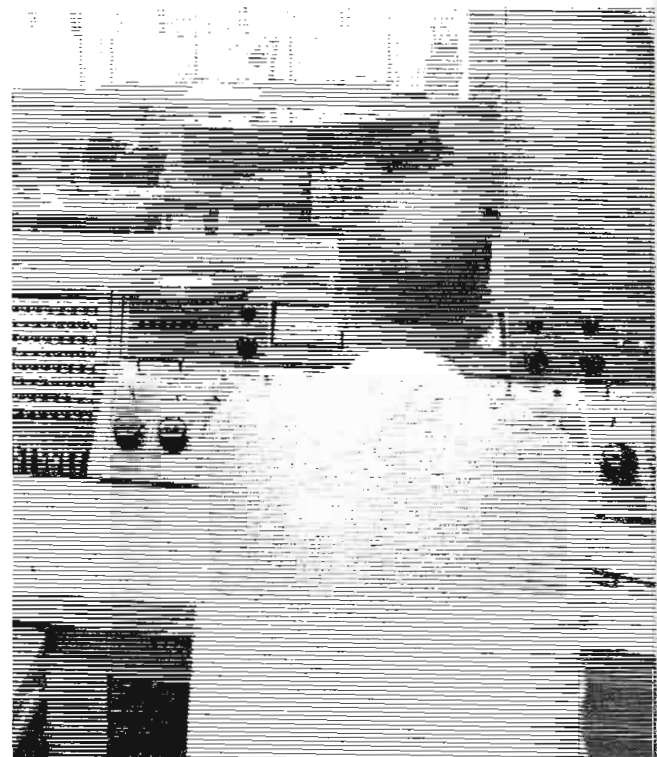
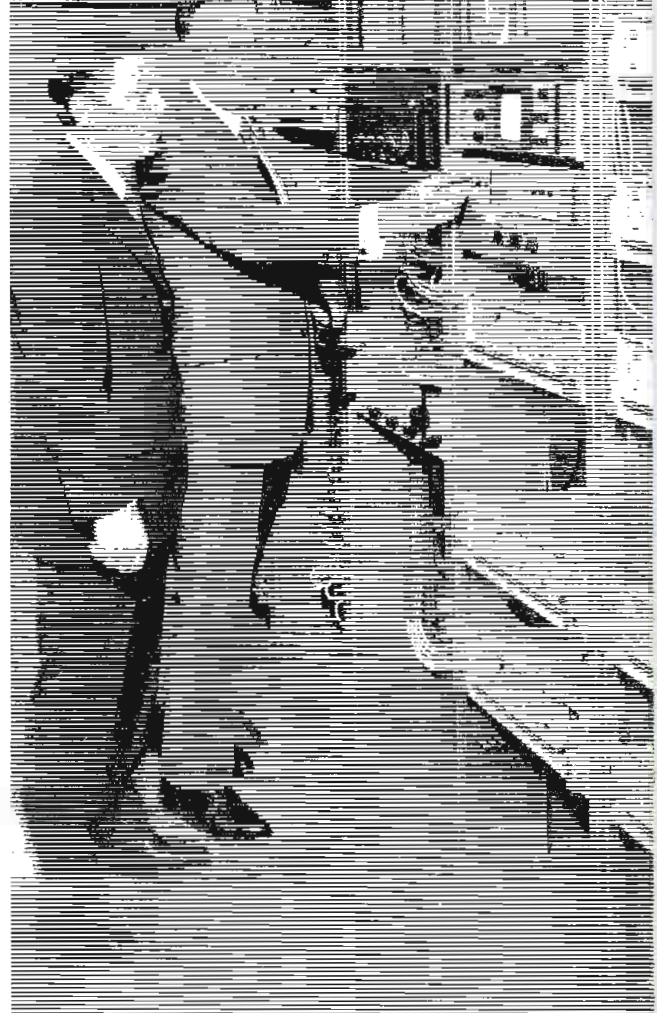


BROADCAST ENGINEERING®

the technical journal of the broadcast-communications industry

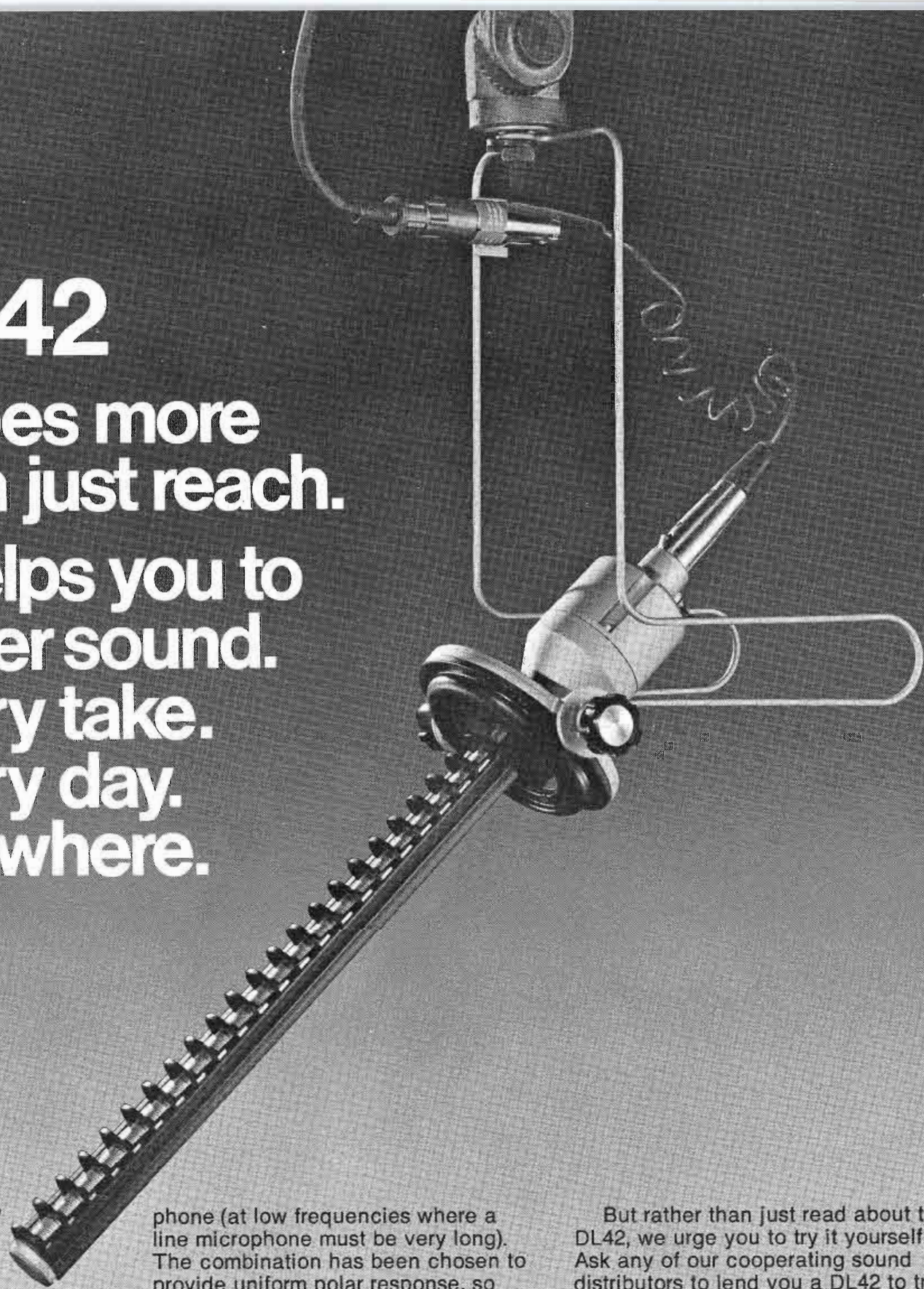
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DL42

It does more
than just reach.

It helps you to
better sound.
Every take.
Every day.
Anywhere.



Since 1962 when the E-V Model 642 earned an Academy Award certificate for contributions to motion picture sound, there have been a lot of attempts to better this pioneering design.

Admittedly, some similar-appearing microphones were lighter and a bit smaller. But often it was at the expense of uniform polar response and wide range. Now there's a long reach microphone that's both smaller and lighter, yet maintains wide range response even off mike.

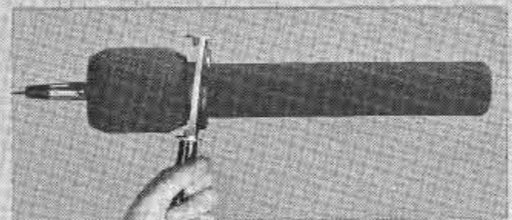
It's the E-V DL42.

Weight has been reduced to 1/4 of the 642... even less than most highly-directional condenser microphones. And size has been shaved wherever possible. The DL42 is a unique combination of line microphone (at the high frequencies) and cardioid micro-

phone (at low frequencies where a line microphone must be very long). The combination has been chosen to provide uniform polar response, so important to consistent sound quality. Off-mike pickups even sound good (although lower in level), a particular advantage to documentary units and free-wheeling shows where the unexpected is always happening.

The good pickup quality off axis has another practical benefit in the studio. Because maximum rejection is at the sides (where most of the noise comes from) you can work at a remarkable distance when necessary. So when a long shot is called for, the DL42 can be moved upward and cover the entire area with good quality and level. In fact the DL42 is more like a super-super-cardioid. And it covers with less racking and paring of the microphone than you ever needed before.

But rather than just read about the DL42, we urge you to try it yourself. Ask any of our cooperating sound distributors to lend you a DL42 to try on your next production. No cost or obligation to serious professional users. Write today for a DL42 technical data sheet. Good reach with good sound. We think you'll like what you hear.



Electro-Voice

For More Details Circle (1) on Reply Card

a **Gulton**
COMPANY

AMPEREX PLUMBICON*
TV CAMERA PICKUP TUBE



*This is the tube
that was in the camera
that revolutionized TV broadcasting
seven years ago.*

INTENSIFIED
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SILICON-VIDICON



VIDICON

PLUMBICON

**This is the line,
the only line
that includes all four types
of one-inch camera tubes
currently used in
today's TV cameras.**

Amperex, who gave the TV industry the Plumbicon camera pickup tube seven years ago, is the only manufacturer of all of the four types of one-inch pickup tubes used in today's TV cameras.

Recognizing the obligations that have accrued to us as the number one source for the component that is the heart of the TV camera, we extend an invitation to anyone who is contemplating the purchase or the design of a TV camera system to discuss his specific requirements with us, with complete confidence in the objectivity and validity of our recommendations. Whatever the application — color or black and white, telecasting or video-taping, CCTV or CATV, industrial, educational or medical, surveillance security or military reconnaissance.

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

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BROADCAST engineering

The technical journal of the broadcast-communications industry [®]

in this issue...

28 Basic Digital Logic Review. John Lee continues with Part 3 of his 4-part series by covering a variety of gates used in logic designs. **John Lee.**

34 Television Down The Line. A manufacturer takes a look at what he thinks we are likely to see in TV equipment in the years to come. **Bagio Presti.**

38 Jungle Guides Needed. A station engineer discusses the problem of equipment purchases at a time when circuit sophistication is ever increasing. **Fred Moore.**

42 Read Those Specifications. A chief engineer tells what to look for in the specification sheets so your equipment comparisons will be more meaningful. **Dennis Ciapura.**

54 The FCC Expects You To Know. BE Editor reviews citations and fines against stations involved in lottery and excessive power. **Ron Merrell.**

59 Address Directory. Complete list of addresses for companies listed in this year's equipment section.

65 1973 Buyer's Guide Equipment Directory. Our new and enlarged directory includes 600 categories.

ABOUT THE COVER

Our special cover treatment this year calls attention to the industry's most complete equipment buyer's guide. Design by Webb Streit.

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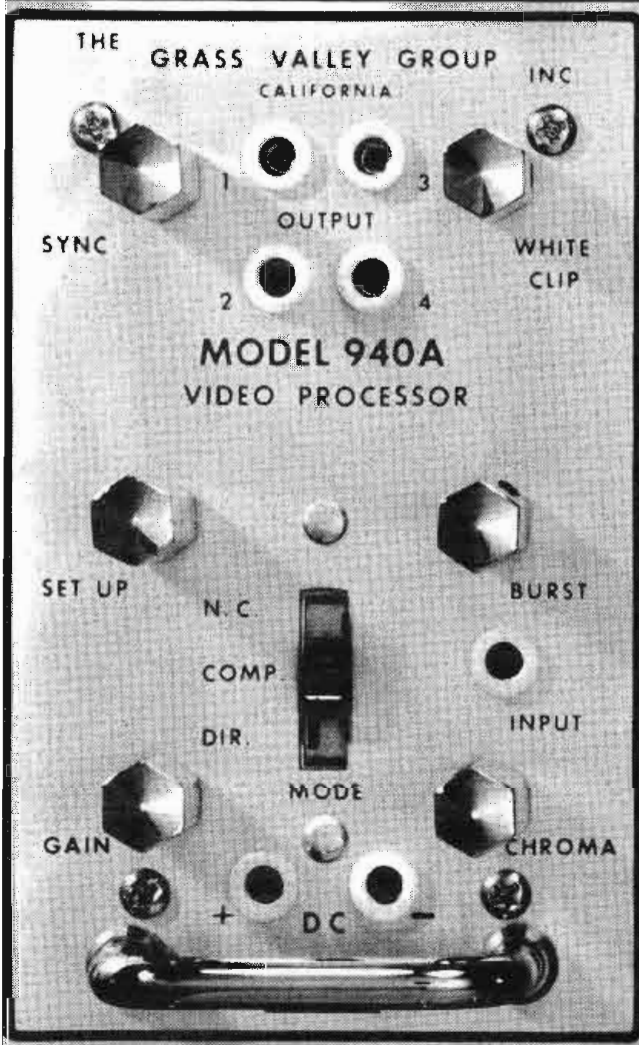
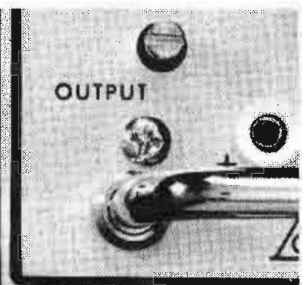
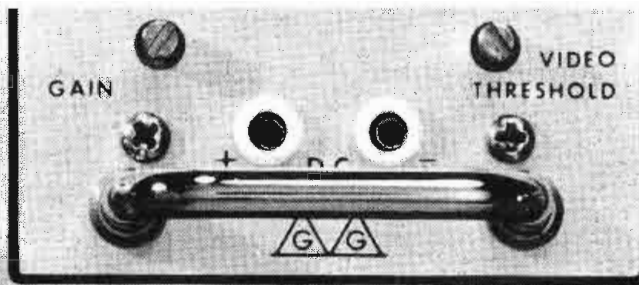
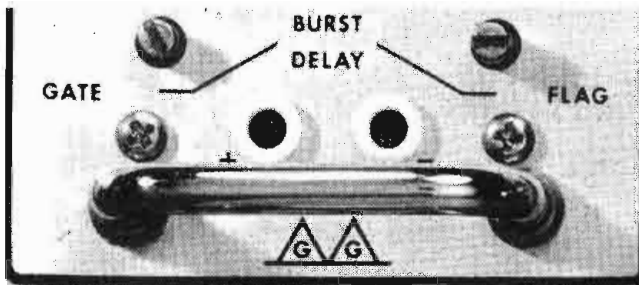
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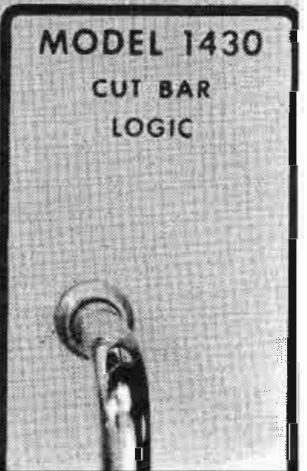
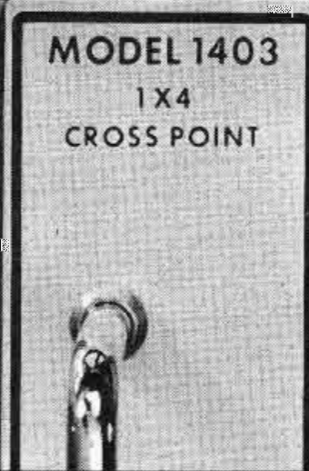
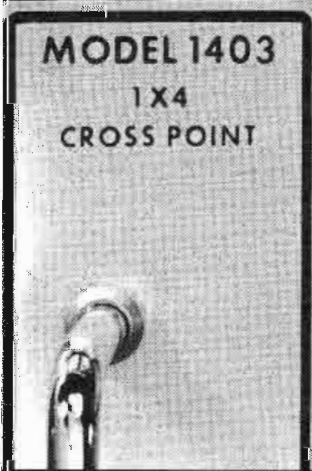
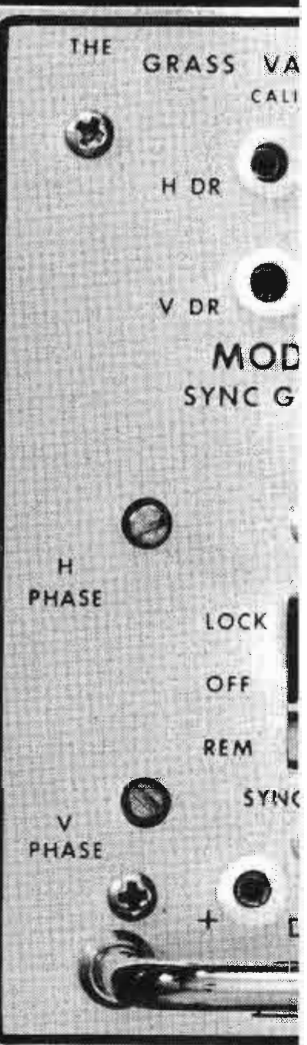
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DIRECT CURRENT FROM D. C.

September, 1973

by Howard T. Head

Circular Polarization To Be Tested for TV

A Chicago VHF TV station is preparing to test the effect of transmitting with circular polarization as a source of possible improvement over transmissions with the standard horizontally-polarized signal. Signals will be transmitted from the top of the world's tallest building, the Sears-Roebuck building, where it is eventually planned to locate all of the Chicago television stations.

The use of circular polarization holds promise of providing increased signal at the receiver, although, ideally, maximum improvement would be expected only when an appropriate circularly-polarized receiving antenna is also employed. However, as proved to be the case with circular polarization for FM broadcast, unexpected improvements may be realized in areas where simple indoor antennas predominate and reflected signals are numerous. One important unanswered question in TV is the extent to which time delays resulting from differing transmission path lengths may aggravate ghosting problems.

Previous tests of circular polarization in TV have been relatively limited, confined principally to tests on Ch. 10 at Altoona, Pennsylvania, Channel 31 in New York City, and Ch. 6 in El Salvador. The comprehensive test program planned in Chicago could go far to providing answers to many of the remaining questions.

Commission to Simplify Directional Antenna Operator Rules

When the Commission adopted new Rules permitting the operation of standard broadcast directional antennas by operators holding less than a first-class radio-telephone license, a requirement was adopted for a partial proof of performance consisting of at least ten field strength measurements along each radial route to verifying the directional antenna pattern. The Rules require an analysis of the data to establish the inverse distance field strength, and furthermore this entire process must be repeated annually so long as reduced-grade operators are employed.



It's no big thing!

It's only a broadcast quality, portable COLOR camera that's priced under \$4000 and weighs less than 6 lbs.!

AKAI'S new CCS-150S Portable Color Camera weighs only 5.8 lbs. yet offers professional studio quality costing thousands more in any other camera.

The specifications tell the story:

- Completely compatible with any U.S. TV system.
- Two vidicon system with separate Luminance and Chrominance channels.
- S/N ratio: Luminance—Better than 40dB
Chrominance—Better than 30dB
- 525 line scanning, 2 to 1 interlaced, locked chroma.
- Better than 300 line resolution.
- Built-in 6 to 1 zoom lens.
- Viewfinder—1.5" picture tube.
- Built-in directional microphone.
- Servo controlled Iris.
- Sensitivity control: 60 to 2,000 ft. candles (without filters)
- AC or battery operated.
- Dimensions: 3½" (W) x 10" (H) x 12" (D) including lens and grip.

The performance of AKAI's new CCS-150S color camera will amaze you! Whether you use it as the perfect tool for on-location shooting or as an alternate studio camera...

But see for yourself... it's really no big thing!

For More Details Circle (6) on Reply Card

From

AKAI™

The Innovators

AKAI America, Ltd./P.O. Box 55055,
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The Commission has now concluded that this requirement is unnecessarily stringent and is preparing to change the Rules so as to require this relatively complete proof of performance only every third year rather than each year. In the intervening years, measurements at three points along each radial route are to be required, and the analysis for these years is to be omitted.

New Rules incorporating these revised provisions are expected to be issued shortly.

NAB Asks Change in FM Translator Policy

The National Association of Broadcasters (NAB) has asked the Commission to change the Rules establishing eligibility for the licensing of FM translators. Under the present Rules, an FM broadcast licensee may also hold a transmitter license so long as the translator community is within the 1 mv/m contour or if outside the contour not within the 1 mv/m contour of an FM broadcast station in another city.

These restrictions apply, however, only where the translator license is to be held by the FM broadcast station licensee. If the license is to be held by another entity, such as a local citizens group, neither of these restrictions applies. NAB contends that the present requirements may promote unfair competition and urges the Commission to extend the restrictions on translator eligibility to all licensees and not only the FM broadcast licensees.

Short Circuits

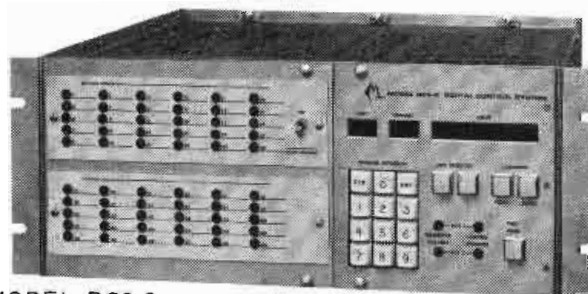
The Commission has proposed to increase allowable height of Class C and D CB stations from 20 feet to 60 feet above ground (except near airports)...The Commission has adopted Rules restricting television program exclusivity to the community of license or other communities no more than 25 miles away... Frequency monitors are no longer required at AM and FM broadcast stations; monthly frequency measurements are required... Land mobile transmitters in aircraft may now be used only for aircraft regularly flying at altitudes below one mile.

COMPUTER-ASSISTED REMOTE CONTROL



FULLY DIGITAL

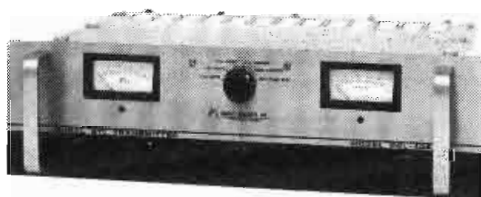
- CONTROL
- TELEMTRY
- STATUS
- AUTOMATIC LOGGING



MODEL DCS-2

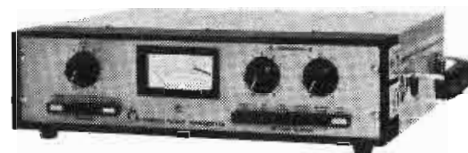
Model DCS-2 Digital Control System for operation of remotely located transmitter plants. Computer Option includes simultaneous display of 30 parameters and other features including tolerances for all parameters. The system can be programmed for totally automated transmitter plant operation.

AURAL STUDIO - TRANSMITTER & REMOTE PICK-UP LINKS



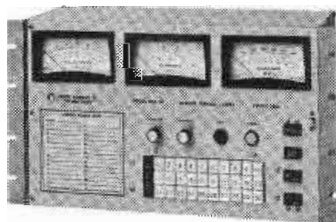
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- 148-174 MHz ■ 215-240 MHz
- 300-470 MHz ■ 890-960 MHz
- Others on Special Order



- FM Stereo on a single STL — a Moseley first!
- Time-proven STL's for all applications — AM-FM-FM Stereo
- Small-sized Remote Pick-Up Link — Models RPL 3/RPL-4

ANALOG REMOTE CONTROL



MODEL PBR-30A

Stepperless 15-channel model TRC-15A. Pushbutton model PBR-30A. Both systems available for wire and wireless service.



MODEL TRC-15A



MODEL SCG-3T FM STEREO GENERATOR

Time-proven stereo performance from an all solid-state self-contained unit.

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- Status/Alarm Systems
- Remote Control Accessories
- Digital Automatic Logging Systems
- Tolerance Alarm Unit

For further information please contact our Marketing Department

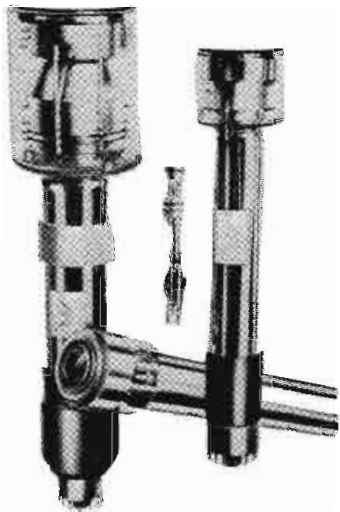


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For More Details Circle (8) on Reply Card

LETTERS TO THE EDITOR

So What's A Lottery

Dear Editor:

At this station we deeply appreciate and thoroughly use your magazine.

The June edition of **BE** carried an article by you called "The FCC Expects You to Know." In the third column on page 48 of this story you referred to two stations in Gainesville, Florida loosing \$2000 on lottery violations. Apparently they carried advertising saying that savings bonds were being given away with the purchase of new cars.

We are curious to know if the bonds were given away with each car or only with certain models (in some method based on chance).

One of our advertisers gave 50-

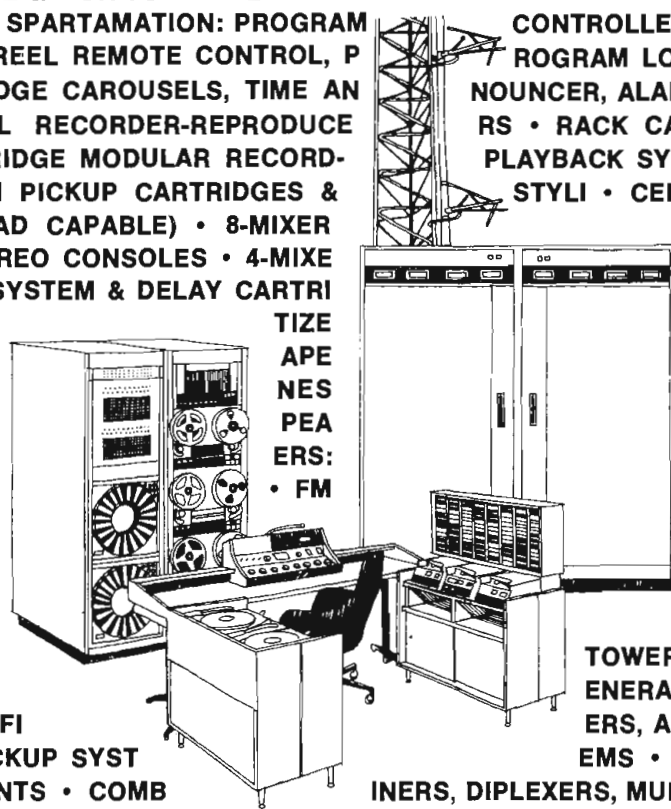
gallons away with every new car. However, in the case of his most expensive automobiles he gave an additional 50-gallons. We would like to know if that might be "chance" in the same sense as in the Gainesville case and therefore in violation of the law.

Naturally we don't expect a legal opinion from you but will appreciate whatever comments you may make.

John H. Wiegman
Engineer/Newsman
KWAL
Osburn, Ida.

Editor's Note: In this issue you will find further examples of stations

AM & FM LIMITERS • REMOTE, LINE & MONITOR AMPLIFIERS • FM ANTENNAS • ANTENNA SAMPLING & TUNING EQUIPMENT
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LER, TAPE CARTRIDGE & REEL/REEL REMOTE CONTROL, P
FIER & MONITOR, TAPE CARTRIDGE CAROUSELS, TIME AN
14" REPRODUCER • REEL/REEL RECORDER-REPRODUCE
• CENTURY SERIES TAPE CARTRIDGE MODULAR RECORD-
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CONSOLE: MONO, STEREO (QUAD CAPABLE) • 8-MIXER
SOLES • 5-MIXER MONO OR STEREO CONSOLES • 4-MIXE
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ERASER • TAPE HEAD DEMAGNI
SIZE
• TEST TAPE CARTRIDGES • T
APE
MONO OR STEREO HEADPHO
NES
CENTERS WITH FURNITURE • S
PEA
TURNTABLES • AM TRANSMITT
ERS:
kw, 25 kw OR BUILT TO ORDER
• FM
2.5 kw, 5 kw, 12.5 kw, 20 kw, 40
QUENCY & MODULATION MONI
TATION MONITORS, MONO & S
WIRE LINK REMOTE CONTROL •
• INTENSITY METERS • ANTENNA
• DIRECT FM EXCITER • SCA G
LIGHTING SYSTEMS • PREAMPLIFI
POWER SUPPLIES • REMOTE PICKUP SYST
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RS • RACK CABINETS • COAX & SHIELDED CABLE
PLAYBACK SYSTEM • TAPE CARTRIDGES & RECON-
STYLI • CENTURION CUSTOM 8-16 MIXER AUDIO
MONO OR STEREO AUDIO CON-
REMOTE AMPLIFIER • TAPE CAR-
DGES • TAPE CARTRIDGE OR REEL
R • TAPE HEAD ALIGNMENT GAUGE
CARTRIDGE STORAGE RACKS •
• STUDIO OR REMOTE CONTROL
KER SYSTEMS • MICROPHONES •
50 W, 1 kw, 3 kw, 5 kw, 10 kw, 15
TRANSMITTERS: 10 W, 250W, 1 kw,
kw OR BUILT TO ORDER • AM FRE-
TORS • FM FREQUENCY & MODU-
TEREO & SCA • RF AMPLIFIERS •
S.T.L. • PHASE SAMPLERS • FIELD
TOWERS • FM ANTENNAS • ISOCOUPERS
ENERATOR • STEREO GENERATOR • TOWER
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EMS • AUDIO RECORDING TAPE • LEASE &
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BE FIRST NAME FRIENDS . . . BIG ENOUGH TO OFFER EVERYTHING. CALL US COLLECT . . .

in a word . . .

everything



SPARTA
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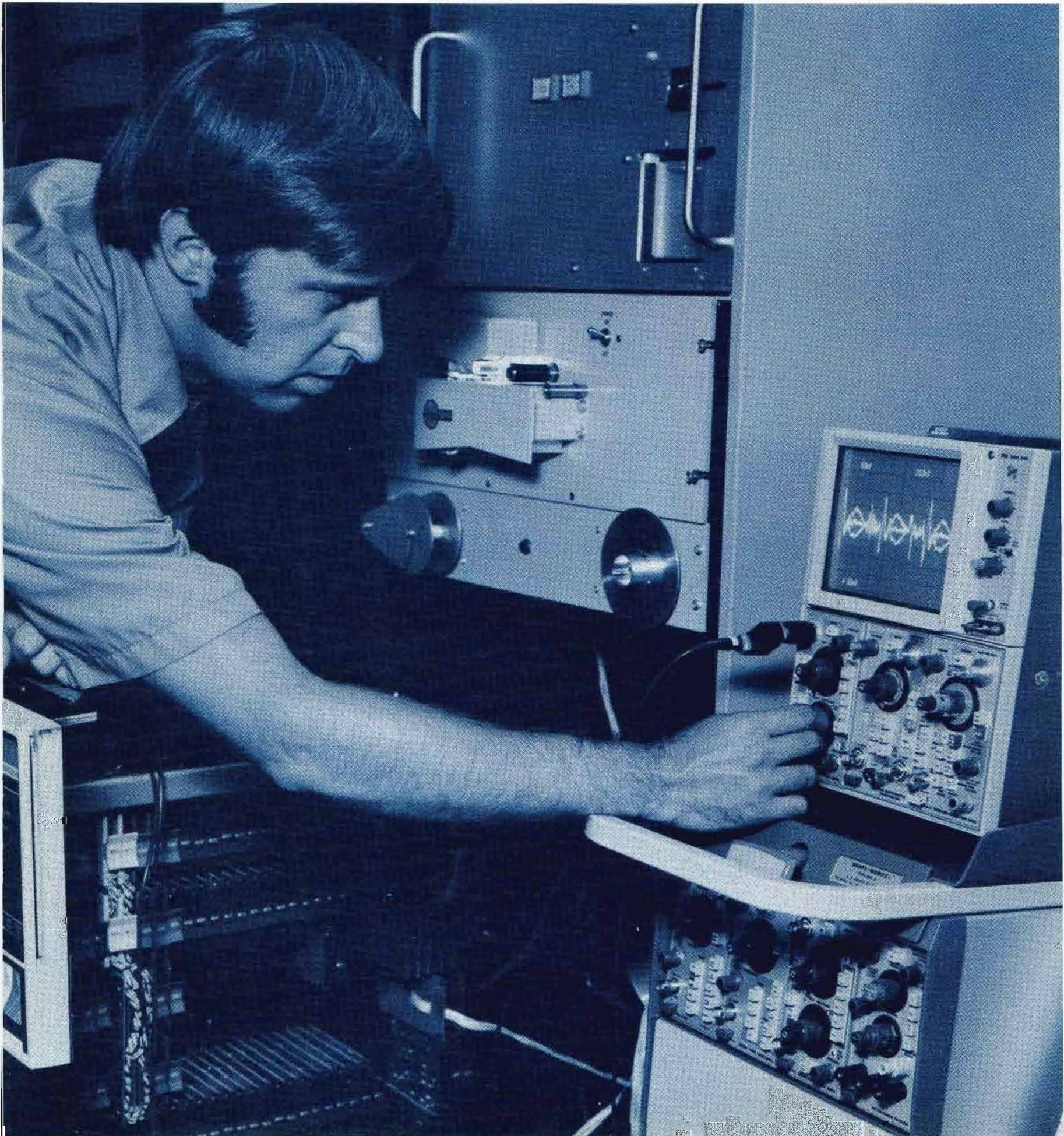
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A DIVISION OF COMPUTER EQUIPMENT CORPORATION

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CABLE engineering

in this issue...

Annual Cable Buyers' Guide	CE-2
Address Directory	CE-13



CATV Product Directory

Red listings are for manufacturers who advertised in this issue. The red listing in any category will refer you only to advertisements of equipment listed in that category.

Immediately following the cable equipment section and the broadcast-communications product sections are comprehensive lists of equipment manufacturers.

The following categories are for equipments especially designed for use in cable operations. The more general categories of communications equipment are listed under the Guide heading Broadcast-communication Product Directory. Cameras, recorders, switchers and a wide line of other support equipment are in that section.

Reader Service Card Good For One Year

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Ameco, Inc.
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Anixter-Pruzan
Blonder-Tongue Labs., Inc.
Buckeye Telephone & Supply Co.
C-COR Elect., Inc.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Elect. Indust. Eng., Inc.
Entron, Inc.
Environmental Comm., Inc.
GTE Sylvania
Jerrold Elect. Corp.
Lindsay Specialty Prods. Ltd.
Magnavox
Maspro Co., Inc.
Teleaudio Centre
Teleng Inc.
Theta-Com of Calif.
TV Cable Supply Co., Inc.
Ultra Audio Prods.
Vikoa, Inc.

Amplifiers, Broadband

AEL Comm. Corp.
Ameco, Inc.
Anaconda Elect.
Anixter-Pruzan
Avantek, Inc.
B&K Instr., Inc.
Blonder-Tongue Labs., Inc.
Broadcast Prods., Inc.
C-COR Elect., Inc.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Elect. Indust. Eng., Inc.
Entron, Inc.
Environmental Comm., Inc.
GTE Sylvania
Jerrold Elect. Corp.
JFD Systems Div.
Kay Elemetrics Corp.
KLM Elect.
Lindsay Specialty Prods. Ltd.
Magnavox

RMS Elect., Inc.
Rohde & Schwarz Sales
Sitco Antenna Co.
Teleng Inc.
Theta-Com of Calif.
TV Cable Supply Co., Inc.
Vikoa, Inc.

Amplifiers, Distribution

Omnix. See page CE-5

Amplifiers, Distribution Pulse

Omnix. See page CE-5

Amplifiers, Line Extender

Able Comm. & Elect.
Ameco, Inc.
Anaconda Elect.
Anixter-Pruzan
Buckeye Telephone & Supply Co.
Cascade Elect. Ltd.
C-COR Elect., Inc.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Elect. Indust. Eng., Inc.
Entron, Inc.
Environmental Comm., Inc.
GTE Sylvania
Jerrold Elect. Corp.
Lindsay Specialty Prods. Ltd.
Magnavox
MPI Co.
Riker Video
Teleng Inc.
Theta-Com of Calif.
TV Cable Supply Co., Inc.
Vikoa, Inc.

Amplifiers, Processing

Ameco, Inc.
Amer. Data Corp.
Anixter-Pruzan
Ball Bros. Research Corp.
CBS Labs.
Cohu, Inc.
Jerry Conn & Assoc., Inc.

Delta-Benco-Cascade Ltd.
Dynasciences Corp.
Environmental Comm., Inc.
GTE Sylvania
Scientific-Atlanta, Inc.
Video Eng. Co., Inc.
Vikoa, Inc.
Vital Indust. Inc.

