artfman

Alster Communications, P.O. Box 9048, Boise, ID 83707 (208) 362-1272 Russ Elsworth

Alster Communications, 1603 N. Lincoln, Kennewick, WA 99336 (509) 735-2232

Bill Holesworth

Electro Pacific, 727 Industrial Rd., San Carlos, CA 94070 (415) 592-3114 Bob Tokarski

Mid-South Sales Co., Inc., P.O. Box 692, Slidell, LA 70459 (504) 641-7480 Harry Hammet

TeleMation, A Div. of Bell & Howell, Box 15068, Salt Lake City, Utah 84115

Tele-Measurements, Inc., D 2, 145 Main Avenue, Clifton, N.J. 07014

Telemet, a Geotel Co., 185 Dixon Ave., Amityville, N.Y. 11701

Joseph F. Cali (516) 842-2300

REGIONAL SALES CONTACTS:

Telemet a Div. of Geotel, Inc., Easthill RFD #3, Brewstr. N.Y. 10509 (914) 279-3231 R. Griffiths

Telemet a Div. of Geotel, Inc., 2640 Northdale Blvd., Coon Rapids, Minn. 55433 (612) 574-1794 John Nash

Telemet a Div. of Geotel, Inc., 6350 L.B.J. Freeway, Dallas, Tex. 75240 (214) 387-1389 William Culbertson

Telemet a Div. of Geotel, Inc., Western States, (408) 249-1559 Paul Welcom

Telescript, Inc., 20 Insley St., Demarest, N. J. 07627

Television Engineering Corp., 519 Rudder Rd., Fenton, Mo. 63026

Television Equipment Associates, Box 260, South Salem, N.Y. 10590

Television Products Co. Inc., 9016 Aviation Blvd., Inglewood, Calif. 90301

Television Research International, 1002 Elwell Ct., Palo Alto, Calif. 94303

Television Technology Corp., 5970 W. 60th Ave., Arvada, Co. 80003

Dr. Byron St. Clair (303) 423-1652

Telex Communications, Inc., 9600 Aldrich Ave. S., Minneapolis, Minn. 55420

Don Mereen (612) 884-4051

REGIONAL SALES CONTACTS:

Bettan Sales, Inc., 77-15 164th St., Flushing, N.Y. 11366 (212) 591-5843 Mary Bettan

George M. Conneen, Inc., 24 S. Newtown St. Rd., Newtown Square, Pa. 19073 (215) 353-2421 George Conneen

Clark R. Gibb Co., 11100 Bren Rd. W., Minnetonka, Minn. 55343 (612) 932-3950 Clark R. Gibb

Kimian Sales, Inc., 1804 Sycamore St., Atlantia, IA 50022 (712) 243-1626 Bob Willms

David H. Brothers Co., Inc., 19 Old Court Rd., Baltimore, Md. 21208 (301) 764-7189 David Brothers

Fleehart and Sullivan, Inc., 10109 Aurora Ave., N., Seattle, Wash. 98133 (206) 522-1533 Earl W. Fleehart

Intech Equipment Div., Inc., 6862 Engle Rd., Cleveland, Ohio 44130 (216) 826-3400 Jim Eales

Koessler Sales Co., Inc., 2010 W. Burbank Blvd., Burbank, Calif. 91506 (213) 849-5716 Ace Ranslem

Wm. M. Linz Associates, Inc., 821 Skokie Blvd., Northbrook, Ill. 60062 (312) 498-9600 William M. Linz

Moulthrop Sales, Inc., 7080 Commerce Dr., Pleasanton, Calif. 94566 (415) 846-0550 David Grubbs

Michael Scott Co., Inc., 20 Walnut St., Wellesley Hills, Mass. 02181 (617) 235-0102 Michael Scott

McLoud & Raymond Co., 2020 S. Pontiac Way, Denver, Colo. 80222 (303) 756-1589 W. C. McLoud

Lewis and Dunning Co., Inc., 104 Jamesville Rd., Syracuse, NY 13214 (315) 466-5522 Richard Dunning

J. Y. Schoonmaker Co., Inc., 10710 Sand Hill Rd., Dallas, Tex. 75238 (214) 349-1650 E. Jess Spoons

Schalco Inc., 23716 Woodward Ave., Pleasantridge, MI 48069 (313) 547-4771 Carl Ludwig

Technical System Reps., 2065 Peachtree Ind. Ct., Suite 215, Chamblee, Ga. 30341 (404) 457-0426 Norman R. Schneider

Telak Electronics Ltd., 690 Progress Ave., Unit 3, Scarborough, Ont. M1H 3A6 Canada (416) 438-3804 Murray Balcom

World Wide Products, Inc., 10818 N.W. 6th Ct., Box 279, Miami, Fla. 33168 (305) 754-5475 Jerry Zeidman

Teltron Inc., Box 416, Douglassville, Pa. 19518

Temtron Electronics, D 1-9, 138-69 Francis Lewis Blvd., Rosedale, N.Y. 11422

Ralf Vlaisire (212) 978-5896. (800) 221-8376

Tentel, 50 Curtner Ave., Campbell, Calif. 95008

Tepeco Corp., Box 680, Rapid City, S. D. 57709

TerraCom, 9020 Balboa Ave., San Diego, Calif. 92123

Texas Electronics, Box 7225, Dallas, Tex. 75209
Sam Eason (214) 631-2490

Texscan Corp., 2446 N. Shadeland, Indianapolis, Ind. 46219

Theatre Techniques Inc., 60 Connolly Parkway, Hamden, Conn. 06514

Thermodyne International Ltd., 12600 Yukon Ave., Hawthorne, Calif. 90250

Thomson-CSF Electron Tubes, 750 Bloomfield Ave., Clifton, N. J. 07015

Thomson-CSF Laboratories, Inc., 37 Brownhouse, Stamford, Conn. 06902

John J. Camarda (203) 327-7700

REGIONAL SALES CONTACTS:

Thomson-CSF Laboratories, Inc., Northeast Region, 37 Brownhouse Rd., Stamford, Conn. 06902 (203) 327-7700 Joseph Ewansky, Regional Mgr.

Thomson-CSF Laboratories, Inc., Southeast Region, 37 Brownhouse Rd., Stamford, Conn. 06902 (203) 327-7700 Thomas F. Hindle, Regional Mgr.

Thomson-CSF Laboratories, Inc., Midwest Region, 396 Chez Paree Dr., St. Louis, Mo. 63042 (314) 831-3320 Harvey Caplar, Regional Mgr.

Thomson-CSF Laboratories, Inc., Western Region, Box 36, LaCanada, Calif. 91011 (213) 790-4393 James Smith, Regional Mgr.

Thomson-CSF Laboratories, Inc., Northeast District, 8407 Brewster Dr., Alexandria, Va. 22308 (202) 296-9189 Al Audick, Dist. Liaison Sales Mgr.

Thomson-CSF Laboratories, Inc., Southwest Region, Box 905, Aliet, Tex. 77411 (713) 933-1700 Martin J. McGreevy, Regional Mgr.

Thomson-CSF Laboratories, Inc., 623 Americas, GA 31709 (912) 924-8309 O.G. (Bud) Mills, Terr. Mgr.

Thomson-CSF Laboratories, Inc., Midwest Territory, Box 95367, Schaumburg, Ill. 60195 (312) 397-1118 Louis V. Mialy, Terr. Mgr.

Thor Electronics Corp., D 1-9, 321 Pennsylvania Ave., Linden, N.J. 07036

3M Co., Magnetic Audio/Video Prod. Div., 3M Center, St. Paul, Minn. 55101

Joe Leon, Sales (612) 733-7732

REGIONAL SALES CONTACTS:

3M Co., Southwestern, 2121 Santa Anna Ave., Dallas, TX 75228 (214) 324-8100 John Handley

3M Co., Mincom Div., 3M Center, St. Paul, Minn. 55101

B. J. Landingham (612) 733-0803

REGIONAL SALES CONTACTS:

3M Co., (Central), 6723 Meadow Dr., Crystal Lake, Ill. 60014 (815) 455-0202 Phil Halter

3M Co., Southwestern, 2121 Santa Anna Ave., Dallas, TX 75228 (214) 324-8100 John Handley

3M Co., (Western), 688 Wasatch Dr., Fremont, Calif. 94536 (415) 791-8344 Bill Hahn

3M Co., (Southeastern), 15932 Shady Grove Rd., Gaithersburg, Md. 20760 (301) 948-0460 Bill Weston

Time & Frequency Tech., Inc., 3090 Oakmead Village Dr., Santa Clara, Cal. 95051

Frank Stolten, Terry Lloyd (408) 246-6365

REGIONAL SALES CONTACTS:

BCD, Inc., 1400 Coleman Ave., Suite H14, Santa Clara, Calif. 95051 (408) 984-6614 Marty Jackson

BCD, Inc., 5526 E. La Palma, Anaheim, Calif. 92807 (714) 528-9505 John Baumann

Didier/Denver, Box 1599, Evergreen, Colo. 80439 (303) 674-6000 Herb Didier

Martin, Zienkosky, Browne & Assoc., 13731 Omega Rd., Dallas, Tex. 75240 (214) 233-5535 Darryl Parker

Emmons Associates, 10700 Lyndale Ave. S., Minneapolis, Minn. 55420 (612) 881-1118 Keith Emmons

Dyer Electronics, 31185 Ten Mile Rd., Farmington Hills, Mich. 48024 (313) 478-2157 Mike Dyer

Doug Cook & Associates, 2185 Trent Rd., Columbus, Ohio 43229 (614) 471-4114 Doug Cook

Electronic Merchandising Ent., Inc., 112 Buena Vista, High Point, N.C. 27260 (919) 869-3335 George Gold

Radlord Associates, 3203 Lanier Dr., Atlanta, Ga. 30319 (404) 237-6097 Lewis Radlord

Repelect, Box 7102, Tampa, Fla. 33603 (813) 227-5051 John Govreau

Holzberg Associates, Box 322, Totowa, N.J. 07512 (201) 256-0455 Herb Holzberg

Hope, Bennett, Blackburn, Inc., 18 La Rosa, Isla Verde, Puerto Rico 00913 (809) 725-8668 Mr. Blackburn

Caldwell A/V Equipment Co. Ltd., 1080 Bellamy Rd. N., Scarborough, Ont. M1H 1H2 Canada (416) 438-6230

BCD, Inc., 7100 S.W. Hampton St., Tigard, OR 97223 (503) 639-8223

MARCOM, P.O. Box 66507, Scotts Valley, CA 95066 (408) 438-4273

Radlord Associates, 1331 Otter Creek Rd., Nashville, TN 37215 (615) 373-0231

Besico Int'l., P.O. Box 1, Ramey Puerto Rico 00604 (809) 891-1510

Doug Holland Associates, 6370 Hawaii Kai Dr., Honolulu, HI 96825 (808) 377-6633

Time Tech Corp., 625 Katella Ave., # 35, Orange, Calif. 92667

Richard E. Miller (714) 639-4445

REGIONAL SALES CONTACTS:

Broadcast Communications Devices Inc., 5526 E. LaPalma Ave., Anaheim, CA 92807 (714) 528-9505 (213) 628-9590 John Baumann

Broadcast Communications Devices Inc., 7100 S.W. Hampton St., Suite 121, Tigard, OR 97223 (503) 639-8223 John Odgers

Cleveland Enterprises of Colorado, P.O. Drawer P, Aurora, CO 80041 (303) 751-3252 Richard T. Seery

H.M. Dyer Electronics, 31185 Ten Mile Rd., Farmington Hills, MI 48024 (313) 478-2157 Mike Dyer

Professional Products, Inc., 4962-64 Fairmont Ave., Bethesda, MD 20014 (301) 657-2141, 656-5100 Phil Botton

Sound System, Inc., 52-12 Twenty-Eighth St., Long Island City, NY 11101 (212) 786-4474, 4386 Dick Mulliner

Video Equipment Corp. of America, 7377 Conroy Court, San Diego, CA 92111 (714) 278-4400 Jerry Frazier

Times Wire and Cable, 358 Hall Avenue, Wallingford, Conn. 06492

Tiner Communications Service, Inc., D, Box 817, Cedar Hill, Tex. 75104

Torpey Controls & Engineering Ltd., 108 Carnforth Rd., Toronto, Canada M4A 2L4

Townsend Associates, Inc., Box 1122, Westfield, Mass. 01085

Track Audio, Inc., D 1-9, 33753 9th S, Federal Way, Wash. 98003

Transtector Systems Div., Konic International Corp., 532 Monterey Pass Rd., Monterey Park, Calif. 91754

Tri-Tronics, Professional Electronics, Box 1067, Hwy. 210 N., Lillington, N.C. 27546

Trompeter Electronics, 8936 Comanche Ave., Chatsworth, Cal. 91311

UHF Associates, Box 24, Jenner, Calif. 95450

UMC Electronics Co., Broadcast Products Div., 460 Sackett Point Rd., North Haven, Conn. 06473

Chuck Rockhill (203) 288-7731

REGIONAL SALES CONTACTS:

Syntec Electronic Distributors, Pty. Ltd., 5-7 Smith St., Chatsworth, N.S.W. 2067

Australia 406-4557, 406-4627 Clive Soss Centelec Equipamentos e Sistemas Electronicos Ltda., Av. Presidente Vargas, 392, Centro-ZC-000, 20.000, Rio de Janeiro

Brasil (021) 253-5873 M. Rodriguez M.S.C. Electronics, Ltd., 254 Wildcat Rd., Downsview, Ont. M3J 2N5 Canada (416) 661-4180 Dennis Hindstridge

Seltech Equipment Ltd., 16 York Rd., Maidenhead, SLG 1SF England (0628) 36315 Bill Jaynes

Audio Profesionales, S.A., Rio Nazaz No. 26, Desp. 8, Mexico 5, D.F. Mexico 535-77-47, 535-33-67 Alejandro Zendejas Lopez

Jesus Soto, P.O. Box 487, Caguas, Puerto Rico 00625 744-313

Broadcast Services & Products Ltd., 60 Air-dale St., City Box 460, Auckland New Zealand 71-501 Chris Prouse

Intermedia-Broadcast Center, 405 Altura St., Santa Mesa, Manila Philippines 2806 62-32-20, 62-34-89 Felix Zamora, Jr.

Uher Corp., 85 Lawrence St., Hackensack, N.J. 07601

Ultra Audio Pixtec, Box 921, Beverly Hills, Cal. 90213

Unarco-Rohn Div., of Unarco Ind., Inc., Box 2000, Peoria, Ill. 61656

Unimedia Corp., 22525 Kingston Ln., Auburn, Calif. 95603

Union Connector Co., Inc., Box H, Roosevelt, N. Y. 11575

United Radio Supply Inc., D9, Box 14040, Portland, Ore. 97214

United Recording Electronics Industries, 8460 San Fernando Rd., Sun Valley, Calif. 91352

Up-Right Scaffolds, 1013 Pardee St., Berkeley, Cal. 94710

Utah Scientific, Inc., 2276 South 2700 West, Salt Lake City, Utah 84119

Lyle O. Keys (801) 973-6840

V

VIF International, D 1-9, Box 1555, Mountain View, Calif. 94042

Gordon MacKenzie (408) 739-9740

Vacuum Tube Industries, 35 Pequit St., Canton, Mass. 02021

Eugene Tosti (617) 828-1650

Valad Electric Heating Corp., 160 Wildey St., Tarrytown, N.Y. 10591

Thomas Valentino Inc., 151 West 46th St., New York, N.Y. 10036

Val-Tronics, Inc., D2, Penn Park Bldg., Pittston, Pa. 18640

Milau Krupa (717) 655-5937

REGIONAL SALES CONTACTS:

Val-Tronics Inc., 1847 Radnor Rd., York, PA 17402 (717) 741-1543 Glen Winter

Vamco Engineering, 11104-CE 56th St., Tulsa, Okla. 74145

Gene Randall, Jr. (918) 252-5448

REGIONAL SALES CONTACTS:

Didier/Denver, P.O. Box 1599, Evergreen, CO 80439 (303) 674-6000 H.N. Didier

Dytek Industries, Inc., 999 N. Sepulveda Blvd., Suite 314, El Segundo, CA 90245 (213) 640-2348 James C. Morrison

The Gene Sudduth Co., Inc., 845 39th S.E., Paris, TX 75460 (214) 785-5764 Gene Sudduth

VanLadder, Inc., Box 709, Spencer, Iowa 51301

James C. Baker (712) 262-5810

Varian Associates, Inc., Electron Device Group, 611 Hansen Way, Palo Alto, Calif. 94303

Varian/Beverly, Micro-Link Products, 8 Salem Rd., Beverly, Mass. 01915

Vector Electronic Co., Inc., 12460 Gladstone Ave., Sylmar, Calif. 91342

Vega, Div. of Cetec Corp., Box 5348, El Monte, Calif. 91731

Paul Baughman (213) 442-0782

Versa Count Engineering, 553 Lively Blvd., Elk Grove Village, Ill. 60007

Victor Duncan, Inc., D 4,5,6,7, 2659 Fondren Drive, Dallas, Texas 75206

Video Aids Corp. of Colorado, 325 E. 7th St., Loveland, Colo. 80537

Video Associates, 8301 Balcones, Suite 313, Austin, Texas 78759

Video Components, Inc., 601 So. Main St., Spring Valley, N.Y. 10977

Dick Turchen (914) 356-3700

Video Data Systems, 40 Oser Ave., Hauppauge, N.Y. 11787

Video Devices Co., 3304 Silver Oak Lane, Vista, Calif. 92083

Video Memory Corp., c/o Recortec, Inc., 777 Palomar Ave., Sunnyvale, Calif. 94086

Video Research Corp., Interstate Industrial Park, Riviera Beach, Fla. 33404

Video Specialties, 4178 A Sorrento Valley Blvd., San Diego, Calif. 92121

The Video Tape Co., 15045 Burbank Blvd., North Hollywood, Calif. 91601

Video Tape Exchange Div. of Cine Film Exchange Inc., D 1-9, 855 Avenue

of the Americas, New York City, N. Y. 10001

Joe Luucci, Alvin Poll (212) 695-6644

Videoedics Corp., 2121 S. Manchester, Anaheim, Calif. 92802

Videomagnetics, Inc., 155 San Lazaro Ave., Sunnyvale, Calif. 94086

Videomax Div., Orrox Corp., 3303 Scott Blvd., Santa Clara, Calif. 95050

William E. Fitts (408) 988-2000

REGIONAL SALES CONTACTS:

Videomax, Western Regional Manager, Box 3052, Manhattan Beach, Calif. 90266 (213) 980-7927 Rick Murphy

Videomax Corp., P.O. Box 341, Tucker, GA 30084 (404) 992-4490 James H. Drummond

Videomax Corp., 800 Riverside Dr., New York, NY 10032 (212) 947-8031 Roy Holmes

Videomedia, 250 North Wolfe Rd., Sunnyvale, Calif. 94086

Videotek, Inc., 125 N. York St., Pottstown, Pa. 19464

Philp C. Steyaert (215) 327-2292

REGIONAL SALES CONTACTS:

All-Media Sales Co., 1535 Fox Hill Rd., Naperville, IL 60540 (312) 420-0429 Ray Sudlow

Bruce Dawson Associated, 420 Belknap Beach Rd., Prospect, KY 40059 (502) 228-4898 Bruce Dawson

Colco Sales, 431 S. 150th Circla, Omaha, NE 68154 (402) 333-4709 Bill Colway
 HMR, Inc., 7200 France Ave. S., Minneapolis, MN 55435 (612) 831-7400 Zev Aeloney
 C. Harrison Associates, 6290 McDonough Dr., Norcross, GA 30093 (404) 449-7696 Steve Rosekrans
 Total Associates, 2501 Evergreen, Plano, TX 75075 (214) 596-1315 Paul Jonas
 Videotek, Inc., 2115 Mountain View Rd., Phoenix, AZ 85021 (602) 997-7523 Jack Park
 Wahlberg Associates, 79 Mystic St., Arlington, MA 02174 (617) 646-5394 Eric Wahlberg

Viscount Industries Ltd., 105 East 69th, Vancouver, B.C., Canada V5X 2W9

Vital Industries Inc., 3700 NE 53rd Ave., Gainesville, Fla. 32601

Nubar Donoyan (904) 378-1581

REGIONAL SALES CONTACTS:

Vital Industries, Inc., Midwest Div., 2644 N. 7th St., Terre Haute, Ind. 47804 (812) 466-3212 Morrell Beavers
 Vital Industries, Inc., Northeast Div., 34 Autumn Lane, Hicksville, N.Y. 11801 (516) 735-0055 Robert McAll
 Vital Industries, Inc., Southwest Div., Box 912, Arlington, Tex. 76010 (817) 261-6855 Gordon Peters
 Vital Industries, Inc., Southeast Div., Fox Hill Rd., Lynchburg, Va. 24503 (804) 384-7001 Enc King
 Vital Industries, Inc., West Coast Div., 7960 West Beverly Blvd., Los Angeles, Calif. 90048 (213) 653-9438 Barry Holland

W

Ward-Beck Systems, Ltd., 841 Progress Ave., (617) 283-7507, Ont., Canada M1H 2X4

William McFadden

REGIONAL SALES CONTACTS:

Ward-Beck Systems, Inc., 6900 E. Camelback Rd., Suite 1010, Scottsdale, AZ 85251

Waters Mfg. Inc., Longfellow Center, Wayland, Mass. 01778

Donald A. Russell (617) 358-2777

REGIONAL SALES CONTACTS:

Bierhaus Sales, Inc., 1013 E. 31st St., LaGrange Park, Ill. 60525 (312) 354-5100
 Eltron, 7024 N. Barbados Pl., Phoenix, Ariz. 85021 (602) 997-1042

INH Component Sales, 160 Winchcombe Dr., Dayton, Ohio 45459 (513) 434-8808
 Dynatech, Inc., 5600 S. Syracuse Circle, Suite 308, Englewood, Colo. 80110 (303) 773-2830

Ozark Electronic Marketing, Inc., 2573 Woodson Rd., St. Louis, Mo. 63114 (314) 423-7200

Fred Peterson Co., Box 800, Hopkins, Minn. 55343 (612) 941-5400

Sales Engineers Ltd., 7580 Stage Rd., Buena Park, Calif. 90621 (714) 521-8673

Sir Associates, 442 Marrett Rd., Box 24, Lexington, Mass. 02173 (617) 862-1812

Sonny Simberkoff Assoc., Inc., 71 Valley St., South Orange, N.J. 07079 (201) 763-7900