Amplifiers, RF

AEL Comm. Corp.
Alaun Engineering
Ameco, Inc.
Anixter-Pruzan
AVA Elect. & Machine Corp.
Avantek, Inc.
Beaver Elect. Ltd.
B & K Instr., Inc.
Blonder-Tongue Labs., Inc.
C-COR Elect., Inc.
Jerry Conn & Assoc., Inc.
Elect. Indust. Eng., Inc.
Environmental Comm., Inc.
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JFD Systems Div.
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RMS Elect., Inc.
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Amplifiers Station, Modular

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Amplifiers, Subcarrier

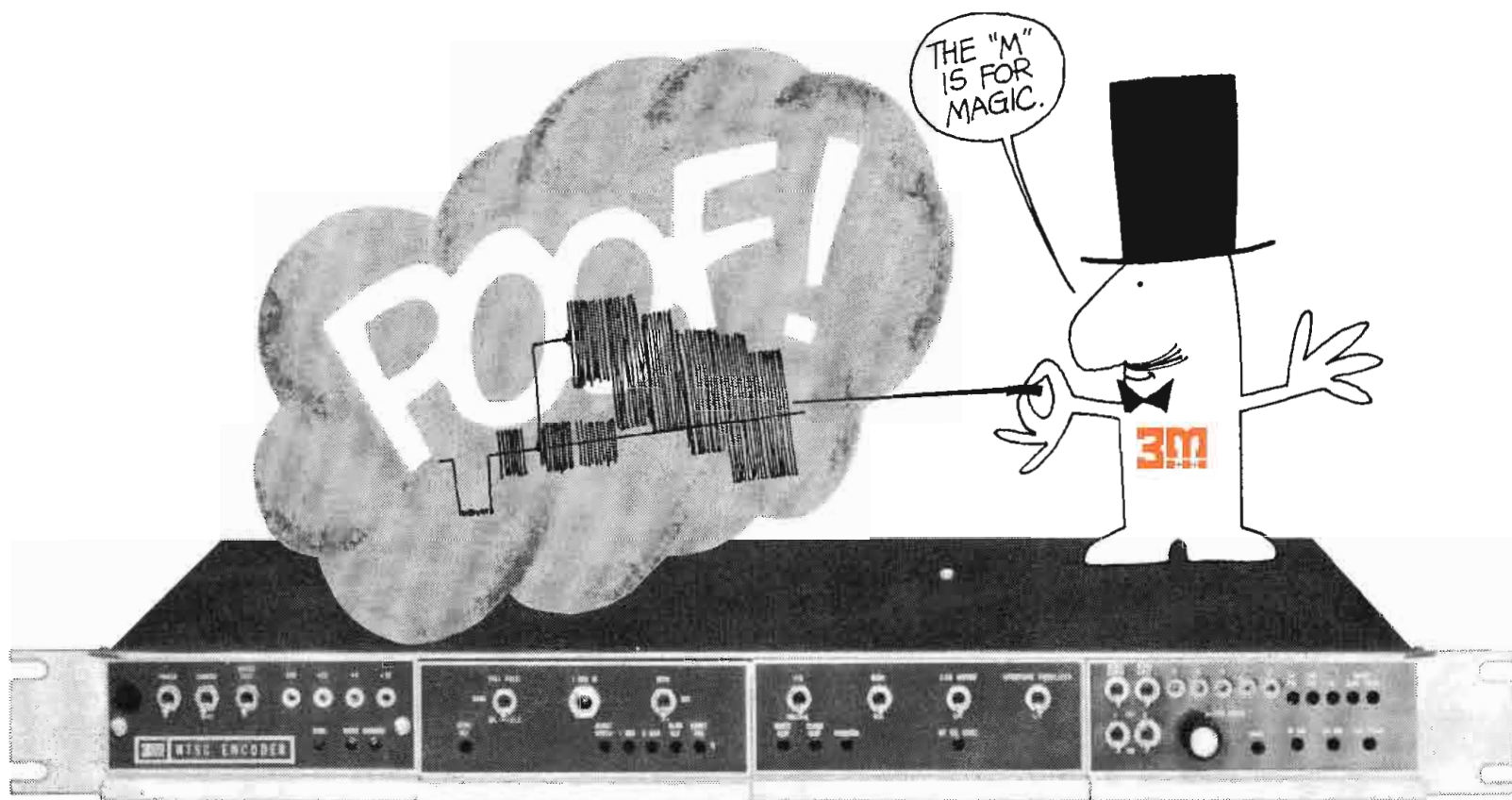
Omnix. See page CE-5

Amplifiers, Trunk

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Scala Radio Corp.
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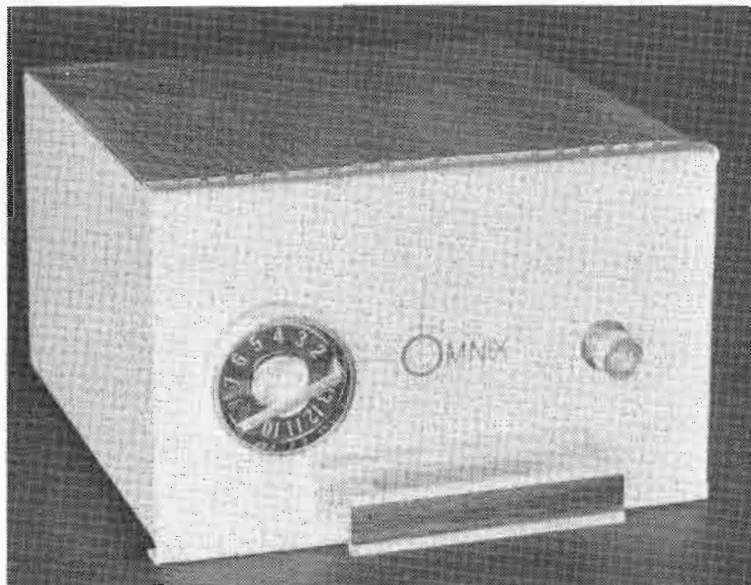
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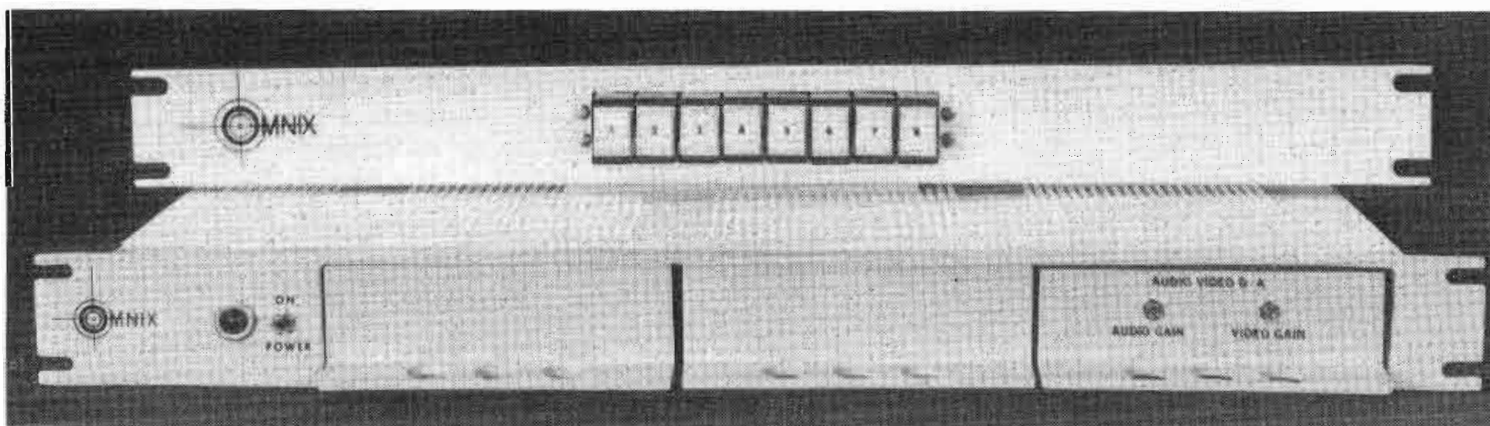
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Phasecom Corp.
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Cable Coaxial

Superior Continental. See Page CE-8-9

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Omnix. See page CE-5

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Encoder, Video

3 M Co., Mincom Div.
See page CE-3

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Omnix. See page CE-5

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Generators, Test

Omnix. See page CE-5

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Fung Eng. Co.
Jerrold Elect. Corp.
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Javelin Elect. Co.
Magnavox
Noram Comm. Ltd.
Panasonic VTR/CCTV
Rank Precision Indust. Inc.
RCA Corp.
Southern Telephone
Supply Co.
Tele-Cine Inc.
Video Eng. Co., Inc.

Lights, Studio

F&B/Ceco of Calif., Inc.
Alan Gordon
Enterprises, Inc.
RCA Corp.
Telaudio Centre
Video Eng. Co., Inc.

Meters, RF Volts

B&K Instr., Inc.
See page CE-11

Microwave Relay Equip.

Avantek, Inc.
Buckeye Telephone
& Supply Co.
Coastcom
Environmental Comm., Inc.
Innovative Television
Equip., Inc.
Microwave Systems Co.
PRD Elect., Inc.
RCA Corp.
Soladyne Internatl., Inc.

Mixers

Omnix. See page CE-5

Modulators, Audio

Able Comm. & Elect.
Ameco, Inc.
Catel
Coastcom
Jerry Conn & Assoc., Inc.
Elect. Indust. Eng., Inc.
Fung Eng. Co.
Jerrold Elect. Corp.
Leaming Indust. Corp.
Noram Comm. Ltd.
Phasecom Corp.
Rohde & Schwarz Sales
Video Eng. Co., Inc.

Modulators, Video

Omnix. See page CE-5

Ameco, Inc.
Anixter-Pruzan
Catel
Jerry Conn & Assoc., Inc.
Dynair Elect., Inc.

Elect. Indust. Eng., Inc.
F&B/Ceco of Calif., Inc.
Fung Eng. Co.
Jerrold Elect. Corp.
JFD Systems Div.
Nelson-Hershfield Elect.
Noram Comm. Ltd.
Phasecom Corp.
Rohde & Schwarz Sales
Telemet
Video Eng. Co., Inc.

Monitors, Video

Anixter-Pruzan
Audiotronics Corp.
Ball Bros. Research Corp.
Beston Elect. Inc.
Comspace Corp.
Conrac Div.
Cunningham Corp.
Electrohome, Ltd.
F&B/Ceco of Calif., Inc.
GBC Closed Circuit
TV Corp.
Hitachi Shibaden
Corp. of Amer.
Javelin Elect. Co.
Jerrold Elect. Corp.
Nelson-Hershfield Elect.
Noram Comm. Ltd.
Panasonic VTR/CCTV
RCA Corp.
SC Elect., Inc.
Southern Telephone
Supply Co.
Tele-Cine Inc.
Telemation, Inc.

Ultra Audio Prods.
Video Aids Corp. of Colo.
Video Eng. Co., Inc.
Visual Elect. Corp.
World Video, Inc.

Monitors, Waveform

Avtel Corp.
Ball Bros. Research Corp.
Beston Elect. Inc.
B & K Instr., Inc.
Cunningham Corp.
Telaudio Centre
Ultra Audio Prods.
Video Eng. Co., Inc.

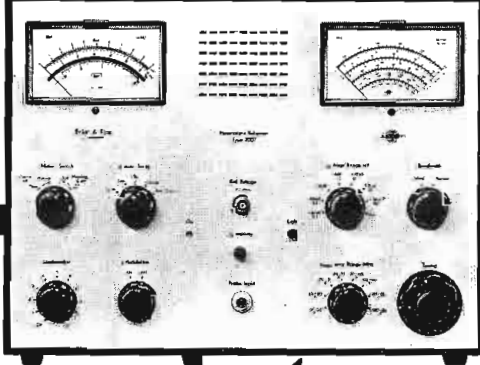
Non-Duplications Switchers

Amer. Data Corp.
Anixter-Pruzan
Avtel Corp.
Phasecom Corp.
RCA Corp.
Rich Labs., Inc.
Vital Indust., Inc.

Pedestals

Aberdeen Co.
Anixter-Pruzan
Buckeye Telephone
& Supply Co.
A. B. Chance Co.
Jerry Conn & Assoc., Inc.
F&B/Ceco of Calif., Inc.
General Cable Corp.
Jerrold Elect. Corp.
Innovative Television
Equip., Inc.
RCA Corp.

**2007
RF Selective
Voltmeter**




*Lab
Quality
Signal Strength
Measurements*

The Model 2007 Precision RF Selective Voltmeter is a laboratory-quality instrument designed to make precision signal strength measurements in the 100 kHz-to-305 MHz frequency range. The unit covers the full VHF, low band, high band, and super band in 8 ranges. Carrier frequency or channel numbers are easily identified using the replaceable frequency meter scales. The unit is completely portable and can operate off internal, re-chargeable, Ni-Cad batteries; 115-220 V line; or external 6 V battery.

Write or call for a data sheet.

B&K Instruments, Inc.
Brüel & Kjær Precision Instruments
5111 West 164th Street, Cleveland, Ohio 44142 / Telephone: (216) 267-4800
1440 South State College Boulevard, Anaheim, Cal. 92806 / Telephone: (714) 778-2450



Southern Telephone
Supply Co.
Tele-Cine Inc.
TV Cable Supply Co., Inc.
Video Eng. Co., Inc.

Pole Line Hardware

Aberdeen Co.
Anixter-Pruzan
AVA Elect. & Machine Corp.
Beaver Elect. Ltd.
Buckeye Telephone
& Supply Co.
A. B. Chance Co.
Jerry Conn & Assoc., Inc.
General Cable Corp.
Kortick Mfg. Co.
Preform Line Prods. Co.
Reliable Electric
Southern Telephone
Supply Co.
Swager Tower Corp.
TV Cable Supply Co., Inc.
Utilities Service Co.
Westay Co.

Power Couplers

Ameco, Inc.
Anixter-Pruzan
Beaver Elect. Ltd.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Entron, Inc.
Jerrold Elect. Corp.
Magnavox
Theta-Com of Calif.

Power Supplies

Alma Eng.
Ameco, Inc.
Amer. Data Corp.
Anixter-Pruzan
Beaver Elect. Ltd.
Broadcast Prods., Inc.
Buckeye Telephone
& Supply Co.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Entron, Inc.
Jerrold Elect. Corp.
Maspro Co., Inc.
Ratelco Inc.
Rich Labs., Inc.
Sawyer Indust., Inc.
Soladyne Internatl., Inc.
Sola Electric
Southern Telephone
Supply Co.
Systron-Donner Corp.
Terado Corp.
Tomco Comm. Inc.
TV Cable Supply Co., Inc.
Viscount Indust. Ltd.
Wilmore Elect. Co., Inc.

Preamps, Single Channel

Anixter-Pruzan
Beaver Elect. Ltd.
Blonder-Tongue Labs., Inc.
Broadcast Prods. Inc.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Entron, Inc.
Environmental Comm., Inc.

Jerrold Elect. Corp.
JFD Systems Div.
Maspro Co., Inc.
Riker Video
Rohde & Schwarz Sales
Tomco Comm. Inc.
TV Cable Supply Co., Inc.

Recorders, Audio

Ampex Corp.
Audiotronics Corp.
B & K Instr., Inc.
Broadcast Prods. Inc.
Echo Science Corp.
F&B/Ceco of Calif., Inc.
RCA Corp.
Sparta Elect. Corp.
Tape-Athon Corp.
Telaudio Centre
Video Eng. Co., Inc.
VIF Internatl.

Recorders, Video Tape

Ampex Corp.
Anixter-Pruzan
Avtel Corp.
Diamond Power
Specialty Corp.
Echo Science Corp.
F&B/Ceco of Calif., Inc.
Hitachi Shibaden
Corp. of Amer.
Int. Video Corp.
Javelin Elect. Co.
3M Co., Mincom Div.
Noram Comm. Ltd.
Panasonic VTR/CCTV
RCA Corp.
Sony Corp. of Amer.
Southern Telephone
Supply Co.
Spin Physics, Inc.
R. H. Tyler Co.
Video Eng. Co., Inc.

Scramblers, Unscramblers

Omnix. See page CE-5

Signal Corrector (Video)

Jerry Conn & Assoc., Inc.
Dynair Elect., Inc.
Echo Science Corp.
Vital Indust., Inc.

Signal Strength Meter

B&K Instr., Inc.

See page CE-11

Splitting & Mixing Networks

Ameco, Inc.
Anixter-Pruzan
Antsco Corp.
AVA Elect. & Machine Corp.
Beaver Elect. Ltd.
Blonder-Tongue Labs., Inc.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Dolphin Comm. Corp.
Entron, Inc.
Jerrold Elect. Corp.-
JFD Systems Div.
Magnavox
Maspro Co., Inc.
MPI Co.
TV Cable Supply Co., Inc.

Video Eng. Co., Inc.

Sweep Systems

Avantek, Inc.
Jerrold Elect. Corp.
Kay Elemetrics Corp.
Rohde & Schwarz Sales
Systron-Donner Corp.
Theta-Com of Calif.

Switchers

Omnix. See page CE-5

Alaun Engineering
Alma Eng.
Amer. Data Corp.
Ball Bros. Research Corp.
Beston Elect. Inc.
Blonder-Tongue Labs., Inc.
Cablewave Systems Inc.
Cohu, Inc.
Dynair Elect., Inc.
Dynasciences Corp.
F&B/Ceco of Calif., Inc.
Fung Eng. Co.
GBC Closed Circuit
TV Corp.
Hitachi Shibaden
Corp. of Amer.
Int. Video Corp.
Jerrold Elect. Corp.
Kay Elemetrics Corp.
Matrix Systems Corp.
Noram Comm. Ltd.
Philips Bcst. Equip. Corp.
RCA Corp.
Shintron Co. Inc.
Telemation, Inc.
Telemet
Video Eng. Co., Inc.
Viscount Indust. Ltd.
Visual Educom Inc.
Visual Elect. Corp.
Vital Indust., Inc.

Systems Research & Development

Omnix. See page CE-5

Tap-offs

Ameco, Inc.
Anixter-Pruzan
AVA Elect. & Machine Corp.
Beaver Elect. Ltd.
Blonder-Tongue Labs., Inc.
Buckeye Telephone
& Supply Co.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Entron, Inc.
GTE Sylvania
Jerrold Elect. Corp.
JFD Systems Div.
Magnavox
Maspro Co., Inc.
MPI Co.
Preform Line Prods. Co.
Riker Video
RMS Elect., Inc.
Saxton Prods. Inc.
Southern Telephone
Supply Co.
Theta-Com of Calif.
TV Cable Supply Co., Inc.
Video Eng. Co., Inc.

Winegard Co.

Taps, Directional

Aberdeen Co.
Ameco, Inc.
Amer. Technology Co., Inc.
Anaconda Elect.
Anixter-Pruzan
AVA Elect. & Machine Corp.
Beaver Elect. Ltd.
Blonder-Tongue Labs., Inc.
Buckeye Telephone
& Supply Co.
Jerry Conn & Assoc., Inc.
Delta-Benco-Cascade Ltd.
Dophon Comm. Corp.
Entron, Inc.
GTE Sylvania
Jerrold Elect. Corp.
JFD Systems Div.
Lindsay Specialty
Prods. Ltd.
Magnavox
RMS Elect., Inc.
Saxton Prods. Inc.
Southern Telephone
Supply Co.
Theta-Com of Calif.
TV Cable Supply Co., Inc.

Title Edgers

Omnix. See page CE-5

Title Inserters

Omnix. See page CE-5

Towers & Accessories

Advance Indust., Inc.
Allied Tower Co.
Andrews Tower, Inc.
Anixter-Pruzan
Beaver Elect. Ltd.
British Insulated
Callender's Cable Ltd.
Buckeye Telephone
& Supply Co.
Jerry Conn & Assoc., Inc.
Copperweld Corp.
E-Z Way Prods., Inc.
Ft. Worth Tower Co., Inc.
Gates Radio
Grasis Fabricating Co.
Jampro Antenna Co.
Microflect Co., Inc.
Path Prods. Inc.
RCA Corp.
RF Systems, Inc.
Rohn Mfg.
Soladyne Internatl., Inc.
Stainless, Inc.
Swager Tower Corp.
Systems Eng., Inc.
Tri-Ex Tower Corp.
TV Cable Supply Co., Inc.
Up-Right Scaffolds
Utility Tower Co.

Tower Service

Bcst. Tower Service,

See page CE-4

Trucks, Ladder & Bucket

Buckeye Telephone
& Supply Co.

McCabe-Power Body Co.
Ratelco Inc.
Telsta/General Cable
Apparatus Div.
Time Mfg. Co.
Utility Body Co.
Van Ladder, Inc.

Two-Way Home Terminal Equip.

AVA Elect. & Machine Corp.
Cascade Elect. Ltd.
Coastcom
Jerry Conn & Assoc., Inc.
Elect. Indust. Eng., Inc.
Jerrold Elect. Corp.
K'Son Corp.
Magnavox
RMS Elect., Inc.
Television Audience
Response System Div.

Video Equip. & Accessories

3M Co., Mincom Div.

See page CE-3

Quick-Set. See page CE-10

Ampex Corp.
Anixter-Pruzan
Audio-Video Eng. Co.

Avtel Corp.
Ball Bros. Research Corp.
Beston Elect. Inc.
CBS Labs.
Cohu, Inc.
Commercial Elect. Inc.
Data Disc, Inc.
Datavision Inc.
Diamond Power
Specialty Corp.
Dynair Elect., Inc.
Dynasciences Corp.
Edison Elect.
Electrohome, Ltd.
F&B/Ceco of Calif., Inc.
Gates Radio
Hitachi Shibaden
Corp. of Amer.

Innovative Television
Equip., Inc.

Int. Video Corp.

Kalart Victor Corp.
Matrix Systems Corp.
Memorex Corp.
Noram Comm. Ltd.
Panasonic VTR/CCTV
Philips Bcst. Equip. Corp.
RCA Corp.

Recording Center, Inc.
Riker Video
Rust Corp.
Sony Corp. of Amer.
Stereotronics Television Co.
Techno Prods. Co.
Telaudio Centre
Tele-Cine Inc.
Telestrator Indust., Inc.
Telesync Corp.
Television Equip. Assoc.
Ultra Audio Prods.
Video Aids Corp. of Colo.
Video Eng. Co., Inc.
Vikoa, Inc.
Viscount Indust. Ltd.
Visual Educom Inc.
Visual Elect. Corp.
Vital Indust., Inc.

Video Equip. & Editor

Ampex Corp.
Anixter-Pruzan
Dynasciences Corp.
F&B/Ceco of Calif., Inc.
3M Co., Mincom Div.
Panasonic VTR/CCTV
RCA Corp.

Telemation, Inc.
Telesync Corp.
Video Aids Corp. of Colo.
Vital Indust., Inc.

Video Tape

3M Co., Magnetic
Prods. Div.

VTR Heads

Spin Physics Inc.

See page CE-6

Weather Units

Ameco, Inc.
Anixter-Pruzan
Avtel Corp.
Beaver Elect. Ltd.
Buckeye Telephone
& Supply Co.
Concise Instr. Design Ltd.
Jerry Conn & Assoc., Inc.
Metrodata Corp.
Soladyne Internatl., Inc.
Telemation, Inc.
Telestrator Indust., Inc.
Texas Elect., Inc.
Texas Instr. Inc.
R. H. Tyler Co.

CATV Address List

A

Aberdeen Company
P.O. Box 2663
Culver City, Cal. 90230

Able Comm. & Elect.
P.O. Box 236
Palm Harbor, Fla. 33563

Advance Indust., Inc.
Lunar Comm.
2301 Bridgeport Dr.
P.O. Box 1410
Sioux City, Ia. 51102

AEL Comm. Corp.
Subs. of Amer. Elect.
Labs., Inc.
P.O. Box 507
Lansdale, Pa. 19446

Alaun Engineering
1827 Copa Way
Monterey Park, Cal. 91754

Allied Tower Co., Inc.
P.O. Box 331
809 Kansas St.
S. Houston, Tex. 77587

Alma Engineering
7990 Dagget St.
San Diego, Cal. 92111

Alpha Wire Corp.
711 Ledgerwood Ave.
Elizabeth, N.J. 07207

Ameco, Inc.
2960 Grand Ave.
P.O. Box 13741
Phoenix, Ariz. 85002

American Data Corp.
315 Wynn Dr.
P.O. Box 5191
Huntsville, Ala. 35806

Amer. Technology Co., Inc.
3630 W. Clarendon St.
Phoenix, Ariz. 85019

Ampex Corporation
Audio-Video Systems Div.
401 Broadway
Redwood City, Cal. 94063

Anaconda Electronics
305 N. Muller St.
Anaheim, Cal. 92801

Andrews Tower, Inc.
1420 Layton Ave.
Ft. Worth, Tex. 76117

Angenieux Corp of
Amer., Inc.
440 Merrick Rd.
Oceanside, N.Y. 11572

Anixter-Pruzan
1963 1st Ave. South
Seattle, Wash. 98134

Antsco Corporation
17 West Sierra Madre Blvd.
Sierra Madre, Cal. 91024

Audio-Video Eng. Co.
65 Nancy Blvd.
Merrick, N.Y. 11566

Audiotronics Corp.
Video Systems Div.
7428 Bellaire Ave.
N. Hollywood, Cal. 91605

AVA Elect. & Machine Corp.
242 Pembroke Ave.
Lansdowne, Pa. 19050

Avantek, Inc.
3175 Bowers Ave.
Santa Clara, Cal. 95051

Avtel Corp.
44 Railroad Ave.
Glen Head, N.Y. 11545

B

Ball Brothers
Research Corp.
Miratel Div.
1633 Terrace Dr.
St. Paul, Minn. 55113

Baron Wire & Cable Corp.
4300 W. Montrose Ave.
Chicago, Ill. 60641

Beaver Elect. Ltd.
70 Ronson Dr.
Toronto, Ontario,
Canada M9W-1B8

Belden Corp.
Richmond, Ind. 47374

Berkshire Electric Cable Co.
River Road
Leeds, Mass. 01053

Beston Elect. Inc.
No. 20 on The Mall
Prairie Village, Kan. 66208

B & K Instruments, Inc.
5111 W. 164th St.
Cleveland, Ohio 44142

Blonder-Tongue Labs., Inc.
One Jake Brown Rd.
Old Bridge, N.J. 08857

Brand-Rex Company
P.O. Box 498
Willimantic, Conn. 06226

British Insulated Callender's
Cables Ltd.
P.O. Box 5
21 Bloomsbury St.
London WC1B 3Qn, England

Broadcast Elect., Inc.
8810 Brookville Rd.
Silver Spring, Md. 20910

Broadcast Products, Inc.
660 Lofstrand Lane
Rockville, Md. 20850

Broadcast Tower Service
P.O. Box 448
Sioux Falls, S.D. 57101

Buckeye Telephone
& Supply Co.
1250 Kinnear Rd.
Columbus, Ohio 43221

C

Cablewave Systems, Inc.
60 Dodge Ave.
North Haven, Conn. 06473

Canada Wire
& Cable Co., Ltd.
147 Laird Dr.
Toronto, Ontario, Canada

Cascade Elect. Ltd.
1111 C Street
Bellingham, Wash. 98225

Catel
Div. of United Scientific
1030 W. Evelyn
Sunnyvale, Cal. 94086

CBS Laboratories
227 High Ridge Rd.
Stamford, Conn. 06905

C-COR Elect., Inc.
60 Decibel Rd.
State College, Pa. 16801

Cerro CATV
Hall Mill Rd.
Freehold, N.J. 07728

A. B. Chance Co.
210 N. Allen St.
Centralia, Mo. 65240

Cleveland Trencher Div.
20100 St. Clair Ave.
Cleveland, Ohio 44117

Coastcom
2346 Stanwell Dr.
Concord, Cal. 94520

Cohu, Inc.
Electronics Div.
P.O. Box 623
San Diego, Cal. 92112

Commercial Elect. Inc.
880 Maude Ave.
Mountain View, Cal. 94040

Comm/Scope Corp.
P.O. Box 2406
15 N. Center St.
Hickory, N.C. 28601

Comspace Corp.
350 Great Neck Rd.
Farmingdale, N.Y. 11735

Concise Inst. Design Ltd.
260 Geary Ave.
Toronto, 170,
Ontario, Canada

Jerry Conn & Assoc., Inc.
550 Cleveland Ave.
Chambersburg, Pa. 17201

Conrac Div., Conrac Corp.
600 N. Rimsdale Ave.
Covina, Cal. 91722

Copperweld Corp.
Copperweld Bimetallics Div.
Box 1000
Glassport, Pa. 15045

Cunningham Corp.
10 Carriage St.
Honeoye Falls, N.Y. 14472

Cush Craft Corp.
621 Hayward St.
Manchester, N.H. 03103

D

Data Disc., Inc.
686 W. Maude Ave.
Sunnyvale, Cal. 94086

Datavision Inc.
15932 Shady Grove Rd.
Gaithersburg, Md. 20760

Davis Manufacturing
1500 S. McLean Blvd.
P.O. Box 1801
Wichita, Kans. 67213

Delta-Benco-Cascade Ltd.
124 Belfield Rd.
Rexdale, Ontario,
Canada M9W1G1

Diamond Expansion
Bolt Co.
500 N. Ave.
Garwood, N.J. 07027

Diamond Power
Specialty Corp.
P.O. Box 415
East Main Pike
Lancaster, Ohio 43130

Ditch Witch
The Charles Machine
Works, Inc.
P.O. Box 66
Perry, Okla. 73077

Dolphin Comm. Corp.
181 Church St.
Pughkeepsie, N.Y. 12502

Dynair Electronics, Inc.
6360 Federal Blvd.
San Diego, Cal. 92114

Dynasciences Corp.
Scientific Systems Div.
Township Line Rd.
Blue Bell, Pa. 19422

E

Eastman Kodak Co.
343 State St.
Rochester, N.Y. 14650

Echo Science Corp.
485 E. Middlefield Rd.
Mountain View, Cal. 94040

Edison Elect. Div.
McGraw Edison
Daven/Measurements,
Grenier Field
Manchester, N.H. 03103

Electrohome, Ltd.
809 Wellington North
Kitchener, Ontario, Canada

Elect. Indust.
Engineering, Inc.
A Div. of RCA Corp.
7355 Fulton Ave.
N. Hollywood, Cal. 91605

Elect. Indust. Sales, Inc.
2300 Richmond Ave.
P.O. Box 66907
Houston, Tex. 77006

Electro-Voice, Inc.
600 Cecil St.
Buchanan, Mich. 49107

Entron, Inc.
70-31 84th St.
Glendale, N.Y. 11227

Environmental Comm., Inc.
Cable Television
Components Div.
2718 S. Grand Ave.
Santa Ana, Cal. 92705

Essex Elect. Systems
6235 S. Harlem Ave.
Chicago, Ill. 60638

E-Z Way Prods., Inc.
Commercial Div.
13155 Nebraska Ave.
P.O. Box 17196
Tampa, Fla. 33612

F

Fairchild MOD
423 National Ave.
Mountain View, Cal. 95111

F&B/Ceco of Calif., Inc.
7051 Santa Monica Blvd.
Hollywood, Cal. 90038

Fort Worth Tower Co., Inc.
5201 Bridge St.
P.O. Box 8597
Fort Worth, Tex. 76112

Fung Engineering Co.
111 Glenn Way
Belmont, Cal. 94002

G

GBC Closed Circuit
TV Corp.
74 Fifth Ave.
New York, N.Y. 10003

General Cable Corp.
730 Third Ave.
New York, N.Y. 10017

Glentronics, Inc.
(See Sawyer Industries)

Alan Gordon
Enterprises, Inc.
5362 Cahuenga Blvd.
N. Hollywood, Cal. 91601

GPL-TV, Link Div.
The Singer Co.
Binghamton, N.Y. 13902

Grasis Fabricating Co.
5601 Gardner Ave.
Kansas City, Mo. 64120

GTE Sylvania
CATV Operations
114 S. Oregon
El Paso, Tex. 79901

H

Hitachi Shibaden
Corp. of Amer.
58-25 Brooklyn-
Queens Expwy.
Woodside, N.Y. 11377

Hy-Gain Elect. Corp.
8601 N.E. Hwy. 6
Lincoln, Neb. 68507

I

Innovative Television
Equip., Inc.
P.O. Box 681
Woodland Hills, Cal. 91634

Int. Video Corp.
675 Alamanor Ave.
Sunnyvale, Cal. 94086

J

Jampro Antenna Co.
Computer Equip. Corp.
6939 Power Inn Rd.
Sacramento, Cal. 95828

Javelin Elect. Co.
Div. of Apollo Laser, Inc.
6357 Arizona Circle
Los Angeles, Cal. 90045

Jerrold Elect. Corp.
CATV Systems Div.
200 Witmer Rd.
Horsham, Pa. 19044

JFD Systems Div. of
Riker Comm.
142 Central Ave.
Clark, N.J. 07066

JJJ Snubber Co.
1105 Clayton Rd.
Creston, Ia. 50801

K

Kalart Victor Corp.
Hultenius St.
Plainville, Conn. 06062

Kay Elemetrics Corp.
12 Maple Ave.
Pine Brook, N.J. 07058

KLM Electronics
1600 Decker Dr.
San Martin, Cal. 95046

Kortick Mfg. Co.
5600 Third St.
San Francisco, Cal. 94124

K'Son Corporation
743 Dunn Way
Placentia, Cal. 92670

L

Lampkin Labs., Inc.
8400 Ninth Ave., N.W.
Bradenton, Fla. 33505

Leaming Indust. Corp.
3740 Campus Dr.
Newport Beach, Cal. 92660

Lindsay Specialty
Prods. Ltd.
50 Mary W.
Lindsay, Ontario, Canada

LRC Elect., Inc.
901 S. Ave.
Horseheads, N.Y. 14845

L-W Photo, Inc.
15451 Cabrito Rd.
Van Nuys, Cal. 91406

M

Magnavox
CATV Div.
100 Fairgrounds Dr.
Manlius, N.Y. 13104

The Magnavox Co.
Video Systems
1700 Magnavox Way
Torrance, Cal. 90503

Maspro Co., Inc.
Asada, Nissin,
Nagoya-shigai, Japan

Matrix Systems Corp.
20426 Corisco St.
Chatsworth, Cal. 91311

McCabe-Power Body Co.
8900 Frost Ave.
St. Louis, Mo. 63134

3M Co., Magnetic
Prods. Div.
3M Center
St. Paul, Minn. 55101

3M Company
Mincom Div.
300 S. Lewis Rd.
Camarillo, Cal. 93010

Memorex Corp.
Audio-Video Group
1200 Memorex Dr.
Santa Clara, Cal. 95052

Metrodata Corp.
3201 Fairview Ave., E.
Seattle, Wash. 98102

Microflect Co., Inc.
3575 25th St. S.E.
Salem, Ore. 97302

Microwave Systems Co.
15860 W. 5th Ave.
Golden, Colo. 80401

MPI Company
1524 Frankford Ave.
Philadelphia, Pa. 19125

MSI Television
4788 S. State St.
Salt Lake City, Utah 84107

N

Nelson-Hershfield Elect.
1848 W. Campbell Ave.
Phoenix, Ariz. 85015

Noram Comm. Ltd.
4626 Burgoyne St.
Mississauga, Ont., Canada
L4W 1G2

O

Oak Indust. Inc.
Crystal Lake, Ill. 60014

Omnix
12234 W. Pico Blvd.
Los Angeles, Cal. 90064

P

Panasonic VTR/CCTV
of Matsushita Elect.
Corp. of Amer.
P.O. Box 3980
Grand Central Station
New York, N.Y. 10017

Panduit Corp.
17301 Ridgeland Ave.
Tinley Park, Ill. 60477

Path Products Inc.
P.O. Box 399
Jacksonville, Tex. 75766

Phasecom Corp.
13130 S. Yukon Ave.
Hawthorne, Cal. 90250

Phelps Dodge Comm. Co.
441 Sawmill River Rd.
Yonkers, N.Y. 10702

Philips Broadcast
Equip. Corp.
One Philips Parkway
Montvale, N.J. 07645

Plastoid Corp.
42-61 24th St.
L.I.C., N.Y. 11101

Potomac Instr., Inc.
932 Philadelphia Ave.
Silver Springs, Md. 20910

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5349 St. Clair Ave.
Cleveland, Ohio 44103

PRD Electronics, Inc.
1200 Prospect Ave.
Westbury L.I., N.Y. 11590

Prodelin Inc.
P.O. Box 131
Hightstown, N.H. 08520

R

Rank Precision Indust. Inc.
260 N. Rt. 303
W. Nyack, N.Y. 10994

Ratelco Inc.
610 Pontius Ave., N.
Seattle, Wash. 98109

RCA Corporation
Comm. Systems Div.
Front & Cooper Sts.
Building 2-5
Camden, N.J. 08102

Recording Center, Inc.
3941 Fifth Ave.
San Diego, Cal. 92103

Reliable Electric
11333 W. Addison
Franklin Pk., Ill. 60131

RF Systems, Inc.
155 King St.
Cohasset, Mass. 02025

Rich Laboratories, Inc.
105 Pasatiempo Dr.
Santa Cruz, Cal. 95060

Riker Video
142 Central Ave.
Clark, N.J. 07066

RMS Elect., Inc.
50 Antin Place
Bronx, N.Y. 10462

Rohde & Schwarz Sales
111 Lexington Ave.
Passaic, N.J. 07055

Rohn Manufacturing
Div. of Unarco Indust., Inc.
P.O. Box 2000
Peoria, Ill. 61601

Rosner Television
Systems, Inc.
250 W. 57 St.
New York, N.Y. 10010

Rust Corporation
168 Tremont St.
Everett, Mass. 02149

S

Sadelco, Inc.
299 Park Ave.
Weehawken, N.J. 07087

Sawyer Indust., Inc.
748 E. Alostia Ave.
Glendora, Cal. 91740

Saxton Prods. Inc.
215 N. Route 303
Congers, N.Y. 10920

Scala Radio Corp.
1970 Republic Ave.
San Leandro, Cal. 94577

SC Elect., Inc.
530 Fifth Ave., N.W.
New Brighton, Minn. 55112

Scientific-Atlanta, Inc.
Box 13654
Atlanta, Ga. 30324

Sencore Inc.
3200 Sencore Dr.
Sioux Falls, S.D. 57107

Shintron Co. Inc.
144 Rogers St.
Cambridge, Mass. 02142
Shure Bros., Inc.
222 Hartrey Ave.
Evanston, Ill. 60204

Sitco Antenna Co.
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T

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Demarest, N.J. 07627

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Bayville, N.Y. 11709

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Apparatus Div.
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Westminster, Colo. 90030

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St. Paul, Minn. 55108

Texas Elect., Inc.
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Texas Instr. Inc.
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Attleboro, Mass. 02703

Theta-Com of Calif.
CATV Division
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Phoenix, Ariz. 85020

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Waco, Tex. 76710

Times Wire & Cable Co.
358 Hall Ave.
Wallingford, Conn.

Tomco Comm. Inc.
2134 Old Middlefield Way
Mountain View, Cal. 94040

Tri-Ex Tower Corp.
7182 Rasmussen Ave.
Visalia, Cal. 93277

TV Cable Supply Co., Inc.
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Hershey, Pa. 17033

R. H. Tyler Co.
Loop 132 & Hwy. 79
Onley, Tex. 76374

U

Ultra Audio Prods.
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Beverly Hills, Cal. 90213

Up-Right Scaffolds
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Berkeley, Cal. 94710

Utilities Service Co.
P.O. Box 627
Allentown, Pa. 18105

Utility Body Co.
901 Gilman St.
Berkeley, Cal. 94710

Utility Tower Co.
3200 Northwest 38th
P.O. Box 12027
Oklahoma City, Okla. 73112

V

Van Ladder, Inc.
Box 709
Spencer, Ia. 51301

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Loveland, Colo. 80537

Video Data Systems, Inc.
657 Old Willets Path
Hauppauge, N.Y. 11787

Video Eng. Co., Inc.
Riggs Rd. at
First Place, N.E.
Washington, D.C. 20011

VIF International
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Mountain View, Cal. 94040

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Hoboken, N.J. 07030

Viscount Indust. Ltd.
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Vancouver 15,
British Columbia, Canada

Visual Educom Inc.
Dage Television
4333 S. Ohio St.
Michigan City, Ind. 46360

Visual Elect. Corp.
356 W. 40th St.
New York, N.Y. 10018

Vital Indust., Inc.
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Gainesville, Fla. 32601

W

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Parkersburg, W. Va. 26101

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Iraq	Taiwan
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Mozambique	Republic of Vietnam

and VOA installations in Bangkok, Bethany, Delano, Dixon, Greenville, and the Philippines.

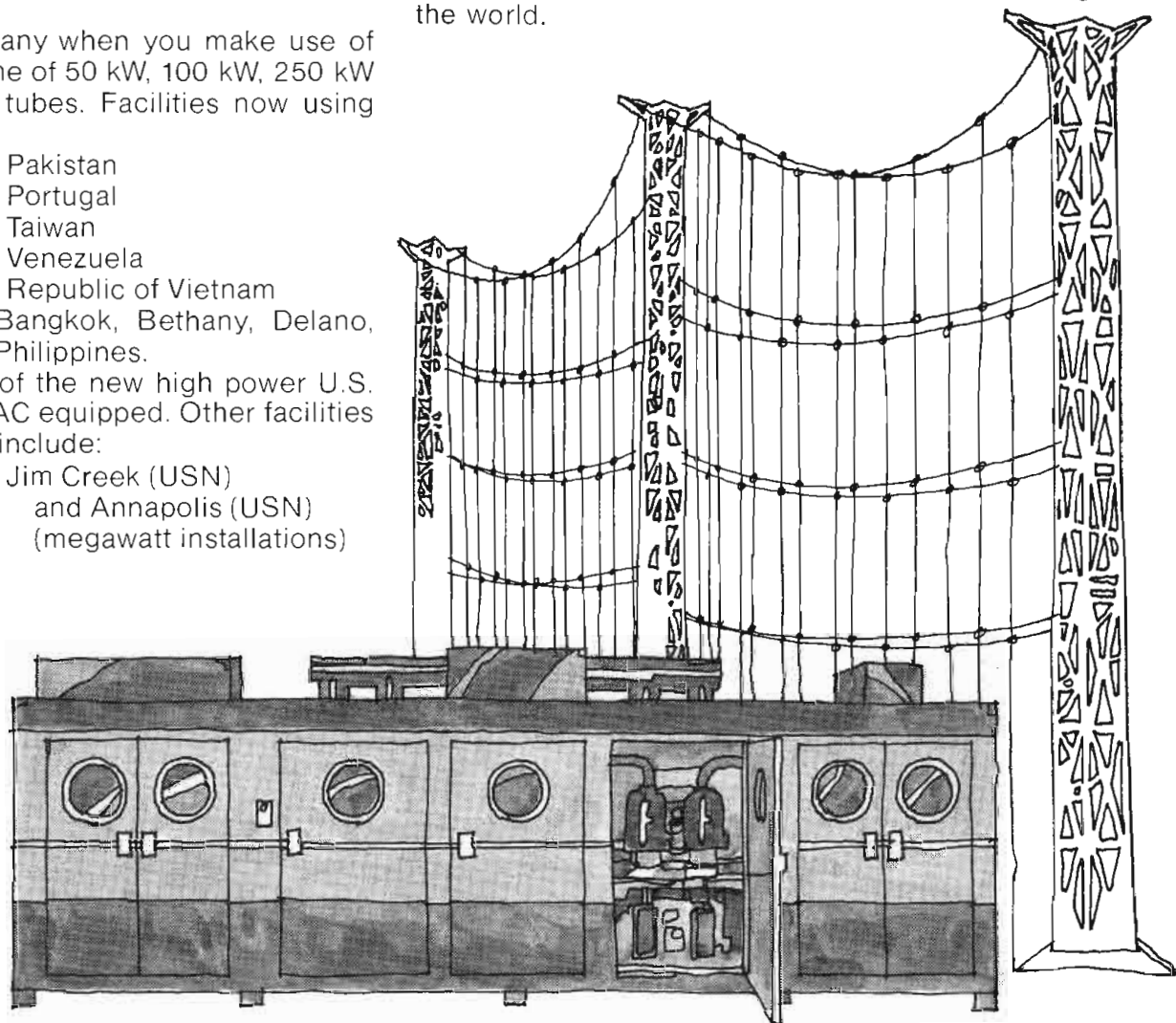
In addition, a majority of the new high power U.S. broadcast stations are EIMAC equipped. Other facilities retrofitted to EIMAC tubes include:

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WLW, Cincinnati	and Annapolis (USN)
	(megawatt installations)

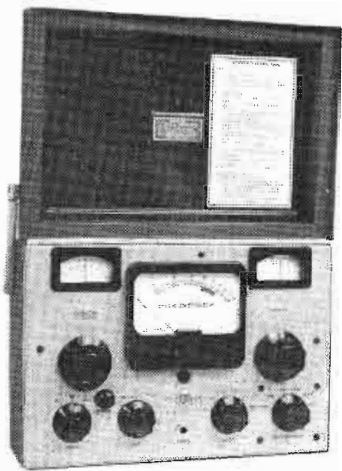
EIMAC power tubes will also be used at new, large facilities in:

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For complete information, contact EIMAC Division of Varian, 301 Industrial Way, San Carlos, California 94070. Or any of the more than 30 Varian/EIMAC Electron Tube and Device Group Sales Offices throughout the world.



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LETTERS TO THE EDITOR

(Continued from page 10)

or FM, but be lost with a TV transmitter. Or, you might feel at home with a VTR, but pull your hair out over camera maintenance. But the hardest point to accept today is that even in the specialties, there is a daily foot race to keep up with how the units are and will be affected by the new components.

All this could be bewildering. But to the inventive and creative engineers, all these changes translate into new and better opportunities in circuit design and operation.

What's more, **Broadcast Engineering** had to change with the times. In order to keep pace, we had to sign more specialists to the staff. At the station level, it means that management must be concerned that their engineering staff is kept up to date. Otherwise, the purchase of equipment would be based on things far afield from the specs and economics. Just who would act as the station's technical interpreter?

So you are not alone in your concern. But you must admit the challenges are as great as they always were. And the future is seemingly limited only by our imagination.



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SBE Zeros In On Part 73 Re-Regulation

The SBE Re-regulation Committee, consisting of committee chairmen John Wilner, James Wulliman, and Edwin T. Karl, has been authorized to forward comments on re-regulation to the Federal Communications Commission. Each of the committee members also head subcommittees, Wilner on Television Engineering, Wulliman on Standard AM Broadcast Engineering, and Karl on FM Broadcast Engineering. Subcommittees had been directed to acquire and coordinate data from SBE chapters and individual members, as announced by publication in the pages of the **SBE Journal** (March and April 1973 issues) and by separate mailing to members.

The most significant results, from the subcommittee on FM engineering, are being forwarded to the Commission. These comments consist mainly of clarification of the FM Rules and Regulations. The subcommittee reported that they felt that the present system of evaluation of the audio system using sine waves and harmonic distortion measurements is inadequate, and in many cases, inaccurate. Also, the subcommittee feels that new alternatives should be developed to certain references in the Commission Rules and regulations pertaining to aural proof of performance measurements, including pre-emphasis standards.

The committee chairman, Edwin T. Karl, vice president, engineering, WSNL-TV, Suburban Broadcasting Corporation, Melville, N. Y., was assisted in development of the comments by William Naramore, chief engineer, WBLI, Patchogue, N. Y.; Norman Sternberg, chief engineer, WHLI, Hemstead, N.Y.; Lawrence Strasser, chief engineer, WTFM,

Fresh Meadows, N. Y.; and Edward Schoeber, Gates Radio Company, New York, N.Y.

The text of the recommended changes will be printed in our next issue.

Engineer Certification

A special meeting of the SBE Board of Directors, called by James Wulliman, president and chairman

of the board of the Society of Broadcast Engineers, was held on July 18th at the offices of Ben Wolfe, vice president, engineering, WTOP-TV, for further review of a program for certifying broadcast engineers. The idea for certification of broadcast engineers, the purpose of which is to raise the professional status of the engineer in broadcasting, had been proposed at the previous official meeting of the board which was held just prior to the NAB convention this past April.

Paragraph 73.69 of the FCC's Rules and Regulations states:

... every standard broadcast station employing a directional antenna must use a type-approved phase monitor.



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2. If you operate your station with less than a first class radiotelephone licensed engineer, you must have a type-approved antenna monitor by June 1, 1974.
3. If you are presently operating your station by "remote control", you must have a type-approved antenna monitor Now! Or—you can use a monitor "properly configured", if such a monitor was manufactured after 1965.
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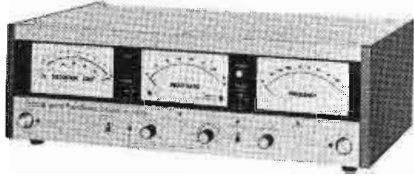


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SBE

(Continued from page 13)

As a result of lengthy discussion, the board has now authorized Ben Wolfe, as chairman of the certification committee, to proceed with the next phase of development. His responsibility aside from acting as chairman will be to spell out the professional requirements for certification. Other committee members are Al Chismark, director of broadcast engineering for Meridith Corporation, Syracuse, N.Y.; John T. Wilner, director of engineering, State of New Jersey Public Broadcast Authority; Leo Reetz, allocations and RF Systems, American Broadcast Company, New York; and Eugene Hill, vice president, engineering, Kaiser Broadcasting, Oakland, California. Chismark will be responsible for development of plans for administration; Reetz will design waiver or "grandfather" standards; Wilner will set up examination procedures.

The board has scheduled its next meeting for early November. At that time, the committee will provide specific recommendations on

setting up and implementing the plan for certification.

The basic requirements for a broadcast engineer to become certified include a minimum number of years of professional experience in responsible broadcast engineering work plus successful completion of a comprehensive written examination. Verification of experience is to be provided through professional references and supporting data provided with the application.

At the same meeting, the board also appointed a Fellowship Committee consisting of Charles Morgan, Ben Wolfe, and John Wilner. Morgan, who was elected to chair the committee, is assistant director of engineering for the Susquehanna Broadcasting group and chief engineer of WARM, Scranton/Wilkes-Barre, Pa. In April, he began his first term on the board.

The board acted to fill the vacant post of director of public relations by asking Joseph Risse, SBE director of publications, to take on this responsibility at least temporarily. Risse is associated with International Correspondence Schools, Scranton,

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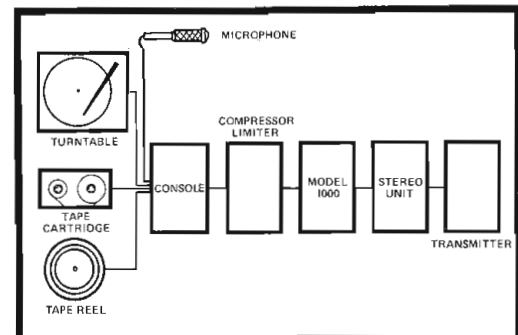
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ton, Pa., as director of the ICS television school, and also with the university of Scranton as director of engineering, Communications Department.

This Is Your Journal

Through these pages, provided by special arrangement with the publisher of **Broadcast Engineering** magazine, members of the Society of Broadcast Engineers may now communicate with each other; SBE headquarters can pass along information to the general membership; SBE chapters can report and announce information concerning their meetings or other activities; and we can air issues of vital concern to all of us who are employed one way or another in the field of broadcast engineering.

A means of communication is vital to any organization. Let's utilize this unusual opportunity which is now available.

Here are some reminders from SBE Headquarters: Chapters: Be sure to apply for annual rebates from SBE headquarters. A rebate of up to \$100 annually is possible based on membership attendance for the preceding year. To obtain this rebate it is necessary to complete the Annual Attendance Report Form which may be obtained from Virginia Doss, SBE, P.O. Box 88123, Indianapolis, Ind. 46208. Virginia would also like chapters to remind members that attractive SBE tie tacks are available from her for \$3.50 (members only).

When corresponding with SBE about your membership include your membership number. Submit change of address promptly. If you are not receiving **Broadcast Engineering** magazine, provided as a courtesy by the publisher to SBE members at no cost, notify Virginia Doss. Letters to the Editor, Chapter News, articles, and other information for publication should be sent to SBE Editor, Joe Risse, P.O. Box 131, Dunmore, Pa. 18512.

The **SBE Journal** is published as a special section of **Broadcast Engineering** magazine as a special courtesy of the publishers of that magazine.

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The new AEL FM-25/25KD was designed to provide exceptionally high power FM broadcasting service with a high degree of redundancy and reliability to meet power level requirements of up to 50KW TPO.

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Chapters In The Making

The following areas represent locations for possible future chapters.

Information on any planned organizational or technical meetings may

Location	Contact
Miami, Fla.:	John Blattner, 11001 N. Kendall Dr., Apt. A107, Miami 33156.
St. Louis, Mo.:	Arthur H. Rounds, 1321 Aspen Drive, Florissant, Mo. 63031.
Puerto Rico:	Bob Beurket, Asst. Chief Engineer, WRIK TV, Ponce/San Juan, Puerto Rico. Telephone 809-724-7575.
San Francisco, Calif.:	Robert Daines, CBS Laboratories, One Embarcadero Center, San Francisco, Calif. 94111.

be obtained from the individual listed as the "contact" in each case. Anyone interested in chapter activities in other locations may contact Virginia Doss, Assistant Secretary-Treasurer, SBE, P.O. Box 88123, Indianapolis, Ind. 46208, or at WRTV, 1330 N. Meridian, Indianapolis. In some cases, assistance from SBE national officers and directors may be available. Contact any officer or director, or SBE President James C. Wulliman, at WTMJ, 720 East Capitol Drive, Milwaukee, Wisconsin. Those involved in the development of new chapters should also keep the SBE Journal Editor posted so that this work can be aided by promotion in the Journal.

Chapter Activities

Reports of SBE chapter meetings and announcements of future events will be published in these pages monthly. It is important that chapters send information on meetings and other news as promptly as possible. Include photographs whenever available; preferred photo size is 8 x 10 but smaller sizes are also usable.

The monthly deadline for submitting copy is the 25th of the 2nd month preceding the month of publication; for example, the date by which copy must be received by the SBE editor for the November, 1973 issue is September 25th; for the December 1973 issue, the deadline is October 25th, and so on.

Letters to the SBE Editor for publication in the **Journal** are invited.

Send all material for publication to: SBE Editor, Joseph A. Risse, P.O. Box 131, Dunmore, Pa. 18512.

Chapter 1 — Binghamton, N.Y.
Chairman: Larry Taylor,
WENY-AM-FM
Mark Twain Hotel,
Elmira, N.Y. 14902

The big news relating the chapter was the announcement of the regional convention planned in cooperation with Chapter 2 of Wilkes-Barre/Scranton, Pa., and Chapter 22 of the Syracuse, N.Y. area for all day Friday, October 19th, at the Owego Treadway Inn, Owego, N.Y. Featured will be booths at which manufacturers' engineering repre-


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representatives will demonstrate and explain equipment, and free food and refreshments. Admission will also be free at the "miniconvention" which is planned for 12 noon to 12 midnight. The Owego Treadway Inn is located just west of Binghamton, N.Y., off Interstate Route 17.

Chapter 2—Northeastern Pa.
Chairman: Paul Evanosky,
WVIA AM FM
Old Boston Road,
Jenkins Township,
Avoca, Pa. 18640

No summer meetings scheduled. See planned October regional convention being planned in cooperation with Chapters 1 and 22, above.

Chapter 9—Phoenix, Ariz.
Chairman: Charles Deen,
KOOL TV - 511 W. Adams,
Phoenix, Ariz. 85003

The most recent activity of the chapter was in the form of assistance in formation of the Tucson chapter on May 24th. Details on the first meeting of the Tucson chapter, held jointly with the Phoenix chapter, were reported in the August issue.

Chapter 11—Boston, Mass.
Chairman: Ross Kauffman,
Assis. C.E., WVCB-TV,
5 TV Place,
Needham, Mass. 02192

A program of revitalization of the Boston Chapter was initiated by Steve deSatnick, WCVB-TV director of engineering, and member of the SBE board of directors, at the May and June Meetings. On May 11th, Ross B. Kauffman of WCVB-TV was nominated and elected by acclamation as Chapter Chairman. At a meeting on June 19th, Mike Goldberg, transmitter supervisor for WGBH-TV was elected vice chairman; and Steve Cohn, WSMW, Worcester Channel 27, was elected Secretary-Treasurer. Cliff Rogers of Philips Broadcasting Equipment Corporation presented a paper on "Sound in Sync" at this same meeting. Meeting announcements were mailed out through the courtesy of Lad Hlavaty, vice president, engineering for R.K.O. Television. SBE members in the New Hampshire and Rhode Island areas aside from those of other localities are especially welcome at all chapter

meetings and activities.

Chapter 16—Seattle, Wash.
Chairman: John Maxson,
KETO FM, 17425 63rd Pl., S.E.
Issaquah, Washington 98027

On July 11th a refreshment hour and lunch preceded a talk by John Enbom, vice president, Air Control, Inc., Seattle, on the new Paar 30-30 air filter system, and its use in intercepting dust and other forms of dirt before it reaches such vital spots as high voltage sections of

transmitters and video tape heads.
Chapter 22—Central New York
Chairman: Hugh Cleland,
WCNY TV/FM
506 Old Liverpool Rd.,
Liverpool, N.Y.

Gary Hartman, secretary, has provided some additional information on the Joint Meeting, held May 8th, with Chapters 1 and 2, at the Owego Treadway Inn, relating especially to the comments of guest speaker Otis Hanson, FCC chief of

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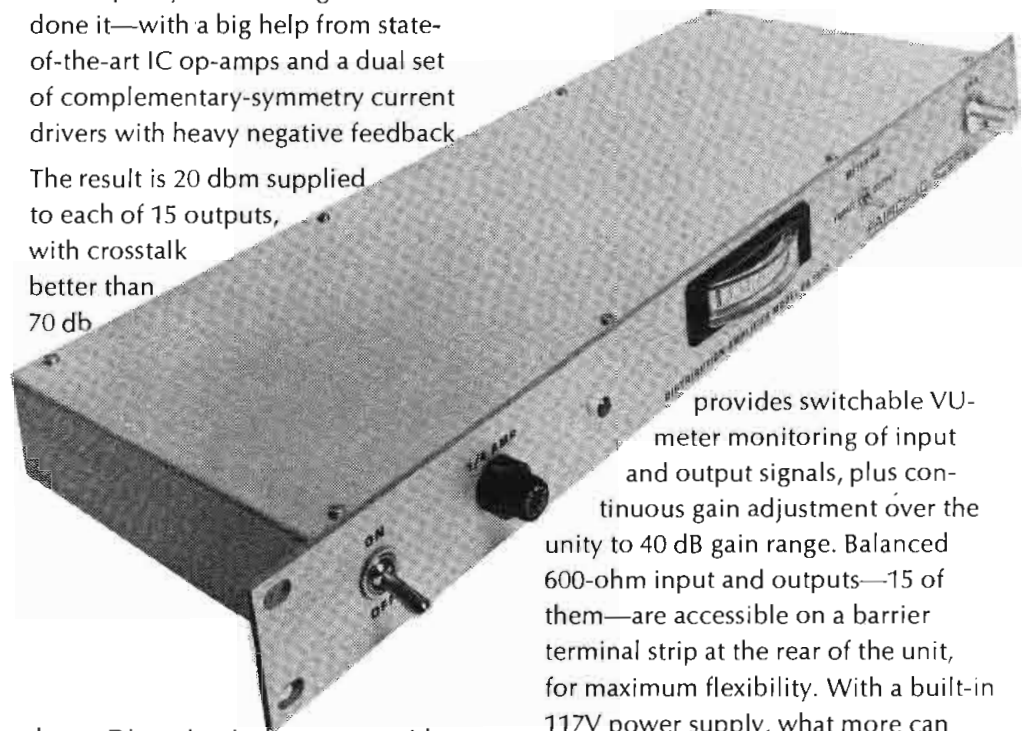
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existing aural facilities. Hanson stated "There is a communications gap between the FCC and stations." He said the gap exists between what the FCC expects and what stations think it expects. "We need to let the regulated know what the regulator has in mind," Hanson went on. Some new rules are not too well known, he said, and urged every station to acquire an updated copy of rules and regulations. Pointing out that he deals with AM and FM, he stated that he and his counterpart in television, Clyde Gurley, are guided in their decisions by the FCC's principal interest in the orderly development and regulation of the broadcast system. Licenses and authorizations are granted on a demand basis in accordance with international treaties with the objective of providing adequate service for as much of the population as possible, according to Hanson.

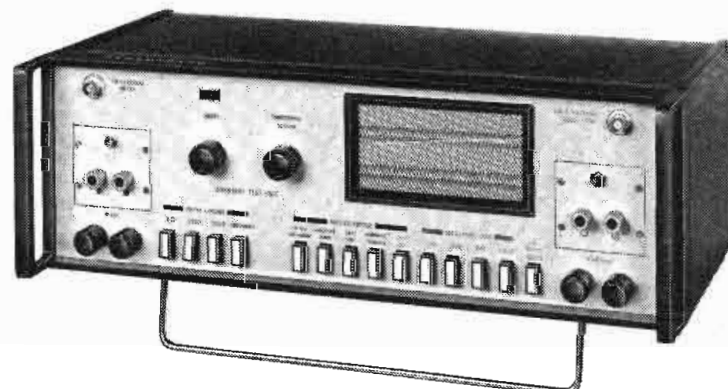
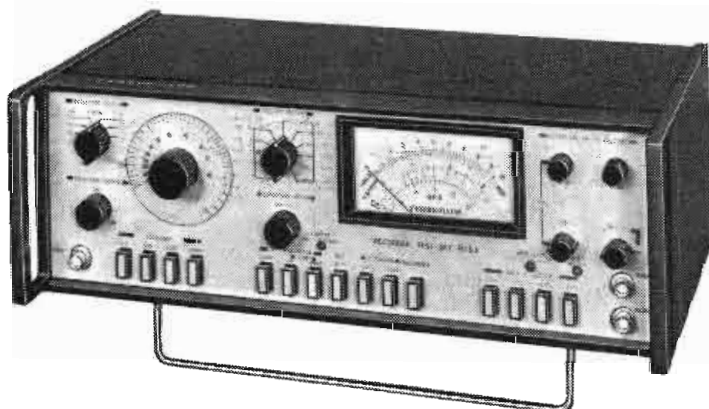
Chapter 25—Indianapolis, Ind.
Chairman: Joe Missick,
WISH TV, 1950 N. Meridian St.,
Indianapolis, Ind. 46202

The May meeting of the chapter was held at Indiana State University, Terre Haute, where a tour of the radio and television facilities was provided under the direction of Buddy Kline; Dr. Workman gave a talk on 3-point lighting. On June 13th, the meeting was at the Hawthorne Room where an open discussion on OSHA requirement was the main feature. On July 10th, at the Indiana University Hospital Cafeteria, Bob Flanders of WRTV, vice president engineering, and former national SBE president, spoke on the possibility of changing video tape standards.

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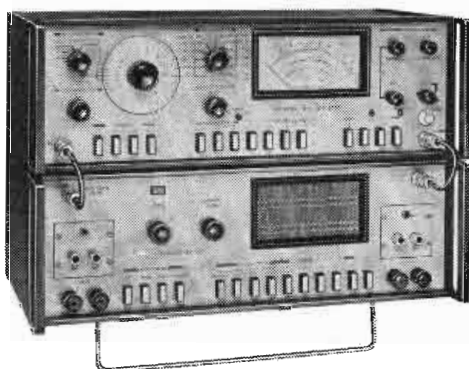


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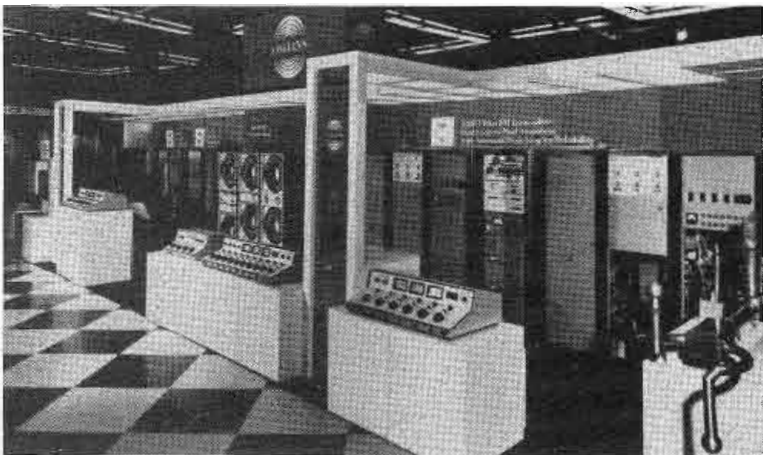
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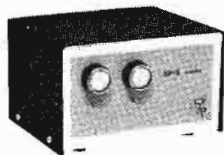
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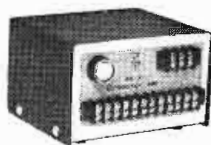
Broadcast and audio engineers around the nation have chosen Ramko products on performance specs alone. Then were pleasantly surprised at our low, low prices.

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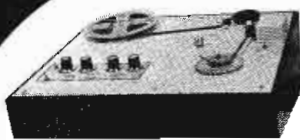
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Individual output amps provide maximum isolation. ± 0.5 db response, 10Hz to 20kHz. 26db gain. Balanced bridging or matching input. Six balanced 600 ohm outputs. +20dbm out max. Output level control. 0.1% or less distortion. Internal power supply. Tabletop or bracket mount. Shipping weight 4 lbs. Other models feature rack mount, output metering and up to 32 outputs, \$138 to \$425.



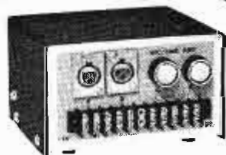
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INDUSTRY NEWS

SMPTTE Ready For October Convention

Members of the Program and Arrangements Committees for the SMPTTE New York Conference have been chosen, according to a joint announcement by Program Chairman, R. L. Pointer, American Broadcasting Co., and Arrangements Chairman Charles Ahto, MPO/Tape Films.

The Conference is slated for the Americana Hotel in New York, October 14-19.

The Program Committee obtains papers for the 5-day technical sessions program. The Arrangements Committee organizes all non-program activities of the Conference.

The recently-announced members of the Program Committee are Calvin Hotchkiss, Eastman Kodak Co., Associate Program Chairman; A. A. Goldberg, CBS Labs, Topic Chairman for Digital Techniques in Television; Mal Albaum, WNET/13, Topic Chairman for Electronic News; Burton J. Stone, Precision Film Labs, Topic Chairman for Film Laboratory Practices; and Daniel Sandburg, TVC Labs, Inc., Topic Chairman for Film Production Techniques.

Members of the Arrangements Committee are: Peter Cardasis, Movielab, Inc., Auditor; Kurt Wulliman, 3M Co., Banquet/Luncheon Chairman; E. Carlton Winckler, Imero Fiorentino Assoc., Inc., Banquet/Luncheon Administrative Assistant; Irwin Young, Du Art Film Laboratories, Entertainment Chairman; Herbert R. Pilzer, Motion Picture Enterprises, Hospitality Chairman; and Edward J. Messina, ABC-TV, Hotel Arrangements Chairman.

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Additional Arrangements Committee Members are: Richard Streeter, CBS-TV Registration Chairman; Calvin Hotchkiss, Eastman Kodak Co., Administrative Assistant for Registration and Hotel Arrangements; Marian Fuller, Geocine Films, Inc., Membership Chairman; Irwin B. Freedman, Agfa-Gevaert, Inc., Message Center Chairman; Samuel Bunchez, Vacuumate Corp., Projection, Public Address and Recording Chairman; William Cooper, WPIX, Inc., Publicity Chairman; Sigmond Bajak, NBC-TV, Transportation Chairman; Marge Ahto, Women's Program Chairman.

In addition to the five days of technical sessions, the SMPTE Conference will feature a 103-booth Equipment Exhibit with the latest professional motion-picture and television equipment on display. Exhibit Chairman is Dom Capano, Cinecraft International.

An attendance of more than 3,500 is expected at this semi-annual meeting.

New Sustaining Members

Eleven companies in the motion picture and TV industries have joined the SMPTE as Sustaining Members so far in 1973, it was announced by SMPTE Financial Vice-President, Joseph T. Dougherty. This brings the number of SMPTE Sustaining Members to 163.

The new SMPTE Sustaining Members are: The Association of Motion Picture and TV Producers, Hollywood; Canon U.S.A., Inc., Lake Success, N.Y.; Dolby Laboratories, Inc., New York; Industrial Silver Corp., Hollywood; International Film Laboratory, Burbank, Calif.; i/o Metrics Corp., Palo Alto, Calif.; Lowel-Light Manufacturing, Inc., New York; Magna Tech Electronics Co., Inc., New York; Pailard, Inc., Linden, N.J.; Saudel Associates, Inc., Mahwah, N.J.; and Gordon Yoder, Inc., Dallas, Texas.

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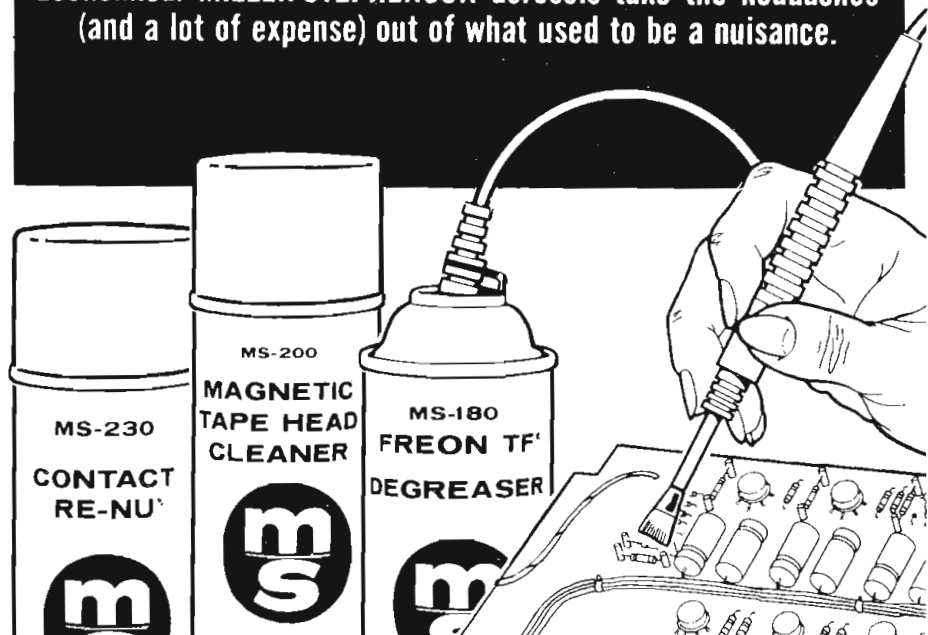
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Equal Employment Rules

A declaratory ruling on the applicability of equal employment rules to religious organizations that are Commission licensees has been issued by the Commission. Sections 73.125, 73.301, 73.599 and 73.680 generally prohibit religious discrimination in employment.

The Commission said that there

is a limited exemption afforded "those who, as to content or on-the-air presentation, are connected with the espousal of the licensee's religious views." The Commission also said that the limited exemption includes writers and research assistants hired to prepare programs espousing the licensee's religious

views, and those hired to answer religious questions on call-in programs.

The action was in response to a request by the National Religious Broadcasters, Inc. (NRB), for a declaratory ruling on discrimination in employment on religious grounds.

The Commission on May 3, 1972 (affirmed November 22, 1972), ruled that King's Garden, licensee of KGDN, KBIQ-FM, Edmonds, Wash., had violated the equal employment opportunities requirements by discriminating in its employment practices on religious grounds. NRB asked for a clarification of the King's Garden rulings for various employee categories.

The Commission said that announcers, as a general category, would not be exempt from the nondiscrimination rules since there was no reason why an announcer had to be of a particular faith in order to introduce a program or insert news, commercial announcements, or station identification during any programs.

Aside from the positions it had discussed, the Commission noted that other categories listed by NRB were not "so clear cut," and it would not be advisable to issue a general declaratory ruling as requested by NRB. It said the area involves First Amendment rights, and it would be preferable to have "specific factual settings" before issuing rulings.

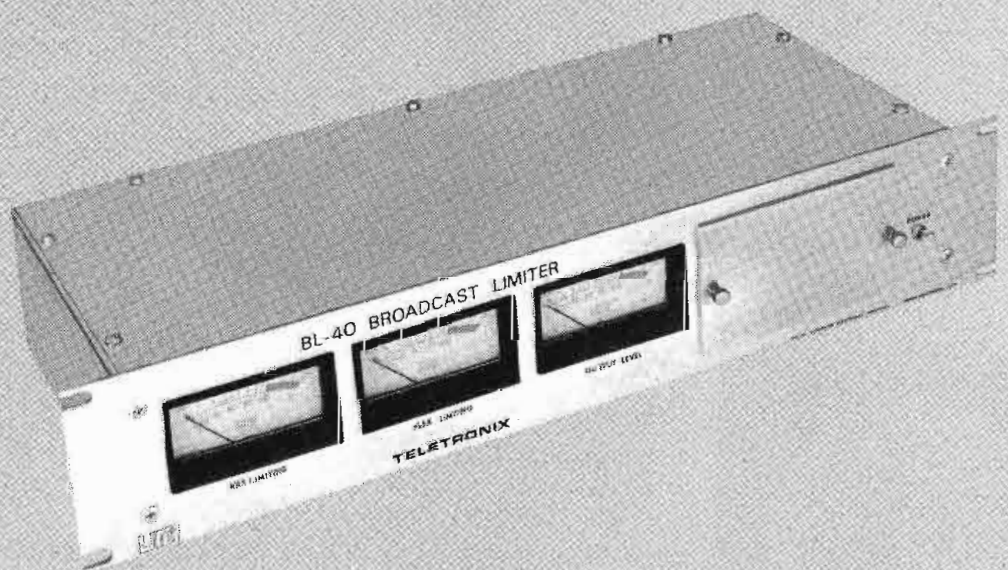
The Commission emphasized that its decisions in this area are restricted to the broadcast activities of licensees that are religious organizations. Pointing out that it would not rule on activities that are not part of broadcast operations, the Commission said religious organizations that are licensees might wish to consider whether certain employees are actually part of the broadcast operation or part of their religious activities.

NPR Offers Recommendations

Recommendations of the National Industry Advisory Committee (NIAC) for voluntary participation of the National Public Radio Network (NPR) and Public Broad-

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casting Service (PBS) audio networks in the national Emergency Broadcast System (EBS) have been approved by the FCC.

National Public Radio is a national radio network serving over 130 non-commercial broadcasting stations. Its production center and general offices are in Washington, D. C. Public Broadcasting Service was established by the Corporation for Public Broadcasting. PBS manages the national distribution of educational television programs to noncommercial television stations.

PBS volunteered to participate in the Emergency Broadcast System on July 6, 1972, and NPR on December 1, 1972. NIAC recommended participation of NPR and PBS in the Emergency Broadcast System in a report to Commissioner Charlotte T. Reid, Defense Commissioner, on February 21, 1973.

The basic EBS plan and Part 73, Subpart G of FCC rules will be revised to include the NPR and PBS. NPR and PBS will be included in all future closed circuit tests of national EBS.

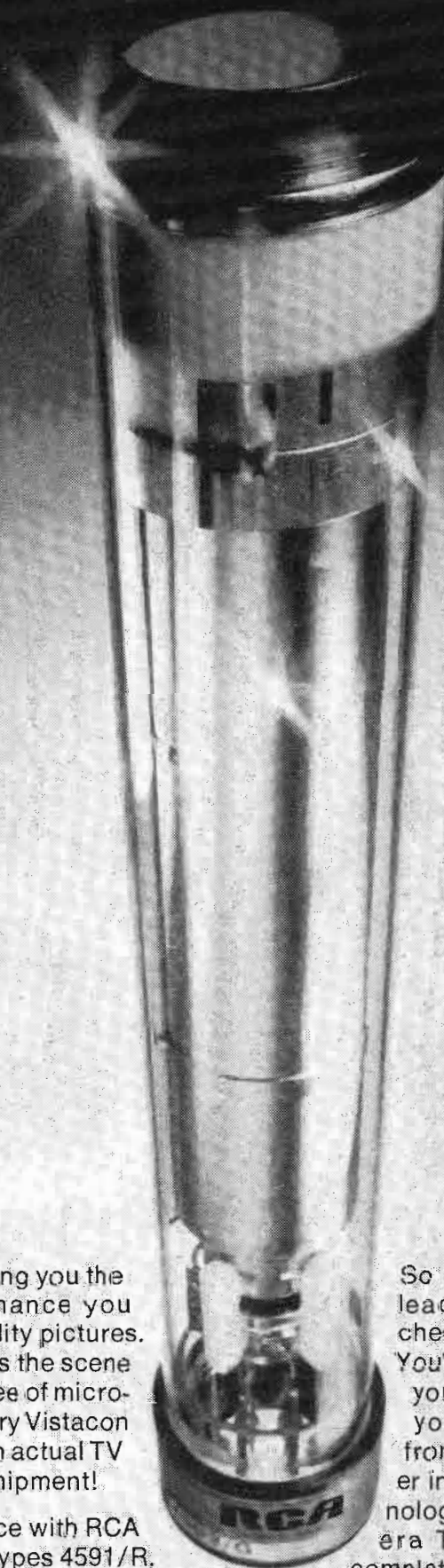
WDIO Shares Water Supply With Area

Recently it was discovered asbestos like particles in Lake Superior's drinking water might pose a health problem. Upon the discovery, WDIO Television (ABC) Duluth, Minnesota took steps to supply area residents with an alternate source of drinking water.

On June 8th, results from one of many studies on the purity of Lake Superior's water revealed the asbestos like particles which are being dumped into the lake as commercial waste may pose a health problem. On June 18th, the Environmental Protection Agency suggested children under five years of age be given drinking water from a source other than Lake Superior. Immediately local dairy's began bottling water for sale at from 18¢ to 24¢ a half gallon.

On June 23rd, WDIO began offering fresh well water to area residents from the stations deep

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So next time you need a lead-oxide replacement, check out RCA Vistacons. You'll get the performance you want with the service you've come to expect from the pioneering leader in TV camera tube technology. Call your RCA Camera Tube Distributor for complete information. Or write RCA, Commercial Engineering, Section 201 /G10, Harrison, N.J. 07029.

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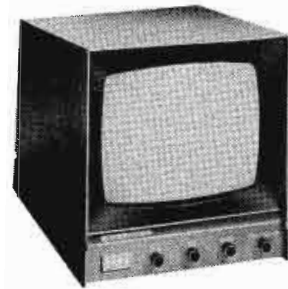
Greater than 800 lines in central 80% of display area at less than 30 microamps beam current.

Standards

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Models Available

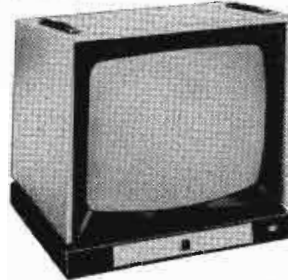
9" single rack, twin rack or case.
11" single rack or case
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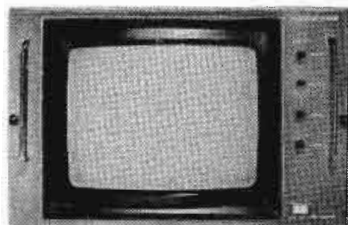
EVM9. 38 sq. in. screen.



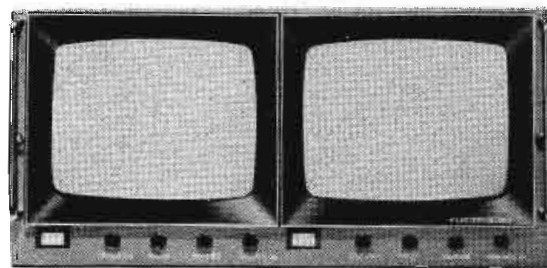
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EVM9R2. Rack-mounted twin 38 sq. in. screens. Also available in single rack mount.

well which was tested and determined safe by Local County Health Department. WDIO President and General Manager Frank P. Befera drew the first gallon of water kicking off the station public service endeavor. About 10,000 people of the Duluth area have availed themselves of the service. Approximately 50,000 gallons of water have been dispensed since June 23rd.

Befera says, "WDIO Television will continue its free fresh well water offer until the water of Lake Superior is determined safe for drinking, or until a permanent alternate water supply for the area is found."

NCTA Authorized To Inspect Bureau Files

The National Cable Television Association, Inc. (NCTA), has been authorized by the Commission to inspect the FCC's "Preliminary FY 1974 Staffing Plan for the Cable Television Bureau," the Harbridge House Final Report prepared under Contract RC 10914, the Fiscal Year 1974 Budget Estimates submitted to the Congress, and certain Commission work sheets.

The action was in response to NCTA's request to inspect documents relating to the revised Schedule of Fees proposed in Docket 19658.

On January 11, 1973, NCTA requested access to 30 categories of material containing information related to the "direct and indirect cost" to the Government of regulating the cable TV industry, and used for determining "value to the recipient" of the cable TV regulatory program. NCTA contended the information was needed to prepare comments on the Commission's notice on fees. On February 21, 1973, the Executive Director granted a substantial part of NCTA's request. NCTA subsequently made a second, more specific request and asked permission to file additional comments in the proceeding (Docket 19658).

In response to NCTA's initial request, the Executive Director located documents for each of the 30

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categories specified by NCTA. NCTA was also permitted access to most of the information considered by the Commission in proposing the revised fee schedule. In response to the second and more specific NCTA request, the Executive Director determined that the Commission would be authorized to withhold the documents (Harbridge House Report, and the FY 1974 Budget Estimates submitted to the Congress) since they came within the scope of two of the exemptions to the mandatory disclosure requirements of the Public Information Section of the Administrative Procedure Act, 5 U.S.C. § 552, (Freedom of Information Act).

The Executive Director said the Harbridge Report was a management study prepared by the contractor for internal Commission use, and the Final Report had not been accepted by the Commission, and was therefore exempt from the Act. He also explained that the FY 1974 Budget Estimates submitted to the Congress had been prepared for the use of the appropriations committees of the Congress and were the property of Congress. The

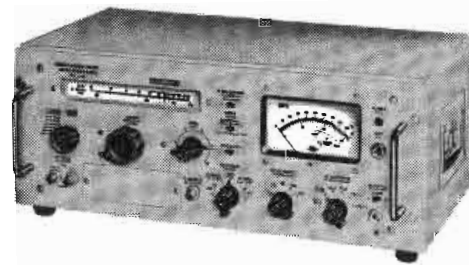
Commission was advised by the appropriations committees that the documents should not be made available until after hearings had been completed and testimony released.

The Commission said that the status of the documents had changed since the Executive Director had ruled on the requests. It noted that testimony taken at the appropriations hearings had been released, and that the Commission had issued its new organization plan for the Cable Television Bureau. It pointed out that it would have been "premature" to disclose the Harbridge House recommendations while the new organizational plan for the Cable Television Bureau was being developed. The Commission noted that the draft Final Report was not used in its proposal to revise the fee schedule, and that the preliminary staffing plan was the Harbridge House material used in preparing the FY 1974 budget proposal.

NCTA also renewed its request for documents used to estimate the total number of CATV subscribers for 1973-79.

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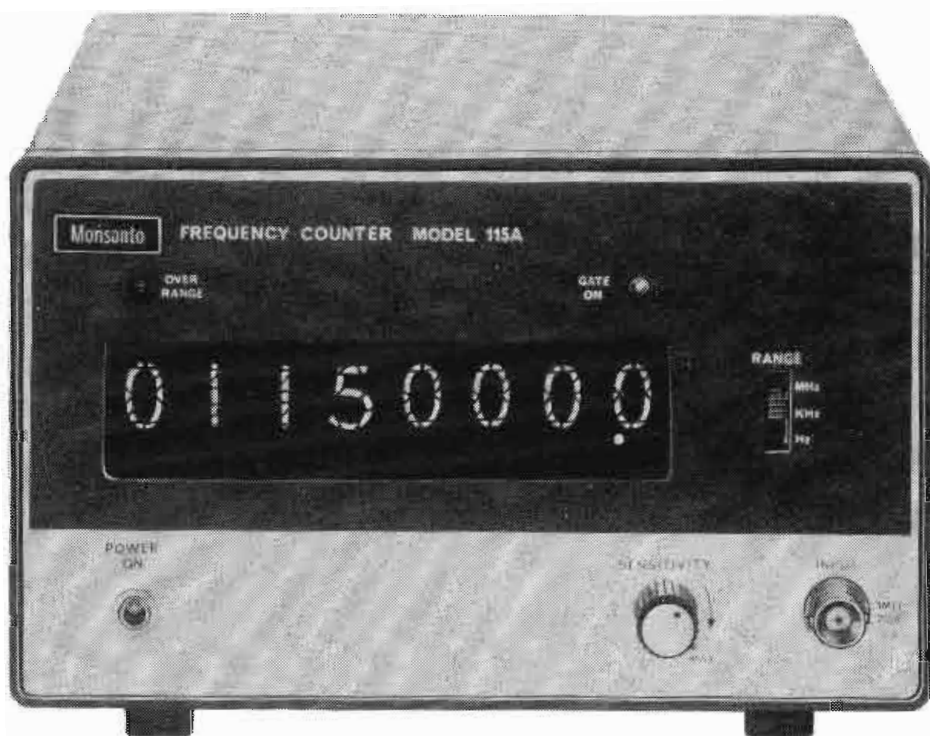
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a "spot 150,000. 25 will , even at

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Imagine a day like this.