R. P. Urban & Associates, 1119 Burton St. S.E., Grand Rapids, Mich. 49510 (616) 245-0511

The Woodworth Co., Box 2165, Redwood City, Calif. 94061 (415) 365-0252

Weather Scan, Inc., D, Loop 132 & Hwy. 79, Olney, Tex. 76374

Weinschel Engineering Co., 1 Weinschel Ln., Gaithersburg, Md. 20760

Western Electronic Products Co., 107 Los Molinos, San Clemente, Calif. 92672

Westinghouse, Ind. & Gov't Tube Div., Westinghouse Circle, Horseheads, N.Y. 14845

Westlake Audio, 6311 Wilshire Blvd., Los Angeles, Calif. 90048

Whirlwind Audio, Box 1981, Rochester, N.Y. 14603

Whirlwind Music, Box 1075, Rochester, N.Y. 14603

Wide Band Engineering Co., Inc., Box 21652, Phoenix, Ariz. 85036

Wide Range Electronics, 2119 Scheutz Rd., St. Louis, Mo. 63141

Al Russell, Marketing Mgr. (314) 567-5366

The Widget Works, Inc., Box 79, Medina, Ohio 44256

Wilkinson Electronics, Inc., Box 738, Trainer, Pa. 19013

Joanne Hall (215) 497-5100

REGIONAL SALES CONTACTS:

Dyma Engineering, Box 1697, Taos, N.M. 87571 (505) 758-2686 Carroll Cunningham

Lebow Labs, Inc., 424 Cambridge St., Allston, MA, 02134 (617) 782-0600 James Ritteman
 S.A.V.C.O., Box 427, Richardson, Tex. 75080 (214) 234-1841 Nathan Hughes
 Broadcast Consultants Corp., 21 N. Wirt St., Leesburg, Va. 22075 (703) 777-8660 David Green
 Electronic Industries, Inc., 19 E. Irving Ave., Oshkosh, Wis. 54901 (414) 235-8930 Bud Tedlie

Wilmore Electronics Co., Inc., Box 2973, Durham, N.C. 27705

Winegard Television Systems, 3000 Kirkwood, Burlington, Iowa 52601

Winsted Corp., 8127 Pleasant Ave. So., Minneapolis, Minn. 55420

Jerry Hoska (612) 888-1957

Wolf Coach Inc., 200 Bartlett St., Northboro, Mass. 01532

World Video Inc., Box 117, Boyertown, Pa. 19512

Y

Yamaha International Corp., 6600 Orangethorpe Ave., Buena Park, Calif. 90622

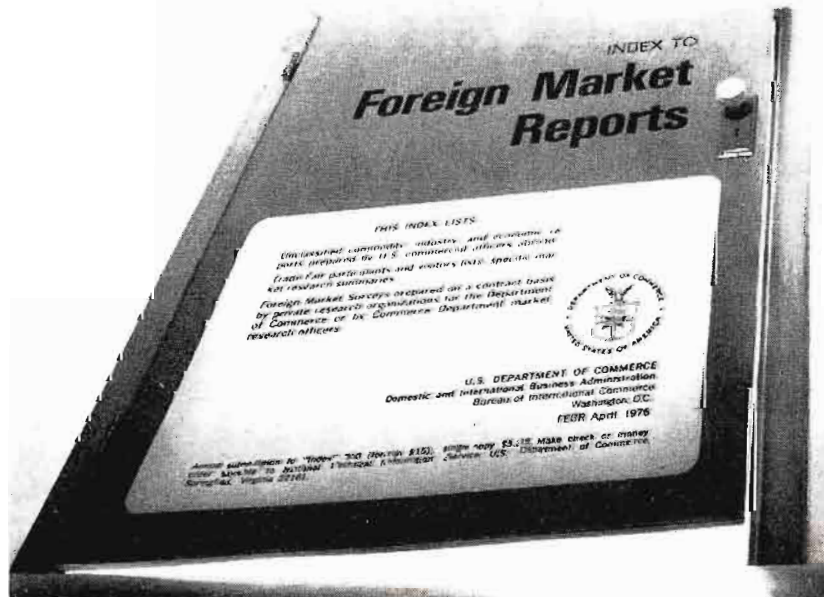
Yardney Electric Corp., 82 Mechanic St., Pawcatuck, Conn. 02891

Z

The Zei-Mark Corp., Box 182, Brookfield Center, Conn. 06805

Product Listings Begin on Page 122

If you're into exporting, or about to take the plunge, this could be your market research department.



It's your guide to one of the most useful libraries in the world. And it's issued by the U.S. Commerce Department on a monthly basis. Inside, you'll find a list of reports containing a wealth of information for the overseas marketer. Spot news; timely surveys of industrial, commodity, commercial and economic conditions in more than 100 countries; in-depth market research performed by the Commerce Department or private research firms overseas; as well as reports sent to Washington by U.S. Foreign Service Officers. For a free sample, write Secretary of Commerce, U.S. Department of Commerce, BIC-10B, Washington, D.C. 20230.



A Public Service of This Magazine & The Advertising Council

Becoming a certified broadcast engineer

By Jim Wulliman, chairman of the SBE certification committee.

Over 1500 broadcast engineers have recognized the value of certification to themselves and to the broadcast industry.

The evaluation of the 1978 exams has been completed and the names of those who have met the qualifications will be published in the next issue of the *SBE Signal*.

A major objective of the certification program is "to encourage broadcast engineers to continue their professional development." Certification is awarded for a period of five years and those certified must accumulate professional credits for recertification.

During the five year period, a senior broadcast engineer must accumulate 25 professional credits and a broadcast engineer must accumulate 20. The credits claimed must be selected from at least four of the categories listed here:

- Employment as a full-time manager or supervisor, or at a decision-making level in broadcast engineering, or as a consultant or equivalent, two credits per year; or full time employment in broadcast engineering or a closely associated field. One credit per year.

Those claiming this credit must provide a statement of the work performed and the period claimed, or provide a statement that there has been no change in his or her responsibility or qualifications since certification. Either statement must be attested to by his or her supervisor.

- Successful completion of an accredited course in broadcast engineering or related field, either as a

student or as a teacher, one credit per 10 contact hours.

- Presentation of a significant paper or talk on a broadcast engineering subject before a national or regional engineering meeting or conference, five credits per paper or talk. Presentation for a local chapter technical meeting, one credit per paper or talk.

- Publication of a technical article in a national broadcast periodical, two to 10 credits per article. The certification committee will determine the credit value based on the significance of the article. Publication of an article in a local chapter publication, one credit.

- Active membership and participation in the SBE or other national technical society related to broadcasting, one credit per group per year. (Maximum 10 credits.)

- Active participation as an elected or appointed officer or committee member in the SBE or other society, either at a local or the national level, two credits per group per year. (Maximum 10 credits.)

- Attendance at local, regional, or national SBE meetings and other technical conferences and seminars, 0.5 credit per local meeting, one credit per day for attending conferences, seminars, and workshops of one or more full day's duration.

- Home study courses may qualify for professional credits as evaluated by the certification committee. Please write to the committee for a ruling.

- Other activities involved in the broadcast engineering field may qualify for professional credits at

the discretion of the certification committee. Please write the committee for a ruling.

It will be the individual's responsibility to keep his certification record of professional credits up-to-date by submitting the proper statements or forms, attesting to his activities and/or participations, periodically to the chapter chairman. One year before his certification expires, the individual should review his certification record for shortages of credits. The certification committee reserves the right to ask any individual for verification of any or all of the professional credits claimed.

Application for recertification will be accepted six months prior to expiration of the five year period as shown on the applicant's certificate.

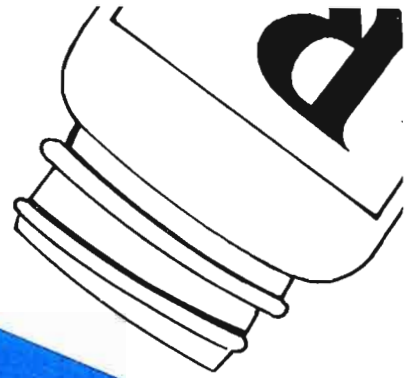
If the certified broadcast engineer elects to recertify by taking the examination, he or she must notify the certification secretary six months prior to the examination.

We have tried to make the requirements flexible enough to make recertification attainable by a broadcast engineer who is actively working to improve his and the broadcast industry's status. This is much more difficult for the isolated station engineer, who is not able to participate in chapter activities. However, I believe that we have provided enough options so that anyone who is actually qualified for certification can demonstrate that fact to the certification committee.

For further information, write to the Certification Secretary, P.O. Box 50844, Indianapolis, IN 46250. □



- Take One or Two
- As Needed for Relief
 - of Systems Proof Headaches.



BROADCAST ENGINEERING'S AM & FM Proof of Performance Manuals...



...Give fast relief for those minor "aches and pains" that arise as you prepare, perform and log the results of your annual systems proof. Here's what you get:

THE AM PROOF

Our AM Proof-of-Performance Manual is a complete guide to the AM E.P.M. Like the FM Proof-of-Performance, this manual includes *all* the required logging forms and everything you need to know to complete your performance measurements...including a chapter devoted to testing for transmitter harmonic output suppression.

THE FM PROOF

Broadcast Engineering's FM Proof-of-Performance Manual includes: All required logging forms for pulling *both* mono and stereo proofs. A complete chapter of FCC Rules. Dozens of helpful troubleshooting tips and time-saving measurement and logging techniques. Detailed procedures on how to *pre-test* your station before pulling the Proof. And more.

Both Proof Manuals show you...

- how to prepare the test equipment
- how to connect the test equipment
- an efficient method of measurement and a look at the performance requirements
- how to use the data summary sheet and evolve the graphs
- how to comply fully with FCC rules and standards

BROADCAST ENGINEERING

P.O. Box 12901, Overland Park, Ks. 66212

- Please send me _____ copies of the FM Proof-of-Performance Manual @ \$7.95 each
- Please send me _____ copies of the AM Proof-of-Performance Manual @ \$7.95 each
- Please send me _____ sets of the FM and AM Proof-of-Performance Manuals @ \$14 for BOTH.

- My check or money order is enclosed

Name _____

Address _____

City _____

State _____ ZIP _____

Volume discounts available on request.

NOTE: Broadcast Engineering pays the postage on all orders!

"Savings Bonds are good for anyone, regardless of income," says Joseph B. Flavin.

*Joseph B. Flavin,
Chairman and Chief
Executive Officer, The
Singer Company.*

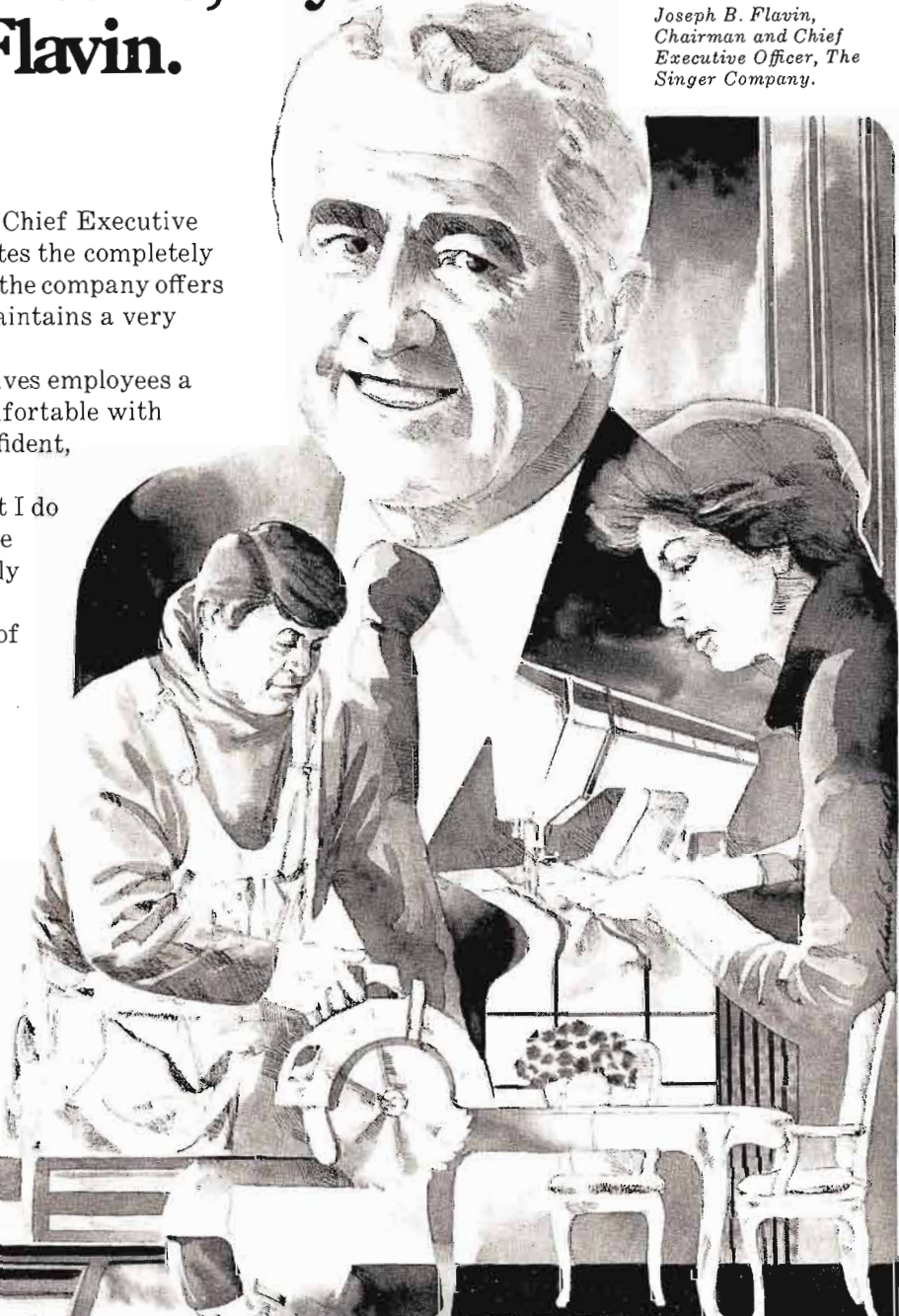
As proof, the Chairman and Chief Executive Officer of The Singer Company cites the completely organized Savings Bond program the company offers its employees, and in which he maintains a very active personal involvement.

"The Payroll Savings Plan gives employees a form of savings they can feel comfortable with . . . anyone who saves is more confident, less frustrated.

"I don't have to buy them, but I do because the Plan is there. We have Bond-a-Matic, which automatically takes over when FICA payments have finished. It's a painless form of saving. You don't miss it. And as part of the Singer Company program, I personally tell employees why Bonds are good for me—and good for them."

Mr. Flavin also feels Bonds are important to the economy "because they don't attack the area from which corporations draw their money."

To receive a free information kit about the Payroll Savings Plan, simply mail the coupon.



Director of Sales
Department of the Treasury
U.S. Savings Bonds Division
Washington, D.C. 20226


**Take
stock
in America.**
Buy U.S. Savings Bonds

Yes, send me your free information kit about the Payroll Savings Plan.

NAME _____ POSITION _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____



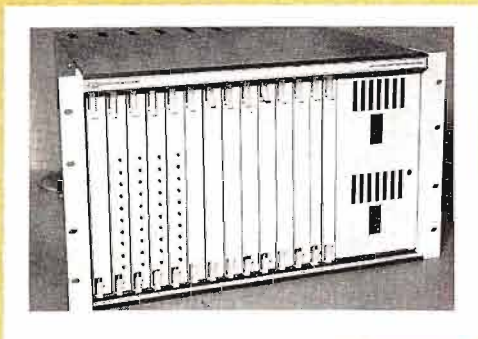
A Public Service of This Magazine & The Advertising Council

Routing switcher roundup

Part 3 (Part 1 of this roundup can be found in the July, 1978 Broadcast Engineering, while Part 2 can be found in the August, 1978 issue).

Manufacturer and model number	Model description
-------------------------------	-------------------

For more information, circle bold face number on Reader Service Card: The Grass Valley Group 400 Series (630), 3600 series (631), 3200 series (632); TeleMation TVS/TAS-1000 (633); Utah Scientific AVS-1 series (634), CAV-7 series (635).



Utah Scientific

AVS-1 Series

- | | |
|-----------------------|---|
| AV-20/20 | This compact switcher features a 20 x 20 AFV matrix in a single card cage complete with one or two power supplies and one or two control and memory cards. |
| AV-50/10 | This configuration provides 10 audio and 10 video outputs from each card cage with a maximum of 50 inputs. Maximum permitted size is 50 x 100 AFV. |
| A-50/20 and V-50/20 | Separate card cages are used for audio and video to provide 20 outputs per card cage from up to 50 inputs. |
| A-100/10 and V-100/10 | One hundred inputs are accommodated by using separate audio and video card cages for each 10 outputs. Maximum standard size is 100 x 100 AFV. Custom sizes to 150 x 150 and larger. |
| A-20/20-S | Designed for stereo/audio switching with each card cage providing 20 outputs from a maximum of 50 inputs. |
| A-50/10-S | A stereo/audio switcher providing 10 outputs per card cage from a maximum of 50 inputs. |

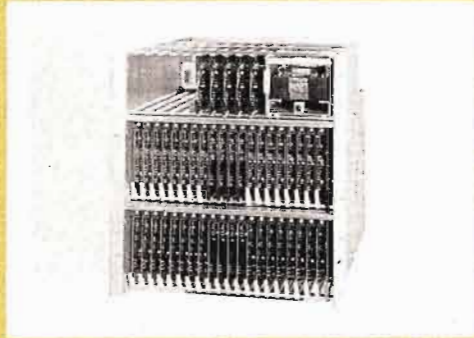
CAV-7 Series

- | | |
|------------|---|
| CAV-20/10 | Provides 10 outputs from either 10 or 20 audio and video inputs. |
| CV-50/10 | 10 x 10 to 50 x 10 video only. |
| CA-50/10 | Provides 10 audio or time-code outputs from up to 50 inputs. Slave model available for coupling to CV-50/10. |
| CV-20/20 | Provides a maximum of 20 video outputs from a maximum of 20 video inputs. |
| CA-20/20 | 20 x 20 audio switcher available with built-in control system or for use as slave to CV-20/20. |
| CA-20/10-S | Switches a maximum of 20 stereo inputs to 10 stereo outputs. |
| CT-384 | Tally matrix. Switches digital, analog, or control signals on mutually exclusive, bi-directional or reverse-only signal paths. Add-on to AVS-1, CAV-7 or switchers of other manufacturers. 8 x 8 to 96 x 96 matrix sizes. |

continued on page 240

Routing switcher roundup

continued from page 239

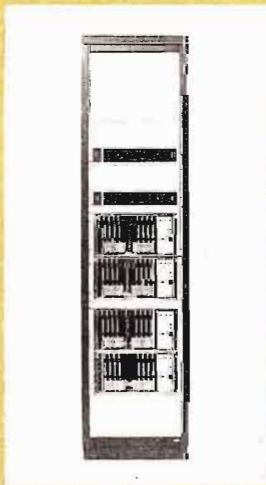


**Manufacturer
and
model number**

Model description


The Grass Valley Group

- 400 Series** The basic video switching matrix is arranged in a 32-input by 16-output format. A frame contains 21 printed circuit modules consisting of four input buffer amplifiers, 16 crosspoint modules, and an interface module. The audio switching matrices consist of input buffer modules, crosspoint modules and a single interface module. A tally relay matrix is available to provide contact closures corresponding to input sources. Other features include: DC restored inputs, vertical interval switching, destination oriented matrices, and built-in short term memory protection.
- 3600 Series** The video matrices consist of an input fanout system, an array (matrix) of crosspoints, and an output system. Video crosspoints are arranged on 10-input, 1-output circuit modules. Ten modules can be mounted in a 1 $\frac{3}{4}$ -inch high frame to form a 10 x 10 matrix. Audio matrices are arranged similarly to video matrices. Input and output impedances are 600 ohms, balanced to ground.
- 3200 Series** This model is intended for general purpose, utility video or audio switching applications. Symmetrical matrices up to 8 x 8 and asymmetrical matrices up to 29 : 2 can be assembled from the series components. Each audio or video mounting tray accommodates eight 8 x 1 modules and a power supply.

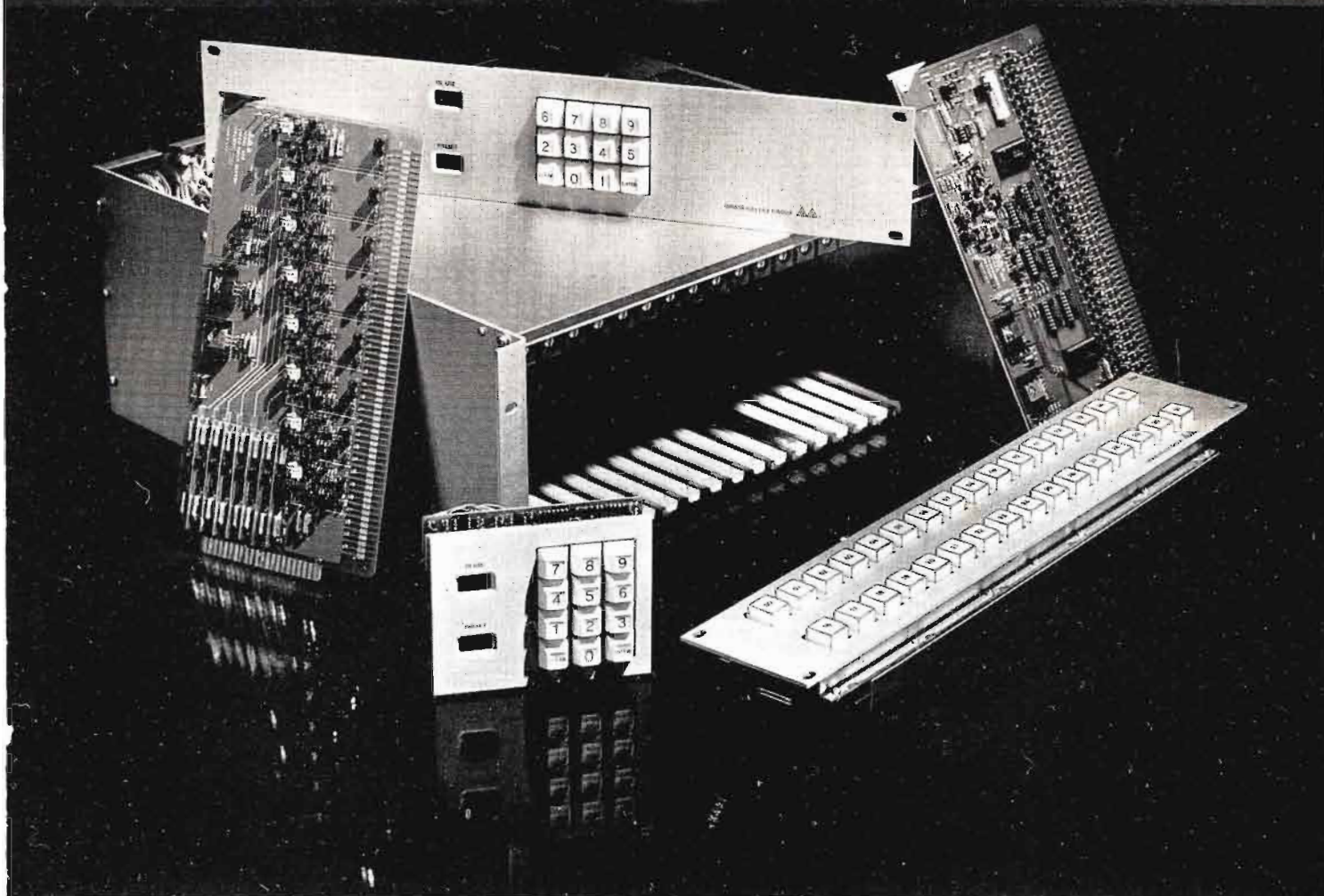


TeleMatron

- TVS/TAS-1000** Has up to 1,000 crosspoints per 8 $\frac{3}{4}$ -inch chassis. Features include solid-state crosspoints with vertical interval switching; single-coax "party-line" control; wide selection of bus controls and status monitors; dual video outputs; and automatic restoration after power failure, with Refresh Memory option. No splitters, combiners or distribution amplifiers required regardless of system size or expansion requirements. Recent additions to the switcher are the CP-1020 remote control panel which can switch any one of 20 input signal sources to a single output bus; the SM-1030 status light display which monitors the "party line" and identifies the output users through the use of LEDs; and the CP-1010 category/number control panel which can switch any one of 100 inputs to a single output bus while requiring only 1 $\frac{3}{4}$ -inch space in a standard 19-inch rack.