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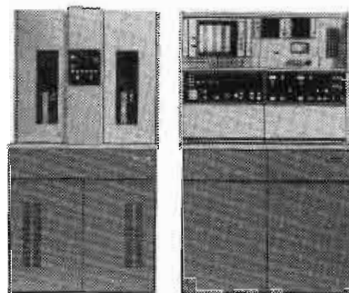
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KHJ, Los Angeles, CA
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Basic Digital Logic

By John Lee*

Hewlett Packard

The combinatorial and sequential devices discussed in the previous articles are, in practice, implemented in seven major technologies. These technologies or logic families as they are most often referred to are RTL (Resistor-Transistor-Logic), DTL (Diode-Transistor-Logic), HTL (High-Threshold-Logic), TTL (Transistor-Transistor-Logic), ECL (Emitter-Coupled-Logic), MOS (Metal-Oxide-Semiconductor) and CMOS (Complimentary Metal Oxide Semiconductor).

Each of these logic families possess characteristics that make them particularly suitable to a given application. Based upon his circuit requirements and the capabilities of the logic family, the logic designer selects the family that best provides the solution to his needs.

The desired features of a logic family have been classified into the following categories:

1. Logic flexibility
2. Availability of complex functions
3. Speed

4. Low power dissipation
5. High noise immunity
6. Lack of generated noise
7. Wide operating temperature
8. Low cost

Logic Flexibility And Availability Of Complex Functions

These features relate to the ease of designing a digital circuit from the devices available in the logic family. There are several important features to consider: the number of commonly available functions, the availability of complex functions, wired logic capabilities and complimentary outputs.

The number of commonly available logic functions is often related to the age of the logic family. The older the family, the more functions there will have been developed and thus, the more likely a designer will find the gate or counter that he needs.

In addition to the simple logic functions, it is also desirable to have access to more complex (MSI and LSI) devices. Often these complex functions can reduce the number of IC packages required to

implement a given design. In many cases not only is a signal required but also the inverted signal. Devices with complimentary outputs provide both these signals and thus add to the design flexibility.

Wired Logic

A unique feature of some logic families is the ability to perform a basic AND or OR function by wiring the outputs of several devices together. This is what is meant by wired logic.

Figure 1 illustrates how wired logic is possible. The two transistors represent the output stage circuitry inside the IC's. The node formed by wiring these outputs together will be pulled low whenever either output transistor is turned on.

Another way of looking at this node is that only when both outputs are supposed to be in the high state will the node formed by wiring these outputs together be high. Thus the act of wiring the outputs together has formed an AND function.

The wired logic function can be performed on more than two devices. In some logic families the

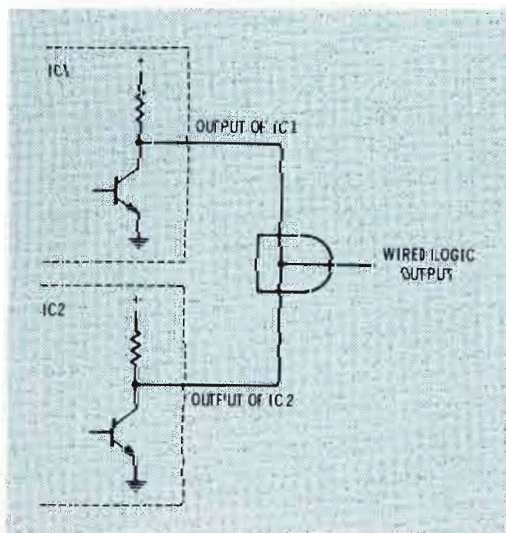


Fig. 1 Wired logic. In some families, an additional AND or OR function can be performed by wiring the outputs of several devices together. This type of output stage forms a wired-AND function.

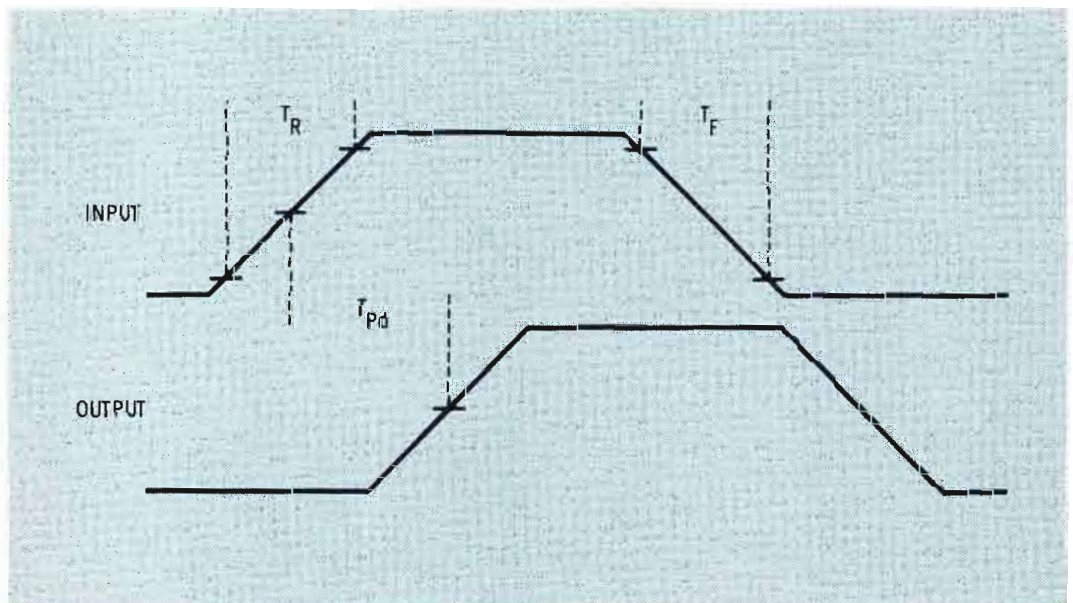


Fig. 2 Timing parameters of digital signals. Propagation delay time (T_{pd}) is a measure of how fast an output responds to a change in an input measured from the 50 percent point. Rise time (T_r) and fall time (F_t) are measured from the 10 to 90 percent points.

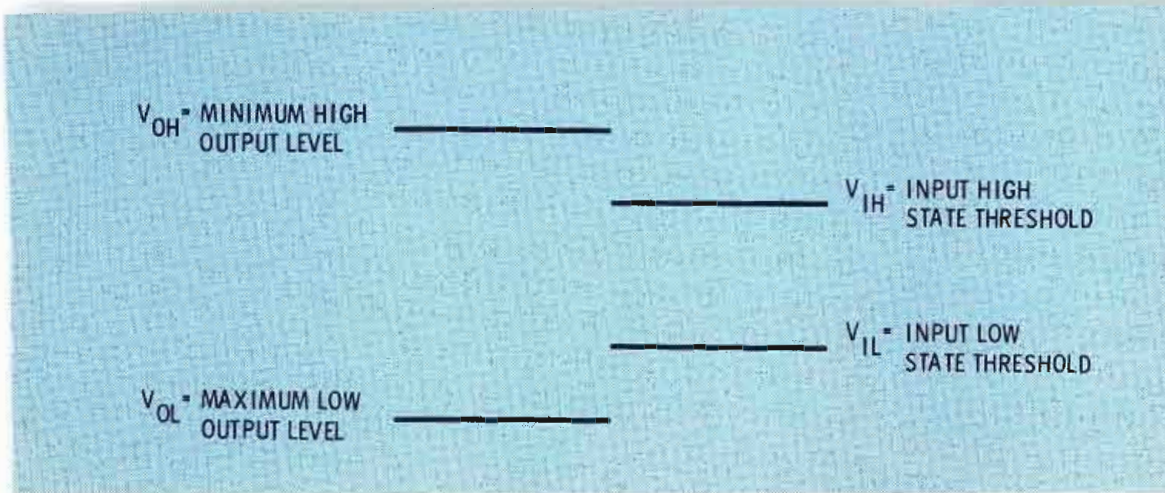


Fig. 3 Noise immunity is a measure of the amount of noise that can exist on an output before an input falsely interprets the data.

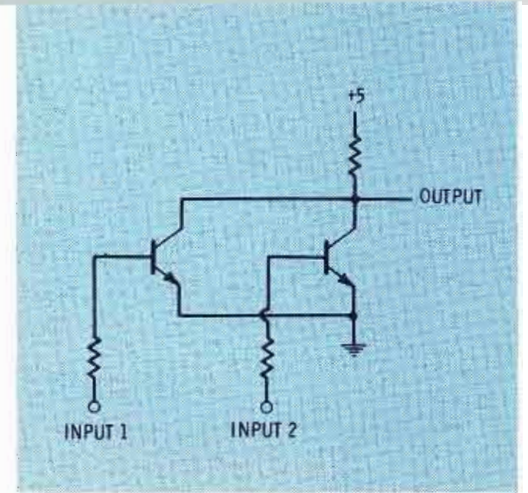


Fig. 4 Basic RTL Gate. From the similarity of the output stage of this gate and that shown in Fig. 1, you can see that the RTL provides the wired-AND capability.

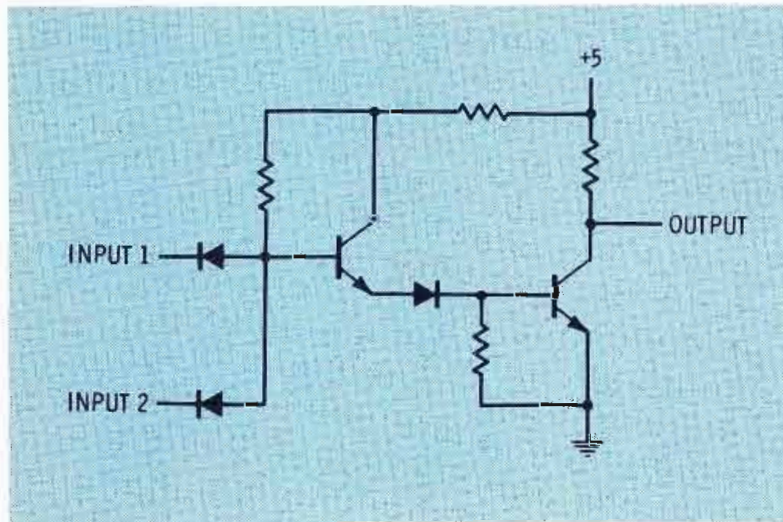


Fig. 5 Basic DTL Gate. DTL provides the wired-AND function. The basic DTL gate is a NAND function.

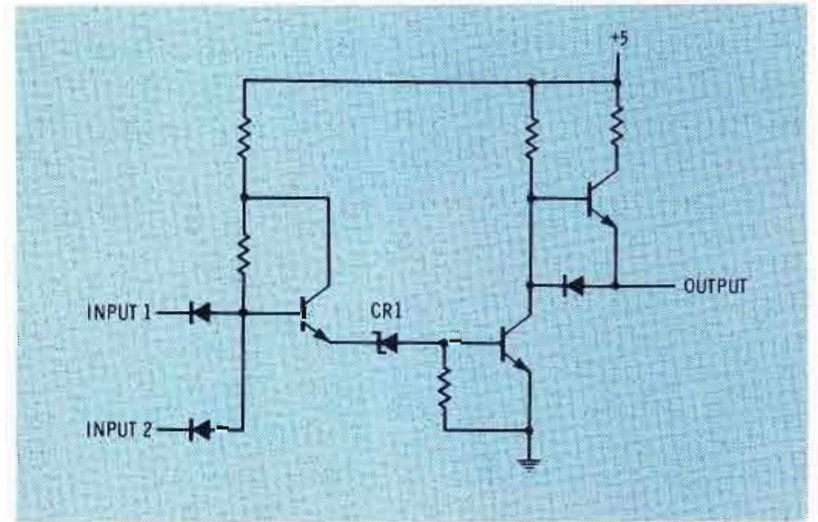


Fig. 6 HTL. The basic HTL gate provides the NAND function. The zener diode, CR1, increases the voltage swing required on the inputs to go between the high and low state.

wired logic is an AND function as described in Figure 1, in others it may be an OR. The terms "wired-AND" and "wired-OR" or "IMPLIED-AND" and "IMPLIED-OR" are properly applied to the situations that result in an AND and an OR function respectively. In practice, though, both cases are often referred to as "wired-OR". Wired logic is both a blessing (to the designer) and an evil (to the digital troubleshooter) as we will see in the next article.

Speed VS. Power

A consideration of all designs is the timing of the signals involved. The timing parameters of a logic family are (Figure 2) rise time, fall time, propagation delay time, and maximum flip-flop toggle frequency. Both rise and fall time relate to the shape of a resulting signal. Propagation delay time refers to the amount of time required for a

change on an input to cause a change on an output. Usually this time is measured from a 50 percent change on the input to a 50 percent change on the output.

The maximum rate at which a flip-flop can toggle is often important in determining the maximum cycle time of clocked designs. While higher speeds are desirable, it is also desirable to have low power dissipation. Unfortunately as speed increases so does the power dissipation. Designers are thus faced with selecting a logic family with a good compromise of the speed-power product.

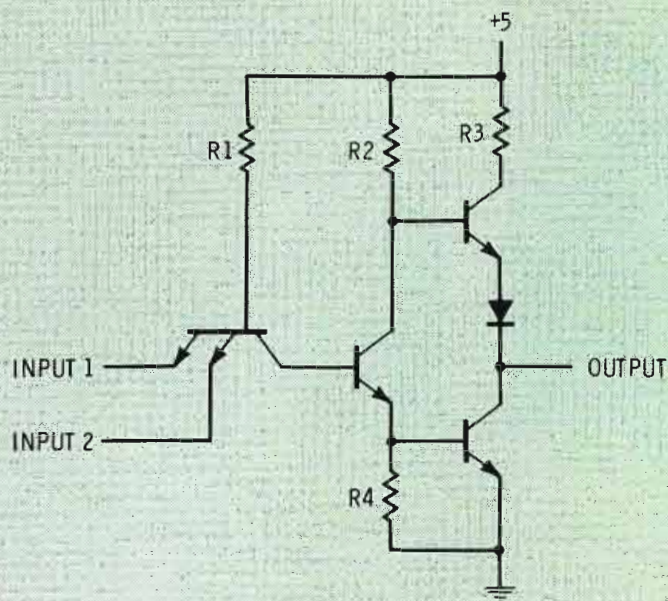
High Noise Immunity And Lack Of Generated Noise

While noise in general has less effect on digital circuits than on analog circuits, it is still an important consideration in many applications. Figure 3 illustrates the con-

cept of noise immunity.

Noise immunity refers to the amount of noise that may exist on an output before the input it drives falsely interpret the signal state. A high output can have as much as $V_{OH}-V_{IH}$ noise before it falls below the input high state threshold. Thus the high state noise immunity is $V_{OH}-V_{IH}$. Similarly, the low state noise immunity is $V_{IL}-V_{OL}$. These threshold voltages are usually specified and constant for most logic families. In a noisy environment, the requirement for a high noise immunity may be the major consideration in the logic family chosen.

A second noise factor is generated noise. This refers to the amount of noise created on a systems power supply lines due to the change in state of a device's outputs. Under ideal conditions, the current drain on the power supply would be constant as the outputs



RESISTOR VALUES		
	7400 SERIES	74L00 SERIES
R1	4K	40K
R2	1.6K	20K
R3	1K	12K
R4	130	500

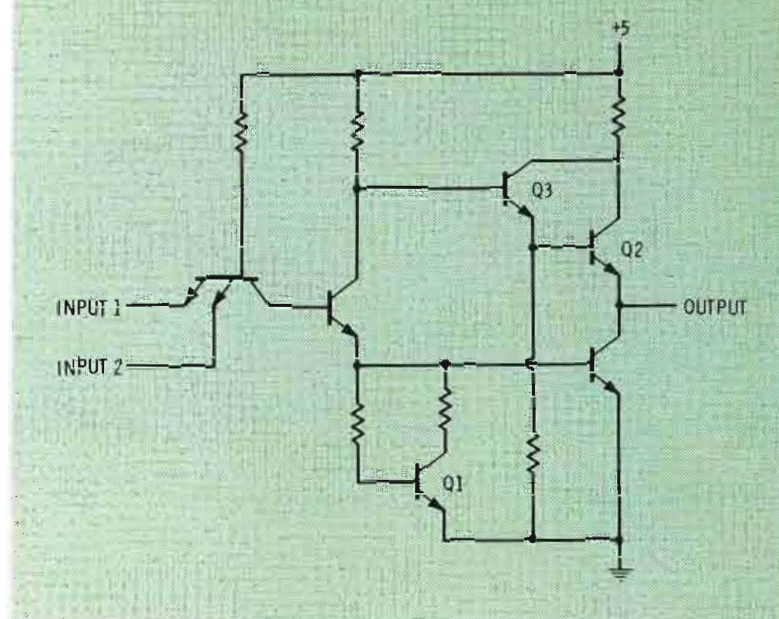


Fig. 8 74H00 TTL. By replacing the pull down resistor R3 on Fig. 7 with an active pull down Q1 and replacing the upper output transistor and diode with a Darlington pair Q2, Q3 the speed of the 7400 gate is vastly increased.

Fig. 7 7400 and 74L TTL. The main difference between the medium speed 7400 series and the low power 74L00 series gate is the resistor values are increased.

switched. In reality, though, a current surge usually accompanies the switching of an output. This current surge results in generated noise on the power supply line.

As generated noise increases, more expensive circuit layout and power supply bypassing becomes necessary. In a low cost system, this may be a very important consideration.

Wide Operating Temperature Range And Low Cost

Both low cost and a wide operating temperature range are always desired. In general, two operating temperature ranges are specified. For commercial or industrial requirements, devices are usually specified over 0°C to +75°C range.

Since the noise immunity, power supply tolerance and other design parameters degrade with increasing temperatures, some applications may depend heavily on the temperature characteristics of the logic family.

The low cost feature is one that is a little more complicated than it appears on first sight. A first approximation at cost comparison between two logic families can be based upon the cost of a basic unit such as a NAND, NOR or AND gate. But other factors also enter

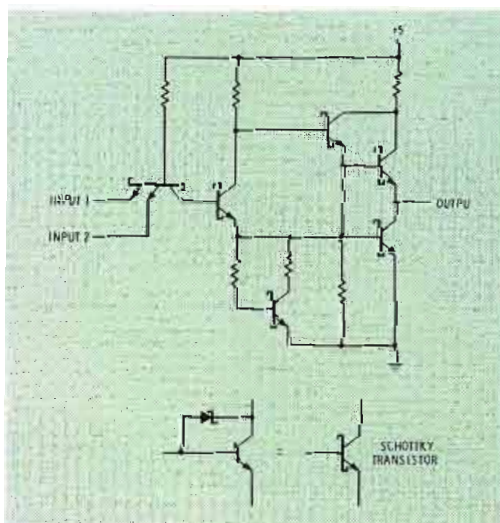


Fig. 9 74S00 TTL. The basic Schottky TTL gate is the same as a 74H00 with all transistors replaced by Schottky transistors. A Schottky transistor is a transistor with its base tied to its collector by a Schottky diode.

into the consideration.

Availability of complex functions can reduce package count and should be considered in the cost of using a given logic family. Similarly, a family with little generated noise will require a less expensive circuit layout and power supply. All of these parameters are considered by the designer in choosing a logic family that meets his cost requirement as well as his design requirements.

Resistor-Transistor-Logic

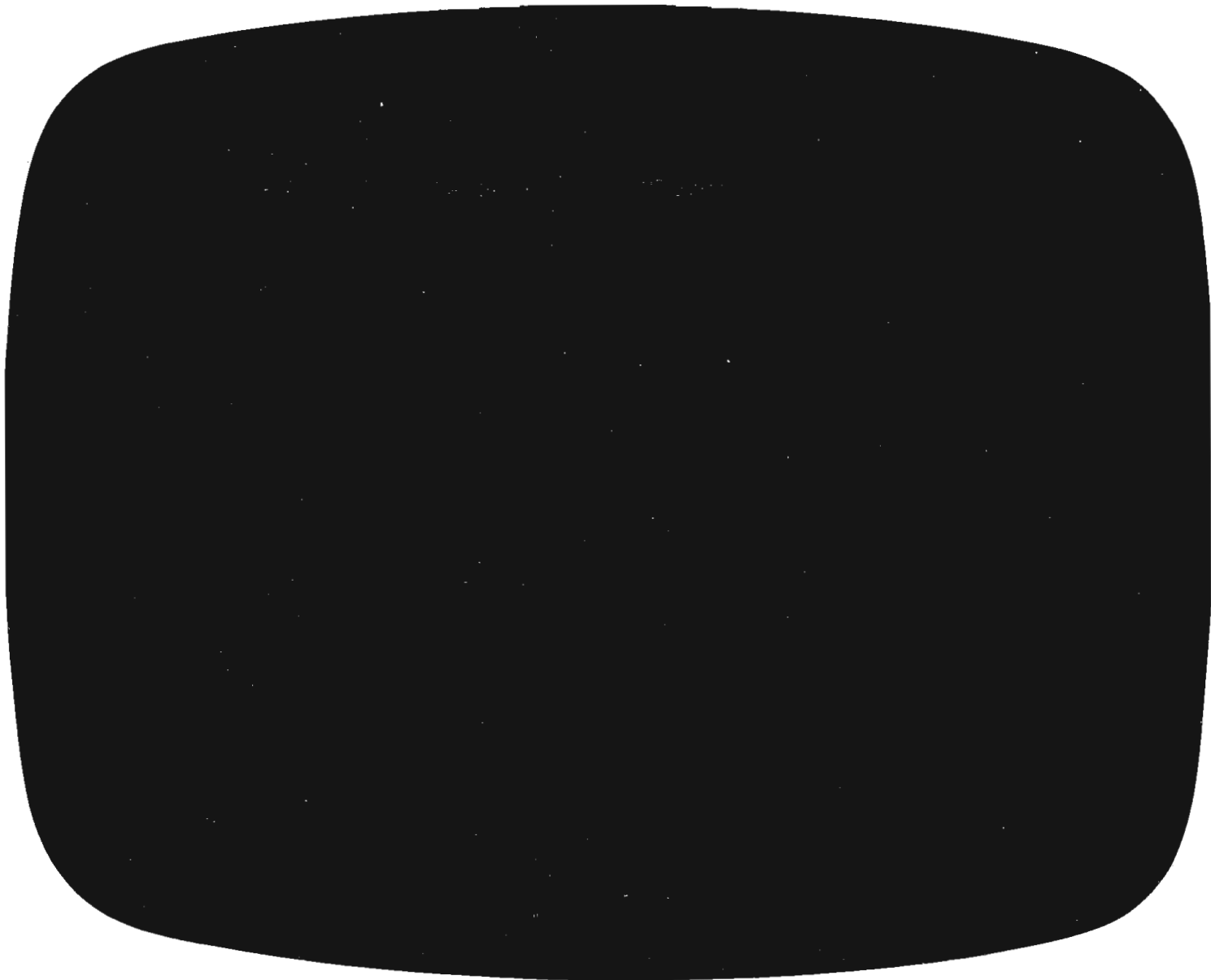
RTL was one of the first major logic families to gain popularity in the design world. As can be seen from Figure 4, only resistors and transistors are used in implementing the basic RTL gate. Whenever either input goes high, current flows through the base resistor turning on the transistor. This then pulls the output to a low state, V_{SAT} , above ground.

In logical terms, this is equivalent to saying a 1 on any input (A or B) causes a 0 on the output. Thus the basic RTL gate is a NOR function.

RTL operates from a 3.0 to 3.6 Volt power supply with low generated noise. The noise immunity of this family is fairly low (around 100 mV when operated from a 3 Volt supply). Propagation delay time per gate is around 25 ns and a typical clock rate of 2.5 MHz. Because of its age and wide acceptance, RTL is both low cost and highly flexible. Its current use in new designs is slowing since TTL, CMOS and other families provide a better trade-off.

Diode-Transistor-Logic

Another early and well accepted logic family is DTL. Figure 5 illustrates a widely used DTL gate design. Whenever any input is low, the base drive to the input tran-



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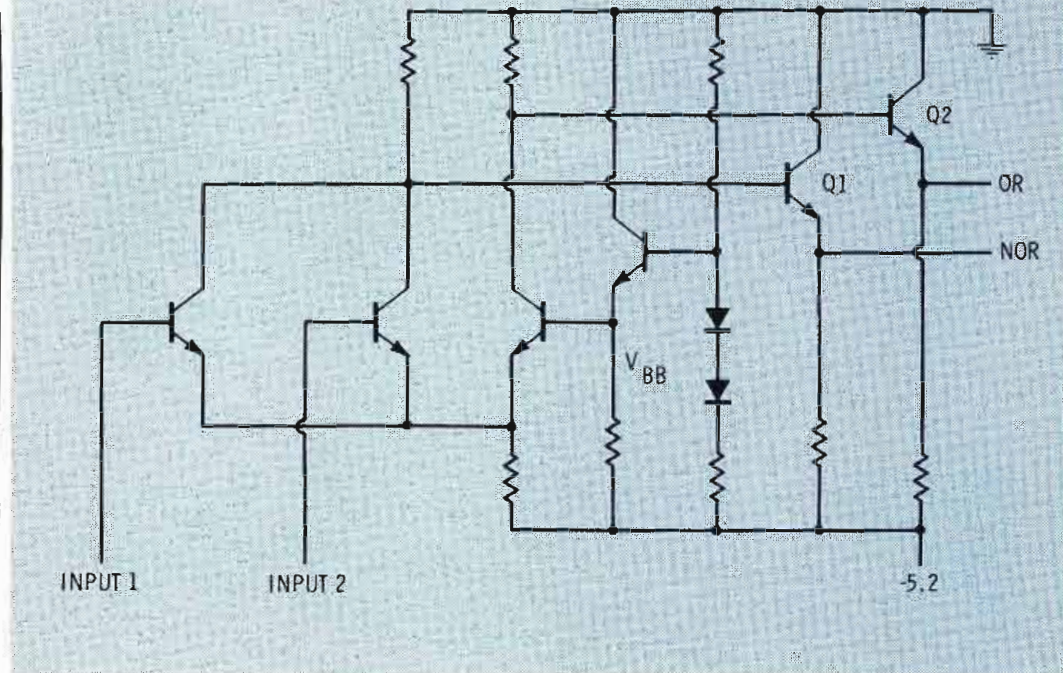


Fig. 10 Basic ECL Gate. ECL is the fastest form of logic today. Its differential outputs and wide acceptance make this a flexible family to design with. Where high speed is a major concern, ECL is often used.

When all inputs are high, all the input diodes are reverse biased, allowing the input transistor to be turned on. This turns on the output transistor, pulling the output to a low state.

Logically, this can be stated as all inputs high, the output is low. Any input low, the output is high. This is the NAND function.

By the similarity in the output states of the DTL and RTL devices, it is easy to see that DTL devices can be "wire-AND'ed". The noise immunity of DTL is around .6 Volts, which is better than RTL but not as good as HTL or TTL. The typical propagation delay time of a DTL gate is 30 ns and a typical clock rate of 12-30 MHz. Like RTL, DTL is being replaced in many new designs by TTL and CMOS.

HTL Immunity

HTL provides a high immunity to noise, making it ideal for applications in noisy environments. Figure 6 shows the design of a basic HTL gate. The zener diode, CR1, is used to increase the voltage swing required between the 1 and 0 state. Whenever any input is low, the input diode is turned on thus turning off the input transistor. This

causes the lower output transistor to be turned off and allows the output to be pulled high through the upper output transistor.

When all inputs are high, the input and lower output transistors are turned on and the output pulled low. Thus the basic HTL gate is a NAND.

The TTL Family

Transistor-Transistor-Logic is the most widely used logic family in existence today. There are four important sub-families of the TTL logic family. These are low power (74L00 series), medium speed (7400 series), high speed (74H00 series), and Schottky (74S00 series). This wide range of sub-families makes the TTL technology a very flexible and easy to use family.

The major distinction between the low power TTL gate and the medium speed gate, as far as internal design is concerned, is the value of the associated resistors (Figure 7). To decrease the power consumption, the resistor values are increased. But the operation is the same. Whenever any input is low, the input transistor will turn on removing base drive from the intermediate stage transistor, thus turning it off. Turning this transistor off turns on the upper transistor in the totem pole and turns off the lower one. Thus, the output is pulled high.

When all inputs are high, the input transistor is turned off and

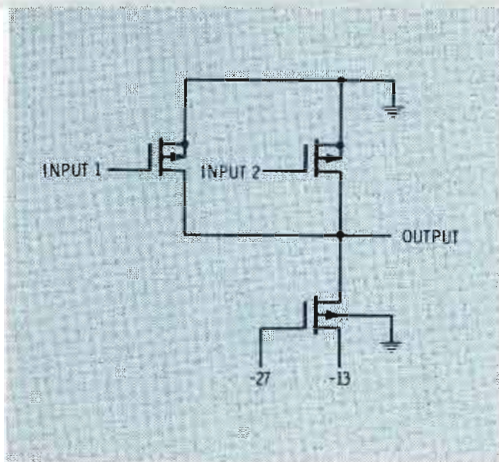


Fig. 11 P-MOS. The basic P-MOS gate is a NAND. A low signal on any input turns on the corresponding FET, pulling the output high. If all inputs are high, the input FET's are turned off and the output is pulled low.

the intermediate stage turned on. This then turns off the upper output transistor and turns on the lower one. Note that the output in the low state is then a saturated transistor to ground and hence a very low impedance. In terms of 1's and 0's, this operation can be described as a 1 on all inputs causes the output to be 0, and a 0 on any input causes the output to be 1. Thus the basic TTL gate is the NAND gate.

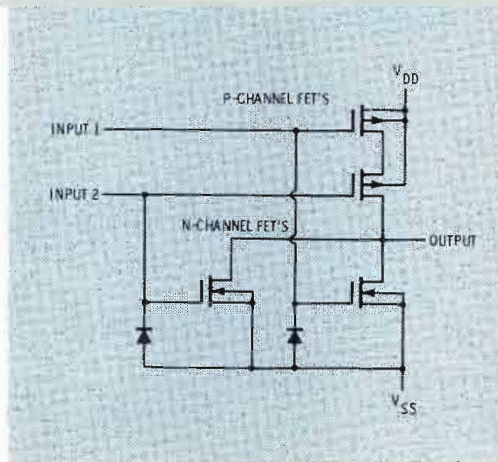


Fig. 12 CMOS. One of the fastest growing logic families today, CMOS offers very low power consumption and availability of complex devices. CMOS uses both N-channel and P-channel FET's to achieve the low power consumption.

Two modifications are made to this design to improve the speed characteristics. First, the pull down resistor on the emitter of the intermediate stage transistor is replaced with an active pull down (the transistor shown in Figure 8). Secondly, the upper output transistor and diode are replaced with a Darlington transistor pair. With these modifications and some changes in production processes, the high speed series (74H00) is developed.

As a further improvement in speed, the transistors in the design can be kept out of saturation by replacing each transistor with a Schottky transistor (Figure 9).

A Schottky transistor is just a transistor with its base clamped to its collector by a Schottky diode. Thus, as shown in Figure 9, the 74S00 series of Schottky TTL is the same as a 74H00 device with all transistors replaced with Schottky transistors.

TTL offers a wide range of speed and power consumption. The many existing devices and availability of several complex functions makes it an extremely flexible family to design with. Wired logic capabilities are not available with all TTL devices, but some devices whose output stage has been modified can be wired to form an implied-AND. These devices are known as open collector devices.

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(Continued on page 114)

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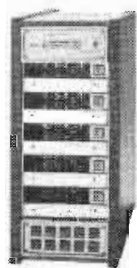


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Television... Down The Line

By Bagio Presti

Sarkes Tarzian

Equipment in television stations continues to undergo extensive development in spite of the fact that most of the designs have limited lives ranging from three months to two years!

Sometimes a development never leaves the laboratory because it has been obsoleted during the development period by the introduction of a new solid state component or product. It seems that some designs are under continuous development as the design engineer tries to avoid design obsolescence by incorporating the weekly flood of new components which have a bearing on his design.

Most industries can expect a 5-10 year life for a major development with minor improvements in the product being introduced slowly and methodically. On the other hand, most TV equipment manufacturers have products under continuous major development which minimizes or eliminates amortization of development costs. The net result is that TV equipment is expensive, has less trade-in value, is prone to be quickly obsoleted, and yet is a good buy when considered in the light of the enormous technical development cost and attention it receives.

Wasted Effort?

What has all this effort accomplished? Consider the major equipment items found in TV station studios. VTR machines and VTR computer editors have provided the program and production personnel with facilities to electronically integrate pretaped show or commercial segments with great precision. Independent control of camera color signals which allows selective hue and saturation control of individual object colors and artificial detail enhancement. This feature has provided flexibility in creative pro-

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gramming and product display. Film, live camera, and VTR sources used in conjunction with switching and video effects equipment offer the creative operating talent of the TV station flexibility and latitude in programming. All the engineering expense has resulted in substantial increases in reliability and performance while equipment has become more and more complex.

Production and master control switching in television stations has become more and more sophisticated to meet the increasing demands of commercial productions. TV station production and engineering personnel are demanding complex systems with high flexibility without imperfection in technical performance. The central core of TV operation revolves around production and master control switching—all sources are funneled through these devices before being routed to the transmitter.

The rapid evolution of solid state development in IC components and MSI and LSI technology has made it practical to produce equipment which provides highly sophisticated results coupled with reliability and stringent technical performance. It has also made it possible to produce relatively complex equipment at reasonable costs. An example is the rotational travelling matte effects. This equipment makes it possible to produce a complex commercial in minutes. This would normally require several weeks while special film processing of travelling mattes were integrated with other materials.

Digital circuits have provided a large variety of rotational and transitional mattes which are available at the touch of a button and under the continuous control of the production people—mattes may be speed variable—stopped, reversed, etc., at the whim of the operator. This gives far more flexibility to the

producer of commercials as opposed to equivalent film techniques which are time consuming and costly to produce.

What's Ahead?

Now as we examine the evolution of TV systems and look forward to the future, what lies ahead? In spite of the enormous development investment made to date, the future demands an accelerated effort.

We are now on the threshold of a revolution in the technique of video processing! Revolution is the proper word because the age of digital application in television has already begun and the impact will revolutionize development in all phases of television engineering.

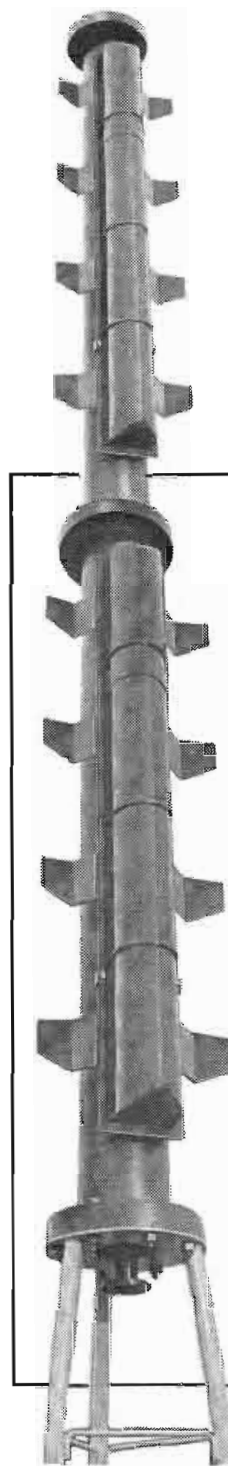
The industry has already started to feel the impact of the application of digital techniques in Broadcast TV, particularly in control systems, encoded sync generator pulses producing one line sync systems, logic circuits in various video equipment items, computer applications in master control switching, and TV data processing for administrative and management use, etc.

More recently other components of television systems are becoming digitized including fully digital special effects (including digitized rotational travelling mattes), digital machine control systems which reduce thousands of wires to a single pair of coax, extensive use of digital electronics in VTR equipment and VTR computer editing systems, digital remote transmitter control and monitoring systems, and many other less obvious applications. Electronic conversion between various world TV standards by purely digital techniques is already an accomplished fact and in daily use.

There has been substantial development work in this country, England, and elsewhere in digitizing video transmission. Actual use of digital transmission systems by COMSTAT, NASA, and other non-

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Management Highlights

Here you see the current broadcast problem: Do I buy today or wait for tomorrow's innovation? The author gives us an opportunity to peer into the future and consider what's ahead. Today's decision making team must know what is currently available and have a fair idea of what will come down the pike tomorrow.

commercial broadcast applications is in progress. This experience along with the extensive development work in the MARS planet probe in the use of digital processing of video data will have important fallout results in the broadcast industry in the future.

There are now commercial electronic modules available which convert analog video and audio data into digitized signals. Again the impact of these sophisticated units will be significant in the near future.

Other Solid State Devices

The use of digital techniques is not limited to control and video applications. Audio systems are also enjoying the advantages of digital circuit applications as well.

In addition, solid state photosensitive matrix elements are beginning to appear commercially. These units are designed as replacements for vidicon and Plumbicon tubes. Prototype solid state cameras have already been developed in several laboratories.

Even In Cameras

These solid state devices are naturally adaptable to digital techniques. Solid state cameras will utilize digital scanning and digital scanning will produce direct digital video data. This system will generate exotic results . . . it will be possible to have a direct interface of camera systems with production switching systems which will give the creative talent of a station the opportunity to manipulate the picture information in the time domain before the information reaches the switcher processing electronics. The diagram illustrates a potential TV system of this kind. TV picture contrast enhancement, element by element inversions or transpositions will be in the norm when these techniques are perfected.

Mini-computers will be central elements in studio video and audio applications. These units will become the interface between the operator and the system operated. TV systems will provide automatic synchronizing assignment timed for

all types of local and remote sources. This technique will allow high flexibility in the planning of systems combining live and recorded video/audio sources.

At the present time digital techniques are in extensive use in camera designs for remote control functions, and in automatic function as auto-registration, etc. Camera designs of the future will not require decisions as to where to implement analog to digital conversions — the camera systems will be entirely digital including picture scanning of the image, remote control, and video processing.

Digital audio and video systems of the future will have high performance characteristics providing immunity from transmission imperfections and will include techniques for restoration of lost portions of information which may result from imperfect transmission. These systems will allow the transmission of other data as newspaper, stock market reports, etc., during the blanking portion of the picture. Interpolation and storage techniques will allow the combining of video data editing functions heretofore impossible in analog systems. Two-way systems providing communications between user and originating sources will follow rapidly.

The consumer will benefit in other ways. Television receivers employing digital techniques will use digital frequency synthesizer tuners and the final signal will be received on a solid state picture tube. Print-out of various information as newspapers, financial reports, etc. will also be provided. Selection of channel and subject matter will multiply the variety of program material the user may enjoy.

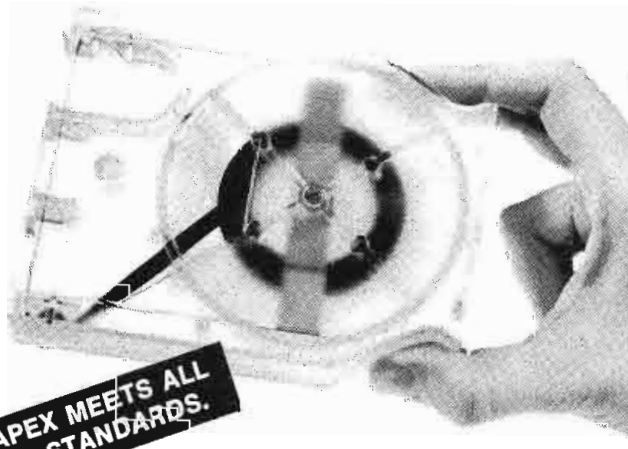
Actual transmission (over the air) by digital means will require FCC rule changes and this stage will take many years since it will essentially obsolete present day TV receivers. On the other hand the reliability, simplicity, and performance of digital receivers will substantially improve consumer satisfaction and enjoyment of television. In the meantime, studios will become digital and conversion to analog signals will be required until rule changes are promulgated. □

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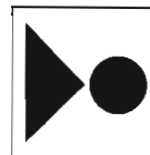
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Jungle Guides Needed

By Fred Moore

Station WJZ, Decatur, Ill.

Some people in our business are saying engineers are a bunch of shuffling bumblers who have no role in major decisions in their stations. Not so. The engineers I know are as articulate and current in our business as any other broadcaster.

The good management people know that if you don't talk to your technical guy ahead of, say, that next equipment purchase, things get complicated very fast around the station. Most managers already know this and save themselves gray hair by maintaining a rapport with engineering that serves them well during technical decisions.

It's no fun to watch managers who **don't** keep the channel open with their technical half. They're rather scarce, fortunately, but easy to spot. They have lots more wrinkles and are given to constant pacing when technical things are mentioned.

And Then One Day

Let's set up a hypothetical case. The manager is one of these rare ones. He is not a technical type and avoids that sort of thing like the plague. The need for a new console arises. The manager, feeling up to the decision without advice, buys one.

The day of arrival is quite festive at the station, and it is a beautiful beast sitting there amid packing foam and cardboard. It boasts twelve channels in, one out, with intercom, color coded knobs and integrated circuits. Our manager, the program director, and everyone in the office is very proud and each is eager to have it wired in.

But who's that lurking over in a corner looking very worried? It's our Chief Engineer. Upon questioning him, you find out just what's really got him down. The console won't **fit** where the old one is now. It doesn't have a second output

channel, and that's how the stock markets are recorded daily. There are two transmitters less than ten feet away and nobody asked the manufacturer about RFI in this console. You need six mic inputs and there are . . . only four? Is **that** what's bugging you, Chief?

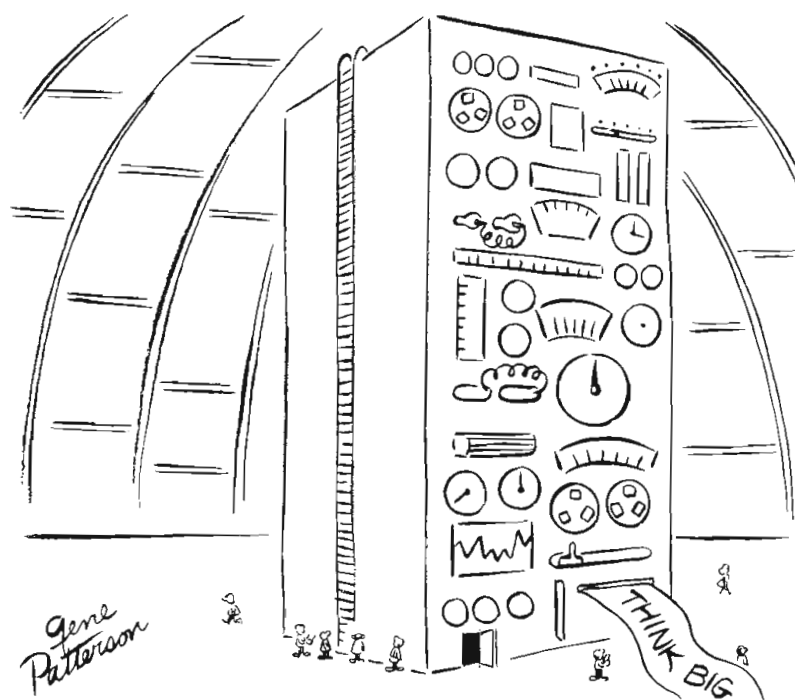
And if you think the engineer is upset, wait until the manager is told that 26-hundred bucks was just the start of what this gem will run the company. And then tack on time involved in trying to fit this round peg into the scheme of things!

It's On The Air

Step one is breaking it to the announcers. We can hear it now. "Uh, hey, Ron would you mind doing your show from the production studio for a little while? Say about two weeks?" The air mistakes Ron will make with too few cart machines and the long reach to the start buttons in that studio will make radio history.

Step two would be to rip out the control room operating desk, a project engineers are known to have nightmares about. And on and on. For fear of really getting us all down, we leave out the really expensive part where our engineer has to add two more mic preamps, another output channel and other accommodations. When he's through, the board should be named after him instead of the manufacturer (as a tribute to his patience). Even months later, when all seems well after the storm, that old feeling comes right back one otherwise bright Monday morning when the manager bounds into the shop and asks, "Didn't I hear FM getting in the AM board on the way to work this morning, Rube?" It's enough to make you cry.

To some of you this may sound all too familiar, but happily, that day is fast disappearing. Most managers today know that he who





Bill Wertz, VP of WQLR, checks the chronometer, as Dennis Weidler is poised to put the station on the air. Pat Dyszkiewicz and Eric Toll watch.

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Engineer Brian Morgan of WDRC AM/FM, gets ready for on-air playback.

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For on-the-air use, Stanton 500 series cartridges have the ability to withstand rugged handling without any lessening of audio quality. They meet all standards for reliability and sound quality, both in on-air playback usage, and in the production of transfers. These characteristics, which assure high quality sound with minimum maintenance, make them ideally suited not only for professional use, but for home stereo systems as well.

You can enjoy the professional audio quality of Stanton Products whether your purpose involves broadcasting or home entertainment.

Write today for further information to Stanton Magnetics Inc., Terminal Drive, Plainview, New York 11803.



Scott Muni, WNEW-FM, cues in on a new release.



All Stanton cartridges are designed for use with all two and four-channel matrix derived compatible systems.

walks heavily into the technical jungle without a trusty guide may emerge later without his cherished audience and money. The one-man purchase decision just doesn't make it today. There are too many products and far too many features and technical considerations.

When The Votes Are In

At a recent NAB show, a company rep told me that their hospitality suite upstairs was for the managers. The display area downstairs was, he said, for engineers.

Both locations surely had their intended effect on that year's sales of broadcast gear. But leave it to the guy who poked around the equipment asking questions for a couple of hours to pull out the brochures and have the facts at hand when an equipment purchase decision is near.

Sure, station managers are concerned with costs. And, just as understandably, an engineer's first thoughts are likely to be about performance and reliability. That's

why the best decision on technical matters, including equipment buying, lies right on the fairway somewhere, not to close to either extreme. A vigorous discussion involving everyone concerned, be it programming, sales, engineering, management and any other areas affected almost always produces the smart choice.

Purchasing Checklist

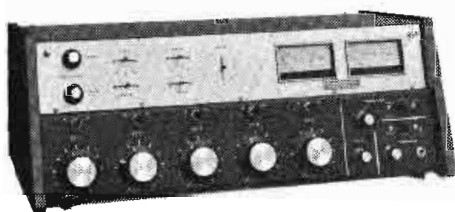
Regarding equipment purchases, I use a short checklist for firming up my decisions before any conference. You may find it handy, too.

1. Are the stations now using the proposed equipment happy with the particular brand you are considering? A few letters or phone calls now may save much grief.
2. How does the price compare with others? What extras am I willing to pay for? What features can I do without to get a lower price?
3. How old is this model? Designs less than a year old give me the heebies.
4. Can it expand? Consoles may need extra inputs soon. Transmitters could require remote control or a stereo generator.
5. Compare the specs. Sounds basic but there may be a few surprises.
6. How good will the service be? A major factor here is how close the manufacturer is to you.
7. Is it compatible? Ever tried installing one company's remote control system on another's transmitter? Auugh!

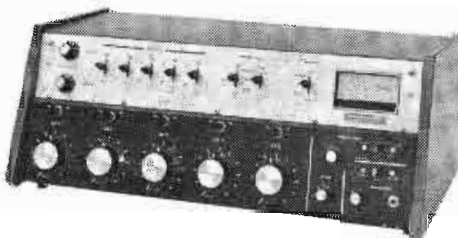
Remember to get all the data you can. Then keep the channels open between all concerned. It keeps the "team decision" alive and well and making the right moves.



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Model 5M11
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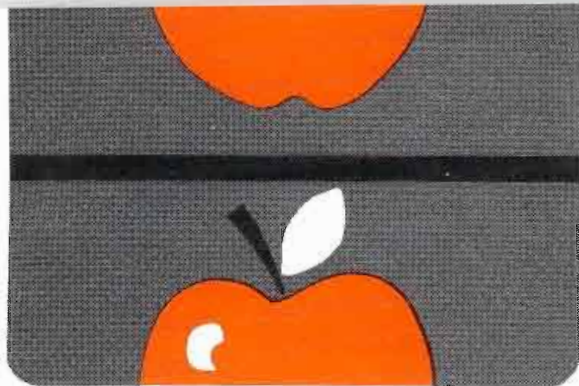
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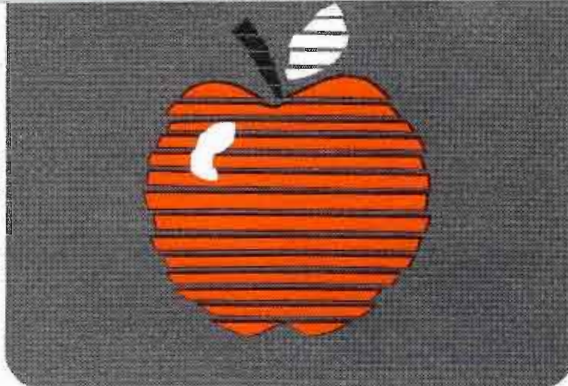
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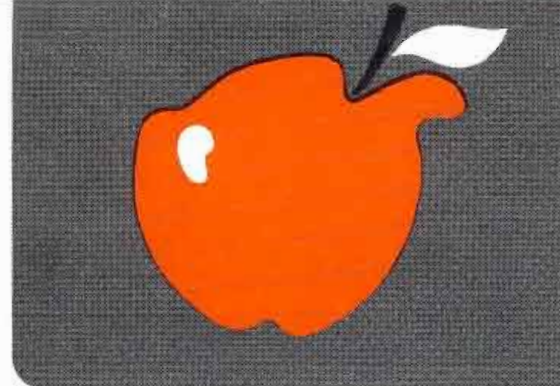
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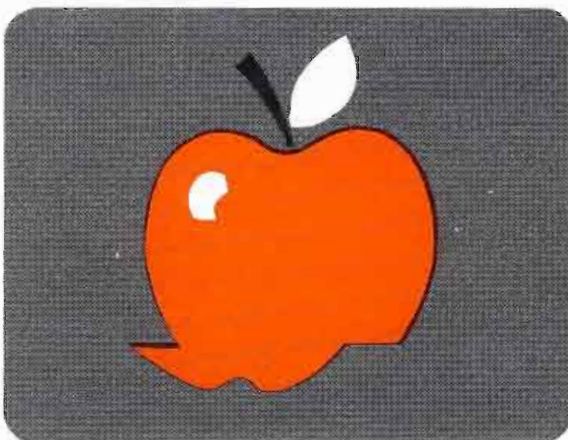
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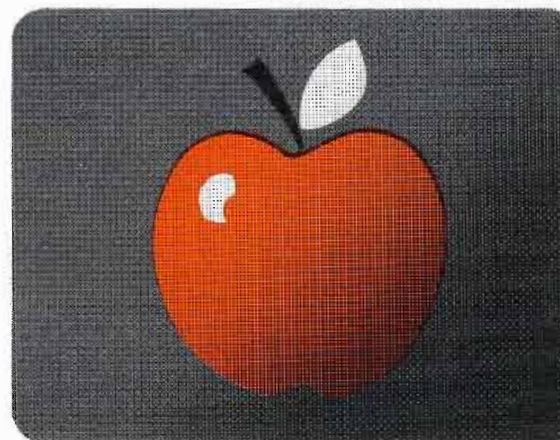
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Delta TBCs give you broadcast quality from every VTR — 2-inch "quads," 1-inch helicals, 3/4-inch cassettes, 1/2-inch EIAJ — in monochrome, or direct or heterodyne NTSC color. And you can get them with standalone or built-in velocity error correction.

Delta accessories convert V-lock VTRs to H-lock operation and add automatic skew tension correction to low cost cassette and EIAJ VTRs. Our new full line brochure, *Meet The Compatibles*, describes over 20 different models . . . covers time base errors, the causes and the solutions. Use the coupon to send for your free copy. Or send for our special tape demonstration. We're available anytime to tell you how we can help solve time base problems.

Dear Sir,

I want to know more about time base error correction and Delta Series TBCs.

- Please send me your new brochure: *Meet The Compatibles*.
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Read Those Specifications

By Dennis Ciapura
WLIF, Baltimore, Md.

Since it is virtually impossible to obtain a sample of each piece of new broadcast equipment purchased and "try-it-out" on the air, much of what we buy is purchased on the merits of the manufacturers' reputation and specifications.

Interpreting these specs is quite an ominous responsibility because a lot of dollars are usually at stake, both in the purchase price and the effects of the equipment on the air product. So, in this area of broadcast engineering we have an opportunity to inflict upon our operation a sort of economic double jeopardy; miss once and lose twice!

If one is to make sound purchasing decisions or accurately advise others in that capacity, it is obvious that a thorough understanding of how to interpret manufacturers' specs is essential. While broadcast equipment manufacturers are, as a group, among the most reputable and conscientious salesmen around, the ultimate responsibility for purchasing the best piece of equipment for a specific station lies with the station's engineering staff.

No matter how good the equipment is, if it is not utilized as it was intended to be, (in other words, if a poor purchasing decision was made)

optimum results will not be obtained. With this in mind, let's review each category of radio equipment and look into the specifications.

As with all equipment, mechanical construction as well as electrical specifications is important. The only mechanical specs normally given for consoles is the height, width, depth and weight, even though in most operations the "board" is the ever used and abused heart of the operation.

It is advisable to look at the "board" you plan to purchase "in person" if possible. It is very difficult to describe the mechanical construction of a console in specifications and certainly ten minutes of first-hand scrutiny is worth a thousand words. Keep the application in mind; a production console for some radio stations is not subjected to one thousandth the use that the on-air board is and a few dollars saved on this item might be used for a better quality main

(Continued on page 44)

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DIGITALS For computer age timing, counting and measuring.



ES 112 Digital Clock:

A six digit, 12 hour clock. Set to the second. Solid state, MSI components with printed circuit board. No moving parts. Silent, seven segment tubes. Built to last a lifetime. Three setting controls: Fast Advance, Slow Advance, Hold. **\$90.00**

Dimensions: 2 3/4" x 8" wide x 5 5/8" deep.
Case: Choice of Etched Aluminum or Walnut.
Electrical: 117 VAC 50/60 Hz 10 W max.
Options: R B P C K

ES 124 Digital Clock: Same clock specifications as ES 112 except displays up to 24 hours, and has provisions for 50 or 60 Hz operation. **\$90.00**

ES 500 Combination Six Digit Clock/Timer:

A 12 hour clock or timer. 5 controls: Start, Stop, Reset, Fast Advance, Slow Advance. Runs continuously to 12:59:59. Advances to 1:00:00 and continues as clock unless stopped or advanced. Same start, stop, and reset action as ES 400. **\$130.00**

Dimensions: 2 3/4" x 8" wide x 5 5/8" deep.
Case: Etched Aluminum
Electrical: 117 VAC 60 Hz 8 W max.
Options: R B P K



ES 510 Sixty minute timer:

A four digit timer (59:59). Start, stop and reset controls (Single pole, momentary, push-button). Runs continuously unless stopped or reset. If stopped, display holds time reading. When restarted continues with next count from last displayed figure. Reset while running or stopped. Returns display to all zeros. **\$110.00**

Dimensions: 2 3/4" x 6" wide x 5 5/8" deep.
Case: Etched Aluminum
Electrical: 117 VAC 60 Hz 8 W max.
Options: R B P Y Q K



ES 750 thru 769 Programmings Units:

Combines with standard ESE products on etched aluminum, 19" relay rack mounting panel (3 1/2" high). Single pole form A contact closure (1 Amp contact rating) for length of time program matches time. If control function involves count other than timing, products can be adapted. In most cases we provide interface between count input and event to be displayed.

Thumbwheel Programmer System

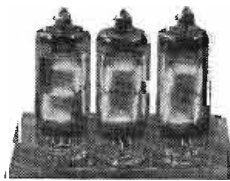
- ES 750/ES 112 & one 6 digit program \$265
- ES 751/ES 124 & one 6 digit program \$265
- ES 752/ES 500 & one 6 digit program \$295
- ES 753/ES 112 & two 4 digit programs \$315
- ES 754/ES 124 & two 4 digit programs \$315
- ES 755/ES 500 & two 4 digit programs \$345
- ES 756/ES 510 & one 4 digit program \$250
- ES 757/ES 300 & one 4 digit program \$285
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Patchboard Programmer Systems*

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- ES 761/ES 124 & one 6 digit program \$220
- ES 762/ES 500 & one 6 digit program \$250
- ES 763/ES 112 & two 4 digit programs \$235
- ES 764/ES 124 & two 4 digit programs \$235
- ES 765/ES 500 & two 4 digit programs \$265
- ES 766/ES 510 & one 4 digit program \$225
- ES 767/ES 300 & one 4 digit program \$260
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- ES 769/ES 300 & two 4 digit programs \$275

*An economy approach to providing the same programming functions as thumbwheel programmers listed.

ES 900 Series Modular Display Units



Priced from \$15.00 to \$79.00

Single Digit Modules — Vertical mounting board — Connector included.				Height	Width	Depth
	Height	Width	Depth			
ES 901	2"	.5"	2"	1.75"	1.8"	3.75"
ES 902/(7475)	2"	.5"	2"	1.75"	2.7"	3.75"
ES 903/(7475) (7490)	2"	.5"	2"	1.75"	3.6"	3.75"
ES 904/(7475) (74192)	2"	.5"	2"	1.75"	4.5"	3.75"
ES 905/(7490)	2"	.5"	2"	1.75"	5.4"	3.75"
ES 906/(74192)	2"	.5"	2"	1.75"	6.3"	3.75"
Multiple Digit Modules — Horizontal mounting — Connector optional.				Height	Width	Depth
	Height	Width	Depth			
ES 912/2 Digits	1.75"	1.8"	3.75"	1.75"	1.8"	3.75"
ES 913/3 Digits	1.75"	2.7"	3.75"	1.75"	2.7"	3.75"
ES 914/4 Digits	1.75"	3.6"	3.75"	1.75"	3.6"	3.75"
ES 915/5 Digits	1.75"	4.5"	3.75"	1.75"	4.5"	3.75"
ES 916/6 Digits	1.75"	5.4"	3.75"	1.75"	5.4"	3.75"
ES 917/7 Digits	1.75"	6.3"	3.75"	1.75"	6.3"	3.75"
ES 918/8 Digits	1.75"	7.2"	3.75"	1.75"	7.2"	3.75"
ES 922/2 Digits/(7475)	1.75"	1.8"	3.75"	1.75"	1.8"	3.75"
ES 923/3 Digits/(7475)	1.75"	2.7"	3.75"	1.75"	2.7"	3.75"
ES 924/4 Digits/(7475)	1.75"	3.6"	3.75"	1.75"	3.6"	3.75"
ES 925/5 Digits/(7475)	1.75"	4.5"	3.75"	1.75"	4.5"	3.75"
ES 926/6 Digits/(7475)	1.75"	5.4"	3.75"	1.75"	5.4"	3.75"
ES 927/7 Digits/(7475)	1.75"	6.3"	3.75"	1.75"	6.3"	3.75"
ES 928/8 Digits/(7475)	1.75"	7.2"	3.75"	1.75"	7.2"	3.75"
ES 932/2 Digits/(7475) (7490)	1.75"	1.8"	3.75"	1.75"	1.8"	3.75"
ES 933/3 Digits/(7475) (7490)	1.75"	2.7"	3.75"	1.75"	2.7"	3.75"
ES 934/4 Digits/(7475) (7490)	1.75"	3.6"	3.75"	1.75"	3.6"	3.75"
ES 935/5 Digits/(7475) (7490)	1.75"	4.5"	3.75"	1.75"	4.5"	3.75"
ES 936/6 Digits/(7475) (7490)	1.75"	5.4"	3.75"	1.75"	5.4"	3.75"
ES 937/7 Digits/(7475) (7490)	1.75"	6.3"	3.75"	1.75"	6.3"	3.75"
ES 938/8 Digits/(7475) (7490)	1.75"	7.2"	3.75"	1.75"	7.2"	3.75"
ES 942/2 Digits/(7490)	1.75"	1.8"	3.75"	1.75"	1.8"	3.75"
ES 943/3 Digits/(7490)	1.75"	2.7"	3.75"	1.75"	2.7"	3.75"
ES 944/4 Digits/(7490)	1.75"	3.6"	3.75"	1.75"	3.6"	3.75"
ES 945/5 Digits/(7490)	1.75"	4.5"	3.75"	1.75"	4.5"	3.75"
ES 946/6 Digits/(7490)	1.75"	5.4"	3.75"	1.75"	5.4"	3.75"
ES 947/7 Digits/(7490)	1.75"	6.3"	3.75"	1.75"	6.3"	3.75"
ES 948/8 Digits/(7490)	1.75"	7.2"	3.75"	1.75"	7.2"	3.75"
ES 952/2 Digits/(7475) (74192)	1.75"	1.8"	3.75"	1.75"	1.8"	3.75"
ES 953/3 Digits/(7475) (74192)	1.75"	2.7"	3.75"	1.75"	2.7"	3.75"
ES 954/4 Digits/(7475) (74192)	1.75"	3.6"	3.75"	1.75"	3.6"	3.75"
ES 955/5 Digits/(7475) (74192)	1.75"	4.5"	3.75"	1.75"	4.5"	3.75"
ES 956/6 Digits/(7475) (74192)	1.75"	5.4"	3.75"	1.75"	5.4"	3.75"
ES 962/2 Digits/(74192)	1.75"	1.8"	3.75"	1.75"	1.8"	3.75"
ES 963/3 Digits/(74192)	1.75"	2.7"	3.75"	1.75"	2.7"	3.75"
ES 964/4 Digits/(74192)	1.75"	3.6"	3.75"	1.75"	3.6"	3.75"
ES 965/5 Digits/(74192)	1.75"	4.5"	3.75"	1.75"	4.5"	3.75"
ES 966/6 Digits/(74192)	1.75"	5.4"	3.75"	1.75"	5.4"	3.75"

A prototype tool for custom digital instrumentation. Each module consists of a printed circuit board, a seven segment incandescent tube and decoder driver (7447). Many modules feature other TTL devices, as listed, to provide the following additional functions:

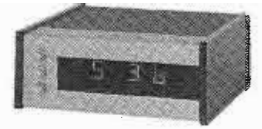
- Latch (7475)
- Decade Counter (7490)
- Programmable Up/Down Counter (74192)

A single 5V supply is the only power required for all modules.

ES 400 Three Digit Ten Minute Timer:

Three controls (Start, Stop, Reset). Runs continuously unless stopped. Displays up to 9:59. If stopped, display will hold time reading. Reset returns display to all zeros. Can be reset while running or stopped. If reset while running, timer will continue to run. **\$85.00**

Dimensions: 2 3/4" x 6" wide x 5 5/8" deep.
Case: Etched Aluminum
Electrical: 117 VAC 60 Hz 8 W max.
Options: R B P K



ES 300 One hundred minute up/down timer:

Four digit, one hundred minute timer (99:59) with six momentary push-button controls: Count Up, Count Down, Stop, Minutes Advance, Seconds Advance, Reset. Minutes and Seconds can be advanced simultaneously or independently, to pre-set for a specified countdown. Preset time will be automatically held until the timer is started. Counting can be activated up or down from that point or set back to zero. When "Stop" control is pressed, the four digit display is held. Counting direction (up or down) can be changed or time can be reset to zero without stopping the count. Continue to register elapsed time beyond the zero setting unless stopped. **\$145.00**

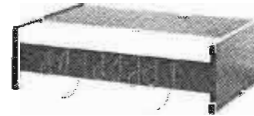
Dimensions: 2 3/4" x 8" wide x 5 5/8" deep. **Case:** Etched Aluminum
Electrical: 117 VAC 60 Hz 10 W max. **Options:** R B P Y Q K



ES 702 thru 718 Programming Units:

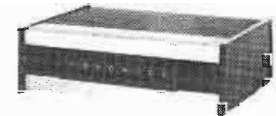
Includes comparator circuitry. User provides BCD information to compare to program. When info agrees with program, a single pole form A relay contact closure occurs (1 Amp contact rating). Contact closure is maintained for length of time external BCD information agrees with program.

Dimensions: 2 3/4" x 8" wide x 5 5/8" deep
Case: Etched Aluminum
Electrical: 117 VAC 60 Hz — Power requirements vary with number of digits.



Patchboard

- ES 702 — 2 Digits \$64.00
- ES 703 — 3 Digits \$69.00
- ES 704 — 4 Digits \$74.00
- ES 705 — 5 Digits \$78.00
- ES 706 — 6 Digits \$82.00
- ES 707 — 7 Digits \$88.00
- ES 708 — 8 Digits \$92.00



Thumbwheel

- ES 712 — 2 Digits \$110.00
- ES 713 — 3 Digits \$120.00
- ES 714 — 4 Digits \$130.00
- ES 715 — 5 Digits \$140.00
- ES 716 — 6 Digits \$150.00
- ES 717 — 7 Digits \$165.00
- ES 718 — 8 Digits \$180.00

Standard Options

... on many ESE digital products, allows a wide range of adaptability from the standard product line:

NOTE: When ordering, add these letter designations to the basic part number.

EXAMPLE:

ES 400 R P B
Basic Part Remote Panel BCD
Number Connector Mount Output

Designation:	Function:
R	Remote Connector
B	Parallel BCD Output (TTL)
P	Panel Mount
Y	Relay Closure
Q	Solid State Outputs
C	Crystal Time Base
K	Kit Available

KITS: Our K series kits allow you to build ESE digitals at much less than the price of an assembled unit. Includes illustrated instructions, parts list, schematic and parts. No special tools needed. Kits can be factory assembled for an additional charge.

Twelve Hour Digital Clock: ES 112K — All features of ES 112. **\$46.95** plus opt. alum. case **\$7.50/walnut \$12.00.**

Twenty Four Hour Digital Clock: ES 124K — Same as the ES 112 except tells time through 23:59:59. **\$46.95** plus opt. alum. case **\$7.50/walnut \$12.00.**

ID REMINDER: ES 200K — Opt. to ES112/124 Reminds operator 9 min. 45 sec. passed since last ID. Mounts on ES 112/124 board. Silent LED flash and opt. audio alarm. **Kits \$10.95/assembled \$16.95**

Crystal Time Base: ES 201K — Opt. addition to ES 112K, ES 124K, or ES 500K. Mounts on board. Accuracy .002%. **\$28.00**

Digital Multimeter: ES 210K — Sensitive, accurate, bipolar. Automatic polarity indicator. Displays ohms, volts or amps in five ranges. 100 Microvolts to 500 V. 100 Milliohms to 1 Megohm. 100 Nanoamps to 1 Amp. Optional probe. **\$77.00** plus **\$12.50** case.

40 MHz Digital Frequency Counters: ES 220K — 5 Digit line freq. time base (1 KHz resolution). **\$69.50** plus **\$10.00** case.

ES 221K — 6 Digit crystal time base (100 Hz resolution). Not damaged by high power transmission levels. One cable connection to trans. output. Pot for sensitivity adjustment. **\$109.50** plus **\$10.00** case.

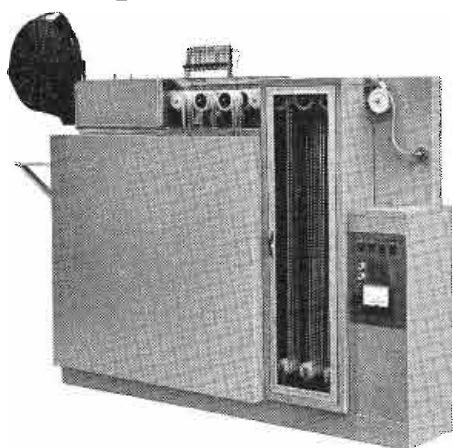


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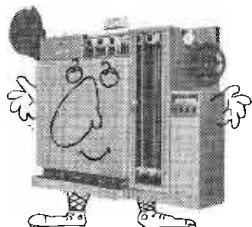
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LITTLE MAX

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(Continued from page 42)

console. For an automated station the exact reverse might be true. The human engineering aspects are also of prime importance. Knob size, spacing and location can mean a lot in terms of operator efficiency.

Digging In

If the selection of possible purchases is narrowed down by first finding the units most suitable mechanically, the electrical specifications of the "semi-finalists" can then be analyzed. Flexibility is a major item. How many inputs required? How many may be added later? How many inputs on one "pot"? Any studio engineer who has suffered through the experience of electronic tap dancing with a board that just ran out of pots as additional signal sources were added, is an expert in this area.

Serviceability is another consideration. How does the board "open-up"? Some of the better ones spread-eagle while others are a challenge to service.

The electrical specifications for fidelity and output capability often look very similar from one unit to the next, but there are pitfalls. Is the maximum output listed for driving one line or two? There can be a 3 dB difference, and in some operations this may be important. Also, check to see if the maximum output data is given for a maximum distortion level.

A good amplifier will be very clean right up to the clipping level. And look for overload capability. If the nominal output of the console is +8 dBm, the maximum output should be around +18 dBm to allow for transients 10 dB above the normal program level.

When looking at the signal to noise ratio, see if it is referred to maximum output or nominal output. There is usually a 10 dB difference here. The noise output is sometimes listed as a function of equivalent input noise in dBm. This is a very descriptive spec because it takes the gain of the console into account. The better units boast figures of about -120 dBm.

The distortion figures should be given for a range of input frequencies and output level for harmonic distortion specs. For example, less than 0.5 percent from 50-15000 Hz

at +8 dBm output. If an IM distortion spec is given, look for the low to high frequency ratio: the SMPTE standard is 4:1. If a 2:1 ratio is used, the distortion will look better in the spec than it actually is.

The frequency response of the console should be flat over the desired range and this spec should also be accompanied by an output level tag. And don't forget to check the monitor amplifier specification, too. If the maximum monitor output level is +33 dBm, this is only 2 Watts. How many speakers are you planning to drive?

Disc Equipment

Many engineers are confused by the variety of disc reproducing equipment available. Once again the application must be kept in mind. Starting speed may be of very little consequence at a classical music station with a slow, flowing format, but what a curse a slow starting turntable would be to Randy-Rock-Jock!

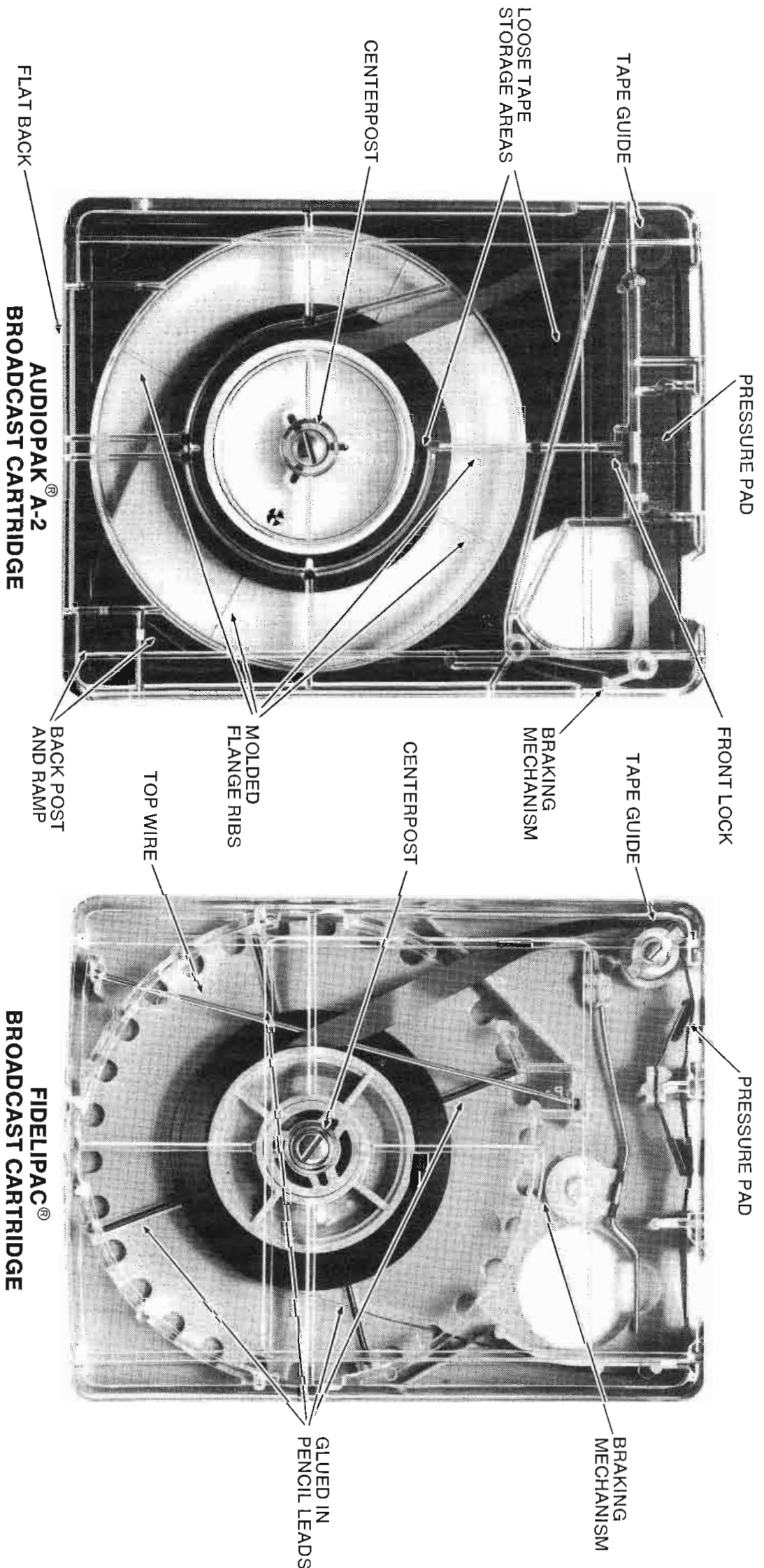
But Randy might not encounter a pianissimo in a year, so the low rumble spec that Mr. Classical engineer looks for won't concern the engineering staff at Randy's facility as much as the starting speed. A good turntable would have a rumble spec of about 40 dB below standard NAB zero level and wow and flutter figures of less than 0.2 percent. A fast table will reach full speed in one-tenth of a turn or less.

The electronic performance of the disc reproducing system is a many faceted situation. The pickup and pre-amp should be considered a system and the manufacturer's specs for these units analyzed accordingly. It must be remembered that there is no AGC system between the phono cartridge and the pre-amp, so the pre-amp must be able to handle the full dynamic range of the pickup's output. We have observed peaks as high as 26 dB above average program level on some of the newer records!

The pre-amp output noise, gain, maximum output capability and phono pickup output voltage must all be considered at the same time

(Continued on page 46)

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(Continued from page 44)

if we are to be sure that the disc reproducing system will not be clipping program peaks or running unnecessarily close to the residual noise level. Also bear in mind that the pre-amp output level controls are usually in the output circuits and cannot prevent overload of stages prior to these controls.

The usual frequency response and distortion criteria do, of course, also apply to the disc reproducing equipment. Remember that the phono pre-amp is also an equalizing device and has much more gain at low frequencies than at the high end. And since the response tapering R-C elements are usually in the feed-back circuit, there will be less feedback and more distortion at the bass end unless the open loop gain of the amplifier is high enough and/or the open loop distortion low enough to keep the non-linearity down to negligible levels. Look at the distortion vs. frequency specs to gauge performance in this area.

Phono pickup tracking ability

and mechanical tenacity are qualities which in practice are often found working at cross purposes. A very compliant stylus assembly will track well at low stylus pressure but may be too delicate for a fast paced top 40 operation. However, it may be just what the doctor ordered for the classical or "good music" guys on the next antenna down the street.

The tone arm is also part of our disc system and its specs should also be compatible with the other components chosen. It would do very little good to have a phono pickup that could track at $\frac{3}{4}$ gram mounted in an arm designed to operate at $1\frac{1}{2}$ grams or more. An extreme mis-match would be a very low mass tone arm with a low compliance pickup. In such a case, the low frequency response could actually show a measurable loss due to the fact that the stiff stylus would cause low frequency mechanical energy to move the entire tone arm assembly instead of the pickup's internal voltage generating ele-

ment alone.

Tape Systems

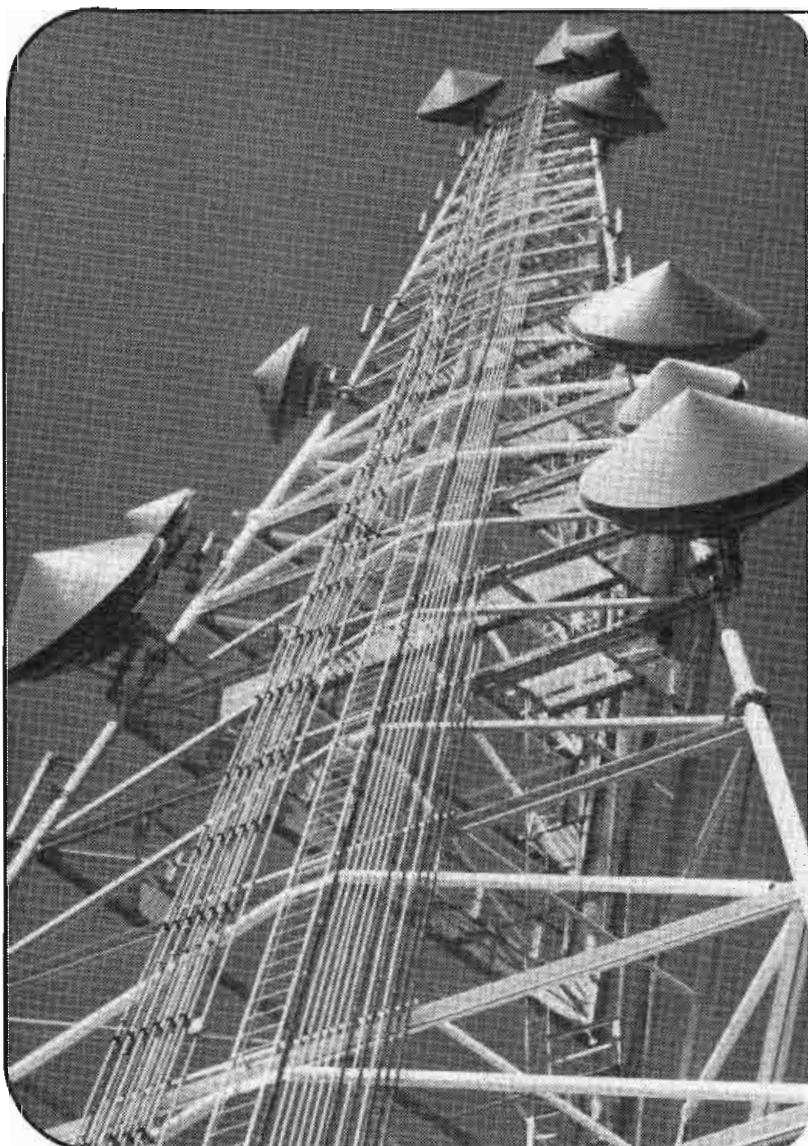
In analyzing spec sheets for tape equipment, one is very easily impressed by the level of fidelity afforded by modern tape machines. In fact, it is sometimes difficult to choose one deck as being better suited to our needs because they all look so good in the specs.

If we take a closer look at how the specs are written, we may begin to see where the differences are. Signal-to-noise ratio is always a lively tape topic, so let's start there.

Look to see if the noise level is referred to the standard NAB zero level or to 2 or 3 percent total harmonic distortion. Also inquire as to the bandwidth of the measurement. A tape deck will usually produce a somewhat lower noise reading when measured with a 15 kHz cut-off filter, as supersonic bias noise is removed.

Distortion can be minimized when the deck's bias is adjusted for

(Continued on page 48)



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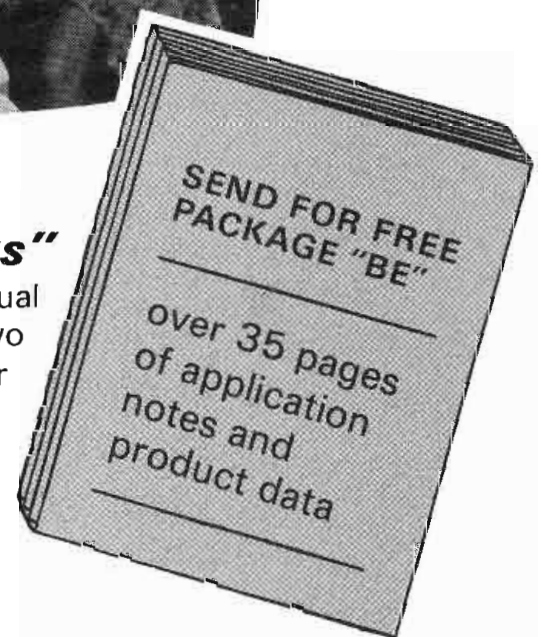
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(Continued from page 46)

optimum performance with the tape used and will, of course, vary a bit from tape to tape, but the tape deck's amplifier distortion can be a limiting factor. Some of the newer decks boast amplifier distortion as low as 0.5 percent or less at 1 kHz, zero level.

Speed stability specs are also important and doubly so if your production operation requires multiple generations. Speed errors can be additive. Short term errors like wow and flutter are expressed as a percent, while long term error is sometimes called timing accuracy and can be expressed as a percent or in accumulated error in seconds per some unit of time (such as an hour or beginning-to-end of reel). It may be necessary to convert a percent spec to seconds of error to compare decks.

Cartridge equipment specs are similar to reel-to-reel, except that there are the usual flexibility considerations related to cueing facilities, etc. Like consoles and phono equipment, reel-to-reel and cart-

ridge tape equipment is subjected to the human (if not always humane) factor, and should be scrutinized mechanically to determine if the degree of ruggedness your operation requires is there.

AGC Amplifiers and Limiters

These units are probably the most difficult to compare specs on. Some of the equipment separates the audio range into bands and performs its control functions separately on each band, while other units employ multiple attack and release times keyed to the level of the incoming signals. Many others operate with a single attack and a single release characteristic. Once you have determined which control scheme is best suited to your facility, the more usual electrical specs can be reviewed.