GRASS VALLEY GROUP 

400-SERIES



A complete new cost effective, systematic approach to routing switching.

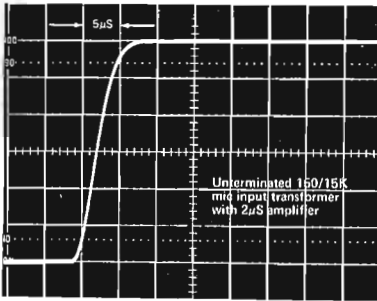
THE GRASS VALLEY GROUP, INC.

A Tektronix Company

Grass Valley Group Field Offices: WEST; 4419 Van Nuys Blvd Ste 307, Sherman Oaks, CA 91403 (213) 990-6172 • SOUTHEAST; 1644 Tullie Cir NE, Atlanta, GA 33029 (404) 321-4318 • NORTH CENTRAL; 810 W Bristol St, Elkhart, IN 46514 (219) 264-0931 • NEW ENGLAND & MID ATLANTIC; Station Plaza East, Great Neck, NY 11021 (516) 487-1311 • SOUTHWEST; 2639 Walnut Hill Ln Ste 143, Dallas, TX 75229 (214) 358-4229 • MIDWEST; 3585 N Lexington Ave Ste 374, Arden Hills, MN 55112 (612) 483-2594

jensen transformers
By REICHENBACH ENGINEERING

Wide Bandwidth
Minimum Transient Distortion
Low Noise



Years of transformer manufacturing and design experience, combined with computer assisted technology, have enabled us to make a *significantly audible improvement* in the performance of audio transformers.

Write or call for information
1617 NORTH FULLER AVENUE
HOLLYWOOD, CA 90046
(213) 876-0059

(Visitors by appointment only.)

Circle (163) on Reply Card

Radio, Television, Microwave
TOWERS

DESIGNED, FABRICATED,
ERECTED, MAINTAINED

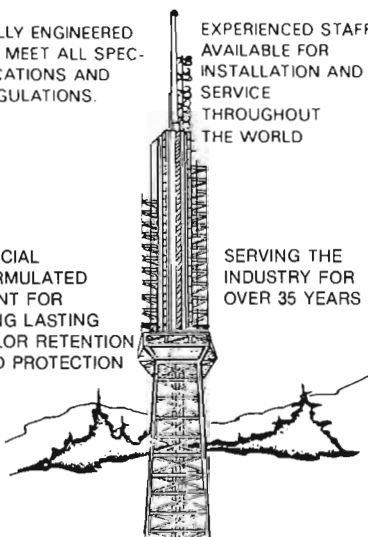
MONO POLES FOR NEW
AND EXISTING TOWERS

FULLY ENGINEERED
TO MEET ALL SPEC-
IFICATIONS AND
REGULATIONS.

EXPERIENCED STAFF
AVAILABLE FOR
INSTALLATION AND
SERVICE
THROUGHOUT
THE WORLD

SPECIAL
FORMULATED
PAINT FOR
LONG LASTING
COLOR RETENTION
AND PROTECTION

SERVING THE
INDUSTRY FOR
OVER 35 YEARS



FRED A. NUDD CORPORATION

1743 ROUTE 104
ONTARIO, NEW YORK 14519
(315) 524-2531

Circle (164) on Reply Card

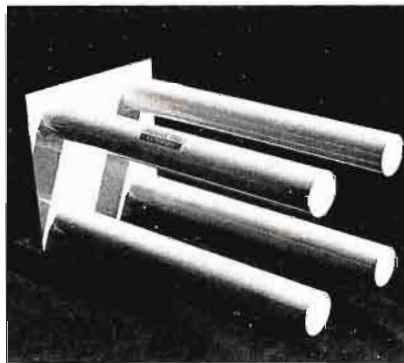
**new
products**

Antennas

Nurad has designed three antenna systems for various uses.

First is the Hemi hemispherical antennas for airborne TV microwave systems. The Hemi provides complete hemispherical coverage below the aircraft on which it is installed.

Next is the Slimline directional circularly polarized antenna. Operating in the 2 GHz band, it is useful with microminiature portable ENG/EJ transmitters.



The third is the Quadron, a 7/GHz counterpart to the Goldenrod. It embodies four rod antennas on a common mount. Featuring a gain of 22 dB, its primary use will be as a mobile low-windload transmit antenna operated in conjunction with quad-polarized receive antenna systems.

Circle (300) on Reply Card

Blanking interval meter

Auburn Instruments' DBM-1 digital blanking interval meter measures horizontal and vertical blanking widths in the region between zero and 7.5 IRE units.

The unit is not intended to completely replace a waveform monitor and knowledgeable operator, but rather, to flag an operator's attention to a critical blanking problem.

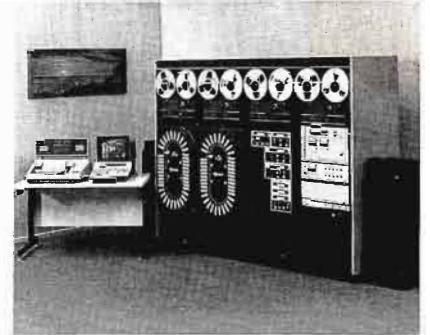
Potential uses of the meter include screening of incoming program and commercial material as well as monitoring of the outgoing program line.

Circle (301) on Reply Card

Automation system

Broadcast Electronics has introduced the control 16 microprocessor program automation system.

The system provides versatility in programming and time-oriented operations through two-way communication between the system and the operator. This is possible with five CRT displays, which tell the operator what the system is doing and what it will be doing in the future.



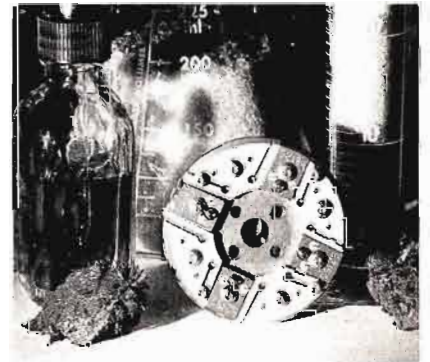
Control 16 can handle 16 program sources with a 3000 event memory. A 12/24-hour self-correcting digital clock system and 500 event compare time memory with 17 programmable functions are included.

A four-mixer stereo console, model 4S50, is also new. The 12 input console has cue switches on all faders.

Circle (302) on Reply Card

Video heads

The XM series of quadruplex video heads from Videomax features Megamite, a long-life tip material. The ferromagnetic spinel has been developed with the physics, chemistry, and operating parameters of broadcast video magnetic recording in mind.



The video tips are unaffected by varying tape chemistry, resistant to noise-generating microfractures, thermodynamically stable, and electromagnetically optimized for quad

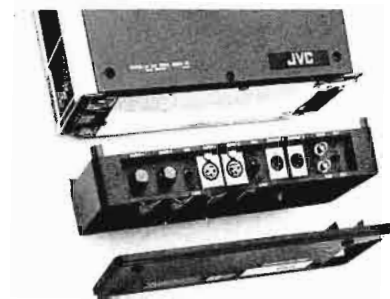
videotape recorders.

Circle (303) on Reply Card

Add-on A/V kit

An add-on audio/visual kit which adds broadcast features to standard 3/4-inch portable VTRs is available from Videomedia.

Model VMU-44 offers balanced audio/low impedance, XLR connectors, external sync and subcarrier, and RF connector acceptance.



The kit also features individual gain pots and a microphone/line switch for each audio channel.

The VMU-44 works with the JVC CR-4400, Hitachi SV-340 or Panasonic NV-9400 VTR and is installed with a soldering iron and a Phillips screwdriver.

Circle (304) on Reply Card

Headsets

Telex has announced a line of four headset models designed for use in high noise environments.



The HearDefender headset features foam-filled earcups and cushions which surround the ear to maximize noise attenuation. A wide

headband with a snap-on comfort cushion distributes the weight of the unit evenly over the head while allowing air flow to alleviate perspiration problems.

Model HD-1 is a protective ear device to attenuate high noise. Model HD-2 is a headphone for listening to intercom information. Model HD-3 is equipped with a noise cancelling dynamic microphone and model HD-4 features a superior electret noise cancelling microphone.

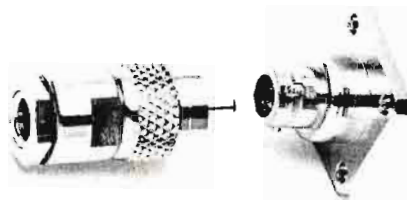
Circle (305) on Reply Card

Connectors

Trompeter Electronics has introduced a line of electro-optical connectors for single and bundle fiber communications.

Two types of all metal single channel connectors are fabricated; the threaded SMA and the quick disconnect bayonet TPS.

Both will accommodate single fibers as small as 125 μ m up to bundles as large as 1143 μ m in diameter.



The threaded SMA is a fragile connector, particularly for field use, and requires precision torquing in assembly.

The TPS is slightly larger and more rugged than the SMA, uses a three lug bayonet for stability, is positive locking and requires no torquing.

Circle (306) on Reply Card

Edit code generator

EECO's MTG-550 Series master time code generator generates standard SMPTE/EBU Edit Code formats used for electronic indexing of video and audio tapes.

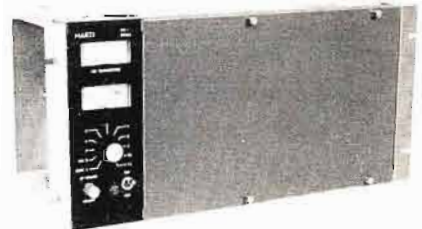
Standard features include: the ability to slave the generator to an external source of time code for add-on recording; encoding the aux-

continued on page 244

Broadcasters

GET UN-HOOKED FROM THE TELEPHONE COMPANY — PROVIDE YOUR OWN "PROGRAM LINES" WITH

MARTI STL



STL-8 TRANSMITTER • All Solid State • Direct FM Modulator • Modular Construction • Test Meter Built In • Proven Reliability in hundreds of installations • Unsurpassed for Dual Channel Stereo STL, Single Channel AM STL or Inter City Relay.

SPECIFICATIONS - STEREO

Stereo Cross Talk —65 DB
Noise —65 DB or less
Response ± 0.5 DB 30-15000 Hz.
Distortion Less than 0.5%

MARTI Electronics, Inc.
Box 661 • 1501 N. Main • Cleburne, TX 76031 • 817/645-9163

Circle (165) on Reply Card

Johnson FM SCA receiving equipment the finest that money can buy

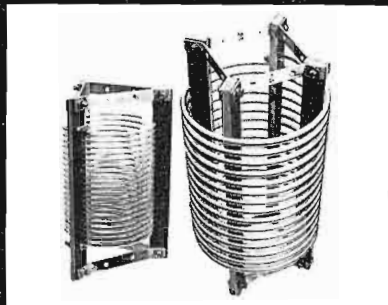


Write or call today for more information.

Johnson Electronics, Inc.
P.O. Box 7 Casselberry, Florida 32707
(305) 339-2111

Circle (166) on Reply Card 243

Don't Compromise...



when you purchase RF Components and Phasing Equipment.

For a Quotation on Custom-Designed Installations, call or write C.S.P.

- CONTACTORS
- FIXED COILS
- VARIABLE COILS
- RF COMPONENTS
- COMPLETE PHASING SYSTEMS

203 AIRPORT ROAD
DOYLESTOWN, PA 18901

C.S.P.

Inc. (215) 345-7386

Circle (167) on Reply Card

ELECTRO IMPULSE

Thanks You for Making Our Model DPTC-20KFM Dummy Load One of our Most Successful Products!



MODEL
DPTC-20KFM
Rated 25KW
DC-110MHz
VSWR 1.15:1

Load is Dry,
Forced Air Cooled,
Fully Interlocked and
**WARRANTED
FOR 25 MONTHS**

Our New General Catalog 890 is now available upon request covering:

- Dummy Loads ● Baluns ● Calorimeters
- Power Meters/Attenuators

**Electro
IMPULSE, INC.**

OUR 29th
YEAR OF
GROWTH

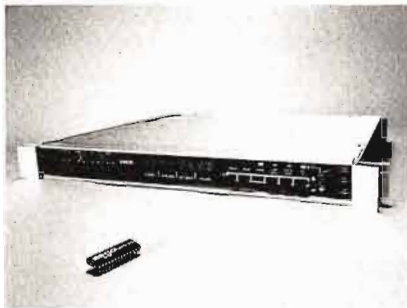
116 Chestnut St., Red Bank, N.J. 07701
Telephone: 201-741-0404

Circle (168) on Reply Card

New Products

continued from page 243

iliary binary word from four different sources; special status/alarm signals to alert the user to loss of time code, loss of video/sync as a



reference, loss of phase lock and momentary power loss with selectable internal audible alarm; and a hexadecimal display which allows selection of either binary word or edit code for display.

Circle (307) on Reply Card

Bandpass filters

Allen Avionics has announced a line of LC synthesized bandpass filters. These units offer a 40 dB to 3 dB bandwidth ratio of under 2.75, and a delay variation of less than 10% over the entire 3 dB passband.



Units can be manufactured with bandwidths of from 2% to 70% of their center frequencies over a frequency range from 1 kHz to 25 MHz.

Circle (308) on Reply Card

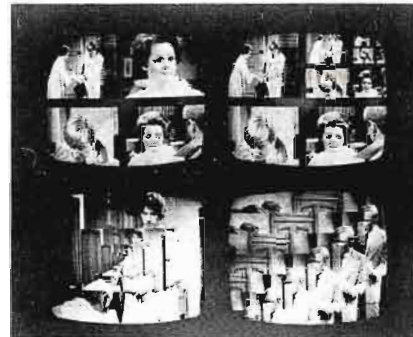
Visual effects

Available from RCA are visual effects for their digital video frame synchronizer.

Designated the TFS-121, the system locks automatically to the TV station sync and all non-synchronous signals to produce smooth intermix of remote and studio sources.

The picture freeze accessory, which allows the picture output of the synchronizer to be retained

frozen on the screen, includes an auto-freeze mode.



The picture compressor option, which allows the operator to reduce a full-size picture to one-fourth its original size, now includes quad freeze.

Circle (309) on Reply Card

Field service kit

A field service kit which can prevent electrostatic charge from damaging delicate electronic printed circuit boards during repair operations is available from 3M Company Static Control Systems.

The Velostat 8005 field service grounding kit provides a method of draining electrostatic charge from the field technician to ground before it can destroy sensitive board components.



The kit consists of one 10-mil Velostat Table Top, (24-inch square); one conductive wrist strap; and one ground cord.

The table top has storage pockets and can be rolled or folded to fit neatly in tool boxes.

Circle (310) on Reply Card

Recording console

Quantum Audio Labs has intro-

duced QM-8B, a 4-buss recording console with 8-track monitor and cue capability.

Each input line has solo, panning, three special effects sends, a 15 dB pad in the mic preamp and a three knob equalizer. Two frequencies are available on each knob along with an in/out switch.

The signal is routed through a plastic fader to four output assignment switches. The pan pot has an in/out control for left-right panning or straight buss assignments.

The output section includes buss trim controls, board master and a VU meter on each buss. The console's slew rate is greater than 10 volts per microsecond and distortion is .05% THD. Headroom at the output is 17 dB and the output is tailored for +4 dBm.

Circle (311) on Reply Card

Timer/counters series

A specially designed 05 high stability oscillator for the PM6620 series of Philips timer/counters has been introduced by Philips Test and



Measuring Instruments, which increases stability to less than 5×10^{-10} per 24 hours and 5×10^{-9} for the temperature range of 0 degrees C to 50 degrees C.

The series offers frequency ranges at 80, 520 and 1000 MHz. Options include battery, BCD output, IEEE interference, 19-inch rack mount, carrying case and IF display offset unit.

Special features include trigger hold-off, independent trigger selection for channels A and B of AC/DC coupling, slope and attenuation.

Circle (312) on Reply Card

Cadmium cells

A line of ultra high capacity nickel cadmium cells has been announced by the Electronic Components Division of Panasonic Company.

Packaged in standard Sub-C, C, and D sizes, these cells offer anywhere from 20% to 30% more capacity (ampere hours) than conventional cells of the same size.



The cells are available both as individual cells and also in batteries of required voltages.

Circle (313) on Reply Card

Diagnostic system

Pinzone Engineering now offers a Reflex/Command Diagnostic unit for the TCR-100 and the RCD-100. Its purpose is to assist in maintenance of the TCR by providing the operator with information that can be relayed to maintenance personnel.

By means of a 210 unit LED array, indicates the last completed step, the instantaneous status of the reflex/command logic, the logic conditions necessary for the next step to be achieved, and special indicators for singular fault condition.

Circle (314) on Reply Card

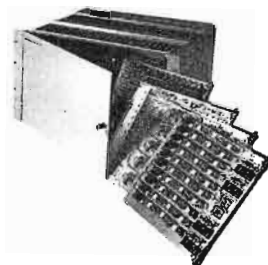
Recording studio console

Model 2008-RS recording studio console from Opamp Labs features a 16-track mixdown-monitor system.



Twenty input channels consist of
continued on page 246

Computer Controlled Switcher



SYSTEM 21 SWITCHING

- Route video, audio, data
- 10 x 10 to 1000 x 1000
- Matrix or trunking
- Battery-protected memory
- 100% preset - salvo
- RS-232 computer interface



DYNAIR

DYNAIR ELECTRONICS, INC.
5275 Market St., San Diego, Ca. 92114
Telephone: 714/263-7711
TWX: 910/335-2040

Circle (169) on Reply Card

YOUR best buy in
TURNABLES is:

Technics
by Panasonic

Your best deal for
BROADCASTING
EQUIPMENT is:

Val-Tronics

A complete line of: AM-FM Transmitters, all powers; All types of Microphones and Headphones; AM, FM, Stereo, SCA, Modulation, Antenna Monitors; All Types of Audio Consoles, Tape Cartridge Machines; AGC Amplifiers; ATS Systems; Limiters; STLs; FM Antennas; Tone Arms; Coaxial Cable; Audio Tape; Tape Cartridges; Turntables; Tubes, Recording Heads; Mixers; Preamplifiers; Tape Recorders; Remote Control Systems; RPUs; Reverb Systems; Speakers, Towers.

Val-Tronics Inc.
Penn Park Bld.
Pittston, PA 18640
(717) 655-5937
CALL COLLECT

Circle (170) on Reply Card



**Frequency
Devices
INC.**

ACTIVE FILTERS

Low Pass • High Pass
Band Pass • Band Reject
0.001 Hz to 50 KHz

FIXED FREQUENCY RESISTIVE TUNEABLE

F.D.I. also manufactures
Sinewave Oscillators, Tone Encoders,
Tone Detectors and other
Communications Products

Frequency Devices Inc.
25 Locust Street
Haverhill, Mass. 01830

(617) 374-0761/TWX 710-347-0314

Circle (171) on Reply Card

**CDE CORNELL-
DUBILIER**

Transmitting Mica Capacitors



**STOCK DELIVERY
ON MOST RATINGS**

**Amperex Vacuum
Capacitors**

**Plus Other Transmitter
Components and Accessories**

SURCOM ASSOCIATES

305 Wisconsin Avenue
Oceanside, California 92054
(714) 722-6162

Circle (172) on Reply Card

New Products

continued from page 245

mix slide pot, film type, with 90 dB of attenuation.

Standard features include: eight master pots; 16 stereo earphone pots; 16 mixdown concentric panning potentiometers; talkback and slate push buttons, microphone, gain controls; built-in five frequency oscillator; stereo record and monitor amplifiers; and external rack mounted power supplies.

Circle (315) on Reply Card

Monitor prompting system

Listec's Digivision Prompting System consists of a 12-inch professionally engineered monochrome monitor for below the lens positioning, complete with monitor, hood and semitransparent mirror (equivalent to 85% transmission).



The unit is encased in lightweight plastic molding. Total weight of the monitor, hood and mirror assembly is 22 pounds.

Circle (316) on Reply Card

Phono preamp

The BPA-100, a low-noise, transformerless, balanced-input circuit, designed by Logitek, allows use of a five-lead cartridge/tone arm combination in a balanced mode, with all the hum-rejection advantages characteristic of balanced lines.

Common mode rejection is more than 100 dB at 60 Hz, allowing the preamp to be installed in a convenient location without signal degradation due to nearby hum-radiating fields.

The BPA-100 is equipped with wire-capturing terminal blocks for fast installation without solder or connectors.

Circle (317) on Reply Card

Tool chest

Jensen Tools and Alloys has introduced a 5-drawer hand-crafted oak

tool chest.

Made of selected seasoned, kiln dried dark oak, the cabinet-type drawers are of tongue and groove construction and cushioned with green billiard table felt.



Drawer fronts, chest side and back are solid 1/2-inch oak. Center hasp, latches, drawer pulls and corner protectors are nicked steel.

Other features include a small triangular mirror mounted on the inside of the top lid, two elastic tool holders, a top till, a leatherette handle and two keys.

Circle (318) on Reply Card

Lettering machines

Three models of lettering machines from Kroy Industries include the Kroy 80 electric, the Kroy 61 electric, and the Kroy 61 manual.

Each machine produces KroyType, type on tape which is available in 18 type styles, in sizes from eight to 36 point.



Each typeface size is available on a separate disc, which is placed on the machine and dialed for letters, numbers and symbols.

A button causes colored dry ink to print on transparent or opaque tape. The tape has a firm paper backing which is removed before application.

Circle (319) on Reply Card

Correction window

Microtime has announced a super-wide correction window to assure correct vertical blanking from VTRs

used in ENG be always correct.

Operator inconsistency, lack of control over outside tapes, VTR misalignment and other reasons have caused numerous FCC complaints and citations for extra-wide V-blanking.

Microtime's super-wide window allows such wide blanking to be processed through its ± 12 line range, with the TBC output blanking per FCC specifications.

An additional feature is Auto-Trac II which centers the VTR output in the correction range of the wide-window.

Circle (320) on Reply Card

Video noise meter

A video noise meter that utilizes a new principle of noise measurement is available from Lenco.



Model VNM-428 is designed specifically for video signal-to-noise measurement requirements of TV studios, CATV installations and microwave system users where portability, simplicity of operation and accurate measurements are required.

The noise meter has a built-in calibrator that ensures accuracy of ± 0.5 dB throughout the range of 20 dB to 55 dB. The signal-to-noise ratio is calibrated to EIA standards and is shown on a large LED display.

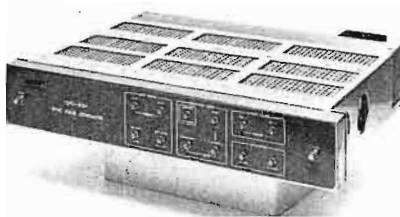
The meter may be used as a portable unit, or may be rack-mounted with an adaptor for side-by-side use with an oscilloscope.

Circle (321) on Reply Card

Sync pulse generator

Leitch Video Limited's SPG-102N digital sync generator features improved temperature stability and time base errors of less than 1 nsec. All pulse widths and timing relationships are adjustable.

The generator includes an automatic digital sync lock, switchable one or two line advance, selectable vertical blanking width of 19, 20 or 21 lines and a color frame ident pulse with choice of position.



Options include high stability master color standard 100 CS; frequency converter and resolver (for external Rubidium Standard); color black, bar & dot and NTSC encoded color bar signals.

Circle (322) on Reply Card

Remote control assist

IGM has announced the MARC VII (manual assist remote control) for control of production room elements in creation of commercials.

The unit will control seven audio sources, and can manage as many as 84 tracks on multi-track recorders.



Consisting of a simple keyboard and a CRT, the MARC VII includes a built-in elapsed time read-out, enabling the operator to add overlaps and fades and to do multiple starts and special effects at precisely controlled moments.

Circle (323) on Reply Card

Program automation system

Harris Corporation's System 90 is a complete microcomputer controlled program automation system.

Several options, including announcer assist, are available. A newly expanded memory, along with repetitive day and hour entries,

continued on page 248

Off-air TV Demodulator



RX-4B

- High-quality performance
- Optional plug-in front ends VHF, UHF, crystal control
- Optional chopper for video modulation monitoring or closed-loop VIR operation
- Available for systems B, M, N
- For Broadcast, CATV, CCTV use

DYNAIR

DYNAIR ELECTRONICS, INC.
5275 Market St., San Diego, Ca. 92114
Telephone: 714/263-7711
TWX: 910/335-2040

Circle (173) on Reply Card

QUALITY TALKS FOR WCOV

Montgomery, Alabama



Continental's new 5/10 kW AM transmitter is setting records for acceptance. It has performance and efficiency, with the cleanest sound around. Listen to Continental: quality talks.

Write for brochure: Continental Electronics
Mfg. Co. Box 270879 Dallas, Texas 75227
(214) 381-7161

Continental Co.
Electronics

Circle (174) on Reply Card

**IF YOU NEED
ATTENUATORS
YOU NEED THIS
CATALOG!**



**AUDIO AND RF ATTENUATORS
TO MEET ANY REQUIREMENT**

Here in one compact and informative 24 page booklet is all the data you need to select a Precision Audio and RF Attenuator for your application.

Reference Charts, Circuit Diagrams, Types and Uses, Current and Voltage Ratio Tables, Ratings, Etc., make this a handy and invaluable reference.

SEND FOR YOUR FREE COPY TODAY.

TECH LABS, INC.

Bergen & Edsall Blvds.
Palisades Park, N.J. 07650
Tel.: (201) 944-2221

Circle (175) on Reply Card

New Products

continued from page 247

allows greater programming flexibility and saves operator time.

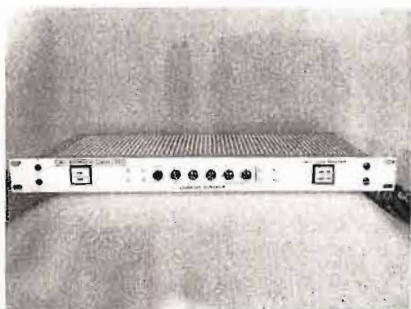


The 7-day CRT display, used with TEC model 70 terminal incorporates dual intensity to highlight inserted instructions and the commercial file.

Circle (324) on Reply Card

Reader-character unit

Gray Engineering Laboratories has announced a reader-character unit having four isolated character generators in conjunction with a single SMPTE time code reader.



Model DR-115 offers four isolated 75-ohm video loop inputs each with a separate video output to monitor or record.

Controls are provided to size and position the characters on the monitor, control the brightness, and insert a "box" around the characters.

Circle (325) on Reply Card

Elliptical waveguide

The Andrew heliax elliptical waveguides, EW52 and EWP52, are optimized for lowest possible attenuation in the 5.925-6.425 GHz band.

Assemblies of the low-VSWR EWP52 waveguide and tunable con-

nectors are recommended for high channel capacity long-haul systems.

The EW52 waveguide is recommended for short- and medium-haul radio relay systems with low and medium channel densities and medium-haul color television microwave systems.



The heliax waveguide is formed of corrugated high conductivity copper tubing and is provided with a black polyethylene jacket for protection. It is available in long continuous lengths which can be cut to specified sizes.

Circle (326) on Reply Card

25 Hz filter

Dyma Engineering has developed an active 25 Hz filter that eliminates cue tones from program material.



It is a sharp notch filter with at least 45 dB of attenuation at 25 Hz, and less than 1.2 dB attenuation at 50 Hz.

It is available in mono and stereo.

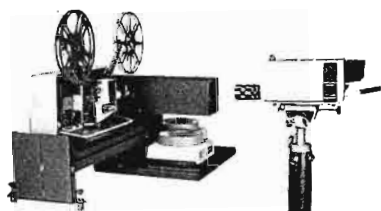
Circle (327) on Reply Card

Signal-sampling element

Dielectric Communications has in-

BUHL

**A FILM CHAIN
WITHOUT
A DEDICATED
CAMERA**



**MOBILE
MULTIPLEXER!**

Save the high cost of an extra color camera. Studio camera adapts to film chain use in seconds.

Use standard TV zoom lens

Input: Two 35mm slide projectors in dissolve mode plus 16mm or Super-8

Screen used for previewing is easily removed for conventional field lens operation

Mobile Multiplexer saves studio space. At \$975.00

outperforms units at twice the price!

BUHL OPTICAL
1009 Beech Avenue
Pittsburgh, Pa. 15233
Phone: 412 321-0076

BUHL

roduced the model 7004 Sniffer, a non-directional, adjustable-amplitude, RF signal-sampling element, designed to permit convenient sampling of a high-power RF signal for spectrum analysis, frequency counting or oscilloscope display.



The unit is inserted into the Dielectric model 1000 RF wattmeter, or into an auxiliary line section designed for use with the 7004. It may also be used with other RF wattmeter and line sections.

The Sniffer exhibits low VSWR and insertion loss, and can be used over the 2-1000 MHz range at power levels up to 1000 watts. RF output sample is adjustable ± 8 dB around a nominal -43 dB.

Circle (328) on Reply Card

Phono cartridges

Audio-Technica's top-of-the-line stereo phone cartridges, designated the AT15SS and AT20SS, employ three refinements in the stylus and its assembly:



Audio-Technica Bull Head® Stereo Phono Cartridge with QUARTZ Stylus and Stylus Tip Cantilever



MODEL AT15SS



MODEL AT20SS

The stylus cantilever is made of beryllium, the diamond stylus Shibata tip contacts a wider up-and-down area of the record groove

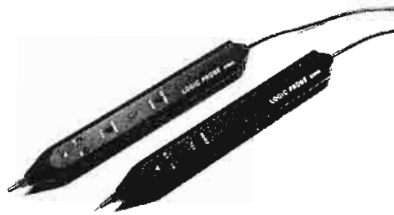
than elliptical styli, and the Shibata Plus stylus is a square-shanked, nude-mounted diamond that is 36% narrower than its predecessor.

Circle (329) on Reply Card

Logic test probes

Alco Electronic Products logic test probes provide dual LED indication of logic states for both TTL/DTL and CMOS circuits, with separate LEDs indicating high and low logic levels.

Model 3100A has a pulse stretcher function to capture single-shot pulses as short as 30 nanoseconds, and a memory function for latch storage of similar pulses.



Model 3200A is a similar instrument, but without memory and pulse stretching features.

Both models have clips for connection to the power source and ground system of the circuit under test and high impedance data inputs to minimize loading effects.

Circle (330) on Reply Card

Remote start platform

The Utopia I Remote Start Platform from Grinnan Fixture Company is custom built for a board in the



same size as the bottom of a console. Remote starts are placed directly under the pots.

Circle (331) on Reply Card

continued on page 250

Remote Control Patch Panel



SERIES 10 SWITCHING

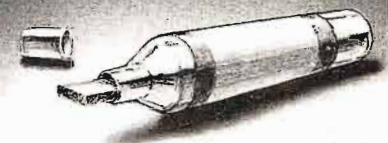
- Signal patching with solid-state reliability
- 10-in by 10-out matrix
- Video, audio, time-code switching
- Remote control via a single coax
- Battery-protected memory and tally contacts standard
- Vertical-interval video switching

DYNAIR

DYNAIR ELECTRONICS, INC.
5275 Market St., San Diego, Ca. 92114
Telephone: 714/263-7711
TWX: 910/335-2040

Circle (177) on Reply Card

This titler costs less than a K50.



- BUT THE K50 HAS 4 PAGES OF MEMORY.

And that's not all it has. If you want to write on your screen, but you don't have a lot to spend, Do it the right way. Do it with a Knox K50 Titler.




It's still a Knox. And it's still \$995.



16021 Industrial Drive, Gaithersburg, Md. 20760
(301)840-1930

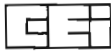
Circle (178) on Reply Card



Guess who just became your single source for quality transmitting tubes including EIMAC, RCA, EEV, GE and AMPEREX?

That's right. CEI. One of the oldest and most respected names in tubes is now guaranteeing you Fastest Deliveries. All tubes are in stock & our prices are unbeatable.


CALL TOLL-FREE
(800) 221-6844 (Except N.Y., Hawaii, & Alaska)
for lowest prices, immediate deliveries.



CALVERT ELECTRONICS, INC.
220 East 23 St. New York, N.Y. 10010 (212) 481-5300

Circle (179) on Reply Card

Fantastic DISCOUNTS ON CAMERA AND TRANSMITTING TUBES



NEW and WARRANTED CAMERA TUBES
Image Orthicons • Lead Oxides • Vidicons • Saticons • Silicon Diodes • Newicons

TRANSMITTING TUBES
TV-AM-FM Translator • Power • Final • Driver • Exiter

MICROWAVE TUBES

OTHER SPECIAL BUYS
Monitors • CRT's • Viewfinders • Lenses • Photo Multipliers • IC's • Semiconductors • Quartz Lamps

EIMAC • RCA • EEV • AMPEREX • MACHLETT
GE • VARIAN • SYLVANIA • PHILLIPS

Temtron Electronics Ltd.
138-69 FRANCIS LEWIS BLVD.
ROSEDALE, NEW YORK • 11422
(212) 978-5896
TOLL FREE 800-221-8376

PRICES AND CATALOG ON REQUEST

250

Circle (180) on Reply Card

New Products

continued from page 249

Tape duplicator

Garner Industries has introduced the 1056 High Speed Professional Tape Duplicator.

It features a common precision-ground capstan which drives the master and five slaves at a constant speed. The capstan bearing surfaces are ground, diamond lapped and mounted in neoprene, eliminating metal-to-metal contact for smooth performance and increased durability.



The main drive control lever mechanically and electronically controls all transport functions.

Circle (332) on Reply Card

Zoom lens system

Angenieux now offers accessories that form the 15X system with full production on both the 15 x 9.5, 9.5-142mm, f/1.8 for 3/8-inch video cameras and the 15 x 10, 10-150mm, f/2 for 16mm cine cameras.

The retrozoom, a front mounted wide-angle attachment, changes the 15 x 10 to a very wide angle zoom, 7.5-112mm. The 15 x 9.5 is changed to 7-105mm. With this attachment, both lenses now have a minimum object field of .08 x 1-inch.



The front mounted 1.66x tele-attachment enables both the 15 x 9.5 and 15 x 10 to be used where extreme telephoto lenses would be required.

A 1.6X rear mounted range extender is used to change the focal length to a maximum of 225mm. A

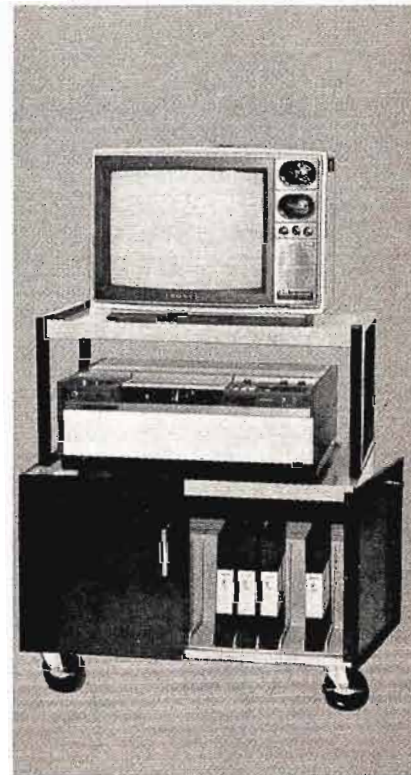
remote control kit allows the video camera to be used in a studio mode.

Circle (333) on Reply Card

Video centers

The Winstead Corporation offers three 3/4-inch compact portable units to organize video equipment for fast convenient use.

Model A/V-54 is the standard-height video center, with an upper shelf accommodating a 25-inch monitor.



Model A/V-34, the low-profile video center, is designed for smaller groups and individual use. The monitor shelf is set back slightly to permit easier access to the VTR shelf.

Model A/V-37W, the executive video center, is made of walnut wood-grain laminate and holds any 3/4-inch VTR machine and monitor of up to 25-inch size.

All models feature smooth rolling 4-inch industrial ball bearing casters and are finished in beige and black enamel.

Circle (334) on Reply Card

Switch panel

Farion Electric has introduced an auxiliary transponder switch panel for use in satellite receive-only earth stations.

BROADCAST ENGINEERING

**"YOU DON'T
HAVE TO CLIMB
A MOUNTAIN
TO GAIN
ENLIGHTENMENT."**



Just send away for the Consumer Information Catalog and a key to enlightenment will appear in your mailbox.


The Consumer Information Catalog is put out by the Federal Government. And it lists over 200 of their booklets that you can send away for. Most are free. And they can help you with things like how to buy a home, how to grow vegetables, how to deal with headaches, simple plumbing repairs and many other everyday and not-so-everyday problems.

So if you wish to learn about the mystic sensibilities of the wayward ancients, put on your climbing gear.

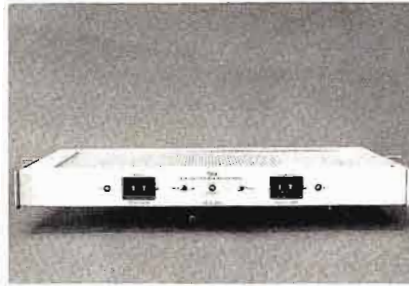
But, if you wish to know about how to fix a leaky faucet, send for the catalog. Write: Consumer Information Center, Dept. A, Pueblo, Colorado 81009.

Remember, it's free. Which is only right. After all, the first step towards enlightenment shouldn't enlighten your pocketbook.

**THE CONSUMER
INFORMATION CATALOG**
A catalog of over 200 helpful publications.

 General Services Administration
Consumer Information Center

The switch panel provides remote selection of preprogrammed satellite transponder channels.



The panel controls the frequency of an earth station receiver by providing one of two preprogrammed BCD codes to the remote input of the receiver's frequency synthesized local oscillator.

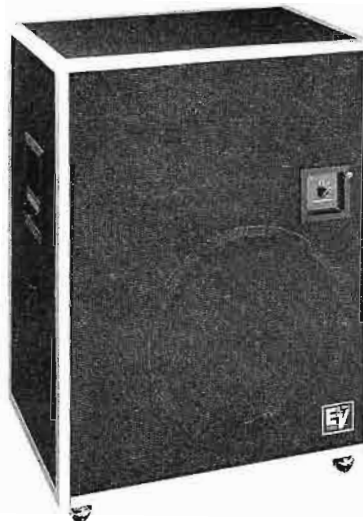
Power requirements are -21 VDC, with 85 mA typical and 120 mA maximum.

Circle (335) on Reply Card

Speaker system

A keyboard speaker system, designated the S18-3, is offered by Electro-Voice.

The three-way system is designed for the wide range frequency reproduction likely to be encountered in reproducing synthesizer and keyboard music.



continued on page 252

**Color Terminal
Equipment**



SERIES 5900

- Broadcast specifications
- Six-output video, pulse, audio DA's
- Six-output subcarrier and pulse delay DA's
- Color sync generator with optional genlock
- Black burst generator
- Remote control video and audio switching

 **DYNAIR**

DYNAIR ELECTRONICS, INC.
5275 Market St., San Diego, Ca. 92114
Telephone: 714/263-7711
TWX: 910/335-2040

Circle (181) on Reply Card

**Digital Air
Temperature**
in Fahrenheit and Celsius



Indoor & Outdoor Sensors
Walnut Finish Console
Selector for F° & C°
Multi-Sensor Selector
Remote to Any Distance
Slaves Available

Send for Spec. Sheet, Model 309

Also, a complete line of Weather
Instruments, Recorders &
Controllers

Department B

Texas Telephone
Electronics, Inc. (214)
P. O. Box 7225 631-2490
Dallas, TX 75209

Circle (182) on Reply Card

251

Does Your AM Tuner Sound Like Quality FM?



Our Dymek AM5 Does!

"Listening to a local classical-music station that carries the same programs on its AM and FM outlets, switching between the audio-output signals from an FM tuner (set to mono) and the AM 5, we found that the differences were very slight, actually comparable to those we have sometimes heard between different FM tuners. Much of the time no difference at all could be heard." . . . JULIAN HIRSCH

Reprinted with permission, *Stereo Review*, August 1976

Factory Direct. Money Back Guarantee. Rent/Own Plan. Call or write for complete specs and details on the remarkable AM 5, its companion piece the DA 5 antenna, and other Dymek Products. Call toll free:

800/854-7769

California 800/472-1783



McKay Dymek Co.
111 S. College Ave., PO Box 5000
Claremont CA 91711

Circle (183) on Reply Card

Let's help each other.



The American Red Cross

New Products

continued from page 251

The EVM18B used in the S18-3 maintains full, low-distortion output to 40 Hz. Protected by the high frequency auto limiting circuit, the S18-3 will accept 100 watts in, while putting out 116 dB at 4 feet.

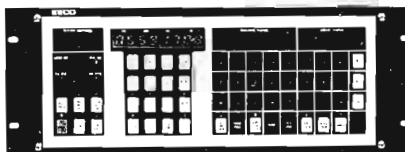
The S18-3 is bi-ampable with a tweeter and midrange level control which allows tailoring of the high end to the music or instrument being reproduced.

Circle (336) on Reply Card

Tape synchronizer

EECO's microprocessor-based MQS-100 series synchronizing system can cue and synchronize any three mag tape transports including video, audio and mag film simultaneously.

The SMPTE/EBU edit code, used for indexing of the tapes, need not be identical and tapes with drop-frame and non-drop-frame formats can be intermixed.



EECO MQS-100 Synchronizer

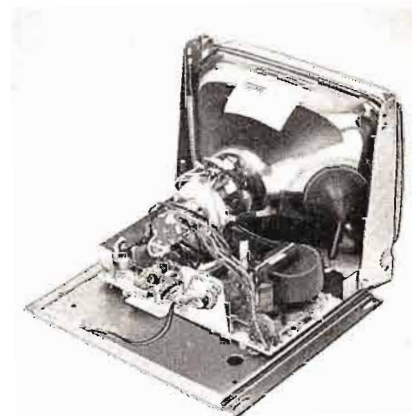
System modes include high speed search and cue, follow the leader, or chase mode, synchronized play back, fast and slow re-synchroniza-

tion and roll-back with automatic re-synchronization.

Circle (337) on Reply Card

Data monitors

Electrohome Limited has introduced a V15 series of solid-state data display monitors designed for incorporation with CRT terminals displaying an 80 x 24 (1920) character format.



A modular design permits user oriented custom packaging options which include 9- or 12-inch high resolution CRTs with selectable phosphors and polished or anti-glare screens.

V15 series units are available with as little as TTL drive deflection circuitry and tube, or a complete chassis mounted tilt selectable display containing integral power supply, composite video input and deflection circuitry.

Circle (338) on Reply Card

SMPTE Edit Code Generator and Reader,

Edit Memory Control, Time Code/Computer Interface, Character Generator, Syndicated Tape Programmer, Delay Program Controller . . .



All Kaitronics equipment are designed for easy integration into your existing editing system, syndicated programming, news, delay program recording and other station operations.

ALWAYS QUALITY PRODUCTS AT REASONABLE PRICES!

(We've been doing that for over a decade.)