When looking at the distortion figures, check to see if the data is given for levels below or above the threshold of limiting. Some manufacturers give a maximum distortion figure which will not be ex-

ceeded at any audio frequency and through the entire control range. Naturally, such a distortion spec will not be as impressive as a 1 kHz only figure taken at a low level.

If the AGC or limiter amplifier you require must feed a line, be sure to check the maximum output specification to see if the unit you choose can drive the line and any isolation and/or distribution network losses that may be required for your system.

Transmitting Equipment

Transmitting equipment has become more simple and more economical to operate with the introduction of new components and advanced circuitry. The specifications for most of the transmitters on the market today are quite impressive and sometimes similar as well. Therefore, once again we are inclined to take a closer look at the specs to see in what areas a particular model may excel.

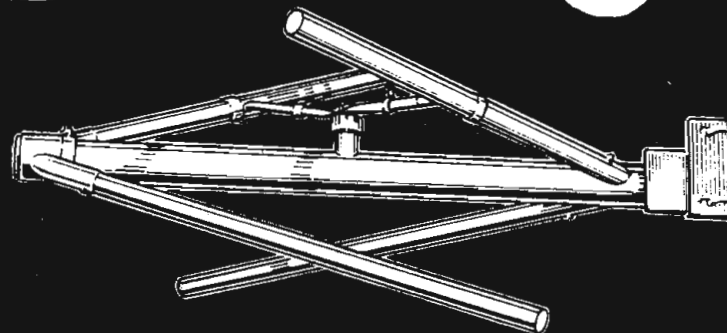
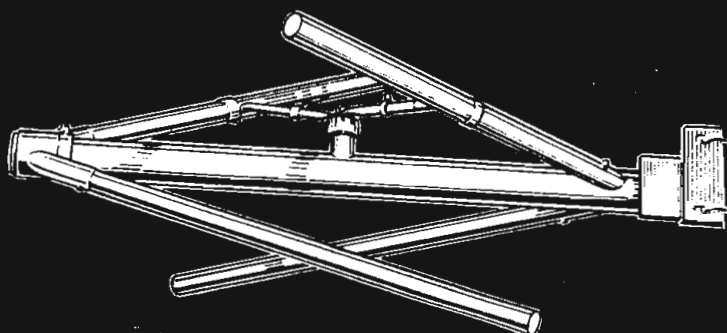
(Continued on page 50)

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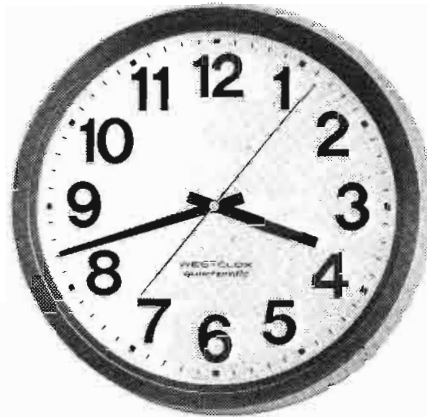


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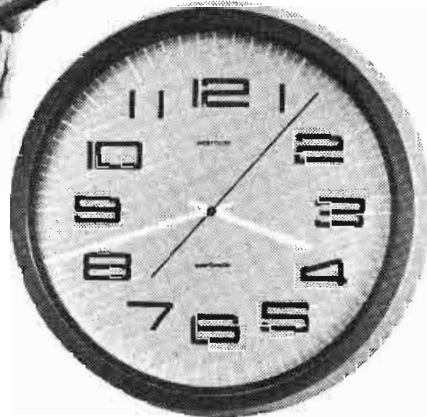
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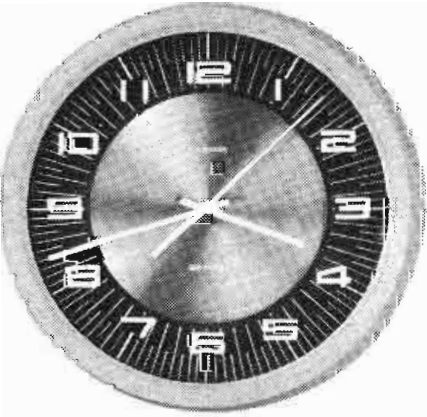
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When checking the AM rigs, look for a good carrier shift spec. An AM transmitter which excels in this area has a good stiff power supply and, all other things being equal, is likely to sound better when run at high modulation levels because there will be less inter-modulation distortion. It is possible for two transmitters to have identical harmonic distortion characteristics and yet sound different. The manufacturers seldom give IM data, but the carrier shift spec is one clue. On a visual inspection look for a lot of iron in the modulation transformer, if there is one. A sharp rise in harmonic distortion at high modulation levels with low modulating frequencies can also indicate possibly less than spectacular IM performance.

Operating efficiency, tube types, construction, etc., all play a part in making the total transmitter the kind of beast it is or isn't going to be, but many of these considerations are subject to what the purchasing engineer feels is ideal for his station.

FM transmitter specs are a bit more complex, particularly if a stereo generator is to be employed. The FM transmitter itself is basically a huge RF amplifier and is usually broadband enough that most of the fidelity determining circuitry is in the stereo generator and exciter. Stereo separation data should include the modulating frequencies as should distortion data.

If a phase modulation system is employed, look closely at the low frequency audio performance. Also, check with the manufacturer to see if his signal to noise ratio data was taken with the exciter mounted in the transmitter. It is sometimes possible for the blowers to mechanically modulate the master oscillator and cause some deterioration of an otherwise excellent noise figure. Unless you are prepared to operate the exciter in a separate rack, this is something to be considered.

Frequency stability of both the main carrier and 19 kHz pilot is important, and these specs should be tagged with a temperature range. A transmitter installed at a remote antenna site may have to operate satisfactorily over quite a temperature span. □

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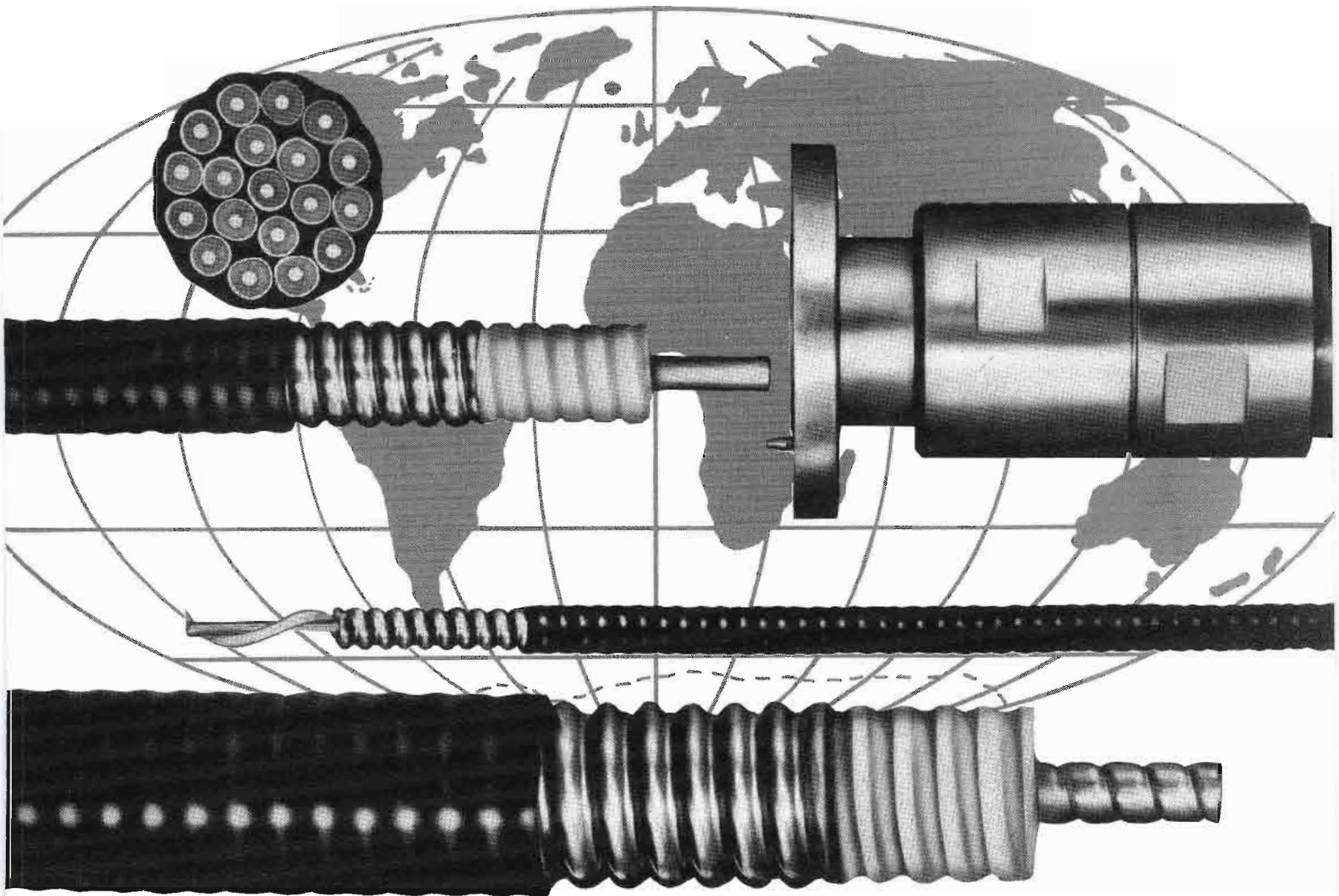
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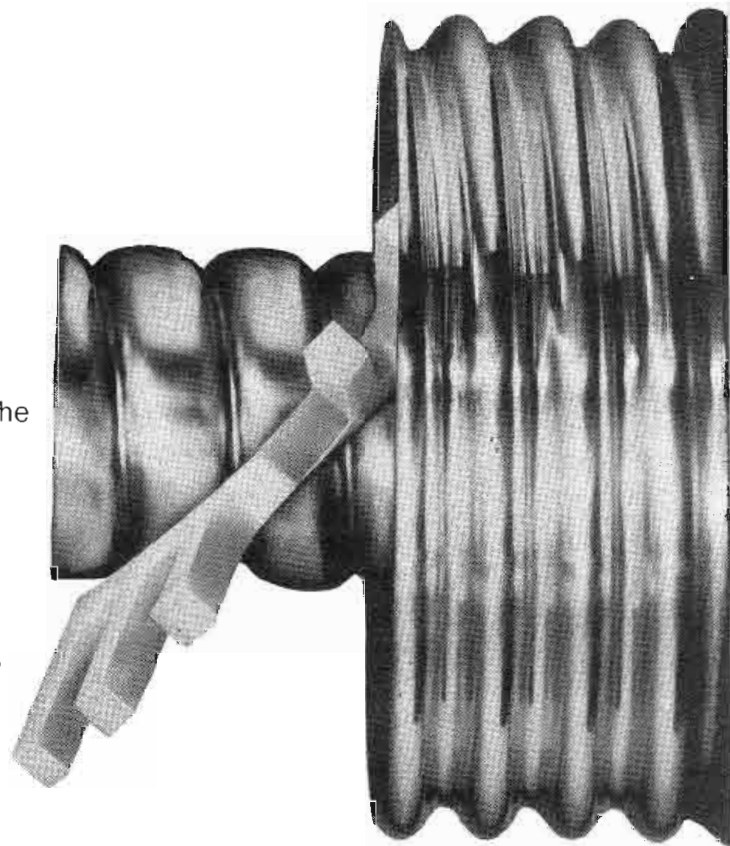


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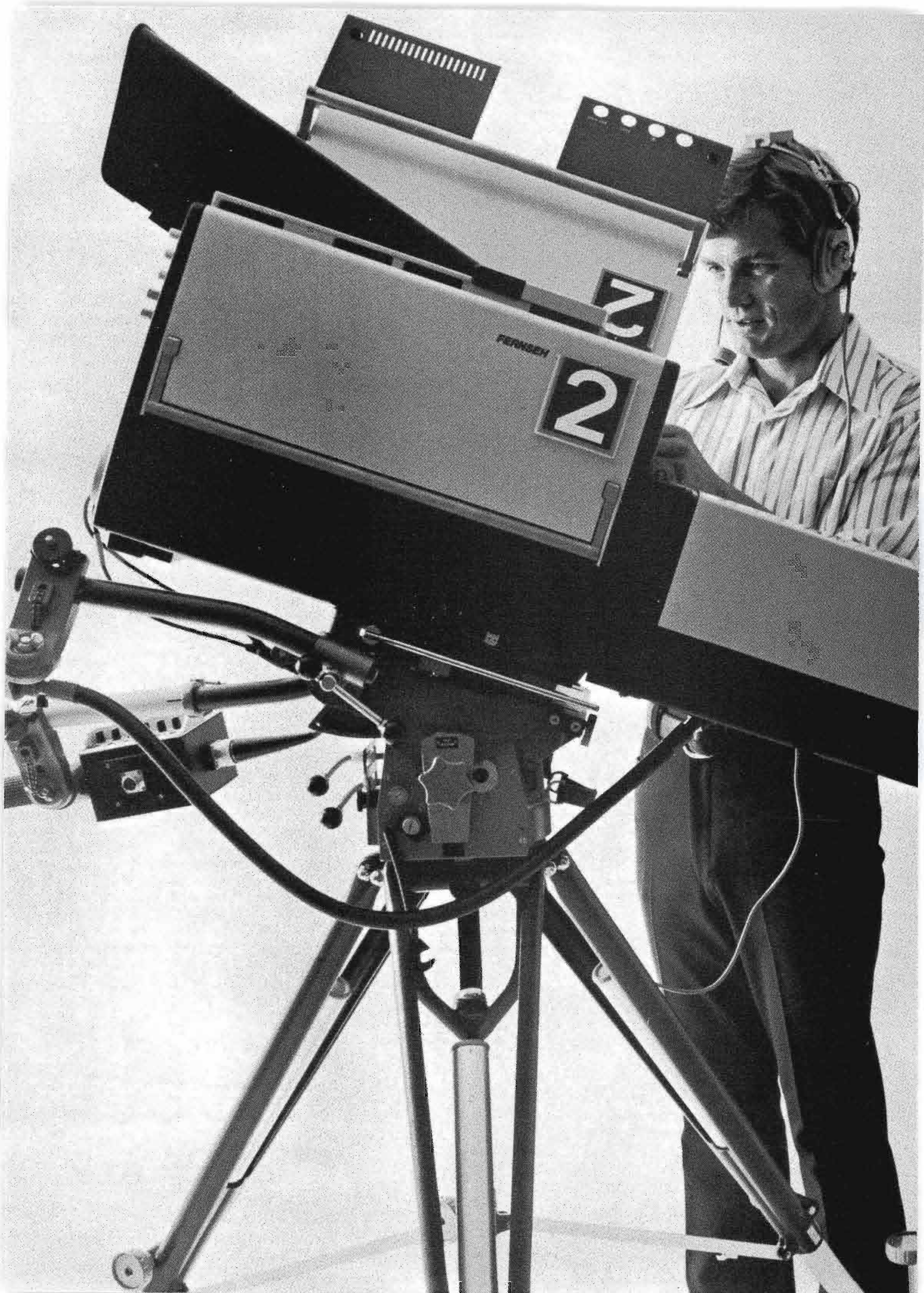
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The FCC Expects You To Know

By Ron Merrell

We've covered lottery before in "The FCC Expects You To Know" articles, but for those readers who missed it, let's have another crack at it.

For openers, the fines can be quite high. The most recent case involving an Indiana radio station was set at \$2,000. Obviously, that's quite a loss of revenue.

According to Section 73.122(b), lottery is defined this way: "...a program comes within the provisions of paragraph (a) of this section if in connection with such program a **prize** consisting of money or thing of value is awarded to any person whose selection is dependent in whole or in part upon **lot or chance**, if as a condition of winning or competing for such prize, such winner or winners are required to furnish (consideration) any money or thing of value or are required to have in their possession any product sold, manufactured, furnished or distributed by a sponsor of a program broadcast on the station in question. (See 18 U.S.C. 1304.)

Basically, it comes down to three elements, all of which must be present to constitute a lottery. These are: prize, consideration, and chance. As a broadcaster, you cannot broadcast a lottery or information about one.

Let's get back to that Indiana radio station and see how they were involved in a lottery.

This station broadcast information on a golf "contest". The listener could pick up a score card from a participating merchant, play 18 holes of golf on any course, have the professional at the course sign the scorecard, and mail it to the station. The winners were determined by having their cards drawn at random, without regard to the actual scores. The prizes were to total \$25,000.

Obviously, we have a prize offered. And there was chance, or lot, as the cards were drawn at random. But what about consideration?

This "contest" sounds safe enough, until we look for any possible qualification of consideration. If we go back to the contest requirements, we'll find that the listener had to play 18 holes of golf. And no course is going to let you play the holes for free! A green fee must be paid, and that amounted to consideration.

Unfortunately, there are further complications....other than fines. If we go back to that paragraph (a) mentioned earlier (under 73.122), we'll see why.

The Rule states: "An application for construction permit, license, renewal of license, or any other authorization for the operation of a broadcast station, will not be granted where the applicant proposes to follow or continue to follow

a policy or practice of broadcasting or permitting 'the broadcasting of any advertisement of or information concerning any lottery, gift enterprise, or similar scheme, offering prizes dependent in whole or in part upon lot or chance, or any list of the prizes drawn or awarded by means of any such lottery, gift enterprise, or scheme, whether said list contains any part or all of such prizes.' " Fortunately, the Rule continues by stating that the Commission will consider the facts in each case.

Check It Out

Naturally, the FCC expects you to know. If you have doubts about a proposed ad, call your FCC Field Office and ask them. And request a written answer. If the FCC sees a lottery in the offing, their written reply will: (1) show your integrity to the sponsor proposing the ad; (2) save you an awful lot of money; and (3) keep your record in good shape at renewal time.

By the way, you'll recall that the golf contest prize total was \$25,000. Actually, the figure was nearer \$6,000. So who can you trust? You might see the golf fees and you might not. But ask yourself what the merchants expect to get from the contest. In this case, it might well have been (1) to increase the course income from fees due to interest spurred by the contest, or (2) pro shops and sporting goods stores would get side effect business from the increased interest in golf, and it could have been (3) both of these.

Rocky Mountain Luck

On the other hand, not all lotteries come from outside sources. A Colorado station worked out a promotional scheme that went like this: Each letter of their call sign

Management Highlights

Here are two ways to lose money the hard way. But if you follow the article details, you avoid these pitfalls, and you will have a better record at renewal time.

Filmchain Projection Simplified



The new Bell & Howell Model 562 Optical/Magnetic Filmchain projector is delivered complete with a base which contains the projector controls and height adjustment to align the projector with TV camera or multiplexer. The projector is very much like the reliable 500 series design manual thread 16mm projector which is widely used in industry and education.

The Model 562 utilizes a synchronous motor, chain-driven film transport system including an automatic loop restorer to assist in providing picture and sound into the camera for transmission over closed circuit or antenna-signal distribution. The pedestal includes facility for easily installing remote operation from a control panel.

Other Features You'll Like

Optical or magnetic sound play back. Choose from a wide variety of standard lamps and Bell & Howell lenses to obtain the optimum lumen input to the camera. A special torque release lever is provided when using reels with small hubs.

Other Important Details

Projector reel arms are gear driven, which provides quiet, reliable operation and constant take-up torque. The "Stellite," 3-tooth shuttle and ground and polished aperture plate, provides careful film handling in the projector transport system.

Self-lubricated bearings and other fine engineering details provide long life. The 500 series product design is well known to the hundreds of Bell & Howell service stations across the country, providing a ready facility to service any projector when maintenance or repair is required.

A Final Thought

The instruction books and service manuals provide the details necessary for installation, both electrical and mechanical, as well as remote control. Contact Bell & Howell, Chicago, for technical literature and the name of the local sources who will help you select the best combination of lens, lamp and equipment to project 16mm films for TV program distribution or local display.

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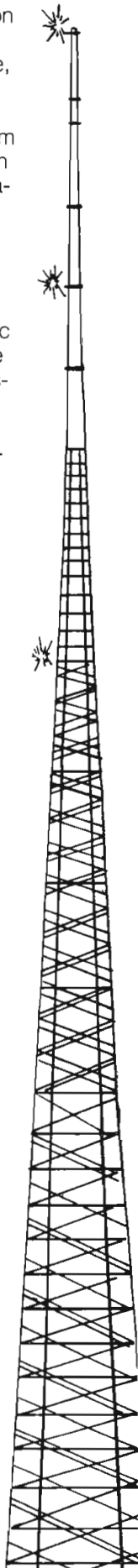
New generation Strobe-Beacon meets all the latest FAA requirements... and then some.

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Free Brochure: We've just updated all technical literature. Like a copy? Circle our key number. Or, for a recommendation for your installation, including specifications and a price quote, write to Dielectric Communications, Raymond, Maine 04071 or phone (207) 655-4555.



was printed on the bottom of cardboard pizza platters, and to win you must have a complete set of call sign letters. Only 30 platters were used for one of these letters, limiting the chance to win to that number.

With a Pizza Hut restaurant cooperating, it probably sounded like a fine promotional idea and a nice way to draw attention to the station's call letters. Of course the restaurant would benefit as well as the station.

But the Commission looked upon this as a lottery. Can you figure out why? Where are the basic elements? Prize, consideration, and chance?

Yes, prizes were given to 11 people who collected a complete set of pizza platters of the station call letters. **Consideration** was involved, because to compete, you must **buy** pizzas and take a **chance** on getting the complete set of letters.

The station contended that they did not "knowingly" broadcast a lottery. The Commission said that the station broadcast announcements of the contest and information on the prizes and the fact that one must buy a pizza to compete.

In this case, the station was fined \$500. And they were told that the low fine was based on the station's financial condition. Lottery fines usually start at \$1,000.

Excessive Power

Meanwhile, three stations have recently been fined from \$500 to \$1,000 for operating with excessive power. If you have your Rules handy, look this one up under 73.52(a).

In each case, the disturbing factors were that the logs showed operation with excessive power and that these violations were not for a few hours or for just a day or so. In other words, it's one thing to log readings, and it's quite something else to understand what the readings mean. Secondly, several consecutive days of operation with excessive power would seem to indicate that either no one at the station knew how to figure the power or there was a deliberate attempt to operate with excessive power.

We all know unfair inspections and a host of sometimes ridiculously interpreted Rules. But if you stop to think of what that inspecting engineer sees and must think in instances like these, you may come to understand why they are suspicious. But then, it should make you wonder about the relaxation of operator requirements. After all, even when it comes to figuring input and output power, the FCC expects you to know! □

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Cablecasting Guidebook Available

The NCTA **Cablecasting Guidebook**, a 250-page compendium of cable television programming ideas, suggestions, and tips is now available.

The Guidebook includes programming information contributed by 178 large and small cable systems in 39 states and Canada. It contains descriptions of 525 program ideas actually used by cable operators.

The Guidebook, organized in loose leaf binder fashion, is available to NCTA members for \$15 per copy and to all others for \$30 per copy.

Included in the publication are entries under education, public access, community services, news, medical, sports, political programs, children's shows, entertainment, how-to-do-it and hobbies, and others. The Cablecasting Guidebook also includes listings of sources for free programs, program distributors, and a section on practical tips for setting up and managing a cablecasting operation.

The Guidebook was compiled by the NCTA staff under the direction of the association's Community Services Committee.

Orders, accompanied by check or money order, should be sent to Brian Owens, Cablecasting coordinator, NCTA, 918 16th St., NW, Wash. D.C.

"A Cable Television Profile, 1971-1972" (Technical Report No. T-7301), an analysis by the Technical Division of the Office of Chief Engineer of reports to the FCC by several thousand cable systems, may now be obtained from National Technical Information Service (NTIS), Port Royal Road, Springfield, Va. 22151.

The report had previously been available from the Technical Division.

The price is \$3.75 per copy for paper, and \$0.95 for microfiche.

Requests for orders should include the Report Number T-7301, PB221762, and title, "A Cable Television Profile, 1971-1972."

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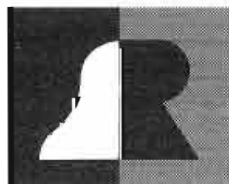
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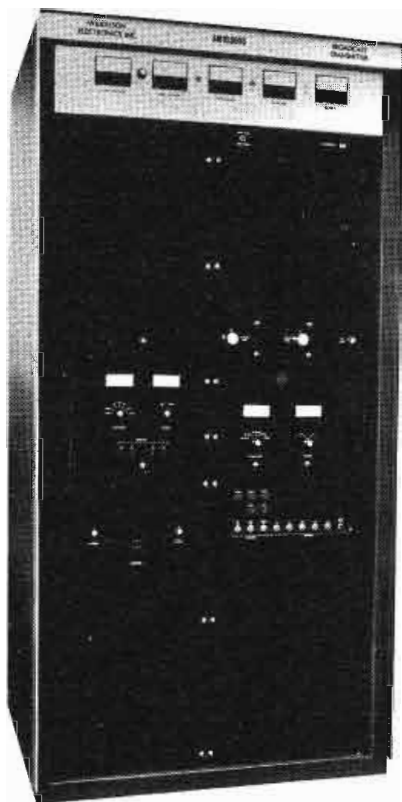
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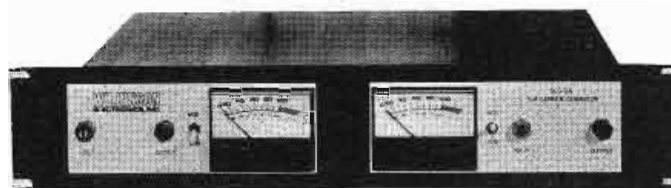
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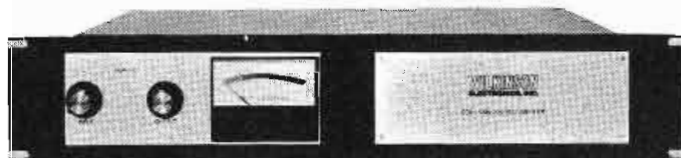
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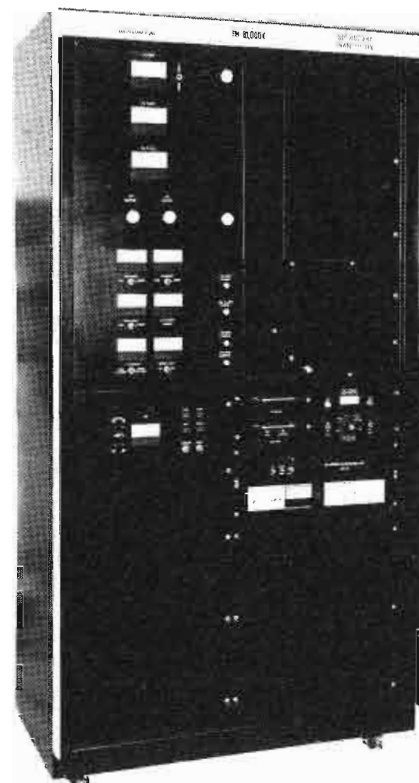
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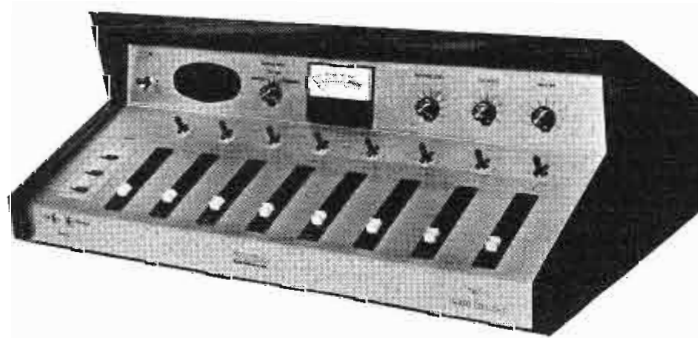
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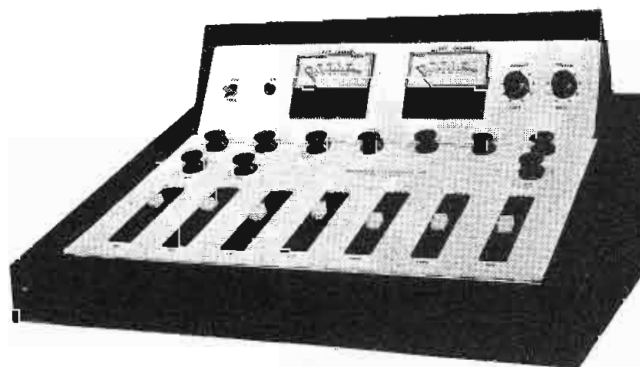
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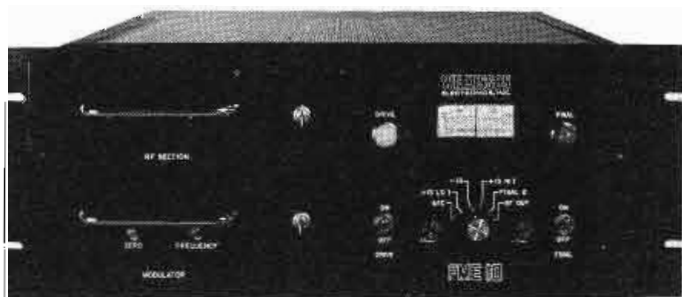
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Custom Craft Designs 2135 Drexel St. West Hyattsville Md. 20783

D

Danscoll Ltd. 9721 Cote de Liesse Montreal 760 Que., Canada
Data Disc Inc. 686 W. Maude Ave. Sunnyvale Cal. 94086
Datapulse Div. of Systron-Donner 10150 Jefferson Culver City Cal. 90230
Datatek Corp. 1200 W. Chestnut St. Union N. J. 07083
Datatron, Inc. 1562 Reynolds Ave. Santa Ana Cal. 92707
Datavision, Inc. 15932 Shady Grove Rd. Gaithersburg Md. 20760
David Clark Co., Inc. 360 Franklin St. Worcester Mass. 01604
Davis & Sanford Co. Inc. 24 Pleasant St. New Rochelle N.Y. 10802
Defense Electronics Rockville Md. 20850
Delta-Benco-Cascade Ltd. 124 Bel- field Rd. Rexdale Ont., Canada M9W 1G1
Delta Electronics Inc. (N.C.) 145 Fayette St. Winston Salem N.C. 27101
Delta Electronics Inc. (Va.) Box 1508 Springfield Va. 22151
Delta Products, Inc. Box 1147 Grand Junction Colo. 81501

Denrad Mfg. Co. Inc. Drawer 326 Denison Tex. 75020
Denson Electronic Corp. P.O. Box 85, Longview Street Rockville Conn. 06066
Diamond Power Specialty Corp. Subs. Babcock & Wilcox Co. P.O. Box 415 Lancaster Ohio 43130
Diebold Incorporated 818 Mulberry Rd. SE Canton Ohio 44711
Dielectric Communications Div. of Sola Basic Route 121 Raymond Me. 04071
Display Systems Corp. 300 N. Griggs Midway Bldg., 1821 University Ave. W. St. Paul Minn. 55104
Ditch Witch Div. of Charles Machine Works, Inc. 100 Ash Street Perry Okla. 73077
Diversified Products Inc. 7625 E. 46th Place Tulsa Okla. 74145
D. N. Latus & Co., Inc. Airport Road Helena Mont. 59601
Dorado Systems 20698 Corsair Blvd. Hayward Calif. 94545
Dranetz Engineering Labs., Inc. 2385 S. Clinton Ave. South Plainfield N. J. 07080
D AND S CORLEY LIMITED 80 Galaxy Blvd. Rexdale, Ont. Canada
Duncan Electronics, Inc. 2865 Fairview Road Costa Mesa Cal. 92627
Duotone Co. Inc. Box 1168 South Miami Fla. 33134
Dyma Engineering, Inc. Route 1 Box 51 Taos N. M. 87571
Dynacool Mfg. Co., Inc. 1 Russell St. Saugerties N.Y. 12477
DYNAIR Electronics, Inc. 6360 Federal Blvd. San Diego Cal. 92114
Dynascan Corp. B & K Division 1801 W. Belle Plaine Ave. Chicago Ill. 60613
Dynasciences Corp. Video Products Div. Township Line Road Blue Bell Pa. 19422

E

Eastcoast Camera Center, Inc. 248 Lafayette St. New York N. Y. 10012
Eastman Kodak Co. 343 State St. Rochester N.Y. 14650
Econco Broadcast Service Inc. Rt. 2 Box 188 Woodland Calif. 95695
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements Grenier Field Manchester N.H. 03103
Editel Productions 5610 Bois Franc Montreal 386 Que., Canada
Edwards Company, Inc. 90 Connecticut Ave. Norwalk Conn. 06856
Eico Elect. Inst. Co., Inc. 283 Malta Street Brooklyn N.Y. 11207
Eidson Electronic Co. Box 96 Temple Tex. 76501
EiE-Electronic Industrial Engineering A Division of RCA 7355 Fulton Ave. North Hollywood Calif. 91605
Eimac Div. Varian Associates 301 Industrial Way San Carlos Cal. 94070
Elektromesstechnik E M T Wilhelm Franz G M B H 5430 Wettingen (AG) Switzerland
Electrohome Ltd. 809 Wellington St. N. Kitchener Ont., Canada N2G 4J6

Electro Impulse, Inc. 116 Chestnut St. Red Bank N.J. 07701
Electromagnetic Sciences, Inc. Box 80508 - Chamblee Atlanta Ga. 30341
Electromagnetic Specialties 2417 Spring Hill Dr. Dallas Tex. 75228
Electronic Designers Inc. 84 Newtown Plaza Plainview N.Y. 11803
Electronic Engineering Co. of California 1441 E. Chestnut Ave. Santa Ana Calif. 92701
Electronic Inst. & Spec. 42 Pleasant St. Stoneham Mass. 02180
Electronic Lights Inc. 1701 N. Ashland Ave. Chicago Ill. 60622
Electronic Systems Engrg. Co. 120 1/2 N. Cleveland Cushing Okla. 74023
Electro-Voice Inc. Subs. of Gulton Industries, Inc. 639 Cecil St. Buchanan Mich. 49107
ELPA Marketing Industries, Inc. New Hyde Park N. Y. 11040
EMCEE Broadcast Products Div. of Electronics, Missiles & Communications, Inc. P.O. Box 116 White Haven Pa. 18661
Emerson Elec./Artolier Lighting & Sound Rittenhouse Div. Quaker Mtg. House Rd. Honeoye Falls N.Y. 14472
Enclosure Corp. 1701 Industrial Blvd. Pennsauken N.J. 08110
Engineering Associates R. R. 2 Arcanum Ohio 45304
Enterprise Electronics Corp. Box 1216 Enterprise Ala. 36330
Entron, Inc. 70-31 84th St. Glendale N. Y. 11227
Envirco Box 6468 Albuquerque N. M. 87107
Equipto 225 S. Highland Aurora Ill. 60507
ES Enterprises 10418 S. La Cienega Blvd. Inglewood Calif. 90304
ESC Electronics Corp. 534 Bergen Blvd. Palisades Park N. J. 07650
Essex International Inc. Communication & CATV Div. 6235 S. Harlem Ave. Chicago Ill. 60638
Essex International Inc. RBM Div. 131 Godfrey St. Logansport Ind. 46947
Eventide Clock Works Inc. Broadcast Products Div. 265 West 54th St. New York N. Y. 10019
E Z Way Prod. Inc. Box 17196 Tampa Fla. 33612

F

Fairchild/Robbins Fairchild Sound Equipment Corp. 75 Austin Blvd. Commack N. Y. 11725
F&B/Ceco Industries, Inc. 315 West 43rd St. New York N.Y. 10036
Feller Vacuum Form Studios 383 Canal Place Bronx N. Y. 10451
Fidelipac Division TelePro Industries, Inc. 3 Olney Ave. Cherry Hill N. J. 08034
Filmline Corp. 43 Erna Street Milford Conn. 06460
Fisher Berkeley Corp. 5800 Christie Ave. Emeryville Cal. 94608
Fluke, John, Mfg. Co. Inc. Box 7428 Seattle Wash. 98133

Fort Worth Tower Co., Inc. 5201 Bridge St., Box 8597 Ft. Worth Tex. 76112
Franz Vertriebs-gesellschaft m.b.H. POB 1520 D-763-Lahr-1 West Germany
Freeland Products Co. 3233 Conti St. New Orleans La. 70119
Fung Engineering Co. 111 Glenn Way Belmont Calif. 94002

G

GAF Corp. 140 W. 51 Street New York N.Y. 10020
Gately Electronics 57 W. Hillcrest Ave. Haverstown Pa. 19083
Gates Division of Harris-Intertype 123 Hampshire Street Quincy Ill. 62301
GBC Closed Circuit TV Corp. 74 Fifth Ave. New York N.Y. 10011
G.C. Electronics 400 S. Wyman St. Rockford Ill. 61101
General Cable Corp. 730 Third Ave. New York N.Y. 10017
General Devices Co., Inc. Vent-Rak Div. 525 S. Webster Ave. Indianapolis Ind. 46219
General Electric Co. Imaging Devices Operation Electronics Pk. Bdg. 6 Syracuse N. Y. 13201
General Electric Co. Mobile Radio Dept. Box 4197 Lynchburg Va. 24502
General Electric Company Tubes/MW Devices 316 E. Ninth St. Owensboro Ky. 42301
Gen. Electrodynamics 4430 Forest Lane Garland Tex. 75040
General Microwave Corp. 155 Marine St. Farmingdale N.Y. 11735
General Radio Co. 300 Baker Ave. Concord Mass. 01742
General Television Ntwk. 520 W. Eight Mile Rd. Ferndale Mich. 48220
General Time Service A Talley Industries Co. Box 4067 Mesa Ariz. 85201
Gibbs Mfg. & Research Co. 450 N. Main St. Janesville Wis. 53545
Gilbert Engineering Co. 3700 N. 36th St. Phoenix Ariz. 85019
Gotham Audio Corp. 741 Washington St. New York N.Y. 10014
Gould Inc. Instrument Systems Div. 3631 Perkins Ave. Cleveland Ohio 44114
GPL Div. Singer Gen. Pleasantville N.Y. 10570
Granger Assoc. 1601 California Ave. Palo Alto Cal. 94306
Grass Valley Group, Inc. P.O. Box 1114 Grass Valley Cal. 95945
Greenlee Tool Co. 2136 12th St. Rockford Ill. 61101
Grinnan Fixture Co. 16041 Georgetown St. N.E. Minerva Ohio 44657
GTE Lenkurt Incorporated 1105 County Road San Carlos Calif. 94070
GTE Sylvania Inc. Lighting Products Group 100 Endicott St. Danvers Mass. 01923
Gulf Telephone & Electronics Box 42130 Houston Tex. 77027
Gulton Industires, Inc. Recorder Systems Div. Route 2 & Middle Rd. East Greenwich R.I. 02818

H

Hannay Reels Clifford B. Hannay & Son Inc. 402 Main St. Westerlo N.Y. 12193
Hartley Prod. Corp. Barnert Place Ho Ho Kus N.J. 07423
Harwald Company 4900 Madison St. Skokie Ill. 60076
Harwood Mfg. Co. 1800 W. Fullerton Chicago Ill. 60614
Head Sound, Inc. 722 Brooks St. Ann Arbor Mich. 48103
Heath Co. Benton Harbor Mich. 49022
Heintz and Kaufman Ltd. 3650 Hayden Ave. Culver City Cal. 90230
Hewlett Packard Co. 1501 Page Mill Rd. Palo Alto Cal. 94304
Hickok Elect. Instrument 10514 Dupont Ave. Cleveland Ohio 44108
Hitachi Shibaden Corp. of America 58-25 Brooklyn Queens Exp. Woodside N.Y. 11377
Hokushin Elect. Co. 3-30-1, Shimomaru Ohta-ku, Tokyo Japan
Holland Electronics 842 East 94th St. Brooklyn N. Y. 11236
Hollingsworth Solderless Terminal Co. Nutt & French Creek Rds. Phoenixville Pa. 19460
Honeywell Inc. Test Instruments Div. 4800 E. Dry Creek Rd. Denver Colo. 80217
Hughes Aircraft Company Ind. Prod. Div.-Image Devices 2020 Ocean-side Blvd. Oceanside Calif. 92054
Hughey & Phillips Inc. 3050 N. California St. Burbank Cal. 91505
Hunt Chemical Corp., Philip A. Roosevelt Place Palisades Park N.J. 07650
Hy-Power Electronics Co. Box 38367 Dallas Tex. 75238