For further information, call Paul Tarrodaychik, (408) 739-4262

KAITRONICS 1540 Gilbreth Road, Burlingame, CA 94010

Circle (184) on Reply Card

Tel: (415) 697-9102

BROADCAST ENGINEERING

Transmission system

The Schaffer-Vega-Diversity System from the Ken Schaffer Group is a wireless (RF) transmission system designed to replace the audio cable between an instrument and its amplifier (or between the instrument and sound reinforcement system).

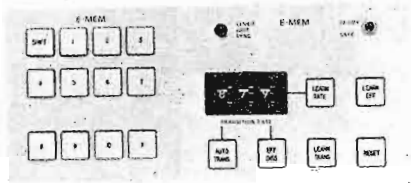
Model X10 transmitter has an audio input of 50,000 ohms impedance and an external audio level trimmer to adjust sensitivity.

Options include RF preamp for long antenna lines, 1:4 antenna splitter, multi-receiver mainframe with built-in antenna splitters and custom installation of the X10 inside the instrument.

Circle (339) on Reply Card

Production switcher

Grass Valley Group's Effects Memory System (E-MEM) uses a microcomputer which follows each movement an operator makes on the switcher.



Features include: an effects memory which stores all input cross-points, wipe patterns, effects controls and all 15 analog channels in each register; auto transition present rate at 7-999 TV frames on a three-digit thumbwheel and error indication for overload.

Circle (340) on Reply Card

Frequency counter

A communications-type universal counter with a multi-stage pin diode attenuated AGC high frequency input channel (B) is offered by Philips Test and Measuring Instruments.



The instrument, PM 6616, optimizes triggering on RF signals up to 1.3 GHz, and on LF signals up to 80 MHz.

Rated at 10 mV sensitivity, the frequency counter offers a maximum degree of overload protection and noise immunity.

Circle (341) on Reply Card

Communications receiver

McKay Dymek Company announces the DR55 general coverage communications receiver.

High level RF front end design and digital phase locked loop tuning

continued on page 254

Switch to a better idea



Dual-channel tape reproduce amplifier for studio recording and broadcast automation. 3-speed EQ; lowest residual noise. Works with virtually all reproduce heads and transports.

Inovonics' Tape Reproduce Amplifier

Model 376 - \$550

Inovonics Inc.

503-B Vandell Way
Campbell, CA 95008
(408) 374-8300



Circle (185) on Reply Card

Talk is cheap.

Here are some of the actions your company can take to prevent the suffering caused by poor parenting patterns and child abuse.

We want to stop the hurt.

- We are enclosing a tax-deductible donation in the name of our company.
- We want to help. Please call our company and tell us what you're doing to stop the hurt of child abuse in our community.
- We will plan a day for employees' children to visit our place of work to learn what we do and why.

prevent child abuse.
write: Box 2866, Olathe, MO 64669
National Committee for Prevention of Child Abuse



The Good Neighbor is you. Belong.

Red Cross.

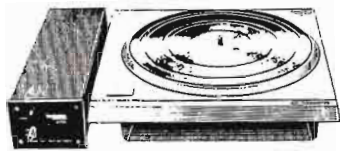


A Public Service of This Magazine & The Advertising Council

Ad Council A Public Service of This Magazine & The Advertising Council

WE'RE THE BETTER SOURCE

FOR ALL YOUR PROFESSIONAL AUDIO NEEDS.



Technics
Professional Series



With more than 150 lines in stock and on display, we sell and service everything from replacement styli to complete studio packages, at the lowest prices you'll find anywhere! AKG, AMPEX, ASHLY AUDIO, BEYER, BGW, CETEC/GAUSS, COMMUNITY, DBX, E.V., EMILAR, M.X.R., MICROTRAK, RUSSCO, SENNHEISER, SHURE, STANTON, SOUND CRAFT, SOUNDWORKSHOP, TAPCO AND TECHNICS are just some of our many fine lines. For more information, call or write us...today!



75 North Beacon Street (Route 20)
Watertown, Ma. 02172 • Tel.: (617) 926-6100

Circle (187) on Reply Card

TRANSLATORS

VHF - TV

FM

UHF TV

SOLAR POWERED

MICROWAVE FED

SATELLITE FED

ALSO REPAIR PARTS AND UP DATING KITS FOR ALL ADLER, LITTON AND KEITH ANDERSON TRANSLATORS

Television Technology Corporation

5970 West 60th Avenue • Arvada, Colorado 80003
303-423-1652 / TWX 910-938-0396

50% OFF

G.E., Sylvania & Norelco

STAGE, STUDIO & PROJECTOR LAMPS

52% off on 48 or more lamps.

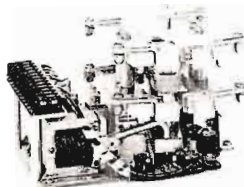
All transportation prepaid on \$100.000 or more net orders. Your satisfaction guaranteed. Order today, or write for Sitler's complete price sheet!

Sitler's SUPPLIES, INC.

702 E. Washington St., P.O. Box 10-A
Washington, Iowa 52353 Ph. 319-653-2123

Circle (188) on Reply Card

Geleco Electronics, Inc.



Now in U.S.A.

Address: 1051 Clinton St.
Buffalo, N.Y. 14206

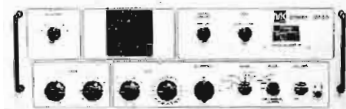
PH. (416) 421-5631

Circle (189) on Reply Card

New Products

continued from page 253

allow quick frequency changes.



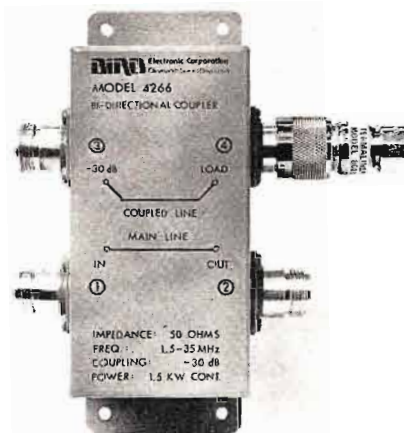
The unit has many applications in the commercial, governmental and marine areas including WWV monitors for time and frequency calibration, back up service for main receivers and point to point communications.

Circle (342) on Reply Card

HF coupler

The first in a series of high power couplers by Bird Electronic Corporation is model 4266.

High power, 4½ octave band width and coupling flatness are features of the bi-directional coupler.



It operates over the frequency range of 1.5-35 MHz at 30 dB below main line signal with a maximum deviation of $\pm 1/4$ dB (1/10 typical).

The coupler is symmetrical with a minimum directivity of 20 dB in either direction (25-30 dB is typical).

Circle (343) on Reply Card

ARA SERVICES • ALLEGHENY LUDLUM • ALL STATE INSURANCE • AMERICAN STANDARD • AMERICAN TELEPHONE & TELEGRAPH • THE ANDERSONS • ARLEN REALTY & DEVELOPMENT CORP. • ARMCO STEEL • AVCO CORP. • D. H. BALDWIN CO. • BANKAMERICA • BETHLEHEM STEEL • BOZELL & JACOBS INTERNATIONAL • BURLINGTON NORTHERN • CINCINNATI MILACRON • CONTINENTAL GROUP • DAYTON HUDSON CORP. • DRESSER INDUSTRIES • EASCO CORP. • EAGLE-PICHER INDUSTRIES • EATON CORP. • EMERY INDUSTRIES • EQUITABLE LIFE ASSURANCE SOCIETY OF THE UNITED STATES • FEDERATED DEPARTMENT STORES • GAMBLE-SKOGMO • GENERAL AMERICAN LIFE INSURANCE • GENERAL DYNAMICS • GENERAL MILLS • GENERAL TELEPHONE & ELECTRONICS CORP. • GOODYEAR TIRE & RUBBER • HEWLETT-PACKARD CO. • HOBART CORP. • IBM CORP. • INTERNATIONAL HARVESTER • INTERNATIONAL MULTIFOODS • INTERNATIONAL PAPER • JEWEL COMPANIES • JOHNSON & JOHNSON • KROGER CO. • KRAFT, INC. • LEVI STRAUSS • MONTGOMERY WARD • MONSANTO • NCNB CORP. • NCR CORP. • NORDSTROM, INC. • NORTHWESTERN NATIONAL LIFE INSURANCE • PACCAR, INC. • PENN MUTUAL LIFE INSURANCE • PENNEY, J. C. • PENNWALT CORP. • PILLSBURY • PROCTER & GAMBLE • PROTECTIVE LIFE INSURANCE • QUAKER OATS • RALSTON PURINA • RAYTHEON • REXNORD, INC. • ROHM & HAAS CO. • SEARS, ROEBUCK AND CO. • STANDARD OIL CO. OF CALIFORNIA • ST. LOUIS-SAN FRANCISCO RAILWAY • TEXAS INSTRUMENTS • TEXTRON • TORO CO. • XEROX CORP. • ZALE CORP. • ZENITH

Why do these corporations and so many others support the United Way?

Because in America, many basic human services are still handled in the private sector. And United Way gets the job done efficiently through its businesslike volunteer organization.

Thanks to you,
it works.
for all of us.



United Way

Ad Council A Public Service of This Magazine & The Advertising Council

Time code reader

Skotel model TCR-80 time code reader includes many features that make it a flexible production tool for producing television programs and commercials.



Standard features include: reading and display of time and user date at search speeds from hand turn reel speeds to more than 40 times play speed, a wide band preamplifier to read time code at fast and hand turn reel speeds, drop frame indicator, detection and bypass of code errors, automatic selection of record bias filter, 7 segment LED displays with contrast enhancing filter, selecting and holding in memory an edit point code without stopping the machine, and holding in memory the last address when the machine stops.

Circle (344) on Reply Card

Frame synchronizer

The FS-15 FE by the NEC Broadcast Equipment Division is designed to eliminate the common, ENG-related occurrence of expanding blanking.

The FS-15 FE automatically expands the incoming signal both vertically and horizontally as it is digitized. Frame synchronization also takes place at the same time.

Expansion increments of 1% to 7% may be selected for accurate video versus blanking adjustment.

Circle (345) on Reply Card

Character generator

Knox Video Products is offering model K128/MOD16 character generator which features a 16-page internal memory, multifonts (three uppercase, two lower), a character resolution of 1536 elements and a 3-position title window.

In addition, it has a dual channel
continued on page 256

Switch to a better idea



The leader in features, performance, and reliability in replacement recorder electronics. 3-speed EQ; distortion-reducing circuits; remote control. Compatible with most transports.

Inovonics' Magnetic Recorder Electronics

Model 375 - \$690

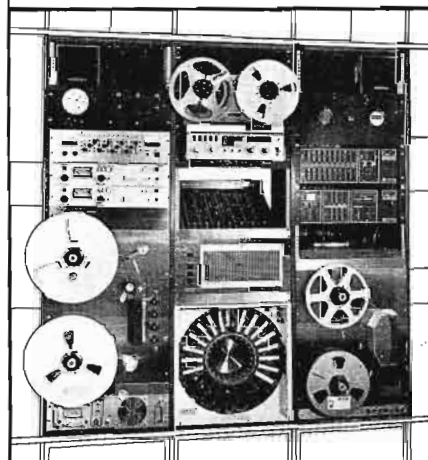
Inovonics Inc.

503-B Vandell Way
Campbell, CA 95008
(408) 374-8300



Circle (190) on Reply Card

For the professionals in sound



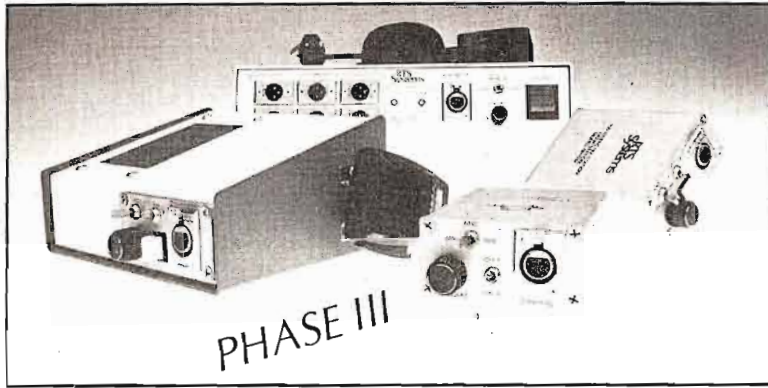
VIF has complete automation systems, plus a wide range of audio equipment, high quality components, readily available spare parts, and a full line of accessories. Professional sound equipment for the professionals in sound.

VIF INTERNATIONAL®
P.O. Box 1555
Mountain View, CA 94042
(408) 739-9740

Visit our "Display Vehicle" at NAB '78.

Circle (191) on Reply Card

THE SUPER SYSTEM



RTS Systems introduces an innovative new intercom system for teleproduction communications in studio and field. With *Super System Phase III*, we've incorporated a number of advances which mark a significant increase in product versatility.

Our new design features the portability of 12 volt battery power and the convenience of dry-line operation. The system can be arranged with up to 50 various user stations on line, and may be coupled to existing communications lines using our new RTS interface devices.

Phase III offers impressive capabilities like powerful headphone amplification, two (or more) channel operation, microphone level limiting, and stable sidetone level. The new units are handsomely packaged and completely field serviceable.

With increased flexibility, improved circuitry, and greater reliability, our *Super System* represents a new development in meeting the demands of modern teleproduction. For additional information, contact RTS Systems, Inc.

RTS Systems INC. 4167 FAIR AVE., NORTH HOLLYWOOD, CA 91602 (213) 980-0511

Circle (192) on Reply Card

YES

NOW TCR-100 MAINTENANCE IS EASIER! THE RCD-100 SUPPLIES YOU WITH ALL THE VITAL INFORMATION YOU NEED TO QUICKLY DIAGNOSE THE REFLEX/COMMAND LOGIC SYSTEMS OF YOUR TCR-100.

- MONITORS REFLEX/COMMAND LOGIC STATUS WITH AN ARRAY OF OVER 210 LEDS
- INSTALLS QUICKLY AND EASILY WITH NO WIRE-WRAPPING.
- IMPORTANT STORE FEATURE • CATCHES INTERMITTENTS THE FIRST TIME.
- THE RCD-100 WILL SAVE YOU TIME AND MONEY.

PINZONE COMMUNICATIONS PRODUCTS, INC. • (304) 296-4493 • (216) 338-5715
10142 FAIRMOUNT ROAD • NEWBURY, OHIO 44065

MANUFACTURER OF THE TCA-100 MONITOR/ALERT FOR THE TCR-100 IN USE IN OVER 70 MARKETS. ALERTS TO ANY CUE-UP OR REJECT MALFUNCTION, \$212.50. AND THE PE-100 PLAY-EDIT ACCESSORY FOR ON-AIR TIME-EDITING OF BACK-TO-BACK NEWS STORIES, \$49.50.

Circle (193) on Reply Card

New Products

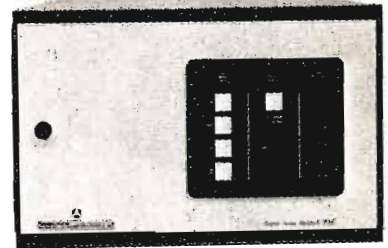
continued from page 255

output (edit and program) and automatic centering. The MOD16 also has expandable line length, italic mode, built-in mixer and RS232 interface.

Circle (346) on Reply Card

Noise reducer

An image enhancer and color corrector are optional plug-in features of the digital noise reducer offered by Thomson-CSF Laboratories.



The image enhancer features combed H and crispening, vertical and horizontal enhancement, dynamic black or white detail clipping, selectable in or out of system operation and luminance/chrominance timing.

The color corrector features instant painting without adjustment, consistent colorimetry for outdoor events, color films balancing, VTR, cameras, and selectable in or out of system operation.

Circle (347) on Reply Card

Micro camera

The Hitachi HV-9017 (NTSC or PAL version) is a single-tube, micro color camera designed for medical

R-MOD for Your VTR

Still the industry's MOST IMPROVED

available

VIDEO TAPE RECORDER

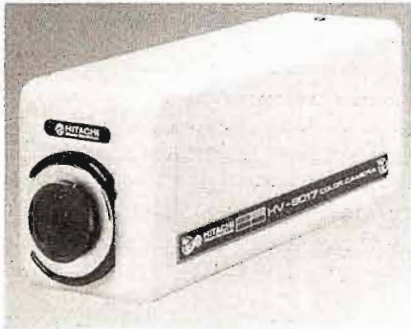
VR-1200	TR-22
VR-2000	TR-70
AVR-2	TR-600

- Faster and gentler shuttling
- Faster lockup, consistently
- Auto-Cue for exact cueing
- Auto-Edit for simple edits
- Prolongs head and tape life

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

Circle (194) on Reply Card

applications and research work by combining a microscope or a surgical operation microscope.



The 1-inch FIC (filter-integrated color) vidicon incorporates a color filter adopting a frequency separation multiplex system, ensuring sensitivity.

The camera is small scaled and light weight enabling direct mounting of the camera head to a microscope.

Circle (348) on Reply Card

Digital video recording system

Ampex is introducing an advanced digital video recording system that stores thousands of images and provides complete control in varying playback speed from still frame to normal play.

The ESS-2 system is a digital video alternative to film slide systems; in addition, it provides slow-motion production capabilities. It uses computer-type disc recording techniques (instead of analog methods) to offer variable record and playback.

The ESS-2 can be used to vary real time action sequences while
continued on page 258

PERFECT TIMING

Low Cost ESE Right On Timers



ES-300: Four digit incandescent display, one hundred minute timer (99:59) with six controls: Count Up, Count Down, Min-Set, Sec-Set, Stop, Reset. **\$187.00**

ES-301: Identical to ES-300 except with planar, gas discharge display. **\$206.00**

ES-302: Equivalent to ES-301 plus fast-set lever wheel programming. **\$264.00**

ES-400: Three digit ten minute timer (9:59) with Start, Stop, Reset. **\$109.00**

ES-510: Four digit sixty minute timer (59:59) with Start, Stop, Reset. **\$139.00**

ES-500: Six digit, twelve hour combination clock/timer with five controls: Start, Stop, Reset, Fast Advance, Slow Advance. **\$166.00**

STANDARD OPTIONS AVAILABLE: Kit; Slave; BCD Output; Remote Connector; 6' Remote Cable and Pushbutton Set; 220V A.C., 50Hz; 9" or 19" Front Panel 3½" high; 3 Wire Cord and Molded Plug. Tenths of seconds are available on all timers except the ES-500. Relay Contact Closure at Zero and/or Stop at Zero available on ES-300, 301, and 302. Crystal Timebase available for ES-500. Custom options and special orders available.



WRITE, WIRE OR CALL TODAY

505½ Centinela Avenue • Inglewood, California 90302 • (213) 674-3021

Circle (195) on Reply Card

MAKE OUR MONITOR YOUR MONITOR

Our MONITOR two-way speaker system provides a flat response, covers the full audio spectrum, and is designed to enhance all types of music.



CONTACT YOUR DEALER OR **ALC**

Auernheimer Laboratories & Company
4561 E. Florence Avenue - Fresno, CA 93725

Circle (196) on Reply Card



Still the industry's MOST WANTED

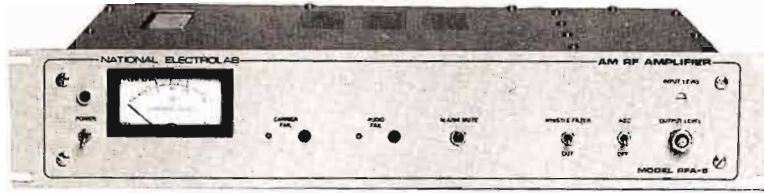
VIDEO TAPE TIMER

- Bright LED display
- More accurate tape time
- Optional remote display
- Hold button freezes display
- Available for all 2-inch VTRs



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

Set it and forget it



The NEW RFA-5 AM RF Amplifier

- 30dB AGC Range • Signal Strength Meter • Three RF Outputs for monitors, frequency counter and oscilloscope • Optional 600 ohm Balanced Audio Output and Carrier/Audio-Fail Alarms.

"Set it and forget it"—that's the comment most often heard from AM station engineers who have installed a National Electrolab AM RF Amplifier. The new RFA-5 is even better than the previous RFA-4. AGC is now standard, and a built-in carrier level meter makes setup easy. As well as driving most modulation monitors, the RFA-5 also delivers a low level oscilloscope output and a clipped/limited output for a standard frequency counter. Four double-tuned selective stages in the preamp, combined with a MOS-FET front end, provide outstanding performance in frequency-congested areas. Over 350 radio stations in Canada and the U.S.A. are presently using National Electrolab RF amplifiers. Try one yourself—and forget it. *For complete information, call any office of Gates Broadcast Equipment Div. of Harris Corp. or:*



NATIONAL ELECTROLAB LTD.

Box 68, Blaine, Washington 98230
Canada: 1536 Columbia St., North Vancouver B.C. V7J 1A4 Phone (604) 985-0511

Circle (198) on Reply Card

New Products

continued from page 257

maintaining a broadcast-quality picture. The system also provides control of video action in forward or reverse.

The potential for still picture usage is enhanced through the use of flying-head disc recorders. Color or monochrome stills can be filed for momentary access without the problem of physical deterioration, for rapid assembly into an unlimited array of sequences or complete programs.

Circle (349) on Reply Card

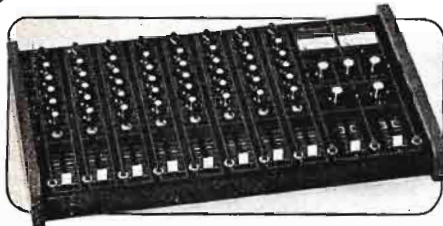
Color camera family

The Mark IX color television camera family from Marconi has been designed to suit a variety of operational requirements.



The cameras work from a control unit contained in one 19-inch rack mounting unit. The modular construction unit includes video processing modules, aperture corrector and color coder.

The studio camera is fitted with two filter wheels, the first containing three neutral density filters and the second two color correction filters. A third position on the second wheel is available for effects filters.



Richmond Sound Design
Portable Broadcast Console



**Listec
Television
Equipment Corp.**

LISTEC
39 CAIN DRIVE, PLAINVIEW, NEW YORK 11803
(516) 694-8963 TELEX 640470
(WEST COAST)
4527 SAN FERNANDO ROAD, UNIT 1, GLENDALE,
CALIFORNIA 91204 (213) 244-0838

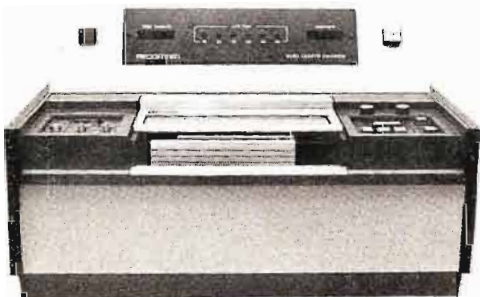
"SOUND CHOICE"

- 8 input channels, expandable to 24
- 2 independent program channels
- complete equalization, monitoring and cueing throughout
- individual and master foldback and echo send controls
- switchable line inputs/microphone attenuation
- rugged, compact, lightweight

Circle (199) on Reply Card

Still the industry's MOST NEEDED

VIDEO CASSETTE EVALUATOR



- High speed cassette tester
- Edge damage counter
- Gross error counter
- Measures cassette length
- Still useful as recorder

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

Circle (200) on Reply Card

A choice of viewfinders is available.

Circle (350) on Reply Card

Camera

Ampex has introduced a color EFP camera which is 5 pounds lighter than conventional EFP cameras and requires 27 watts of power, permitting 90 minutes of operation from a battery belt.

Broadcast picture quality and colorimetry are optimized by magnetic 2/3-inch Plumbicon tubes with a high transmission f1.4 prism system, dynamic beam control, switchable black stretch, bias light for minimum lag and full 2-line vertical and horizontal contour correction.



Variable and fixed focal length or zoom lenses up to 25 times and lens apertures up to f1.4 can be accommodated by the unit because of a quick-release bayonet mount. The BCC-14 accepts power from either a battery belt, a vehicle battery or

continued on page 260

The Railriders Are Here!



Convert your overcrowded film and VTR libraries to the new "Instant Access" high-density systems engineered and distributed by Storeel. Modular **Rapid Transit Storage™** maximizes units stored per square foot of floor space, minimizes retrieval time.

Our ten years of design and engineering experience pay off in solutions to your storage problems. Call or write "The Railriders" at Storeel today for free estimate.

If it needs to be stored, it deserves Storeel!

STOREEL CORP.

4993 New Peachtree Road • Atlanta, Georgia 30341 • Telephone (404) 458-3280

Circle (201) on Reply Card

When accuracy Counts... Count on Belar for AM/FM/TV MONITORS



BELAR
AM/FM MODULATION MONITOR



BELAR CALL ARNO MEYER (215) 687-5550
ELECTRONICS LABORATORY, INC.
LANCASTER AVENUE AT DORSET, DEVON, PA. 19333 • BOX 826 • (215) 687-5550

Circle (202) on Reply Card

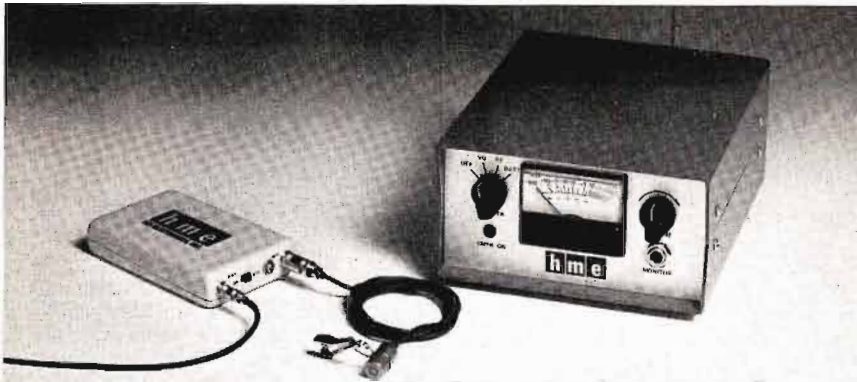
Still the industry's MOST USEFUL

VIDEO TAPE ADDRESSOR



- Off line time code writer
- Records at 8 times speed
- Writes both control and cue
- Saves VTR time and heads
- Cleans and rewinds tape

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



The new name for professional RF wireless microphones

Only the name is new. You will recognize the picture as the same field proven system that has gained universal acceptance in the industry under the label of the leading professional microphone manufacturer. But now this fine product is available from the people who engineered and built it: HM Electronics, Inc.

The System 22 is HME's top-of-the-line VHF Hi Band wireless microphone intended for

h m e
HM ELECTRONICS INC.

use by professionals. Critical adjustments can be made by the audio engineer such as soft compression, transmitter power (can be switched to legal maximum), and internally supplied power for Electret microphones.

To learn more about the System 22 or our new executive and universal lines call or write HM Electronics, Inc. 6151 Fairmount Avenue, San Diego, Ca. 92120 Ph. (714) 280-6050

Circle (204) on Reply Card



**SYSTEM
ASSOCIATES**

6117 Reseda Blvd., Suite 205 Reseda, California 91335

We broker used Broadcast TV equipment. If you are not receiving our free monthly listing **YOU SHOULD BE**. We can help you with your equipment needs.

CALL US — (213) 344-3552

Circle (205) on Reply Card

New Products

continued from page 259

from a conventional AC supply in the studio.

Circle (351) on Reply Card

Video compressor

Colorado Video Incorporated's third generation compressed video system is designed to transmit still TV pictures over standard dial-up phone lines. The model 260B video compressor accepts signals from a conventional professional video camera and reduces the bandwidth by a factor of several thousand for coupling to the telephone systems.



At the receiving location, a model 275B video expander, with solid-state picture memory, reconverts "slow scan" signals to normal TV standards for viewing, distribution, or videotape recording. Nominally, 78 seconds is required to transmit a single image with a resolution of 270 TV lines. An optional 35-second mode with lower resolution is available.

Applications include teleconferencing, telemedicine, instruction, remote environmental monitoring, and security. Either simplex or duplex configurations are available, and the equipment may be inter-

Still the industry's MOST POPULAR

VIDEO TAPE CONDITIONER



- Cleans and winds tapes
- Prolong tape life and reduce dropouts
- Extend VTR head life
- Hundreds installed worldwide
- Leasing program available

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

A BIT DIFFERENT

Time Code Generators, Readers & Comparators

Skotel specializes in counting and controlling bits, and that's why our products provide you greater flexibility and reliability for video tape production and programming...and that takes a big byte out of your costs.



Our products give you the flexibility and convenience you've wanted for User Data bits, and they reliably generate, read and compare every Time Code bit.

Standard features...also a bit different...include: transformer isolated inputs and outputs for simpler installation, AGC, compatible with other SMPTE equipment, remoteable controls, and plug in options that include...a unique Video Character Generator/Inserter, and Jam Sync.

For more value, Skotel makes the difference...so call or write

North: Mike Dyer (313) 478-2157 East: Jim Landy (609) 424-4660 South: Gene Sudduth (214) 785-5764 West: Dave Hill (602) 948-1075

skotel 1445 Boul. Provencher
Brossard, Que., Canada J4W 1Z3
(514) 676 1813

Circle (207) on Reply Card

connected with nearly all professional video or broadcast TV equipment.

Circle (352) on Reply Card

Studio console

Audiomarketing is offering Syncon, a synergistic operational studio console with all discreet components.

Free routing enables any module to be designated as a sub-group master, so there is minimum switching, re-routing, or patching operations.

Standard features include: talk-back circuit routing with a 20 Hz oscillator in the Slate mode; separate monitor level controls provided for studio, solos and control room; echo which can be returned to the console in quad main and main remix faders that are stereo ganged for quad mastering.

Circle (353) on Reply Card

Camera pedestal

A compact, lightweight pedestal designed to support studio and ENG-type video cameras weighing up to 90 pounds is available from Innovative Television Equipment.

The ITE-P6 pedestal utilizes constant torque spring assemblies to provide counter-balance for lighter weight cameras.

The unit features crab steering and column elevation both controlled by the steering wheel. Its dual, 6-inch ball-bearing wheels have polyurethane tires equipped with adjustable cable guards, and are gimbal-mounted to ensure

continued on page 262

SOUND ADVICE!



Shallco

Specify Shallco or Daven style step attenuators for reliable performance. Both available from one source.

SHALLCO, INC.

P. O. Box 1089, Smithfield, NC 27577
919/934-3135

Circle (208) on Reply Card

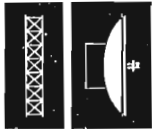
Still the industry's MOST DESIRED

VIDEO TAPE EVALUATOR



- Tape evaluation at 16 times speed
- Cleans and winds tapes
- Standard in the industry
- World wide customer base
- Leasing program available

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



H. M. HOLZBERG
ASSOCIATES,
INC.
P.O. Box 322
Totowa, New Jersey 07511

WE HAVE THE WINNERS!

Manufacturers Rep / Distributor of Equipment for: Radio/TV Broadcast • Closed-Circuit TV • Cable TV • Recording Studio • Communications



Complete Radio & Television Systems... Financing, Too!!!
(201) 256-0455

Circle (210) on Reply Card

23 ways to help assure your company's future.



Our country and your company depend on new ideas. College-trained minds produce new ideas. And colleges need your help. Write on your company letterhead to CFAE for 23 ways companies can aid colleges. We can't afford to run out of ideas.

Council for Financial Aid to Education Inc. **CFAE**
660 Fifth Avenue, New York, N.Y. 10019

A Public Service of This Magazine & The Advertising Council **AQ**



Make America smarter. Give to the college of your choice.

New Products

continued from page 261



smooth movement on floor surfaces. The pedestal will elevate from 33 inches to 52 inches and has a doorway width of 28 inches.

Circle (354) on Reply Card

Color camera

Introduced by Sharp Electronics Corporation, the XC-300U modular CCTV color television camera is designed in four detachable sections and can be used in five different situations.

The detachable modules include: C-Lens mount, camera head, camera control unit, and 4.5-inch view finder.

The XC-300U can be used as a film chain or self-contained camera as well as for remote control and electronic field production. It can also be mounted on a microscope.

Circle (355) on Reply Card

Here is the

Audio Step Generator

to meet Broadcaster's needs



Above is the latest in audio test gear, designed with the needs of the broadcaster in mind. An Audio Generator with nine precise crystal controlled frequencies instantly available. These frequencies correspond to those used in proof of performance measurements, and are pushbutton selectable and sequenceable.

Output level +20 dBm, in 600 ohms max.
Frequency stability .01%
Distortion <0.5%
Output impedance 600 or 150 ohms

Model 1760 FM (top frequency 15 kc)
with precision output attenuator...\$1,150.00

BML

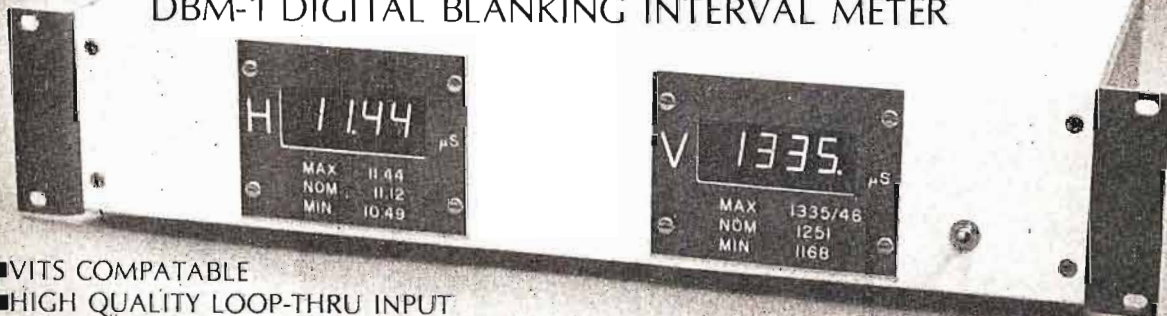
BALD MOUNTAIN LAB

230 BELLEVUE ROAD, TROY,
N.Y. 12180 — TEL (518) 297-9753

Circle (211) on Reply Card

INTRODUCING

DBM-1 DIGITAL BLANKING INTERVAL METER



■ VITS COMPATIBLE
■ HIGH QUALITY LOOP-THRU INPUT
AUBURN INSTRUMENTS

1127 OLYMPIC WAY WEST
SEATTLE, WASH. 98119 (206) 285-7448

advertisers' index

A. F. Associates	120, 193	Continental Electronics Mfg. Co.	247
AEG-Telefunken	201	Datametrics	86
ADDA Corp.	107	Datatek, Inc.	65
Accurate Sound Corp.	48	Datatron, Inc.	111
AdCom Communications, Inc.	40	Decca Austin Products	184
Alco Electronics	222	Delta Electronics	191
Alexander Mfg. Co.	100	Di-tech, Inc.	43
Allen Avionics, Inc.	265, 266	Dielectric Communications	220
Allied Broadcast Equipment	60	Dranetz Engineering Lab	209
Altec Corp.	205	Dyma Engineering	267
American Data Corp.	7	Dynair Electronics, Inc.	245, 247, 249, 251
Amperex Electronic Corp.	18, 19	Dytek Industries, Inc.	185
Ampro Broadcasting, Inc.	80, 96	EEV, Inc.	37
Andrew Corp.	91	ES Enterprises	257
Angenieux Corp. of America	27, 84, 85, 267	Eigen Video	265
Aristocart Div. of Western Broadcasting Ltd.	102	Elcom Engineering	264, 265, 266
Asaca Corp. of America	29	Electro & Optical Systems	81
Auburn Instruments	262	Electro Controls	14
Audio & Design Recording	216	Electro Impulse, Inc.	244
Audio Interface, Inc.	266	Electro-Voice, Inc.	78
Audio Designs & Mfg.	98, 99	Electrohome Ltd.	28
Audio-Technica, US Inc.	53	Electronics Diversified, Inc.	199
Audio-Video Engineering	219	Eventide Clockworks, Inc.	265
Auditronics, Inc.	75	Farinon Electric	71
Aurenheimer Labs	257	Fidelipac	213
Autodyne Industries	267	Flash Technology	110
BTX Corp.	24, 90	Frequency Devices	246
Bald Mountain Lab	262	Frezzolini Electronics	215
Belar Electronic Laboratory, Inc.	259	Fujinon Optical	116, 117
Bird Electronic Corp.	265	Garner Industries	213
Bonneville Productions	202	Geleco Electronics, Inc.	254
Broadcast Electronics, Inc.	52	General Electric	93
Broadcast Equipment & Supply Co.	208	Grass Valley Group	3, 241
Broadcast Video Systems	56	Gray Engineering	265
Brown Electronics, Inc.	264	HM Electronics	260
Buhl Optical	248	Clifford B. Hannay & Son, Inc.	86
CCA Electronics Corp.	221	Harris Corp., Broadcast Products Division	17
CMX Systems	11	Hitachi Denshi America Ltd.	59
CRV Systems, Inc.	265	Hitran Corp.	220
C.S.P., Inc.	244	Holland Electronics, Inc.	264
Calvert Electronics, Inc.	250	H. M. Holzberg Associates, Inc.	262
Camera Mart	74	Howe-Yin Research	208
Canon USA, Inc.	13	Hughey & Phillips	222
Central Dynamics Ltd.	57	IGM	76
Cetec Broadcast Group	118	Image Magnification	214
Cine Film Exchange	264	Industrial Marketing Advisory Services	121
Cinema Products Corp.	9	Inovonics	253, 255
Commercial Electronics, Inc.	63	International Microwave Corp.	216
Communication Medias	200	International Tapetronics Corp.	49
Computer Image Video Controllers		Jensen Transformers	242
Dytek Industries	185	Johnson Electronics, Inc.	243
Comrex Corp.	103	K & L Pro Audio	254
Consolidated Video Systems	79		
Contel Mfg. Co.	12		

**This year
why not invite
your overseas friends
over here?**



advertising contributed for the public good



UNITED STATES TRAVEL SERVICE
An Agency of the U.S. Department of Commerce

SMPTÉ EDITING TIME CODE PRODUCTS



Featured is TIME TECH's Model 9000 SMPTÉ Reader / Generator with generator sync from the line, drop frame or non-drop frame video, reader drop frame indicator, error by-pass, and RUN/HOLD switch. These units can be configured using the following building blocks singly or combined: generator, reader, simultaneous generate/read, generate user bits, read user bits, jam sync, reader or generator time keyed into video. The 19 inch standard rack mount chassis is only 1-3/4 inches high.

A desk top reader (1-3/4 inches high by 18 inches wide) is available. This unit may also be ordered with rack or ceiling mounts.

TIME TECH CORP

625 West Katella Avenue
Suite 35
Orange, California 92667
(714) 639-4445

Circle (213) on Reply Card

REBUILT POWER AMPLIFIER TUBES

- New Tube Warranty
- Guaranteed Satisfaction
- Off Shelf Delivery
- Fraction Of New Price

PARTIAL LIST OF TYPES:

125A	5771	6803
207	5891	6804
356	5918	6920
891	5919	7007
891R	6420	7480
892	6421	7560
892R	6422	7804
893AR	6423	7805
1089	6424	8461
5667	6425	8550
5671	6426	8795
5681	6427	23185
5682	6696	23431
5770	6697	23454

- Duds Purchased Or Rebuilt
- Send For Quote

VACUUM TUBE INDUSTRIES

35 Pequit St., Canton, Mass. 02021
617-828-1650

Circle (214) on Reply Card

PULTEC®



EQUALIZERS & FILTERS

Twenty years of **capable, dependable** service in radio & TV stations and recording studios. U.S. and overseas. Picture is solid-state Model MEQ-5 Audio Mid-range Equalizer.

PULSE TECHNIQUES, INC. 1411 Palisade, Teaneck, N.J. 07666. Tel. (201) 837-2575
Cable: PULTEC, TEANECK, NEW JERSEY

Circle (215) on Reply Card



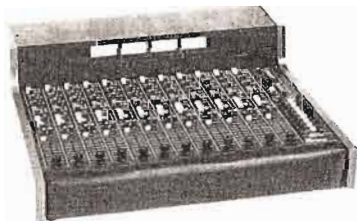
25 HZ. TONE GENERATOR AND RECORDER CONTROL

The Elcom model ATG-25D is a versatile high stability tone generator designed for the professional tape syndicator or for the station production studio where precise automation control is important. Start muting, controlled transport stop delay, simple two step operation, and 0.1 Hz stability are featured. Available in table top unit (shown) or 3½" high rack mount.

Elcom Engineering Company
Post Office Box 10432
Santa Ana, California 92711
(714) 544-5760

Circle (216) on Reply Card

GREAT RECORDING STARTS HERE



- RECORDING
- MIXDOWN
- STEREO PRODUCTION
- QUALITY

Quantum Audio Labs
1909 Riverside Dr.
Glendale, Ca. 91201
(213) 841-0970

Circle (217) on Reply Card

advertisers' index

KVC, Inc.	218
Kaitronics	252
Knox Ltd.	249
L. W. International	196
LPB, Inc.	217
Rus Lang Corp.	204
James B. Lansing Sound, Inc.	109
Leitch Video, Inc.	101
Lenco, Inc.	77
Listec Television Equip.	258
Logitek Electronic Systems	188
3M Magnetic Tape/Broadcast Video	69
3M Mincom/Video Products	58, 89
Marconi Electronics, Inc.	15
Marconi Instruments	195
Marti Electronics	243
McCurdy Radio Industries	Cover 3
McKay Dymek	252
Micro Communications, Inc.	210
Micro Control Associates	62
Microtime, Inc.	83
Midwest Telecommunications	106
Moseley Associates	23
NEC America	119
National Electrolab Ltd.	258
Fred A. Nudd Corp.	242
Nurad, Inc.	113
O'Connor Engineering Labs.	97
Opamp Labs	264
Orban Associates	70
Otari Corp.	203
Pacific Recorders & Engineering	26
Packaged Lighting Service	212
Panasonic Technics	115
Panasonic Video Systems	34, 35
Philidelphia Resins Corp.	20
Philips Broadcast Equipment Corp.	66, 67
Pinzone Communications Products, Inc.	256
Potomac Instruments	206, 207
Pro-Audio Specialties Co.	114
Professional Audio Services	265
Pulse Techniques	264
Quantum Audio Labs	264
RCA Broadcast Systems	27
RCA Distributor and Special Products	87
RCA Electro Optics	73
RTS Systems	256
Ramko Research	186, 187
Recording Supply Co.	90
Recortec, Inc.	256, 257, 258, 259, 260, 261
Rockwell International Collins Division	30, 31
Roh Corp.	211
Russco Electronics	16
SWR, Inc.	41
SSAC Precision Products	266
Ken Schaffer Group	45
Scientific Radio Systems	212
Scientific Systems	266
Scully Recording Products	32, 33
Sencore, Inc.	92
Shalco, Inc.	261
Shintron Co.	204
Siegel Electronics	70
Sintronic Corp.	105

Audio Power Amplifier Modules

Brown Electronic Labs
1233 Somerset Dr.
San Jose, CA 95132
408/259-8648

Circle (218) on Reply Card

WE BUY USED VIDEOTAPE AND VIDEOCASSETTES CINE FILM EXCHANGE INC.

855 SIXTH AVENUE
NEW YORK, N.Y. 10001
(212)695-6644

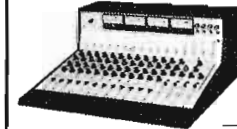
Circle (219) on Reply Card

HOLLAND ELECTRONICS INC.

Computer Controlled Audio & Video Systems
212-649-7330
970 E. 92nd St.
Brooklyn, N.Y. 11236

Circle (220) on Reply Card

FREE CATALOG & AUDIO APPLICATIONS



CONSOLES
KITS & WIRED
AMPLIFIERS
MIC, EQ, ACN, LINE,
TAPE, DISC, POWER
OSCILLATORS
AUDIO, TAPE BIAS
POWER SUPPLIES

OPAMP LABS INC.

1033 N. SYCAMORE AVE.
LOS ANGELES, CA. 90038
(213) 934-3566

Circle (221) on Reply Card

BROADCAST engineering

Advertising Sales Offices

KANSAS CITY, MISSOURI
Home office, P.O. Box 12901,
Overland Park, KS 66212;
Phone: (913) 888-4664

NEW YORK, NEW YORK
Joe Concert, 60 E. 42 St., Room 1227,
New York, NY 10017;
Phone: (212) 687-7240

CHICAGO, ILLINOIS
Helen Hull, P.O. Box 12901,
Overland Park, KS 66212;
Phone: (913) 888-4664

MOUNTAIN VIEW, CALIFORNIA
John MacKay, 2680 Bayshore Frontage
Road, Room 102, Mountain View CA 94043;
Phone: (415) 961-0378

LONDON, ENGLAND
John Ashcraft & Co., 12 Bear St.,
Leicester Square, London, W.C.2, England;
Phone: 930-0525

AMSTERDAM, HOLLAND
John Ashcraft & Co., John J. Lucassen,
Sloterweg 303, 1171 VC-Badhoevedorp,
Holland;
Phone: 2968-6226

TOKYO, JAPAN
International Media Representatives, Ltd.,
2-29, Toranomon 1-chome, Minato-ku,
Tokyo 105, Japan;
Phone: 502-0656



NEW BROADCAST CATALOG

**NEW DIGITAL CALORIMETER
NEW WATER-COOLED LOADS
NEW AIR-COOLED LOADS
NEW THRULINE® WATTMETERS**



30303 Aurora Road, Cleveland (Solon) Oh 44139
Phone: (216) 248-1200 • TWX: 810-427-2687
Cable: BIRDELEC

Circle (222) on Reply Card

There's No Substitute For Experience



C.R.V. Systems is a Total Broadcast Video Supply Center.