I

IGM Box 943, 3950 Home Rd. Bellingham Wash. 98225
Ikegami Tsushinki Co., Ltd. Export Department 1-11-1 Motoki, Kawasaki-ku Kawasaki-shi Kanagawa, Japan
Image Devices Incorporated Box 38-517 Miami Fla. 33138
Industrial Electric Reel 1509 Chicago St. Omaha Neb. 68102
Innovative Television Equipment, Inc. P.O. Box 681 Woodland Hills Cal. 91364
Inovonics 1630 Dell Ave. Campbell Calif. 95008
Instrument Laboratories 315 W. Walton Place Chicago Ill. 60610
Integral Data Devices Inc. 46 S. Bayles Ave. Port Washington N. Y. 11050
International Instrument Div. Sigma Instruments, Inc. 88 Marsh Hill Rd. Orange Conn. 06477
Interntl. Nuclear Corp. 608 Norris Ave. Nashville Tenn. 37204
International Tapetronics Corp. Box 241 Bloomington Ill. 61701
International Video Corp. 990 Al-manor Ave. Sunnyvale Cal. 94086
International Wire & Cable Co. 3500 McCart Fort Worth Tex. 76110

Irish Magnetic Recording Tape Div. Morhan Nat'l. Sales Co. Inc. 270-78 Newtown Road Plainview N. Y. 11803
ITT Electron Tube Div. Box 100 Easton Pa. 18042
ITT Electro-Optical Products Div. Box 7065 Roanoke Va. 24019
ITT General Controls 801 Allen Ave. Glendale Calif. 91201
ITT Jennings 970 McLaughlin Ave. San Jose Cal. 95116

J

Jamieson Film Co. 9171 King Arthur Drive Dallas Texas 75247
Jampro Antenna Co. Div. of Computer Equipment Corp. 6939 Power Inn Road Sacramento Cal. 95828
Janson Industries Box 8110 Canton Ohio 44711
Javelin Div. of Apollo Lasers 6357 Arizona Circle Los Angeles Calif. 90045
Jensen Sound Laboratories Div. Pempcor, Inc. 4310 Trans World Road Schiller Park Ill. 60146
Jensen Tools & Alloys 4117 N. 44th St. Phoenix Ariz. 85018
Joa Cartridge Service Box 7112 Philadelphia Pa. 19117
Johnson Electronics, Inc. P.O. Box 7 Casselberry Fla. 32707
Jones Int'l. Ltd. 880 Continental Bank Bldg. Englewood Colo. 80110
Jos. Schneider & Co. Optische Werke Div. P.O. Box 947 6550 Bad Kreuznach West Germany
Joslyn Electronic Sys. Box 817 Goleta Cal. 93017
Jud Williams Company Box 671 Winter Haven Fla. 33880

K

Kahn Research Lab. Inc. 966 Brush Hollow Road Westbury N.Y. 11590
Kaitronics Corporation Box 556 Belmont Calif. 94002
Kalart Victor Corp. Hultenius St. Plainville Conn. 06062
Kappa Networks, Inc. 165 Rosevelt Ave. Carteret N.J. 07008
Karex, Inc. Subs. of Rohm and Haas Co. 1262 Lawrence Station Rd. Sunnyvale Cal. 94086
Karg Laboratories, Inc. 44 N. Main St. South Norwalk Conn. 06854
Kato Engineering Co. 1415 First Ave. Mankato Minn. 56001
Kay Elemetrics Corp. 12 Maple Ave. Pine Brook N.J. 07058
Kenwood Electronics, Inc. 15777 S. Broadway Gardena Calif. 90248
Kliegl Bros. Lighting 32-32 48th Ave. Long Island City N.Y. 11101
Kline Iron & Steel Co. Tower Division Box 1013 Columbia S.C. 29202
Koss Corp 4129 N. Port Washington Ave. Milwaukee Wis. 53212
K'SON Corporation 250 E. Emerson Ave. Orange Calif. 92665

L

Lamb Laboratories 155 Michael Dr. Syosset N. Y. 11791
Lampkin Lab. Inc. Box 2048 Bradenton Fla. 33506
Lang Electronics Inc. 14 E. 39th St. New York N.Y. 10016
Lauderdale Electronic Labs 16 S.W. 13th St. Fort Lauderdale Fla. 33315
Leader Instruments Corp. 37-27 27th St. Long Island City N.Y. 11101
Lelectronic Res. Labs. Inc. 1423 Ferry Ave. BE Camden N.J. 08104
Lectrotech Inc. 5810 N. Western Ave. Chicago Ill. 60659
Lenco Inc. Electronics Division 319 W. Main St. Jackson Mo. 63755
Lenzar Optics Corp. 636 N. Federal Hwy. North Palm Beach Fla. 33408
Lerro Electrical Corp. 3125 N. Broad St. Philadelphia Pa. 19132
Liberty Industries 598 Deming Road Berlin Conn. 06037
LightNing Elimination Associates 9102 Firestone Blvd. Downey Calif. 90241
Lipps Inc. 1630 Euclid St. Santa Monica Cal. 90404
Lipsner-Smith Corp. 6735 N. Honore St. Chicago Ill. 60626
Listec TV Equip. Corp. 35 Cain Dr. Plainview N.Y. 11803
Logiconcepts, Inc. 3831 Catalina St. Los Alamitos Calif. 90720
The London Company 811 Sharon Drive Cleveland Ohio 44145
LPB Inc. 520 Lincoln Hwy. Frazer Pa. 19355
L-W Photo, Inc. 15451 Cabrito Road Van Nuys Cal. 91406

M

MacCarta 709 Railroad Ave. West Des Moines Iowa 50265
Machlett Laboratories Subs. of Raytheon Co. Inc. 1063 Hope St. Stamford Conn. 06907
MacKenzie Laboratories, Inc. 5507 N. Peck Road Arcadia Calif. 91006
Magnatech Corporation 3601 Park Center Blvd. Minneapolis Minn. 55416
Magna-Tech Electronic Co., Inc. 630 Ninth Ave. New York N.Y. 10036
Magnavox Company CATV Division 100 Fairgrounds Dr. Manlius N. Y. 13104
Magnecraft Electric Co. 5575 N. Lynch Ave. Chicago Ill. 60630
Magnetic Prod. Div. 3M Company 3M Center St. Paul Minn. 55101
Magnusonics Devices Inc. 124 Duffy Ave. Hicksville N.Y. 11801
P. R. Mallory & Co. Inc. Mallory Distributor Products Co. Box 1284 Indianapolis Ind. 46201
Marathon Broadcast Equip. 3 Electronics Ave. Danvers Ind. Pk. Danvers Mass. 01923
Marco Video Systems, Inc. 6114 North. 20th St. Philadelphia Pa. 19138
Marconi Electronics Inc. 500 Executive Blvd. Elmsford N.Y. 10523

Marconi Instruments 111 Cedar Lane Englewood N.J. 07631
Martel Electronics Inc. 2339 S. Cotner Ave. Los Angeles Calif. 90064
Marti Electronics P.O. Box 661, 1501 N. Main St. Cleburne Tex. 76031
Marubeni America Corp. Miida Electronics 2 Hammaraskjold Plaza New York N. Y. 10017
Mastertone Company 1105 Maple West Des Moines Iowa 50265
Matrix Systems Corp. 20426 Corisco St. Chatsworth Cal. 91311
Maze Corporation Box 6636 Birmingham Ala. 35210
McBee Laboratories 5151 Wisconsin Ave. NW Washington D. C. 20016
McCurdy Radio Ind. Inc. 1051 Clinton St. Buffalo N.Y. 14206
McMartin Industries 4500 South 76th St. Omaha Neb. 68127
Mediatech 824 Busse Highway Park Ridge Ill. 60068
Melcor Electronics Corp. 1750 New Highway Farmingdale N.Y. 11735
Memorex Corporation Audio-Video Group 1200 Memorex Drive Santa Clara Cal. 95052
Mercury Electronics 315 Roslyn Road Mineola N.Y. 11501
Metron Instruments 1051 S. Platte River Dr. Denver Colo. 80223
Michigan Magnetics 203 W. Third St. Vermontville Mich. 49096
Micro Communications, Inc. RFD 3, Grenier Field Manchester N.H. 03103
Microflect Co. Inc. 3575 25th St. S.E. Salem Ore. 97302
Micro-Trak Corporation (Formerly: Gray Research & Dev.) 620 Race St. Holyoke Mass. 01040
Microwave Assoc. Inc. South Ave., NW Industrial Prk. Burlington Mass. 01803
Miles Reproducer Co. 598 Broadway New York N.Y. 10012
Miller-Stephenson Chemical Co. Box 628 Danbury Conn. 06810
Minarik Elect. 224 E. Third St. Los Angeles Cal. 90013
Mincom Div. 3M Co. 300 South Lewis Rd. Camarillo Cal. 93010
MINNEAPOLIS MAGNETICS, INC. 8125 Pleasant Ave. S. Minneapolis Minn. 55420
Minnesota Mining & Mfg. Co. 3M Center St. Paul Minn. 55101
Modern Video Engineering Co. 1781 Fifth Street Muskegon Mich. 49440
Mole Richardson Co. 937 N. Sycamore Ave. Hollywood Cal. 90038
Moseley Assoc. Inc. 111 Castilian Drive Goleta Cal. 93017
Mosler Electronic Systems Div. 9 South St. Danbury Conn. 06810
Motorola Semiconduct Motorola Inc. 5005 E. McDowell Rd. Phoenix Ariz. 85008
Mountain West Alarm 4215 North 16th St. Phoenix Ariz. 85016
Multimetrix Industries Div. of Comstron Corp. 120-30 Jamaica Ave. Richmond Hill N.Y. 11418
Multronics, Inc. 12307 Washington Ave. Rockville Md. 20852

N

Nagra Magnetic Recorders, Inc. 19 W. 44th St. New York N.Y. 10036
Narda Microwave Corp., The 75 Commercial St. Plainview N.Y. 11803
Nasco Television Systems 947 Janesville Ave. Fort Atkinson Wis. 53538
National Electrolab Ltd. Box 68 Blaine Wash. 98230
Nemo Recording Labs Box 505 Times Sq. Sta. New York N.Y. 10036
Neumade Prod. Corp. 720 White Plains Rd. Scarsdale N.Y. 10583
Neve Inc., Rupert Berkshire Industrial Park Bethel Conn. 06801
Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp. One Philips Prkwy. Montvale N. J. 07645
North Amer. Electronics 723 Third Ave. West Birmingham Ala. 35204
North American Radio Corp. 3814 Marquis Dr., Suite 111 Garland Tex. 75042
Northlake Engineering, Inc. 999 Anita Ave. Antioch Ill. 60002
Norton Assoc. Inc. 10 Ditomas Court Copague N.Y. 11726
Nortronics Co., Inc. Recorder Care Div. 8101 Tenth Ave. N. Minneapolis Minn. 55427
Novatec Electronic Industries Ltd. 9721 Cote de Liesse Rd. Montreal 760 Que., Canada

O

OAK Industries Inc. CATV Division Crystal Lake Ill. 60014
Oaktron Industries Inc. 930 30th St. Monroe Wis. 53566
O'Connor Eng. Labs. Inc. Photographic Division 100 Kalmus Drive Costa Mesa Cal. 92627
Ohmite Mfg. Co. 3601 Howard St. Skokie Ill. 60076
OMNIX 12234 W. Pico Blvd. Los Angeles Calif. 90064
Onan 1400 73rd Avenue NE Minneapolis Minn. 55432
On-Guard Corp. of America 350 Gotham Parkway Carlstadt N.J. 07072
Orbit Radio and Video Box 1644 Louisville Ky. 40201
Otari of America, Ltd. 8295 S. La Cienega Blvd. Inglewood Calif. 90301

P

Pace Wire & Cable Corp. 3590 Oceanside Road Oceanside N. Y. 11572
Pacific Recorders and Engrg. Corp. 11760 Sorrento Valley Rd. San Diego Calif. 92121
Paillard Incorporated 1900 Lower Rd. Linden N.J. 07036
Palmer Films, Inc., W. A. 611 Howard St. San Francisco Cal. 94105
Panasonic Video Systems Div. Matsushita Electric Corp. of America Box 3980 Grand Central Sta. New York N.Y. 10017
Paso Sound Products Inc. 251 Park Ave. S. New York N.Y. 10010

Pentagon Industries, Inc. 4751 N. Olcott Ave. Chicago Ill. 60656
Peripheral Data Machines, Inc. (PER DATA) 102 New South Rd. Hicksville N.Y. 11801
Permadyne Electronics Corp. 2929 N. Southport Chicago Ill. 60657
Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc. Rte. 79 Marlboro N.J. 07746
Philips Broadcast Equipment Corp. Subs. North American Philips Corp. One Philips Prkwy. Montvale N.J. 07645
Photo Lab Inc. 3825 Georgia Ave. NW. Washington D.C. 20011
Photo-Pic Systems 100 Avenue of the Americas New York N.Y. 10013
Photo Research Div. of Kollmorgen Corp. 3000 N. Hollywood Way Burbank Cal. 91505
Plastoid Corporation 42-61 24th St. Long Island City N. Y. 11101
Polaroid 549 Technology Square Cambridge Mass. 02139
Polyline Corp. 2449 N. Western Ave. Chicago Ill. 60647
Potomac Instruments, Inc. 932 Philadelphia Ave. Silver Spring Md. 20910
Power-Optics Inc. Box 266 Fairview Village Pa. 19409
PRD Electronics, Inc. 6801 Jericho Turnpike Syosset N. Y. 11791
Precision Elect. Inc. 9101 King St. Franklin Park Ill. 60131
Precision Electrical Mfg. Div. Circuit Science Inc. 9628 6th Ave. N. Minneapolis Minn. 55441
Precision Laboratories Precision Cine Equipment Corp. 999 East 46th St. Brooklyn N.Y. 11203
Prestolite Company Port Huron Mich. 48060
Primo Co. Ltd. 1-25-6 Chome Mure Mitakashi, Tokyo Japan
Prodelin Inc. Box 131 Hightstown N.J. 08520
Profit Recovery Systems Div. of CPAC Box 25 Leicester N. Y. 14481
Pulse Dynamics Mfg. Corp. Fulton St. Colchester Ill. 62326
Pulse Techniques Inc. 1411 Palisade Ave. Teaneck N.J. 07666
Pulsecom 5714 Columbia Pike Falls Church Va. 22041

Q

QRK Electronic Prod. 1568 N. Sierra Vista Fresno Calif. 93703
Q-TV Sales & Distributing Corp. 342 W. 40th St. New York N.Y. 10018
Quad-Eight Electronics 11929 Vose St. North Hollywood Calif. 91605
Qualitape Inc. 101 Broadway Runnemedede N. J. 08078
Quasar Microsystems Inc. 448 Suffolk Ave. Brentwood N.Y. 11717
Quick-Set Inc. 3650 Woodhead Drive Northbrook Ill. 60062

R

Racine & Co., Inc., Jules 85 Executive Blvd. Elmsford N.Y. 10523
Radio Mfg. Co. (RMC) 4702 SW 75 Ave. Miami Fla. 33155

Radio Research Instrument Co., Inc. 3 Quincy St. Norwalk Conn. 06850
Ramko Research 3516-B LaGrande Blvd. Sacramento Calif. 95860
Rank Cintel, Electronic Systems Div. Rank Precision Industries Ltd. Watton Road Ware Herts., England SG12 0 AE
Rank Precision Industries 5437 Sheila St. Los Angeles Calif. 90040
Rank Precision Ind. Broadcast Div. 260 North Rt. 303 West Nyack N.Y. 10994
RAPID-Q Div. of Garron Electronics 1216 Kifer Rd. Sunnyvale Calif. 94086
Raytheon Company Raytheon Data Systems Co. 1415 Providence Turnpike Norwood Mass. 02062
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div. Camden N.J. 08102
RCA Corporation RCA Electromagnetic & Aviation Systems Div. 8500 Balboa Blvd. Van Nuys Calif. 91409
RCA Corporation RCA Electronic Components 415 S. Fifth St. Harrison N.J. 07029
RCA Corporation RCA Missile & Surface Radar Div. Marne Hwy. & Borton Landing Rd. Moorestown N. J. 08057
RCA Corporation RCA Service Company Div. Cherry Hill Offices Camden N.J. 08101
Recordex Corporation 1300 Booth Ave. NW Atlanta Ga. 30318
Recortec Inc. 777 Palomar Ave. Sunnyvale Calif. 94086
Red Comet Inc. Box 272 Littleton Colo. 80120
Rek-O-Kut Inc. 1568 N. Sierra Vista Ave. Fresno Calif. 93703
Rex Rheostat & Co., Inc. 149 Babylon Turnpike Roosevelt N. Y. 11575
Reynolds/Leteron Co. 9830 San Fernando Rd. Pacoima Calif. 91331
RF Systems, Inc. 155 King St. Cohasset Mass. 02025
RHA Audio Communications Corp. 625 60th Street West New York N. J. 07093
RHG Elect Labs, Inc. 161 E. Industry Court Deer Park N.Y. 11729
R. H. Tyler Co. Div. of Weather Scan, Inc. Star Rte. Loop 132 & Hwy. 79 Olney Tex. 76374
Richmond Hill Laboratories Inc. 142 Central Ave. Clark N. J. 07066
Riker Communications Inc. 142 Central Ave. Clark N.J. 07066
Robert Bosch Corp. Fernseh Div. 2800 S. 25th Ave. Broadview Ill. 60153
Roberts Div. of Rheem Mfg. Co. 5922 Bowcroft St. Los Angeles Calif. 90016
Rodann Electronics Mfg. Co. 133 S. Brea Blvd. Brea Calif. 92621
Rodelco Corp. 356 A Comac Road Deer Park N.Y. 11729
Roh Corporation 150 Technology Park/Atlanta Norcross Ga. 30071
Rohde & Schwarz Sales Co. 111 Lexington Ave. Passaic N.J. 07055
Rohn Manufacturing Div. of Unarco Industries Inc. Box 2000 Peoria Ill. 61601

Roll-A-Reel 7386 Reading Road Cincinnati Ohio 45237
Rome Cable Div. Cyprus Mines Co. 421 Ridge St. Rome N.Y. 13440
RTI Research Technology Inc. 8260 Elmwood Ave. Skokie Ill. 60076
Rupert Neve Incorporated Berkshire Industrial Park Bethel Conn. 06801
Russco Electronics Mfg. Inc. 1070 Brookhaven Drive Clovis Cal. 93612
Rust Corp. 168 Tremont St. Everett Mass. 02149
F. B. Ryan Mfg. Co. Inc. Box 451 Chariton Iowa 50049
Ryder Magnetic Sales Corp. 1147 N. Vine St. Hollywood Cal. 90038

S

Sadelco, Inc. 299 Park Ave. Weehawken N. J. 07087
Howard W. Sams & Co., Inc. 4300 West 62nd St. Indianapolis Ind. 46268
Sansui Electronics Corp. 55-11 Queens Blvd. Woodside N. Y. 11377
Sarkes Tarzian Inc. Broadcast Equipment Div. East Hillside Dr. Bloomington Ind. 47401
Saxton Prod. Inc. 215 N. Route 303 Congers N.Y. 10920
SC Electronics, Inc. Subs. of Audio-ronics Corp. 530 Fifth Ave., N.W. St. Paul Minn. 55112
Scala Radio Corp. 1970 Republic Ave. San Leandro Cal. 94577
Schafer Electronics Corp. 75 Castilian Drive Goleta Calif. 93017
Schafer International 1355 Harbor Drive San Diego Calif. 92101
Schneider Corp. of America 154 Lodi St. Hackensack N.J. 07601
Schultz Inc., Albert 116 West 14 St. New York N.Y. 10011
Scientific Systems, Inc. Broadcast Equipment Div. 191 Westfield Ave. Clark N. J. 07066
Scintrex Inc. Communications Div. Amherst Industrial Park Tonawanda N.Y. 14150
Scott-Buttner Coastcom, Inc. 2346 Stanwell Drive Concord Calif. 94520
Scully/Metrotech Divs. of Dictaphone Corp. 475 Ellis St. Mountain View Cal. 94040
Seacor Inc. 598 Broadway Norwood N. J. 07648
Sencore Inc. 3200 Sencore Drive Sioux Falls S. D. 57107
Sennheiser Electronics Corp. 10 West 37th St. New York N. Y. 10018
Senstrol Division UMC Electronics Co. 460 Sackett Point Rd. North Haven Conn. 06473
Sentinel, Inc. 613 Easy St. Garland Tex. 75042
Sescom, Inc. Box 4155 Inglewood Calif. 90309
Shallco, Incorporated Hwy. 301 South, P.O. Box 1089 Smithfield N.C. 27577
Shintron Co. Inc. Video Products Div. 144 Rogers St. Cambridge Mass. 02142
Shively Laboratories, Inc. Route 302 Raymond Me. 04071

Shure Brothers Inc. 222 Hartrey Ave. Evanston Ill. 60204
Siemens Corporation 186 Wood Ave. S. Iselin N.J. 08830
SIMEX/COAST NAVIGATION SCHOOL Drawer Y - 418 E. Canon Perdido Santa Barbara Calif. 93102
Simpson Electric Co. 5200 W. Kinzie Chicago Ill. 60644
Singer Instrumentation Los Angeles Operation 3211 S. La Cienega Blvd. Los Angeles Calif. 90016
Singer Co., The Palo Alto Operation 3176 Porter Dr. Palo Alto Calif. 94304
Singer Co. Simulation Products Div. Colesville Rd. Binghamton N.Y. 13902
Singer Products Co., Inc. One World Trade Center Suite 2365 New York N.Y. 10048
Sitco Antenna Co. 10330 N.E. Marx Portland Ore. 97220
Skirpan Lighting Control Corp. 41-43 24th St. Long Island City N.Y. 11101
Soladyne International 7455 Convoy Court San Diego Calif. 92111
Solar Electronics Co. 901 N. Highland Ave. Hollywood Calif. 90038
Solitron Devices Inc. Semiconductor Div. 8808 Balboa Ave. San Diego Calif. 92123
Soll, Inc., Joseph M. 311 E. 72nd St. New York N.Y. 10021
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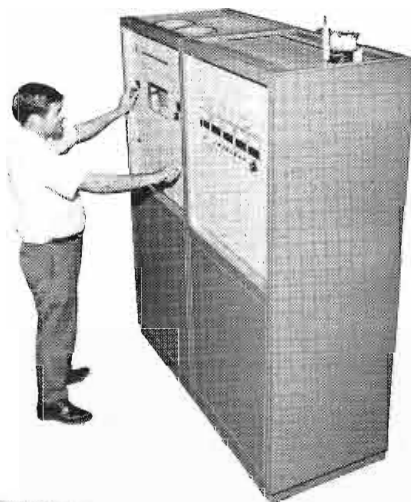
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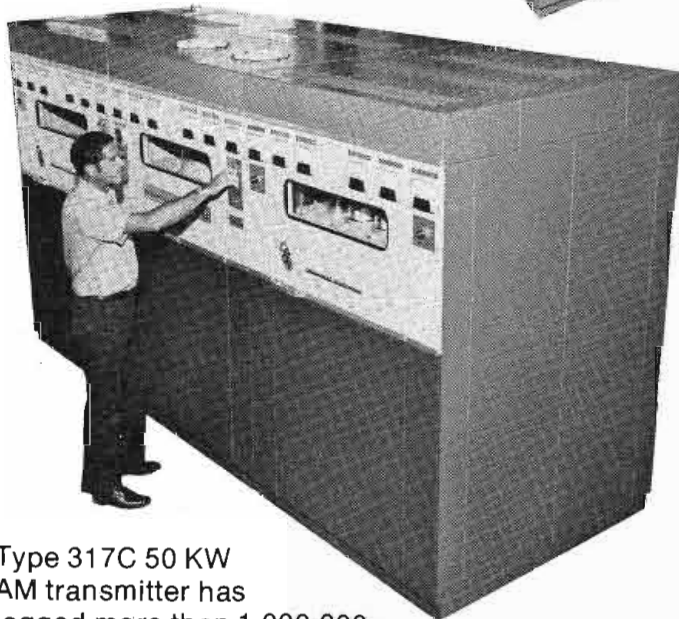
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1973 Broadcast Buyer's Guide

Broadcast Engineering's Reference Issue joins the Computer Age!

This 1973 annual issue, of Broadcast Industry Buyer's Guide and the Manufacturer's Address sections have been prepared for you by computer. We have taken this step so that we may continue to provide you with the most complete and latest information on products and services. Now that we can add and delete listings by computer we will be able to keep pace with the changes taking place in the industry. Not only will you have a better directory with this issue, you will continue to see improvements in the years to come.

Our only limitation is that we send questionnaires to all active manufacturers in the field. Some either fail to receive their listing notice or forget to send it in.

The result is almost 700 manufacturers in over 600 categories.

For CATV categories not listed in this section, see the CATV Buyer's Guide. It includes products especially designed for CATV use.

Red Listings

For the third time we are including red listings. A red listing under a category signifies that the manufacturer has an ad in this issue describing that product or service. In this way you will be able to immediately refer to specs and descriptions in categories of interest to you. Addresses of all manufacturers in this portion of the Guide are listed in the Manufacturers Address section.

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Rust Corp.
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ATLAS Sound
Audio Engineering Co.
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Scott-Buttner Coastcom, Inc.
Sparta Electronic Corp.
Tele-Cine Inc.
TM Systems, Inc.
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Atlantic Research Corp. Teleproducts Dept.
B & I Electronics, Inc.
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AMF Electrical Products Development Division
Delta Products, Inc.
Diebold Incorporated
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Amplifier, AF Remote

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Amplifier, AF Reverberation

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 Melcor Electronics Corp.
 Mincom Div. 3M Co.
 OMNIX
 Raytheon Company Raytheon Data Systems Co.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Spotmaster Broadcast Electronics
 Telemet Co.

Vital Industries Inc.

Amplifier, Compressing

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Marti Electronics 128D

Audio Distributor Inc.
 Broadcast Electronics
 Burwen Laboratories
 Cetec Inc. Subs. Computer Equipment Corp.
 Communication Medias
 Electronic Systems Engrg. Co.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 LPB Inc.
 Marti Electronics
 Melcor Electronics Corp.
 Novatec Electronic Industries Ltd.
 Precision Elect. Inc.
 RHG Elect Labs, Inc.
 Spotmaster Broadcast Electronics

Amplifier, DC

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Moseley Assoc. Inc. 7

American Data Corp. an AIRPAX Company
 B & K Instruments Inc.
 Burwen Laboratories
 Cetec Inc. Subs. Computer Equipment Corp.
 Crown International
 Gately Electronics
 General Electric Company Tubes/MW Devices
 Head Sound, Inc.
 Hewlett Packard Co.
 Honeywell Inc. Test Instruments Div.
 Lectronic Res. Labs. Inc.
 Melcor Electronics Corp.
 Moseley Assoc. Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rust Corp.
 Tele Measurements Inc.
 Test & Measuring Instruments, Inc. a North American Philips Co.

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Alcor Inc.
 Alma Engineering Inc.
 Ameco Inc.
 American Data Corp. an AIRPAX Company
 Ampro Corp.
 Anaconda Electronics
 Anixter-Pruzan CATV Division
 Applied Electro Mechanics, Inc.
 Atlantic Research Corp. Teleproducts Dept.
 Audio Designs & Mfg.
 AVA Electronics Corp.
 Ball Bros. Research Corp. Miratel Division
 Arnold Barnes Company
 Bell P/A Prod. Corp.

Beston Electronics Inc.
 Bethany International
 Blonder-Tongue Labs.
 Bradford Information Systems
 Broadcast Electronics
 Broadcast Prod. Co. Inc. Bcst. Division
 CATV Equipment Co.
 CBS Labs
 C-COR Electronics, Inc.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Cleveland Electronics, Inc.
 Cohu, Inc. Electronics Division
 Communication Medias
 Computer Image Corp.
 Danscoll Ltd.
 Datatek Corp.
 Delta Electronics Inc. (N.C.)
 Delta Electronics Inc. (Va.)
 Dyma Engineering, Inc.
 DYNAIR Electronics, Inc.
 Dynasciences Corp. Video Products Div.
 Enterprise Electronics Corp.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 GBC Closed Circuit TV Corp.
 Grass Valley Group, Inc.
 Head Sound, Inc.
 Hitachi Shibaden Corp. of America
 Interntl. Nuclear Corp.
 Javelin Div. of Apollo Lasers
 Kaitronics Corporation
 Lauderdale Electronic Labs
 Lenco Inc. Electronics Division
 LPB Inc.
 Magnavox Company CATV Division
 Marconi Electronics Inc.
 McCurdy Radio Ind. Inc.
 Melcor Electronics Corp.
 Mincom Div. 3M Co.
 Nasco Television Systems
 Neve Inc., Rupert
 Novatec Electronic Industries Ltd.
 OMNIX
 Pacific Recorders and Engrg. Corp.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 PRD Electronics, Inc.
 Pulse Dynamics Mfg. Corp.
 Radio Mfg. Co. (RMC)
 Ramko Research
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Service Company Div.
 Riker Communications Inc.
 Robert Bosch Corp. Fernseh Div.
 Roh Corporation
 Rohde & Schwarz Sales Co.
 Rupert Neve Incorporated
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Scientific Systems, Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 Singer Products Co., Inc.
 Spectra Sonics
 Spencer-Kennedy Labs., Inc.
 Spotmaster Broadcast Electronics
 Taft Communication Systems, Inc.
 Tasker Systems Div. of Whittaker Corp.
 TelComp Division Television and Computer Corp.
 TeleMation, Inc.
 Tele Measurements Inc.
 Telemet Co.
 Teleng Inc.
 Theta-Com of California Cable Division
 TV Cable Supply Co., Inc.
 Vicon Industries, Inc.
 Video Engineering Co. Inc.
 Visual Communication Products Oper. General Electric Co.
 Visual Educom Inc. DAGE Television
 Vital Industries Inc.
 Wilkinson Electronics, Inc.
 ZERO-Impedance Systems, Inc.

Amplifier, Keying

American Data Corp. an AIRPAX Company

Ball Bros. Research Corp. Miratel Division
 CBS Labs
 Central Dynamics Corp.
 Computer Image Corp.
 Grass Valley Group, Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 Video Devices Co.
 Video Engineering Co. Inc.
 Vital Industries Inc.

Amplifier, Line

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American Data Corp. an AIRPAX Company
 Ampro Corp.
 Anixter-Pruzan CATV Division
 Audio Designs & Mfg.
 Blonder-Tongue Labs.
 Broadcast Electronics
 Burwen Laboratories
 C-COR Electronics, Inc.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
 Communication Medias
 Danscoll Ltd.
 Enterprise Electronics Corp.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 Instrument Laboratories
 Magnavox Company CATV Division
 Marti Electronics
 Neve Inc., Rupert
 OAK Industries Inc. CATV Division
 OMNIX
 Pulse Dynamics Mfg. Corp.
 Quad-Eight Electronics
 Radio Mfg. Co. (RMC)
 Ramko Research
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Service Company Div.
 Riker Communications Inc.
 Robert Bosch Corp. Fernseh Div.
 Roh Corporation
 Rohde & Schwarz Sales Co.
 Rupert Neve Incorporated
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Scientific Systems, Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 Singer Products Co., Inc.
 Spectra Sonics
 Spencer-Kennedy Labs., Inc.
 Spotmaster Broadcast Electronics
 Systems Marketing Corp. And
 Sono-Mag Corp.
 United Recording Electronics Industries
 Video Engineering Co. Inc.
 VIF International
 Wilkinson Electronics, Inc.
 ZERO-Impedance Systems, Inc.

Amplifier, Masking

Burwen Laboratories
 CBS Labs
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Tele Measurements Inc.

Amplifier, Mixing

Audio Designs & Mfg.
 Bell P/A Prod. Corp.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Grass Valley Group, Inc.
 Head Sound, Inc.
 Lauderdale Electronic Labs
 Novatec Electronic Industries Ltd.

QRK Electronic Prod.
 Roh Corporation
 Systems Engineering Co., Inc.
 Vital Industries Inc.
 ZERO-Impedance Systems, Inc.

Amplifier, Monitor

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Ampro Corp.
 Bell P/A Prod. Corp.
 Broadcast Electronics
 CCA Electronics Corp.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Communication Medias
 Crown International
 Electronic Designers Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 Magnatech Company
 Marti Electronics
 Mastertone Company
 Melcor Electronics Corp.
 National Electrolab Ltd.
 Novatec Electronic Industries Ltd.
 QRK Electronic Prod.
 Quad-Eight Electronics
 Radio Mfg. Co. (RMC)
 Ramko Research
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Service Company Div.
 Roh Corporation
 Russco Electronics Mfg. Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Video Engineering Co. Inc.
 Wilkinson Electronics, Inc.

Amplifier, Operational

Audio Designs & Mfg.
 Burwen Laboratories
 Computer Image Corp.
 Gately Electronics
 Head Sound, Inc.
 Hewlett Packard Co.
 Melcor Electronics Corp.
 Quad-Eight Electronics
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Service Company Div.
 Solitron Devices Inc. Semiconductor Div.
 Systems Engineering Co., Inc.
 Tektronix Inc.
 TelComp Division Television and Computer Corp.

Amplifier, Power

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Acrodyne Industries
 Ampro Corp.
 Audio Designs & Mfg.
 Arnold Barnes Company
 Bell P/A Prod. Corp.
 Bethany International
 Bogen Division Lear Siegler Inc.
 Broadcast Electronics
 California Instruments Co.
 C-COR Electronics, Inc.
 Ceco Communications Inc.
 Cetec Inc. Subs. Computer Equipment Corp.

Collins Radio Company Broadcast Division
 Continental Electronics Mfg. Co.
 Crown International
 Electronic Designers Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Fluke, John, Mfg. Co. Inc.
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 McMartin Industries
 Melcor Electronics Corp.
 PRD Electronics, Inc.
 Precision Elect. Inc.
 Pulse Dynamics Mfg. Corp.
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Service Company Div.
 RHA Audio Communications Corp.
 RHG Elect Labs, Inc.
 Roh Corporation
 Spectra Sonics
 Spotmaster Broadcast Electronics
 Taft Communication Systems, Inc.
 Telex Communications Division
 Terminal Hudson Corp. Terminal Hudson Electronics
 ZERO-Impedance Systems, Inc.

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Danscoll Ltd.	116
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Acrodyne Industries
 American Data Corp. an AIRPAX Company
 Ball Bros. Research Corp. Miratel Division
 Arnold Barnes Company
 CBS Labs
 Central Dynamics Corp.
 Computer Image Corp.
 Control Concepts Corporation
 Cramer Video and Audio Systems
 Danscoll Ltd.
 Dyma Engineering, Inc.
 Dynasciences Corp. Video Products Div.
 Enterprise Electronics Corp.
 Grass Valley Group, Inc.
 Marconi Electronics Inc.
 Mincom Div. 3M Co.
 OMNIX
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Robert Bosch Corp. Fernseh Div.
 Shintron Co. Inc. Video Products Div.
 Tektronix Inc.
 Video Engineering Co. Inc.

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American Data Corp.	131
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Acrodyne Industries
 Alma Engineering Inc.
 American Data Corp. an AIRPAX Company
 Applied Video Electronics, Inc.
 Ball Bros. Research Corp. Miratel Division
 Beston Electronics Inc.
 C-COR Electronics, Inc.
 Central Dynamics Corp.
 Cohu, Inc. Electronics Division
 Comark Industries Inc.
 Computer Image Corp.
 Danscoll Ltd.
 Datatek Corp.
 DYNAIR Electronics, Inc.
 Dynasciences Corp. Video Products Div.

General Electric Company Tubes/MW Devices
 Grass Valley Group, Inc.
 Hewlett Packard Co.
 Interntl. Nuclear Corp.
 Kaitronics Corporation
 Kay Elemetrics Corp.
 Lenco Inc. Electronics Division
 Marconi Electronics Inc.
 Nasco Television Systems
 OMNIX
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RHG Elect Labs, Inc.
 Robert Bosch Corp. Fernseh Div.
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 TeleMation, Inc.
 Tele Measurements Inc.
 Telemet Co.
 Video Engineering Co. Inc.
 Viscount Industries Ltd.

Amplifier, Pulse Delay

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Lenco Inc. 123

American Data Corp. an AIRPAX Company
 Beston Electronics Inc.
 Central Dynamics Corp.
 Grass Valley Group, Inc.
 Lenco Inc. Electronics Division
 OMNIX
 Television Equipment Associates

Amplifier, Remote

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Wilkinson Electronics, Inc. 58

Audio Engineering Co.
 Arnold Barnes Company
 Collins Radio Company Broadcast Division
 Communication Medias
 Dyma Engineering, Inc.
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 Moseley Assoc. Inc.
 North American Radio Corp.
 Orbit Radio and Video
 Pulse Dynamics Mfg. Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Sparta Electronic Corp.
 Systems Engineering Co., Inc.
 Time & Frequency Tech., Inc.
 Wilkinson Electronics, Inc.

Amplifier, RF General Purpose

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National Electrolab Ltd. 140

Acrodyne Industries
 AEL Communications Corp., Subs.
 American Electronic Labs., Inc.
 Ameco Inc.
 American Electronics Lab., Inc.
 Anixter-Pruzan CATV Division
 Belar Electronics Lab., Inc.
 Blonder-Tongue Labs.
 CCA Electronics Corp.
 C-COR Electronics, Inc.
 Comark Industries Inc.
 Enterprise Electronics Corp.
 Gates Division of Harris-Intertype
 General Electric Company Tubes/MW Devices
 General Radio Co.
 Hewlett Packard Co.
 Integral Data Devices Inc.
 Kay Elemetrics Corp.
 Lectronic Res. Labs. Inc.
 Magnatech Company
 McMartin Industries
 Microwave Assoc. Inc.
 National Electrolab Ltd.
 North American Radio Corp.
 OAK Industries Inc. CATV Division

PRD Electronics, Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RHG Elect Labs, Inc.
 Robert Bosch Corp. Fernseh Div.
 Rodelco Corp.
 Singer Instrumentation Los Angeles Operation
 Singer Co., The Palo Alto Operation
 Television Technology Corp.
 Time & Frequency Tech., Inc.
 TV Cable Supply Co., Inc.
 Video Engineering Co. Inc.
 Vikoa Inc.

Amplifier, RF Linear

Acrodyne Industries
 Arnold Barnes Company
 CCA Electronics Corp.
 C-COR Electronics, Inc.
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Dyma Engineering, Inc.
 Gates Division of Harris-Intertype LPB Inc.
 Moseley Assoc. Inc.
 National Electrolab Ltd.
 North American Radio Corp.
 PRD Electronics, Inc.
 RHG Elect Labs, Inc.
 Robert Bosch Corp. Fernseh Div.
 Television Technology Corp.
 Wilkinson Electronics, Inc.

Amplifier, RF Peak Limiting

Belar Electronics Lab., Inc.
 CBS Labs
 Magnatech Company
 Microwave Assoc. Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RHG Elect Labs, Inc.
 Video Engineering Co. Inc.
 Wilkinson Electronics, Inc.

Amplifier, RF Power

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Collins Radio Company 19

Acrodyne Industries
 Ailtech (Formerly: Microdot)
 American Electronics Lab., Inc.
 Amperex Electronic Corp.
 Belar Electronics Lab., Inc.
 Blonder-Tongue Labs.
 CCA Electronics Corp.
 C-COR Electronics, Inc.
 Collins Radio Company Broadcast Division
 Comark Industries Inc.
 Continental Electronics Mfg. Co.
 Eimac Div. Varian Associates
 EMCEE Broadcast Products Div. of Electronics, Missiles & Communications, Inc.
 Gates Division of Harris-Intertype
 Kay Elemetrics Corp.
 Lectronic Res. Labs. Inc.
 McMartin Industries
 Microwave Assoc. Inc.
 Moseley Assoc. Inc.
 National Electrolab Ltd.
 OAK Industries Inc. CATV Division
 PRD Electronics, Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RHG Elect Labs, Inc.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Television Technology Corp.
 Video Engineering Co. Inc.
 Visual Communication Products Oper.
 General Electric Co.
 Wilkinson Electronics, Inc.

Amplifier, Sensing

Applied Electro Mechanics, Inc.
 Broadcast Prod. Co. Inc. Bcst. Division
 Mastertone Company
 Tele Measurements Inc.

Amplifier, Stabilizing

American Data Corp. an AIRPAX Company
 Ball Bros. Research Corp. Miratel Division
 CBS Labs
 Central Dynamics Corp.
 Dynasciences Corp. Video Products Div.
 General Radio Co.
 Grass Valley Group, Inc.
 Interntl. Nuclear Corp.
 Marconi Electronics Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Telemet Co.
 Vital Industries Inc.

Amplifier, Stereo Limiter

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Gates 10

Broadcast Electronics
 Broadcast Products Inc.
 Burwen Laboratories
 CBS Labs
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
 Communication Medias
 Gately Electronics
 Gates Division of Harris-Intertype
 Mastertone Company
 Neve Inc., Rupert
 Rupert Neve Incorporated
 Spectra Sonics
 Spotmaster Broadcast Electronics
 UREI a URC Company
 Wilkinson Electronics, Inc.