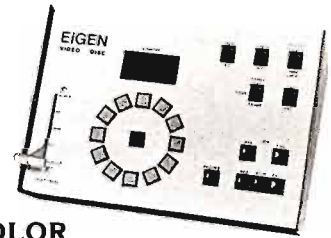
Systems, or a single unit,

C.R.V. Systems' 25 years of Broadcast Engineering Experience is yours. We represent most major lines of Broadcast Equipment.

We sell the only legal time base corrector available today, the DVS DPS-2. We sell ISI, N.E.L., Philips, Lenco, Videotek, and a host of other lines. A call to C.R.V. Systems, Inc. is the only call you need to make.

C.R.V. Systems, Inc.
1901 Madison Avenue
Huntington, West Virginia 26704
(304) 525-2633

Circle (223) on Reply Card



COLOR SLOW-MOTION DISC RECORDER

Sports • Animation • Slides

from \$25,000, including TBC/DOC
CCTV versions from \$15,000.

for full specifications:

**EIGEN
VIDEO**

P.O. Box 1027
Grass Valley, CA 95945
916/273-1341

Circle (224) on Reply Card

TIME CODE READER AND CHARACTER GENERATOR



The Model DR-107 modulates an incoming standard video line to provide a Time Code Character Display from a SMPTE Time Code input. Additional outputs are provided for parallel Time Code binary information, serial 6 line Time Code data for computer interfacing and a reconstituted SMPTE Time Code Output (DUB output). Other products include: Time Code Generators, Readers, Character Generators, Code Comparators, User Bit Modifiers and Code Displays. GRAY ENGINEERING LABS, 504 West Chapman Ave., Orange, Ca. 92668. (714) 997-4151.

Circle (225) on Reply Card

SHIPMENT "QUICK AS A WINK"



Professional Audio Services

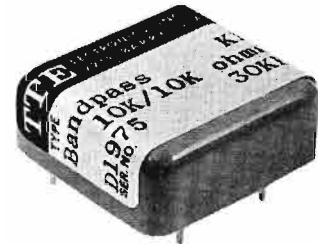
Fidelipac model 300, 350, 600, 1200, & Master Cart, Capitol Audiopak & Aristocart in stock. Cartridge parts, tape, racks, erasers, & alignment aids. Editall, Electro-Voice, Stanton, Nortronic replacement heads, etc., we offer the finest tape cartridge reloading service in the country.

PROFESSIONAL AUDIO SERVICES



"Serving the Broadcaster"
P.O. Box 1953
Fort Worth, TX 76101
Phone: (817) 536-6254.

Circle (226) on Reply Card



FILTERS

1,000,000 Standard Types
BANDPASS • BANDSTOP

Select any Frequency from 3Hz to 500MHz such as • CUE TONE 25HERTZ NOTCH • LOW NOISE 50HERTZ HIGHPASS • STEREO GENERATOR 19KHZ LOWPASS

15.75KHZ CATV Bandpass, 300 Hz Telephone Simulation Lowpass, 21Hz Bandpass, 18KHZ Lowpass, 1KHz notch, 4MHz Lowpass, 7.6KHz Lowpass.

TTElectronics, Inc. 2214 Barry Ave
Los Angeles, 90064, (213)478-8224

Circle (227) on Reply Card



FREQUENCY MEASUREMENTS USING THE MODEL 300 MEASUREMENT PACKAGE

Stations may now make their own monthly measurements. This FCC accepted method reads any frequency from 10 Hz to over 500 MHz in just seconds. The Model 300 consists of a direct read-out digital frequency counter using a crystal time base which is referenced to the 5 and 10 MHz standard frequencies of WWV. The crystal controlled WWV receiver also provides continuous time information. ELCOM ENGINEERING COMPANY, Post Office Box 10432, Santa Ana, California 92711, (714) 544-5760.

Circle (228) on Reply Card

BD955 BROADCAST DIGITAL AUDIO DELAY LINE



The BD955 was specifically designed for the policing of live shows. It offers 1.6, 3.2, or 6.4 seconds of delay, with a frequency response of 7.5 or 15 kHz. Exclusive 'catch-up' feature eliminates the need for a taped jingle or announcement. It also has variable delay capability for production use. Other products include 1745M Digital Delay Line, H910 Harmonizer™, 2830 Omnipressor™ FL201 Instant Flanger™ and S1066 Special Effects Device. **EVENTIDE CLOCKWORKS INC.**, 265 West 54th Street, New York, NY 10019, (212) 581-9290.

Circle (229) on Reply Card



VIDEO L-C DELAY LINES

A complete line of passive switchable & strappable Variable Delay Lines manufactured specifically for the video industry. Finest specifications available anywhere. Lowest pricing. Delivery from stock. Call/Write for Video Catalog. We also manufacture a wide range of L-C Filters for video applications. All products manufactured in Mineola, N.Y. **ALLEN AVIONICS, INC.**, 224 E. 2nd Street, Mineola, New York 11501. (516) 248-8080.

Circle (230) on Reply Card

PRECISION L-C FILTERS



SPECIALIZING IN FAST PROTOTYPES

Allen Avionics, Inc.

VIDEO L-C FILTERS

We manufacture a wide range of Linear Phase Lowpass & Bandpass, as well as the sharpest Lowpass, Highpass & Bandpass Filters available in the entire industry. NTSC Lowpass, Band Reject & Bandpass Filters are our specialties. Fastest delivery of prototypes. Call for Filter & Video Delay Line Catalogs containing the finest specifications & lowest priced units available. ALLEN AVIONICS, INC., 224 E. 2nd Street, Mineola, New York 11501. (516) 248-8080.

Circle (231) on Reply Card



LEVEL GUARD
AUTOMATIC GAIN CONTROL
FOR AM-FM-TV-RECORDING

Level guard is an advanced gain control device that electronically servo controls optical attenuators for low distortion and variable timing.

An unique feature is optional operation from a modulation monitor flasher for compliance with F.C.C. A.T.S. rules. Accommodates 30 dB level variation. Level guard is ideal for use with a high performance limiter such as the Elcom Insta-peak II.

Elcom Engineering Company
P.O. Box 10432, Santa Ana, CA 92711
(714) 544-5760

Circle (232) on Reply Card



AUDIO
DISTRIBUTION
AMPLIFIER PACKAGE

The SA-200 DA, is available in two basic packages. Shown is the wiring side of the 12 card frame which contains a Dual Regulated Power Supply and rear mounted Terminal Boards for ease of installation. Provides 12 Inputs and 72 Outputs at a cost of \$2,495.00. Other products include: Custom Audio Consoles, Studio Intercom Systems, Studio Monitor Systems, Video and Pulse Distribution Amplifiers Systems, SCIENTIFIC SYSTEMS, INC. 92 Westwood Dr., Scotch Plains, New Jersey, 07076, (201) 756-0889.

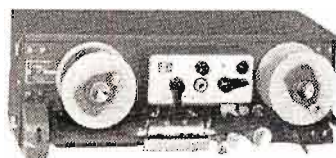
Circle (233) on Reply Card



PROFESSIONAL PHONO
PREAMPLIFIER

The PPS-26 features the ultimate in audio performance and reliability. Some of its specifications: EQ within ± 0.3 dB of RIAA, EIN of -110 dBm, THD below 0.05%, and low TIM. Fully selectable input R & Z, 1 volt max. input at 15 kHz, +29 dBm max. output. MC step-up transformers & automatic cue-mute options available. Dealer inquiries invited. AUDIO INTERFACE INC., 9025 Eton Ave., Canoga Park, CA 91304. 213-998-1082.

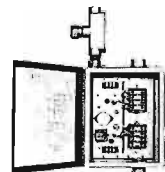
Circle (234) on Reply Card



TAMPER-PROOF 24 HOUR
MONITORING SYSTEM

SoundScriber Model S-124-T keeps a mistake-proof, permanent record of all programming—around the clock, every day of the year. Every broadcast minute of every program is recorded with indisputable accuracy on a time-calibrated tape—invaluable for verification or legal documentation. Unique "transverse recording" pattern makes tampering virtually impossible and allows an entire day's programming to be stored on a single, small reel. Only \$1,395. SOUNDSCRIBER, 85 Willow Street, New Haven, Conn. 06511.

Circle (235) on Reply Card



SOLID-STATE
BEACON FLASHER
AND
LIGHT CONTROL

The Model 260 is a new concept—solid-state "triac" switches eliminates the old style motor and cam switches. No delicate transistor circuits—just an unique R-C timing system that has adjustable flash rate and duration. The entire system is housed in a weatherproof cabinet. The Model 260 meets FCC and FAA specifications, carries a 2 year warranty and is priced much lower than the motor driven systems. ELCOM ENGINEERING COMPANY, Post Office Box 10432, Santa Ana, California 92711, (714) 544-5760.

Circle (236) on Reply Card



INSTA-PEAK II
AUDIO PROCESSORS

FOR AM-FM-TV RECORDING

- Split spectrum control for inaudible compression
- Exclusive keyed integrator for shaping after limiting
- Optical attenuators for smooth automatic control
- Peak ceiling circuit eliminates over-shoot
- FM super modulation by using Model WBL composite stereo limiter board for elimination of all filter over-shoot
- AM super modulation by using Model MP-12 modulation processor for 125% positive modulation and switchable equalization.

ELCOM ENGINEERING COMPANY, Post Office Box 10432, Santa Ana, California 92711, (714) 544-5760.

Circle (237) on Reply Card

NEW
CX-1
MODEL
COAXIAL
CABLE
STRIPPER



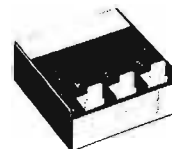
Speeds up studio installations and changes. Widely used by TV stations and CATV • Prepares cable for connectors in 10 seconds • Adjusts for stripping requirements of all standard co-ax connectors • Close-tolerance adjustment prevents nicked conductors • With removable inserts, accepts cable from .075" to .480" OD.

PRICE \$48.50 F.O.B. San Clemente. Specify cable OD when ordering.

WESTERN ELECTRONIC PRODUCTS CO., 107 Los Molinos, San Clemente, CA 92672, (714) 492-4677.

Circle (238) on Reply Card

SOLID
STATE
TOWER
FLASHERS



A new series has been added to SSAC's line of "B-Kon-Flash". The new devices with a load current rating of 300 Amperes Inrush will operate up to four beacons at 230 VAC, two beacons at 120 VAC. Also available are auxiliary units for synchronous operation of additional beacons on separate lines or for alternating flashing of beacons.

Lamp Life is increased by approximately 10 X due to Zero Voltage Switching. Device measures 2 x 2 inches and is completely encapsulated. Price in 1-9 quantity, \$34.60 each, FOB Factory. For more information call John Arnold at (315) 622-1000.

SSAC Inc.

PO Box 395, Liverpool, NY 13088

Circle (239) on Reply Card

BROADCAST ENGINEERING

angénieux service corporation of california
13381 BEACH AVE. VENICE CALIF. 90291 • (213) 821-5080

FACTORY SERVICE CENTERS
REPAIRS • PARTS ACCESSORIES



angénieux service corporation of new york
1500 OCEAN AVE. BOHEMIA, N.Y. 11716 • (516) 567-2424

Circle (240) on Reply Card

DYMA **BUILDS STUDIOS**
*AUDIO CONSOLES
*STUDIO CABINETRY

DYMA BOX 1697
TAOS, N.M. 87571
(505) 758-8686

Circle (241) on Reply Card

AUTODYNE

CART & REEL RECORDERS, CONSOLES, LIMITERS, AMP'S, MIC'S, TURNTABLES, TEST EQUIPMENT, TELEVISION EQUIPMENT, CARTS, STUDIO FURNITURE, SPEAKERS, ACCESSORIES, RECONDITIONING SERVICES.
P. O. BOX 13036, ORLANDO, FL. 32859 (305/855-6868)

Circle (242) on Reply Card

professional services

VIR JAMES
CONSULTING RADIO ENGINEERS
Applications and Field Engineering
Computerized Frequency Surveys
345 Colorado Blvd.
Phone: (Area Code 303) 333-5562
DENVER, COLORADO 80206
Member AFCCE

MIDWEST ENGINEERING ASSOCIATES
Consulting Engineers
6934 A N. UNIVERSITY
PEORIA, ILLINOIS 61614
(309) 692-4233
Member AFCCE

D. L. MARKLEY & Associates, Inc.
CONSULTING ENGINEERS
3101B W. Harmon Hwy.
Peoria, Illinois 61604
(309) 673-7511
Member AFCCE

Applied Video Electronics, Inc.
STUDIO SYSTEMS DESIGN AND INSTALLATION ENGINEERING. REFURBISHING/MODIFYING COLOR CAMERAS AND QUADRUPLEX VIDEO TAPE RECORDERS.
Post Office Box 25
Brunswick, Ohio 44212
Phone (216) 225-4443

BRADLEY ENGINEERING, INC.
Consulting Radio Engineers
APPLICATIONS & FIELD ENGINEERING
Phone 918-245-5444
300 West 41st Street
Sand Springs, Okla. 74063

advertisers' index

•••••	
Sitco Antennas.....	196
Sittler's Supplies, Inc.	254
Skirpan Lighting Control Corp.	64
Skotel.....	261
Sony Corp. of America	50, 51
Sound Genesis.....	184
Soundscribers	266
Sound Technology.....	25
Spin Physics.....	210
Stainless, Inc.....	94
Standard Tape Lab	10
Stanton Magnetics	61
Storeel	259
Studer ReVox America, Inc.	55
Surcom Associates	246
Switchcraft, Inc.....	108
System Associates	260
TT Electronics	265
TDK Electronics.....	95
Taber Manufacturing & Engineering.....	211
Tech Labs	248
Telectric Co.....	112
Teledyne Energy Systems	215
Telemet	189
Television Technology Corp.....	254
Telex Communications, Inc.....	8, 100
Temtron Electronics	250
Texas Electronics, Inc.....	251
Thomson-CSF	46, 47
Time & Frequency Technology	5
Time Tech Corp.	263
Trompeter Electronics.....	218
Utah Scientific, Inc.	22
VIF International	255
Vacuum Tube Industries.....	263
Val-Tronics, Inc.	245
Vamco Engineering	36
Van Ladder, Inc.	38
Vega.....	68
Video Components, Inc.....	183
Videomax Corp.....	1
Videotek, Inc.....	190
Viscount Industries Ltd.....	219
Vital Industries	Cover 4
Ward-Beck Systems Ltd.	Cover 2
Waters Mfg. Co.	214
Western Electronic Products.....	266
Whirlwind Music Distributors	42
Wide Range Electronics	192
Wilkinson Electronics, Inc.....	39, 194
Winsted Corp.....	221
Yardney Electric.....	217

WILLIAM BATTEIGER
Field Engineering
Directional Systems,
Antenna & Audio Proofs
AM/FM Applications, Installations,
& Troubleshooting

819 North 9th Plaza Bus. (904) 763-1778
Panama City, Florida 32401 Home (904) 769-6000

E.M.R. ENGINEERING, INC.
P.O. BOX 766, CHANNELVIEW, TEX. 77530
(713) 452-6147

CONSULTING ENGINEERS
COMMUNICATION SYSTEMS
ALLOCATIONS, BROADCAST SYSTEMS &
MICRO-WAVE SYSTEMS
FRED. L. ZELLNER

JAMES THOMAS, LIGHTING DIRECTOR
Production & Technical Facilities Consultant
Area - Europe & UK
Exp. 18 yrs. British Broadcast TV • Now
Freelance • Member Brit. Soc. TV Lighting
Directors • 2, Glenda Close, Warsash, South-
hampton, England • TEL. (0) 48 95 2009.

RALPH E. EVANS ASSOCIATES
CONSULTING COMMUNICATIONS ENGINEERS
216 N. Green Bay Road
Suite 208
Thiensville, WI 53082
Phone: (414) 242-6000 Member AFCCE

TOWERS
"Complete Tower & Antenna
Installation & Service."
TINER COMMUNICATIONS SERVICE, INC.
P.O. Box 3827, 15201 Hickman Road
Des Moines, Iowa 50322, (515) 278-5501
P.O. Box 817, 924 Brandenburg
Cedar Hill, Texas 75104, (214) 291-1577

SMITH and POWSTENKO
Broadcasting and Telecommunications
Consultants
2000 N. Street, N.W.
Washington, D. C. 20036
(202) 293-7742

FRED A. NUDD CORPORATION
COMMUNICATION TOWERS
Designed - Fabricated - Erected
Complete Service
U.S. & Overseas Installations
(315) 524-2531
1743 Route 104, Ontario, New York 14519

classified

Advertising rates in Classified Section are 50 cents per word, each insertion, and must be accompanied by cash to insure publication. Each initial or abbreviation counts a full word. Minimum classified charge, \$4.00. For ads on which replies are sent to us for forwarding (blind ads), there is an additional charge of \$5.00 per insertion, to cover department number, processing of replies, and mailing costs. Classified columns are not open to advertising of any products regularly produced by manufacturers unless used and no longer owned by the manufacturer or a distributor.

SERVICES

USED CARTRIDGE PARTS: Affordable prices for tape cartridge reloaders! Write for prices. CART MART, Box 3066, Fort Worth, TX 76105. Phone: (817) 536-6437. 9-78-3t

ONE STOP FOR ALL YOUR PROFESSIONAL AUDIO REQUIREMENTS. Bottom line oriented. F.T.C. Brewer Company, P.O. Box 8057, Pensacola, Florida 32505. 7-71-1f

HELIAX-STYROFLEX. Large stock—bargain prices—tested and certified. Write for price and stock lists. Sierra Western Electric, Box 23872, Oakland, Calif. 94623. Telephone (415) 832-3527. 1-73-1f

SERVICES (CONT.)

BUILD YOUR OWN TV AND RADIO PRODUCTION EQUIPMENT. Easy, inexpensive, (mostly IC). Plans or kits: Special Effects Generator, Automatic Logger, Vertical Interval Video Switcher, Solid State Lighting Board, Preset Audio-Video Board, Preset Lighting Board, Crystal Controlled Wireless Mikes with Matching receivers. Subsonic Tone Control for audio tapes, 8MM SOF Cameras and Projectors, Distribution Amplifiers (Sync. Video, Audio), Audio Control Boards (Studio & Remote) Proc-Amp with compensation and regeneration for adapting Helical Scan VTR's to broadcast standards. PLUS specialized correspondence courses in TELEPHONE Engineering (\$39.50), and Integrated Circuit Engineering (\$49.50). Plans from \$5.95 to \$15. SUPER CATALOG plus years updating of new devices Air Mailed \$1.00. Don Britton Enterprises, P.O. Drawer G, Waikiki, Ha. 96815. 5-77-32f

TOWER SERVICE: Erection. Sales. Service. Painting. Inspections. Maintenance contracts. Pioneer Tower Service, P.O. Box 253, Carrollton, Missouri 64633, (816) 542-0840. 8-78-1f

TRAINING

GRANTHAM'S FCC LICENSE STUDY GUIDE—377 pages, 16 FCC-type practice tests, 1465 questions with answers and discussions—covering third, second, and first class license exams. \$13.55 postpaid. GSE Publications, 2000 Stoner Ave., Los Angeles, CA 90025. 10-77-1f

ELECTRONICS DEGREE by correspondence. No commuting to class. Study at your own pace. Begin with basics and continue, first for A.S.E.T. and then for B.S.E.E. For free brochure, write: Information Desk, Grantham College of Engineering, 2000 Stoner Avenue, Los Angeles CA 90025. 10-77-1f

FIRST PHONE through cassette recorded lessons at home plus one week seminar in Boston, Philadelphia, Detroit, Atlanta or Seattle. Our twentieth year teaching FCC license courses. Bob Johnson Radio License Preparation, 1201 Ninth, Manhattan Beach, Calif. 90266. Telephone 213-379-4461. 8-78-1f

PROFESSIONALS ACCREDITED

PROFESSIONAL BACHELOR DEGREE... earned with 4 or more years of Broadcast Business Management, Sales, or Servicing Experience. For FREE Information Write: Ebert PROFESSIONALS INSTITUTE, Box 1651, Dept. B, Columbia, Missouri 65201. 6-78-6f

SITUATIONS WANTED

TELEVISION PRODUCTION: 25+ yrs. television production & related A/V production exp. Studio/remote. Ept. operation thru Mgmt. Commercial/Army/Navy/Air Force. Entertainment/education/information/instruction. Please reply to: Jack Petersen, 2103 Ridgmar Blvd. #126, Ft. Worth, TX 76116. (817) 738-0969. 9-78-1f

Let's help each other.



The American Red Cross

WANTED

TK-27 FILM CHAIN and TR-60 Videorecorder. (901) 458-2521 C.E. 9-78-2f

WANTED TO BUY. One VR2000. Reply to Broadcast Engineering, Dept. 429, P.O. Box 12901, Overland Park, Kansas 66212. 9-78-1f

WANTED: Recording gear of all ages and variety. Microphones, outboard gear, etc. Dan Alexander, 6026 Bernhard, Richmond, CA 94805, (415) 232-7933. 4-78-6f

WANTED: Pre-1926 radio equipment and tubes. August J. Link, Surcom Associates, 305 Wisconsin Ave., Oceanside, Ca. 92054, (714) 722-6162. 3-76-1f

WANTED: Good condition 1 KW and 5 KW AM transmitters for missionary radio station in Western Caroline Island of Palau. Reasonable price or tax deductible receipt for donation. Contact Butch McBride, Pacific Missionary Aviation, Box 224, Agana, Guam 95910. 8-78-2f

WANTED: Small Australian Radio Station wishes to purchase Medium Wave Field Strength Meter in good condition. Would prefer R.C.A. or Potomac UNIT. If you have such a unit please write details and include price. To: HEALY, RADIO 4AM PTY. LTD., P.O. BOX 177, MAREEBA, QUEENSLAND, 4880 AUSTRALIA. 9-78-1f

WANTED: Transmitting tubes new, used, and duds. Rebuilt tubes available for sale. Vacuum Tube Industries, Inc., 35 Pequit St., Canton, Mass. 02021. 9-78-1f

5 KW TRANSMITTER, switchable to 1 KW. Physically as small as possible—two to three cabinets, late model, well-maintained, clean, operational, good specs. Will want to inspect. Bon Mauldin, Box 65, Twin Falls, Idaho 83301. 9-78-1f

WANTED: Small Baptist College desires donation of a small FM transmitter and/or studio equipment. Donation will be acknowledged for tax purposes. Contact: TEMPLE BAPTIST COLLEGE, 11965 Kenn Road, Cincinnati, OH 45240. (513) 851-3800. 9-78-1f

EQUIPMENT FOR SALE

28 FOOT CUSTOM TELEPRODUCTION VAN: 2 camera, color broadcast standard, 10x1 lenses; mics, turntable, R/R and cart tape, 11-in. mixers; wave and V-scopes; SEG/chroma key; 1K page character generators; 3/4" decks, editor, TBC; all accessories included. Write Dept. 427, Broadcast Engineering, P.O. Box 12901, Overland Park, Kansas 66212. 8-78-2f

RADIO AUTOMATION EQUIPMENT: Complete Schafer 903 system—1 VEL900C Cartridge Decode, 1 Stereo audiophile, 1 48-tray stereo audiophile, 4 Revox A77 Mark IV stereo, 2 discriminate audio processors, 1 ITC RP0004R Stereo rack recorders, 1 time announce w/2 ITC WP0003 Mono, 1 ITC SP0003R Mono, 4 autotune for 4 Revox decks. Used 2 years. Contact T. Cohen, Industrialease, 3000 Marcus Ave., Lake Success, N.Y. 11040, (212) 895-0921. 9-78-1f

DATATRON 5050 EDITOR modified for 3 VTR's. Ideal way to break into time code editing. (216) 822-3770. 4-78-1f

RCA VTY MODIFICATIONS KITS for TR4/22/50/60/61/70. Splicer (single-frame), TEP Interface, Time Code Edit Interface Kit, Audio Splice Timing Mod (Audio Insert Editor), Wideband Audio Amplifiers, most mod kits, some modules available. LAWHED, LTD., 388 Reed Road, Broomall, Pa. 19008, (215) 543-7600. 4-78-1f

LIGHT PEN Tektronix 4501 scan converter and homemade interface. (216) 822-3770. 4-78-1f

TELEVISION TRAILER—PRITCHARD-KING. Contact: A. F. Associates, Inc., 100 Stonehurst Court, Northvale, New Jersey 07647, (201) 767-1000. 9-78-1f

EQUIPMENT FOR SALE (CONT.)

LIGHTING DIMMER SYSTEM for sale. 32 - 3K dimmers, 32 faders with 16 preset memory console. Packed for touring. Must sell! Asking price: \$14,950.00. BC&G Enterprises, P.O. Box 708, Arvada, Colorado 80001. (303) 751-5991 or (303) 424-6151. 9-78-3f

CBS AUDIMAX 4450-A. NEW, UNUSED, IN BOX—\$1,000. JAMES MURDOCK, WRIU, KINGSTON, RI 02881. (401) 792-2381. 9-78-1f

USED TAPE CARTRIDGES, 50 for \$35.00, 100 for \$50.00, plus freight. Write for list. CART MART, P.O. BOX 3066, FORT WORTH, TX. 76105. 7-78-3f

NEW 7/8" HARDLINE Cableware SLA 78-50J. 1,000 ft. Lots only. \$.80 per ft. Henry, (301) 855-6777. 9-78-2f

BROADCAST CRYSTALS for AM, FM or TV transmitters, frequency change, repair or replacement of oven types. Also vacuum types for RCA, Gates, Collins, etc. transmitters. Quality products, reasonable prices and better delivery! Don't be without a spare crystal. Frequency change and service for AM and FM monitors. Over 30 years in the business. Eidson Electronic Co., Box 96, Temple, Texas 76501. Phone (817) 773-3901. 12-74-1f

ASACA—5 Cameras—4 ACC 7000, 1 ACC 1000 for sale. Used for demonstration only, value over \$150,000. Best cash offer. Art Florman, F&B/CECO, 7051 Santa Monica Blvd., Hollywood, Ca. 90038, or call (213) 466-9361. 8-78-6f

FOR SALE—EQUIPMENT: (1) Complete AM station and studio equipment except transmitter, includes frequency and modulation monitors, \$3,600.00 complete. (3) RCA TVM-1 watt micro-wave equipment complete with sound mixers, good cond., \$3,400.00 per set. (1) PCP-90 handheld color ENG camera, \$10,000.00. (6) LDH-1 Philips color camera heads (new), \$6,500.00 ea. (10) G.E. PE-350 & Marconi Mark VII Color cameras (reduced). (2) EI8603 color encoders for PC70 cameras, \$500.00 ea. (4) TK42 RCA color cameras, \$1,500.00 ea. (2) PC4-130W Bosch waveform monitors for PAL system, \$1,500.00 ea. **Camera tubes—all types—our 2,000 hour warranty—XQ1020, XQ1025, all colors, \$1,250.00 ea; 8673—\$850.00 ea., 7735B, 8572, 8134, 8480, 4536—all reduced. Transmitting tubes Eimac, etc.—discount prices. Temtron Elec. Ltd., 138-69 Francis Lewis Blvd., Rosedale, N.Y. 11422, Telex 125237. 9-78-1f**

TRANSMISSION LINE: 46 - 20' sections and 2 - 17' sections MI19113 3-1/8", 51.5 ohm. Contact Gale Totten, May Broadcasting Company, (402) 345-3333. 9-78-1f

RCA-TK-76 with 10.5-105 Canon Auto-Zoom, A.C. Power Supply, batteries & cables, Fujinon Sports V.F. Cases & VO-3800's. M. Schlansky, (212) 594-8700. 9-78-1f

5 KW TRANSMITTER—Gates BC5A now in use with many spare parts. Currently on 620 KHz. Transmitter in good condition and available within three months. Contact Howard M. Ginsberg, C.E., WVMT, Box 12, Colchester, Vermont, 05446, or 802-655-1620. 8-78-2f

HELP WANTED

ENGINEERING POSITIONS: \$15,000-\$40,000. Hundreds of current openings coast-to-coast. TV Chief Engineers, Assist Chief, Maintenance Supervisors, Maintenance, etc. Also, all levels & disciplines in manufacturing. No fee, Confidential, Professional. Send your resume with salary requirements to KEY SYSTEMS, New Bridge Center, Kingston, Pa. 18704, (717) 822-2196. 9-78-1f

MAINTENANCE TECHNICIAN—Immediate opening. Television Maintenance Engineer for West Coast Videotape Production, Pay TV operation. Send resume, professional references, and salary requirements to Program Operations Department, P.O. Box 25990, Los Angeles, CA 90025. Equal Opportunity Employer M/F. 9-78-1f

BROADCAST PRODUCTS SALES MANAGER

We are a well-known manufacturer of broadcast equipment, seeking a marketing professional to fill the position of Sales Manager. The successful candidate will direct the efforts of both representatives and company sales people in this country and abroad, with complete responsibility for the sales and marketing of a growth-oriented division.

The ideal candidate will be degreed with five or more years of directly related experience, a willingness to travel, and a need to excel. In return, we offer an excellent salary bonus and fringe benefit package and the opportunity to develop new and existing product lines to their maximum potential. If you feel qualified, please call or write with resume and salary history, in confidence, to Allan J. Shaftel, President. We'll be exhibiting at the NRBA Show and interviews may be held in San Francisco.

UMC UMC ELECTRONICS CO.
460 Sackett Point Rd. North Haven, CT 06473 (203) 288-7731

A CALL TO SERVE—We have continuing and varying needs for experienced engineering personnel. More professional people are wanting to make their lives and talents count for something worthwhile with external consequences. If you feel a call to serve and can be happy with hard work, sacrifice and modest remuneration, you could become a part of one of the world's most exciting happenings. Send resume to Personnel Division, Drawer C, Christian Broadcasting Network, Virginia Beach VA 23463. CBN, producer of "The 700 Club," is an Equal Opportunity Employer. 6-78-41

STABLE, PROFITABLE 5 KW directional plus stereo stations in great area for living, looking for a real Chief and willing to pay for one. Send resume and salary requirements to Steve French, KMON, #7 Holiday Village, Great Falls, Montana 59404. 9-78-11

TELEVISION—CCTV Video Maintenance Technicians. Full Benefits. Greater New York, Suffolk County or New Jersey Area. Send resume to: VPC, P.O. Box 268, New Hyde Park, N.Y. 11040. 6-77-1f

ASSISTANT CHIEF ENGINEER: Immediate opening - looking for strong, technical and administrative background for top 50 market in southeast. Position leading to Chief Engineer. Equal Opportunity Employer. Send resume to Dept. 430, Broadcast Engineering, P.O. Box 12901, Overland Park, KS 66212. 9-78-11

RADIO CHIEF ENGINEER, good audio and transmitter worker. Excellent conditions, salary, and fringes, at West Coasts oldest station. Send resume to KMED, P.O. Box 1440, Medford, Oregon 97501, or call (503) 773-1440. 9-78-41

CHIEF ENGINEER—MEDIA SERVICES, UNIV. OF ALASKA, ANCHORAGE: Engineering position with management responsibilities. Operation and maintenance of full color television production center; new facilities design and installation; equipment evaluation and specification; engineering for satellite telecommunications systems and cable distribution systems; supervision of system of preventative maintenance and repair of audio-visual instruction equipment; assist in development/instruction of undergraduate broadcast electronics courses; provide liaison with engineering staff of public broadcasting station located on campus. BS, Electrical Engineering or equivalent. First Class FCC license and broadcast engineering experience required. Demonstrated successful management experience. Send application, resume, 3 letters of recommendation: Department Head, Media Services, University of Alaska, Anchorage, 3211 Providence Drive, Anchorage, AK 99504, before September 30, 1978. An equal opportunity employer. 9-78-11

RADIO BROADCAST ENGINEER for board operation and studio maintenance. Prefer FCC 1st Phone with 2-5 years experience and some formal training. Starting salary \$4.86/hr. for 20 hours. Send resume to Jim Stitt, WGUC-FM, University of Cincinnati, Location #36, Cincinnati, Ohio 45221, E.E.O. 9-78-11

IMMEDIATE OPENING—SENIOR VIDEO MAINTENANCE ENGINEER: Call Bob Henderson, (212) 725-8080 or send resume to: Windsor Total Video, 565 5th Avenue, N.Y., N.Y. 10017. 9-78-11

REPRESENTATIVES WANTED for high quality line of Television Test Equipment. Name manufacturer looking for representation throughout U.S. on an area basis. Range of equipment sells to broadcasters as well as video equipment and transmitter manufacturers. Send inquiries to Department 425, Broadcast Engineering, P.O. Box 12901, Overland Park, Kansas 66212. 8-78-21

SALES MANAGER—VIDEO PRODUCTS: Southern California manufacturer is seeking someone with experience in sophisticated video products and who is acquainted with all areas of market—Broadcast, post-Production and Industrial. Salary commensurate with experience. Send resume and salary requirements to: Broadcast Engineering, Dept. 428, P.O. Box 12901, Overland Park, KS 66212. Equal Opportunity Employer. 9-78-11

Engineer

TV System Engineer

Bendix has an outstanding career opportunity available for an experienced TV Broadcast or CCTV System Engineer with strong background in installation, maintenance and / or design of state-of-the-art color TV systems and equipment. Must be capable of developing and presenting formal training courses to USN personnel. Considerable travel required. Southern Maryland location that offers the superb recreation facilities of the Chesapeake Bay and its rivers. Send resume or call Collect:

J. W. Hamilton
(301) 872-5173

Bendix Field Engineering Corporation

Subsidiary of The Bendix Corporation
P.O. Box 98, St. Inigoes, Maryland 20684
Attn: J. W. Hamilton

An Equal Opportunity Employer M/F

HELP WANTED (CONT.)

BROADCAST ENGINEER

\$1709 - \$2181 per mo.

2 years of TV and engineering experience plus a first class license. Please call or submit application to San Diego Community College District, 3375 Camino Del Rio S., San Diego, Ca. 92108, (714) 280-7610, Ext. 227. 9-78-1t

ENGINEER I Television, closed circuit system. Responsibilities: Operation, preventive maintenance, and repair of television and related equipment, including quad and helical VTRs, broadcast, and CCTV cameras. Requires: BSEE and experience in television, or minimum two (2) years electronics training beyond high school and three (3) years television experience. First class FCC license desired. Salary: \$13,000 and benefits. Affirmative action employer. Contact or send resume to: Jim Kirklín, Division of Instructional Communications, Western Michigan University, Kalamazoo, MI 49008. 9-78-1t

TELEVISION MAINTENANCE SPECIALISTS. Are you a specialist in the maintenance of quad video tape recorders?, or studio and portable camera systems?, or computerized editing systems? A large southeastern TV production center has positions available for highly qualified and experienced technicians specializing in any of these areas. Paid insurance, 3 weeks paid vacation, 12 holidays per year. Send complete resume to Box 426, Broadcast Engineering, P.O. Box 12901, Overland Park, KS 66212. An Equal Opportunity Employer. 8-78-2t

VIDEO TECHNICIAN/SHOP manager needed at large nonprofit media center. Extensive experience with maintenance and repair of 1/2" VTRs, 3/4" VCRs, cameras and editing systems, also, experience supervising shop functions and personnel. Contact: Suzanne Langle, Young Filmmakers/Video Arts, 4 Rivington St., New York, NY 10002. 8-78-2t

ATTACH ADDRESS LABEL FROM CURRENT ISSUE HERE

and please always include such a label whenever you write us. We'll be able to serve you better, and faster.

MOVING?
Let us know before you go!

Please be sure to notify us so that service will not be interrupted. Write your new address, change of title, or change of company name on lines below.

When you write, why not give us the names and titles of business associates who you think might enjoy receiving copies of this magazine? Thank you for your help.

Name _____
 Title _____
 Company _____
 City _____
 State _____ Zip _____

Mail To: **Broadcast Engineering**
 Subscription Dept.
 P.O. Box 12901
 Overland Park, KS 66212

HELP WANTED (CONT.)

HELP WANTED TECHNICAL: Houston's leading AM/FM station seeks a studio maintenance engineer who will be solely responsible for maintenance of a number of studios and broadcast equipment. Requirements include a first phone license, at least three years experience in stereo studio maintenance, ability to work alone in making efficient repairs, and a quality conscience attitude for scheduled preventative maintenance. Formal electronics analog and digital training highly desirable. Transmitter experience helpful but not necessary as this position involves studio maintenance only. Usual company benefits plus profit sharing, paid retirement and much more. Contact Chief Engineer, KILT, 500 Lovett Blvd., Houston, Texas 77006. 9-78-1t

EQUIPMENT WANTED

REMOTE TELEVISION VAN. MUST HAVE AT LEAST FOUR CAMERA CAPABILITY PLUS ROOM FOR VIDEOTAPE AND SLO-MO. CONTACT ROBERT O. DONAHUE, WMAR-TV, 6400 YORK ROAD, BALTIMORE, MARYLAND 21212. 9-78-3t

CHIEF ENGINEER, INSTRUCTIONAL TELEVISION NETWORK: Dallas based closed-circuit network with 10 originating studios and multiple receive sites in monochrome and color. Chief Engineer responsible for system design, operation and maintenance. Equipment includes microwave, studio, site and switching hardware. Supervision of small staff. Experience should include 3-5 years video broadcasting, CCTV or ITFS plus design and development of hardware. Supervision of small staff. Experience should include 3-5 years video broadcasting, CCTV or ITFS plus design and development of hardware and management level responsibilities. First class phone plus BSEE degree required. MSEE degree preferred. Salary \$23,000-\$28,000 based on qualifications and experience. Excellent fringe package. Send application and resume to: E. L. Crandell, Executive Vice President, TAGER, P.O. Box 688, Richardson, Texas 75080 or call 214/231-7211. 9-78-1t

FIELD SERVICE ENGINEERS—We are seeking individuals with maintenance and installation experience on videotape recorders and digital test equipment. These individuals must have completed technical training school or have equivalent training/experience, and are willing to travel. Our company offers a good starting salary and an excellent fringe benefits program. For immediate consideration, send resume with recent salary history to personnel department: DATATRON, INC., 1562 Reynolds Avenue, Irvine, CA 92714. 9-78-1t

TV CHIEF ENGINEER, position immediately available in New York City. Solid experience W/AE 600's, Pc 70's, RCA Computer Studio Facility. Solid experience required. Salary open. North American Video, 212-369-2552 or B. Grodin, home 914-238-9229. 8-78-2t

OPERATING AND MAINTENANCE TECHNICIAN for color production/closed circuit TV facility. Major state university. Send resume and salary requirements to: Robert Keidan, Ohio State University, Nisonger Center, 1580 Cannon Drive, Columbus, Ohio 43210. 9-78-1t

Let's help each other.



The American Red Cross

Talk is cheap.

It's time we stopped talking about child abuse and did something. Here are some of the actions your company can take to prevent the suffering caused by child abuse and also give your community a better business environment.

We want to stop the hurt.

- We are enclosing a tax-deductible donation in the name of our company.
- We want to help. Please call our company and tell us what you're doing to stop the hurt of child abuse in our community.
- We want to make our employees more aware. We will carry an article about child abuse in our company publication.
- We will volunteer our employees' time and talent to community child abuse prevention programs.
- We will plan a day for employees' children to visit our place of work to learn what we do and why.
- I don't spend enough time with my children. Tonight I am going home early to find out who my children are.
- Please send us _____ copies of the pamphlet "Prevent Child Abuse" at 10¢ a copy for 100 copies or more.

Name _____
 Company _____
 Address _____
 City, State, Zip _____



prevent child abuse.
 write: Box 2866, Ch., IL 60690
 National Committee for Prevention of Child Abuse

Ad Council A Public Service of This Magazine & The Advertising Council

SS 8500 STEREO CONSOLE



CUSTOM AM STEREO STUDIO FOR CKLW WINDSOR

DESIGNED BY VICE PRESIDENT/ENGINEERING, ED BUTERBAUGH
INCORPORATING SS8500 AND SPECIAL ANNOUNCE TURRET

McCURDY RADIO INDUSTRIES

TORONTO
[416] 751-6262

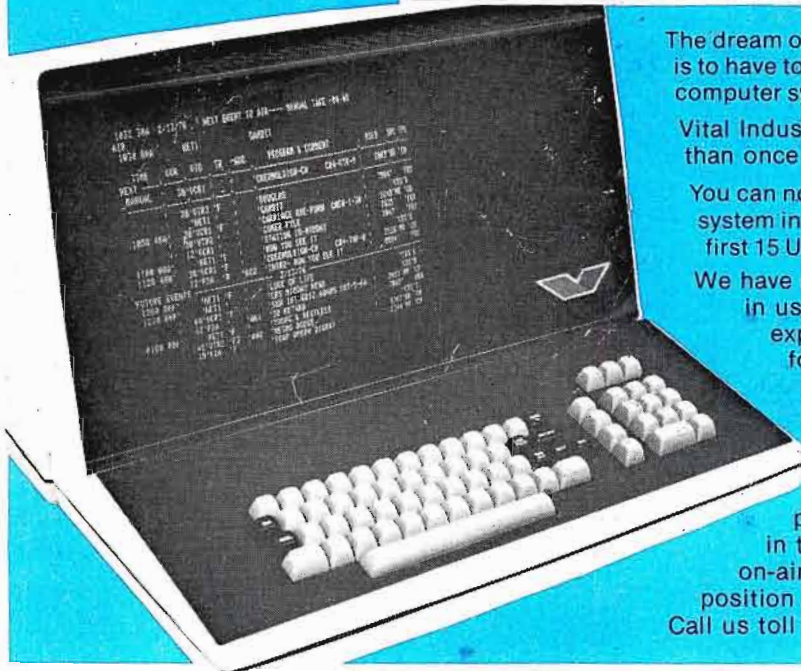
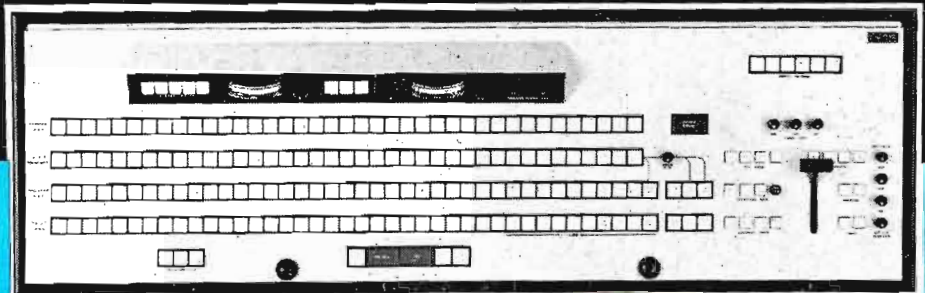
CHICAGO
[312] 640-7077

NEW YORK
[201] 327-0750

Circle (1) on Reply Card



THE VITAL BUSINESS CONNECTION MAKES TV AUTOMATION TOTAL = VIMAX-200



The dream of every TV broadcast station management is to have total automation married with a business computer system with minimum interruptions.

Vital Industries, Inc., has done it, and done it more than once with all four leading business services.

You can now see our actual total TV automation system in use in one of several TV stations in the first 15 US TV markets.

We have over 30 technical automation systems in use since 1972. This total proven experience makes it also possible for us to offer a building-block approach of a 32 event preset system to stations as a first step towards total automation.

Our in-depth experience in programming microprocessors in the "Squeezoom," "PSAS" and on-air automation has given us a position of leadership in TV automation. Call us toll free, 1-800-874-4608, continental U.S.



VITAL INDUSTRIES, INC.
A HIGH TECHNOLOGY COMPANY

MAIN OFFICE: 3700 N.E. 53rd Ave., Gainesville, Fla. 32601, U.S.A. • Phone 904/378-1581 • TWX 810 825 2370

MORRELL BEAVERS Midwest
2644 North Seventh St.
Terre Haute, Indiana 47804
Phone 812/466-3212

ROBERT McALL Northeast
34 Autumn Lane
Hicksville, N.Y. 11801
Phone 516/735-0055

GORDON PETERS Southwest
P.O. Box 912
Arlington, Texas 76010
Phone 817/467-0051

ERIC KING Southeast
Fox Hill Road
Lynchburg, Va. 24503
Phone 804/384-7001

BARRY HOLLAND West Coast
7960 West Beverly Blvd.
Los Angeles, California 90048
Phone 714/497-4516

Circle (2) on Reply Card