Amplifier, TV Video

Acrodyne Industries
 AEL Communications Corp., Subs.
 American Electronic Labs., Inc.
 Alcor Inc.
 Alma Engineering Inc.
 American Data Corp. an AIRPAX Company
 American Pamcor
 Amperex Electronic Corp.
 Applied Electro Mechanics, Inc.
 Applied Video Electronics, Inc.
 AVA Electronics Corp.
 Ball Bros. Research Corp. Miratel Division
 Blonder-Tongue Labs.
 Catel, a Div. of United Scientific Corp.
 CBS Labs
 C-COR Electronics, Inc.
 Central Dynamics Corp.
 Cohu, Inc. Electronics Division
 Comark Industries Inc.
 Computer Image Corp.
 Control Concepts Corporation
 Cramer Video and Audio Systems
 Danscoll Ltd.
 Datatek Corp.
 Delta-Benco-Cascade Ltd.
 Delta Electronics Inc. (N.C.)
 DYNAIR Electronics, Inc.
 Dynasciences Corp. Video Products Div.
 Enterprise Electronics Corp.
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 GBC Closed Circuit TV Corp.
 Grass Valley Group, Inc.
 Ikegami Tsushinki Co., Ltd. Export Department
 Integral Data Devices Inc.
 Interntl. Nuclear Corp.
 Kay Elemetrics Corp.
 Lenco Inc. Electronics Division
 Marconi Electronics Inc.
 Mincom Div. 3M Co.
 Nasco Television Systems
 OMNIX
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Raytheon Company Raytheon Data Systems Co.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.

Richmond Hill Laboratories Inc.
 Riker Communications Inc.
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 Singer Products Co., Inc.
 Spencer-Kennedy Labs., Inc.
 Tektronix Inc.
 Tele-Cine Inc.
 Teledyne Brown Engineering Co. Science & Engrg. Div.
 TeleMation, Inc.
 Telemet Co.
 Television Microtime, Inc. Subs.
 Andersen Laboratories, Inc.
 Vicon Industries, Inc.
 Video Engineering Co. Inc.
 Viscount Industries Ltd.
 Visual Communication Products Oper.
 General Electric Co.
 Visual Educom Inc. DAGE Television
 Vital Industries Inc.

Amplifier, Video Sweep

C-COR Electronics, Inc.
 Kay Elemetrics Corp.
 Leader Instruments Corp.
 Lectronic Res. Labs. Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.

Amplifier, Zero Studio Delay

Television Equipment Associates
 Television Microtime, Inc. Subs.
 Andersen Laboratories, Inc.

Analyzers, Distortion

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The London Company 14

Atlantic Research Corp. Teleproducts Dept.
 Barker & Williamson, Inc.
 Collins Radio Company Broadcast Division
 Crown International
 Dyma Engineering, Inc.
 ELPA Marketing Industries, Inc.
 General Radio Co.
 Heath Co.
 Hewlett Packard Co.
 Lectronic Res. Labs. Inc.
 The London Company
 Marconi Instruments
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Tektronix Inc.
 Vu-Data Corporation

Analyzers, Harmonic

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ELPA Marketing Industries, Inc. 18

ELPA Marketing Industries, Inc.
 General Radio Co.
 Hewlett Packard Co.
 Lectronic Res. Labs. Inc.
 Marconi Instruments
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Tektronix Inc.
 Vu-Data Corporation

Analyzers, Intermodulation

Crown International
 Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
 Heath Co.
 Rohde & Schwarz Sales Co.
 Tektronix Inc.

Analyzers, RF Network

PRD Electronics, Inc.
Rohde & Schwarz Sales Co.
Tektronix Inc.

Analyzers, Sideband

DYNAIR Electronics, Inc.
Enterprise Electronics Corp.
Marconi Instruments
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Siemens Corporation
Singer Co., The Palo Alto Operation
Spectrum Instruments, Inc.
Tektronix Inc.
Telemet Co.

Analyzers, Spectrum

Ailtech (Formerly: Microdot)
ALTEC
B & K Instruments Inc.
Enterprise Electronics Corp.
General Radio Co.
Hewlett Packard Co.
Honeywell Inc. Test Instruments Div.
Kay Elemetrics Corp.
Marconi Instruments
Novatec Electronic Industries Ltd.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Singer Co., The Palo Alto Operation
Spectrum Instruments, Inc.
Spencer-Kennedy Labs., Inc.
Tektronix Inc.
Test & Measuring Instruments, Inc. a North American Philips Co.
Texscan Corp.

Analyzers, Video

Arnold Barnes Company
Colorado Video Inc.
Dynascan Corp. B & K Division
PRD Electronics, Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Spencer-Kennedy Labs., Inc.
Tektronix Inc.
Video Engineering Co. Inc.

Antenna Alignment Systems, Microwave

Innovative Television Equipment, Inc.
Siemens Corporation

Antenna Sampling Systems

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Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
Moseley Assoc. Inc.
Multronics, Inc.
North American Radio Corp.
Sparta Electronic Corp.
Time & Frequency Tech., Inc.

Antenna Systems

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Ceco Communications Inc. 140
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Mastertone Company 139

Admiral Corporation
Ameco Inc.
Andrew Corp.
Andrews Tower Inc.
AVA Electronics Corp.
Arnold Barnes Company
Bogner Broadcast Equipment Corp.
Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal

Ceco Communications Inc.
Collins Radio Company Broadcast Division
Continental Electronics Mfg. Co.
Delta Electronics Inc. (Va.)
Electromagnetic Specialties
Enterprise Electronics Corp.
Gates Division of Harris-Intertype
Gulf Telephone & Electronics
Hy-Power Electronics Co.
Jampro Antenna Co. Div. of Computer Equipment Corp.
Mastertone Company
Micro Communications, Inc.
Microwave Assoc. Inc.
Multronics, Inc.
Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc.
Prodelin Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RF Systems, Inc.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Scala Radio Corp.
Shively Laboratories, Inc.
Siemens Corporation
Singer Products Co., Inc.
Sitco Antenna Co.
Soll, Inc., Joseph M.
Sparta Electronic Corp.
TACO Technical Appliance Corp. A General Instrument Co.
Tri-Ex Tower Corp.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.
Visual Communication Products Oper. General Electric Co.

Antenna Tuning Units

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Sparta Electronic Corp. 8

CCA Electronics Corp.
Collins Radio Company Broadcast Division
Jampro Antenna Co. Div. of Computer Equipment Corp.
Multronics, Inc.
North American Radio Corp.
Siemens Corporation
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Antennas, Directional System

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Gates 10

Alford Mfg. Co.
Bogner Broadcast Equipment Corp.
Collins Radio Company Broadcast Division
Continental Electronics Mfg. Co.
Cook Electric Co.
Electromagnetic Specialties
Gates Division of Harris-Intertype
Innovative Television Equipment, Inc.
Jampro Antenna Co. Div. of Computer Equipment Corp.
Micro Communications, Inc.
Moseley Assoc. Inc.
Scala Radio Corp.
Sparta Electronic Corp.
TACO Technical Appliance Corp. A General Instrument Co.

Antennas, Dummy Load

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Electro Impulse, Inc. 132

Bird Electronic Corp.
Collins Radio Company Broadcast Division
Continental Electronics Mfg. Co.
Dielectric Communications Div. of Sola Basic
Electro Impulse, Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer Equipment Corp.
Marconi Electronics Inc.
Micro Communications, Inc.

North American Radio Corp.
Ohmite Mfg. Co.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rex Rheostat & Co., Inc.
Rohde & Schwarz Sales Co.
Shively Laboratories, Inc.
Siemens Corporation
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Antennas, Ice Warning System

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Gates 10

Collins Radio Company Broadcast Division
Cook Electric Co.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer Equipment Corp.
Micro-Trak Corporation (Formerly: Gray Research & Dev.)

Antennas, Monitor

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Moseley Assoc. Inc. 7

Moseley Assoc. Inc.
National Electrolab Ltd.
Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc.
Scala Radio Corp.
Video Engineering Co. Inc.

Antennas, Receiving FM

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Jampro Antenna Co. 48

Anixter-Pruzan CATV Division
Catel, a Div. of United Scientific Corp.
Gates Division of Harris-Intertype
G.C. Electronics
Jampro Antenna Co. Div. of Computer Equipment Corp.
McMartin Industries
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RCA Corporation RCA Missile & Surface Radar Div.
RCA Corporation RCA Service Company Div.
RF Systems, Inc.
Saxton Prod. Inc.
Scala Radio Corp.
Siemens Corporation
TACO Technical Appliance Corp. A General Instrument Co.

Antennas, Receiving LF

Andrews Tower Inc.
Delta Electronics Inc. (Va.)
Fluke, John, Mfg. Co. Inc.
Time & Frequency Tech., Inc.

Antennas, Receiving MF

Delta Electronics Inc. (Va.)
Gulf Telephone & Electronics
Siemens Corporation
Singer Products Co., Inc.

Antennas, Receiving UHF

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Gates 10

Ameco Inc.
American Electronics Lab., Inc.
American Pamcor
Andrew Corp.
Anixter-Pruzan CATV Division
Blonder-Tongue Labs.
Conway Electronic Enterprises Limited
EMCEE Broadcast Products Div. of Electronics, Missiles & Communications, Inc.
Gates Division of Harris-Intertype
G.C. Electronics

Lectronic Res. Labs. Inc.
Moseley Assoc. Inc.
Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc.
Prodelin Inc.
RF Systems, Inc.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Rohde & Schwarz Sales Co.
Saxton Prod. Inc.
Scala Radio Corp.
Siemens Corporation
Sitco Antenna Co.
TACO Technical Appliance Corp. A General Instrument Co.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.

Antennas, Receiving VHF

See Adv. Page
Gates 10

Ameco Inc.
American Electronics Lab., Inc.
American Pamcor
Andrew Corp.
Anixter-Pruzan CATV Division
Blonder-Tongue Labs.
CATV Equipment Co.
Conway Electronic Enterprises Limited
EMCEE Broadcast Products Div. of Electronics, Missiles & Communications, Inc.
Gates Division of Harris-Intertype
G.C. Electronics
Lectronic Res. Labs. Inc.
Moseley Assoc. Inc.
Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc.
Prodelin Inc.
RF Systems, Inc.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Rohde & Schwarz Sales Co.
Saxton Prod. Inc.
Scala Radio Corp.
Siemens Corporation
Sitco Antenna Co.
TACO Technical Appliance Corp. A General Instrument Co.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.

Antennas, Receiving Microwave

Andrew Corp.
Anixter-Pruzan CATV Division
Bogner Broadcast Equipment Corp.
Lectronic Res. Labs. Inc.
Mastertone Company
Narda Microwave Corp., The Prodelin Inc.
RF Systems, Inc.
Siemens Corporation
TACO Technical Appliance Corp. A General Instrument Co.

Antennas, Remote Indicator

Gates Division of Harris-Intertype
Moseley Assoc. Inc.
Potomac Instruments, Inc.

Antennas, Remote Pickup

Andrew Corp.
Andrews Tower Inc.
Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Gates Division of Harris-Intertype
Magnatech Company
Mastertone Company
Moseley Assoc. Inc.
Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc.
RF Systems, Inc.
Scala Radio Corp.
Siemens Corporation
TACO Technical Appliance Corp. A General Instrument Co.

Antennas, STL

Andrew Corp.
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Magnatech Company
Mastertone Company
Moseley Assoc. Inc.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Scala Radio Corp.

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Arnold Barnes Company
Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
CCA Electronics Corp.
CCA RF Industries, Inc.
Collins Radio Company Broadcast Division
Electromagnetic Specialties
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer Equipment Corp.
Magnatech Company
Mastertone Company
Micro Communications, Inc.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Scala Radio Corp.
Shively Laboratories, Inc.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
TACO Technical Appliance Corp. A General Instrument Co.
Wilkinson Electronics, Inc.

Antennas, Transmitting LF

Andrews Tower Inc.
Continental Electronics Mfg. Co.
Delta Electronics Inc. (Va.)
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer Equipment Corp.
Siemens Corporation

Antennas, Transmitting MF

Andrews Tower Inc.
Collins Radio Company Broadcast Division
Continental Electronics Mfg. Co.
Delta Electronics Inc. (Va.)
Gates Division of Harris-Intertype
Gulf Telephone & Electronics
Jampro Antenna Co. Div. of Computer Equipment Corp.
Marconi Electronics Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Shively Laboratories, Inc.
Siemens Corporation

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Bogner Broadcast Equipment Corp. 35

Alford Mfg. Co.
Andrew Corp.
Bogner Broadcast Equipment Corp.
CCA Electronics Corp.
CCA RF Industries, Inc.
Collins Radio Company Broadcast Division
EMCEE Broadcast Products Div. of Electronics, Missiles & Communications, Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer Equipment Corp.
Lectronic Res. Labs. Inc.
Marconi Electronics Inc.

Micro Communications, Inc.
Moseley Assoc. Inc.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Prodelin Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Shively Laboratories, Inc.
Siemens Corporation
Sitco Antenna Co.
TACO Technical Appliance Corp. A General Instrument Co.
Visual Communication Products Oper. General Electric Co.

Antennas, Transmitting VHF

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Bogner Broadcast Equipment Corp. 35

Alford Mfg. Co.
Bogner Broadcast Equipment Corp.
CCA Electronics Corp.
CCA RF Industries, Inc.
Collins Radio Company Broadcast Division
Dyma Engineering, Inc.
EMCEE Broadcast Products Div. of Electronics, Missiles & Communications, Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer Equipment Corp.
Lectronic Res. Labs. Inc.
Marconi Electronics Inc.
Micro Communications, Inc.
Moseley Assoc. Inc.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Prodelin Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RF Systems, Inc.
Rohde & Schwarz Sales Co.
Scala Radio Corp.
Shively Laboratories, Inc.
Siemens Corporation
Singer Products Co., Inc.
Sitco Antenna Co.
TACO Technical Appliance Corp. A General Instrument Co.
Visual Communication Products Oper. General Electric Co.

Antennas, Transmitting Microwave

Andrew Corp.
Bogner Broadcast Equipment Corp.
Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
Collins Radio Company Broadcast Division
Jampro Antenna Co. Div. of Computer Equipment Corp.
Lectronic Res. Labs. Inc.
Mastertone Company
Microwave Assoc. Inc.
Moseley Assoc. Inc.
Prodelin Inc.
RF Systems, Inc.
Siemens Corporation
TACO Technical Appliance Corp. A General Instrument Co.

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Bird Electronic Corp.
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Delta Electronics Inc. (Va.)
Gates Division of Harris-Intertype
General Radio Co.
Jampro Antenna Co. Div. of Computer Equipment Corp.
Lectronic Res. Labs. Inc.
Micro Communications, Inc.
Moseley Assoc. Inc.

PRD Electronics, Inc.
Shively Laboratories, Inc.
Singer Products Co., Inc.

Arms, Tone

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Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Gates Division of Harris-Intertype
Lauderdale Electronic Labs
LPB Inc.
Micro-Trak Corporation (Formerly: Gray Research & Dev.)
QRK Electronic Prod.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rek-O-Kut Inc.
Russco Electronics Mfg. Inc.
Shure Brothers Inc.
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Video Engineering Co. Inc.
Wilkinson Electronics, Inc.

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Allen Avionics Inc.
ALTEC
Atlantic Research Corp. Teleproducts Dept.
Audio Designs & Mfg.
Audio Distributor Inc.
Burwen Laboratories
Cetec Inc. Subs. Computer Equipment Corp.
Collins Radio Company Broadcast Division
Duncan Electronics, Inc.
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Fairchild/Robbins Fairchild Sound Equipment Corp.
General Radio Co.
Gotham Audio Corp.
Kay Elemetrics Corp.
Leader Instruments Corp.
Marconi Instruments
Neve Inc., Rupert
Ohmite Mfg. Co.
Quad-Eight Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Roh Corporation
Rohde & Schwarz Sales Co.
Rupert Neve Incorporated
Sennheiser Electronics Corp.
Shallco, Incorporated
Soundolier, Inc.
Sparta Electronic Corp.
Systems Engineering Co., Inc.
Tech Laboratories Inc.
Terminal Hudson Corp. Terminal Hudson Electronics
Texscan Corp.
TM Systems, Inc.
TRW Electronic Supply Co. Div. of TRW
Video Engineering Co. Inc.
Waters Mfg. Inc.
Weinschel Engineering Co.

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Allen Avionics Inc.
Ameco Inc.
Audio Distributor Inc.
Bird Electronic Corp.
Cetec Inc. Subs. Computer Equipment Corp.
Collins Radio Company Broadcast Division
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Gates Division of Harris-Intertype
General Microwave Corp.
General Radio Co.
Holland Electronics
Kay Elemetrics Corp.
Lectronic Res. Labs. Inc.
Magnavox Company CATV Division
Narda Microwave Corp., The
PRD Electronics, Inc.
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Riker Communications Inc.
Roh Corporation
Rohde & Schwarz Sales Co.
Shallco, Incorporated
Siemens Corporation
Singer Co., The Palo Alto Operation
Sparta Electronic Corp.
Tech Laboratories Inc.
Tektronix Inc.
Telonic Industries Inc.
Texscan Corp.
Trompeter Electronics
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.
Waters Mfg. Inc.
Weinschel Engineering Co.

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Allen Avionics Inc.
Barker & Williamson, Inc.
Cetec Inc. Subs. Computer Equipment Corp.
Collins Radio Company Broadcast Division
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Electromagnetic Sciences, Inc.
General Radio Co.
Holland Electronics
Kay Elemetrics Corp.
Ohmite Mfg. Co.
PRD Electronics, Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Roh Corporation
Rohde & Schwarz Sales Co.
Shallco, Incorporated
Sparta Electronic Corp.
Tech Laboratories Inc.
Tektronix Inc.
Test & Measuring Instruments, Inc. a North American Philips Co.
Texscan Corp.
Video Engineering Co. Inc.
Waters Mfg. Inc.
Weinschel Engineering Co.

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American Electronics Lab., Inc.
Electro Impulse, Inc.
General Microwave Corp.

General Radio Co.
Hewlett Packard Co.
Kay Elemetrics Corp.
Lectronic Res. Labs. Inc.
Marconi Instruments
Narda Microwave Corp., The
PRD Electronics, Inc.
Rohde & Schwarz Sales Co.
Siemens Corporation
Singer Co., The Palo Alto Operation
Tech Laboratories Inc.
Tektronix Inc.
Telonic Industries Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Texscan Corp.
Video Engineering Co. Inc.
Weinschel Engineering Co.

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Tech Laboratories Inc. 21

AEL Communications Corp., Subs.
American Electronic Labs., Inc.
Allen Avionics Inc.
Ameco Inc.
American Electronics Lab., Inc.
Anaconda Electronics
Anixter-Pruzan CATV Division
AVA Electronics Corp.
Bird Electronic Corp.
CATV Equipment Co.
Comark Industries Inc.
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Electro Impulse, Inc.
Enterprise Electronics Corp.
General Microwave Corp.
General Radio Co.
Hewlett Packard Co.
Holland Electronics
Integral Data Devices Inc.
Kay Elemetrics Corp.
Lectronic Res. Labs. Inc.
Marconi Instruments
Matrix Systems Corp.
Narda Microwave Corp., The
OAK Industries Inc. CATV Division
PRD Electronics, Inc.
Riker Communications Inc.
Rohde & Schwarz Sales Co.
Shalco, Incorporated
Siemens Corporation
Singer Co., The Palo Alto Operation
Tech Laboratories Inc.
Telonic Industries Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Texscan Corp.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.
Weinschel Engineering Co.

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Corp.** 105

Computer Magnetics Corp.

Automation, Camera Control

Ameco Inc.
Bristol Div. of Acco
Cunningham Corp. Subs. of Gleason
Works
Moseley Assoc. Inc.
Power-Optics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Tele-Cine Inc.
Trepac Corp. America
Video Engineering Co. Inc.

Automation, Color Corrector

Arnold Barnes Company
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

Robert Bosch Corp. Fernseh Div.

Automation, Data Processing

Broadcast Products Inc.
Central Dynamics Corp.
Lamb Laboratories
Mincom Div. 3M Co.
Quad-Eight Electronics
Sarkes Tarzian Inc. Broadcast
Equipment Div.
STEP Corporation
Systems Marketing Corp. And
Sono-Mag Corp.

Automation, Equipment Control

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Ampro Corp.
Atlantic Research Corp. Teleproducts
Dept.
Audio Devices, Inc.
Autogram Corporation
Bailey Meter Company Subs. Babcock
& Wilcox Co.
Broadcast Products Inc.
CCA Electronics Corp.
Central Dynamics Corp.
Chrono-Log Corp.
CMX Systems
Concept 70, A Div. of Dyma
Engineering, Inc.
Display Systems Corp.
Gates Division of Harris-Intertype
Grass Valley Group, Inc.
IGM
Magna-Tech Electronic Co., Inc.
Mastertone Company
McBee Laboratories
Mincom Div. 3M Co.
Moseley Assoc. Inc.
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Roh Corporation
Rust Corp.
Schafer Electronics Corp.
Sparta Electronic Corp.
STEP Corporation
Systems Marketing Corp. And
Sono-Mag Corp.
Tape-Athon Corp.
Telemet Co.
Trepac Corp. America
Visual Communication Products Oper.
General Electric Co.
Vitec Communications Ltd.

Automation, Film Chain

Central Dynamics Corp.
Mincom Div. 3M Co.
Quad-Eight Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
STEP Corporation
Vital Industries Inc.

Automation, Lighting Control

Berkey-Colortran Inc.
General Electric Company Tubes/MW
Devices
General Radio Co.
Skirpan Lighting Control Corp.
Video Engineering Co. Inc.

Automation, Program Control

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Aitken Communications Inc.
Aito Communications Inc. Broadcast
Marketing Div.
Ameco Inc.
American Data Corp. an AIRPAX
Company
Ampro Corp.
Audio Devices, Inc.
Autogram Corporation
Arnold Barnes Company
Broadcast Products Inc.
CCA Electronics Corp.
Central Dynamics Corp.
Chrono-Log Corp.
Collins Radio Company Broadcast
Division
Concept 70, A Div. of Dyma
Engineering, Inc.
Conrac Corporation Cramer Division
Datatron, Inc.
Display Systems Corp.
ES Enterprises
Gates Division of Harris-Intertype
Grass Valley Group, Inc.
IGM
Orbit Radio and Video
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Schafer Electronics Corp.
Schafer International
Sparta Electronic Corp.
STEP Corporation
Systems Marketing Corp. And
Sono-Mag Corp.
Tape-Athon Corp.
Tektronix Inc.
TeleMation, Inc.
Trepac Corp. America
VIF International
Visual Communication Products Oper.
General Electric Co.
Vital Industries Inc.

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Aitken Communications Inc.
Alto Communications Inc. Broadcast
Marketing Div.
American Data Corp. an AIRPAX
Company
Ampex Corp. Audio-Video Systems
Division
Ampro Corp.
Atlantic Research Corp. Teleproducts
Dept.
Autogram Corporation
Broadcast Products Inc.
CCA Electronics Corp.
Central Dynamics Corp.
Collins Radio Company Broadcast
Division
Datatron, Inc.
Gates Division of Harris-Intertype
Grass Valley Group, Inc.
IGM
Mastertone Company
McBee Laboratories
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Schafer Electronics Corp.
Schafer International
Sparta Electronic Corp.
STEP Corporation
Systems Marketing Corp. And
Sono-Mag Corp.
Tape-Athon Corp.
Time & Frequency Tech., Inc.

Video Sentry System
Visual Communication Products Oper.
General Electric Co.
Vital Industries Inc.

Automation, Projector

Central Dynamics Corp.
Grass Valley Group, Inc.
Hokushin Elect. Co.
Magna-Tech Electronic Co., Inc.
Marconi Electronics Inc.
Skirpan Lighting Control Corp.
Spindler & Sauppe, Inc.

Automation, Switching

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Audio Devices, Inc. 45
**Grass Valley Group,
Inc.** 3

American Data Corp. an AIRPAX
Company
Ampro Corp.
Atlantic Research Corp. Teleproducts
Dept.
Audio Devices, Inc.
Belcom Electronics Mfg. Co.
Broadcast Products Inc.
Central Dynamics Corp.
Chrono-Log Corp.
CMX Systems
Cohu, Inc. Electronics Division
Concept 70, A Div. of Dyma
Engineering, Inc.
Cunningham Corp. Subs. of Gleason
Works
Grass Valley Group, Inc.
IGM
Marconi Electronics Inc.
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
Riker Communications Inc.
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Schafer Electronics Corp.
STEP Corporation
Systems Marketing Corp. And
Sono-Mag Corp.
Tech Laboratories Inc.
TeleMation, Inc.
Telemet Co.
Trepac Corp. America
Video Engineering Co. Inc.
Visual Communication Products Oper.
General Electric Co.

Automation, Tape Control Cart

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**Systems Marketing
Corp.** 129
VIF International 128C

Aitken Communications Inc.
Alto Communications Inc. Broadcast
Marketing Div.
Ampex Corp. Audio-Video Systems
Division
Ampro Corp.
Audio Devices, Inc.
Autogram Corporation
Arnold Barnes Company
Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Central Dynamics Corp.
Collins Radio Company Broadcast
Division
Delta Electronics Inc. (N.C.)
Gates Division of Harris-Intertype
Grass Valley Group, Inc.
Mastertone Company
Mincom Div. 3M Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Schafer Electronics Corp.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics

Systems Marketing Corp. And
Sono-Mag Corp.
Tapecaster TCM, Inc.
Telectro Systems Corp.
VIF International

Automation, Tape Control Reel

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Audio Devices, Inc. 45
Collins Radio Company 19
Gates 10
Sparta Electronic Corp. 8
Systems Marketing
Corp. 129
VIF International 128C

Aitken Communications Inc.
Alto Communications Inc. Broadcast
Marketing Div.
Ampro Corp.
Audio Devices, Inc.
Autogram Corporation
Broadcast Products Inc.
CCA Electronics Corp.
Central Dynamics Corp.
CMX Systems
Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Grass Valley Group, Inc.
Mastertone Company
Mincom Div. 3M Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Schafer Electronics Corp.
Sparta Electronic Corp.
Systems Marketing Corp. And
Sono-Mag Corp.
Tape-Athon Corp.
Telectro Systems Corp.
VIF International
Wide Response

Automation, Transmitter Logging

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Atlantic Research Corp. Teleproducts
Dept.
Autogram Corporation
Arnold Barnes Company
Broadcast Products Inc.
Central Dynamics Corp.
Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Marconi Instruments
Marti Electronics
McBee Laboratories
Moseley Assoc. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rust Corp.
Systems Marketing Corp. And
Sono-Mag Corp.
Telectro Systems Corp.
Time & Frequency Tech., Inc.
Vital Industries Inc.

Automation, Video Tape Machine

Ampex Corp. Audio-Video Systems
Division
Broadcast Products Inc.
Central Dynamics Corp.
Display Systems Corp.
Mincom Div. 3M Co.
Orbit Radio and Video
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
TeleMation, Inc.

Blowers and Fans

AMCO Engineering Co.
American-Standard Industrial
Products Div.
Bud Radio Inc.

Collins Radio Company Broadcast
Division
Dynacool Mfg. Co., Inc.
Mole Richardson Co.
Terminal Hudson Corp. Terminal
Hudson Electronics

Bridge, Common Point

Collins Radio Company Broadcast
Division
Delta Electronics Inc. (Va.)
Gates Division of Harris-Intertype

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AMCO Engineering Co.
Anixter-Pruzan CATV Division
Audio Designs & Mfg.
Arnold Barnes Company
Borg-Warner Corp. Ingersoll Prods.
Div.
Broadcast Electronics
Bud Radio Inc.
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Concept 70, A Div. of Dyma
Engineering, Inc.
Dyma Engineering, Inc.
Enclosure Corp.
EQUIPTO
Gates Division of Harris-Intertype
General Devices Co., Inc. Vent-Rak
Div.

Grinnan Fixture Co.
Harwald Company
Lauderdale Electronic Labs
Mastertone Company
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Multronics, Inc.
Neumade Prod. Corp.
North American Radio Corp.
Paso Sound Products Inc.
QRK Electronic Prod.
Quad-Eight Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rek-O-Kut Inc.
RTI Research Technology Inc.
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Soundolier, Inc.
Sparta Electronic Corp.
Stantron Division Wyco Metal Products
Storeel Corp.
TeleMation, Inc.
Vicon Industries, Inc.
Video Engineering Co. Inc.
Waber Electronics Inc. Div. SGL
Industries, Inc.
Wilkinson Electronics, Inc.
Wilson Corp., H.

Cable, Camera

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& Cable Co. 120

Anixter-Pruzan CATV Division
Belden Corp. Electronic Division
Boston Insulated Wire & Cable Co.
Brand-Rex Company
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
International Video Corp.
International Wire & Cable Co.
Robert Bosch Corp. Fernseh Div.
Rome Cable Div. Cyprus Mines Co.
Terminal Hudson Corp. Terminal
Hudson Electronics
Video Engineering Co. Inc.

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Inc. 125
Sparta Electronic Corp. 8

Anaconda Electronics
Andrew Corp.
A-Tel-A-Matic
Belden Corp. Electronic Division
Blonder-Tongue Labs.
Brand-Rex Company
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
CATV Equipment Co.
Cohu, Inc. Electronics Division
Collins Radio Company Broadcast
Division
Columbia Electronic Cbl.
Comm/Scope Company
Cramer Video and Audio Systems
Dyma Engineering, Inc.
Essex International Inc.
Communication & CATV Div.
G.C. Electronics
General Cable Corp.
Gulf Telephone & Electronics
International Wire & Cable Co.
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Javelin Div. of Apollo Lasers
Lamb Laboratories
Lectronic Res. Labs. Inc.
Mastertone Company
Pace Wire & Cable Corp.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Plastoid Corporation
Prodelin Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rome Cable Div. Cyprus Mines Co.
Saxton Prod. Inc.
Shively Laboratories, Inc.
Singer Products Co., Inc.
Soll, Inc., Joseph M.
Sparta Electronic Corp.
Spencer-Kennedy Labs., Inc.
Theta-Com of California Cable Division
Times Wire and Cable Sub. of Insilco
Corp.
Trompeter Electronics
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.
Vikoa Inc.
Wilkinson Electronics, Inc.

Cable, Coaxial Rigid

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Andrew Corp. 51
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Inc. 125

Ampro Corp.
Andrew Corp.
Anixter-Pruzan CATV Division
A-Tel-A-Matic
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
CATV Equipment Co.
CCA Electronics Corp.
Cohu, Inc. Electronics Division
Collins Radio Company Broadcast
Division
Comm/Scope Company
Dyma Engineering, Inc.
Essex International Inc.
Communication & CATV Div.
Gately Electronics
General Cable Corp.
Gulf Telephone & Electronics
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Mastertone Company
Micro Communications, Inc.
Pace Wire & Cable Corp.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Plastoid Corporation
Prodelin Inc.
Quad-Eight Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

Rome Cable Div. Cyprus Mines Co.
Shively Laboratories, Inc.
Soll, Inc., Joseph M.
Sparta Electronic Corp.
Theta-Com of California Cable Division
Times Wire and Cable Sub. of Insilco
Corp.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.
Wilkinson Electronics, Inc.

Cable, Direct Burial

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Cablewave Systems
Inc. 125

Anixter-Pruzan CATV Division
A-Tel-A-Matic
Brand-Rex Company
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
CATV Equipment Co.
Collins Radio Company Broadcast
Division
Columbia Electronic Cbl.
Comm/Scope Company
Essex International Inc.
Communication & CATV Div.
General Cable Corp.
Gulf Telephone & Electronics
Pace Wire & Cable Corp.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Plastoid Corporation
Rome Cable Div. Cyprus Mines Co.
Singer Products Co., Inc.
Spencer-Kennedy Labs., Inc.
Theta-Com of California Cable Division
Times Wire and Cable Sub. of Insilco
Corp.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.
Vikoa Inc.

Cable, Microphone

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Sescom, Inc.

Cable, Shielded Audio

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Alpha Wire
Amphenol RF Division
A-Tel-A-Matic
Belden Corp. Electronic Division
Birnback Co. Inc.
Boston Insulated Wire & Cable Co.
Brand-Rex Company
Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
Columbia Electronic Cbl.
Comm/Scope Company
Essex International Inc.
Communication & CATV Div.
Franz Vertriebs-gesellschaft m.b.H.
G.C. Electronics
General Cable Corp.
Gulf Telephone & Electronics
Lamb Laboratories
Nortronics Co., Inc. Recorder Care Div.
Pace Wire & Cable Corp.
Prestolite Company
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rome Cable Div. Cyprus Mines Co.
Saxton Prod. Inc.
Sescom, Inc.
Singer Products Co., Inc.
Sparta Electronic Corp.
Terminal Hudson Corp. Terminal
Hudson Electronics
Times Wire and Cable Sub. of Insilco
Corp.
Video Engineering Co. Inc.
Vikoa Inc.
Wilkinson Electronics, Inc.

Cable Laying Equipment

Anixter-Pruzan CATV Division
Contender Corporation
Ditch Witch Div. of Charles Machine Works, Inc.
Roll-A-Reel
F. B. Ryan Mfg. Co. Inc.
Terminal Hudson Corp. Terminal Hudson Electronics

Calibration Service, Instrument

Ameco Inc.
American Electronics Lab., Inc.
Bird Electronic Corp.
B & K Instruments Inc.
CBS Labs
Comm. Radio Monitoring
Eidson Electronic Co.
Honeywell Inc. Test Instruments Div.
Instrument Laboratories
National Electrolab Ltd.
Potomac Instruments, Inc.
Simpson Electric Co.
Tektronix Inc.

Camera Dollies, Stands and Tripods

Ameco Inc.
Anixter-Pruzan CATV Division
Comquip, Inc.
Cosmicar Optical Co., Ltd.
Cramer Video and Audio Systems
Davis & Sanford Co. Inc.
Diamond Power Specialty Corp. Subs. Babcock & Wilcox Co.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
Hitachi Shibaden Corp. of America
Image Devices Incorporated
Innovative Television Equipment, Inc.
International Video Corp.
Javelin Div. of Apollo Lasers
Listec TV Equip. Corp.
O'Connor Eng. Labs. Inc. Photographic Division
Paillard Incorporated
Panasonic Video Systems Div. Matsushita Electric Corp. of America
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
Precision Laboratories Precision Cine Equipment Corp.
Quick-Set Inc.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Riker Communications Inc.
Sylvania Comm. Electronic Technology Incorporated HF Photo Systems Div.
Tele-Cine Inc.
TeleMation, Inc.
Television Products Co. Inc.
Victor Duncan, Inc.
Video Engineering Co. Inc.
Vikoa Inc.
Waber Electronics Inc. Div. SGL Industries, Inc.
Wilson Corp., H.

Camera Pan and Tilt Heads

Anixter-Pruzan CATV Division
Cramer Video and Audio Systems
Cunningham Corp. Subs. of Gleason Works
Davis & Sanford Co. Inc.
Gates Division of Harris-Intertype
Javelin Div. of Apollo Lasers
Listec TV Equip. Corp.
O'Connor Eng. Labs. Inc. Photographic Division
Technology Incorporated HF Photo Systems Div.
Tele-Cine Inc.
Victor Duncan, Inc.

Camera Remote Control Equipment

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Anixter-Pruzan CATV Division
Arnold Barnes Company
Bristol Div. of Acco
Catel, a Div. of United Scientific Corp. Comquip, Inc.
Cunningham Corp. Subs. of Gleason Works
Diamond Power Specialty Corp. Subs. Babcock & Wilcox Co.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
Innovative Television Equipment, Inc.
Listec TV Equip. Corp.
Moseley Assoc. Inc.
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
Power-Optics Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Sylvania Comm. Electronic
Tektronix Inc.
Tele-Cine Inc.
TeleMation, Inc.
Tele Measurements Inc.
TRACOR, Inc. Instruments Group
Trepac Corp. America
Vicon Industries, Inc.
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television
Visual Educom Inc. MTI Television

Cameras, Closed Circuit B&W

Admiral Corporation
Akai America, Ltd.
Ameco Inc.
Ampex Corp. Audio-Video Systems Division
Anixter-Pruzan CATV Division
A-Tel-A-Matic
ATV Research
Audiotronics Corp.
CATV Equipment Co.
Cohu, Inc. Electronics Division
Colorado Video Inc.
Commercial Elect.
Computer Image Corp.
Comquip, Inc.
Cramer Video and Audio Systems
Denson Electronic Corp.
Diamond Power Specialty Corp. Subs. Babcock & Wilcox Co.
Diebold Incorporated
F&B/Ceco Industries, Inc.
GBC Closed Circuit TV Corp.
Gen. Electrodynamics
GPL Div. Singer Gen.
Gulf Telephone & Electronics
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
International Video Corp.
Javelin Div. of Apollo Lasers
Nasco Television Systems
Panasonic Video Systems Div. Matsushita Electric Corp. of America
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
RCA Corporation RCA Electromagnetic & Aviation Systems Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast Equipment Div.
Singer Co. Simulation Products Div.
Sony Corp. of America
Teledyne Brown Engineering Co. Science & Engrg. Div.
Teledyne Camera Systems
TeleMation, Inc.
Tele Measurements Inc.
Telesync Corp.
Teltron, Inc.
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television
Westinghouse Electric Corp. Electric Tube Div.

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Robert Bosch Corp. 52, 53

Akai America, Ltd.
Ameco Inc.
Ampex Corp. Audio-Video Systems Division
Anixter-Pruzan CATV Division
A-Tel-A-Matic
Arnold Barnes Company
CHESTER ELECTRONIC LABS., INC. GTE Information Systems Inc.
Cohu, Inc. Electronics Division
Commercial Elect.
Cramer Video and Audio Systems
Denson Electronic Corp.
F&B/Ceco Industries, Inc.
GBC Closed Circuit TV Corp.
GPL Div. Singer Gen.
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
International Video Corp.
Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp.
Panasonic Video Systems Div. Matsushita Electric Corp. of America
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RCA Corporation RCA Electromagnetic & Aviation Systems Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Robert Bosch Corp. Fernseh Div.
Singer Co. Simulation Products Div.
Sony Corp. of America
Teledyne Camera Systems
TeleMation, Inc.
Tele Measurements Inc.
Telesync Corp.
Video Engineering Co. Inc.
Westinghouse Electric Corp. Electric Tube Div.

Cameras, Film Chain

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Anixter-Pruzan CATV Division
Arnold Barnes Company
CHESTER ELECTRONIC LABS., INC. GTE Information Systems Inc.
Cohu, Inc. Electronics Division
Commercial Elect.
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
International Video Corp.
Marco Video Systems, Inc.
Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp.
Rank Cintel, Electronic Systems Div.
Rank Precision Industries Ltd.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast Equipment Div.
TeleMation, Inc.
Tele Measurements Inc.
Video Engineering Co. Inc.

Cameras, Film Cine

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Comquip, Inc. 141

ABTO, Inc.
Arriflex Company of America
Camera Mart Inc.
Canon USA, Inc. Optics Division
Cohu, Inc. Electronics Division
Comquip, Inc.
Eastman Kodak Co.
F&B/Ceco Industries, Inc.
GAF Corp.
Image Devices Incorporated
Paillard Incorporated

Precision Laboratories Precision Cine Equipment Corp.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Robert Bosch Corp. Fernseh Div.
Teledyne Camera Systems
Tele Measurements Inc.
Victor Duncan, Inc.
Wilcam Photo Research Inc.

Cameras, Film Still

ABTO, Inc.
Burke & James
Eastman Kodak Co.
GAF Corp.
Paillard Incorporated
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
R. H. Tyler Co. Div. of Weather Scan, Inc.

Cameras, Image Motion Compensation

Dynasciences Corp. Video Products Div.
GBC Closed Circuit TV Corp.
GPL Div. Singer Gen.

Cameras, Surveillance

Anixter-Pruzan CATV Division
A-Tel-A-Matic
ATV Research
Audiotronics Corp.
Arnold Barnes Company
Cohu, Inc. Electronics Division
Comquip, Inc.
Cramer Video and Audio Systems
Diebold Incorporated
Eastman Kodak Co.
GBC Closed Circuit TV Corp.
Gen. Electrodynamics
Hitachi Shibaden Corp. of America
Javelin Div. of Apollo Lasers
Nasco Television Systems
Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp.
Panasonic Video Systems Div. Matsushita Electric Corp. of America
Power-Optics Inc.
Pulse Dynamics Mfg. Corp.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Riker Communications Inc.
Singer Co. Simulation Products Div.
Tele-Cine Inc.
Teledyne Brown Engineering Co. Science & Engrg. Div.
Teledyne Camera Systems
TeleMation, Inc.
Telesync Corp.
Teltron, Inc.
Vicon Industries, Inc.
Victor Duncan, Inc.
Video Engineering Co. Inc.

Cameras, TV B&W Portable Broadcast

Ampex Corp. Audio-Video Systems Division
Anixter-Pruzan CATV Division
CATV Equipment Co.
Cohu, Inc. Electronics Division
Cramer Video and Audio Systems
Denson Electronic Corp.
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
International Video Corp.
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Sony Corp. of America
Teledyne Camera Systems
TeleMation, Inc.
Tele Measurements Inc.
Teltron, Inc.
Video Engineering Co. Inc.
Visual Educom Inc. MTI Television

Cameras, TV B&W Studio Broadcast

Ameco Inc.
Anixter-Pruzan CATV Division
Arnold Barnes Company
Cohu, Inc. Electronics Division
Cramer Video and Audio Systems
Denson Electronic Corp.
GBC Closed Circuit TV Corp.
GPL Div. Singer Gen.
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
International Video Corp.
Marconi Electronics Inc.
Maze Corporation
Norelco, Philips Bcst. Equip. Corp.
Subs. North American Philips Corp.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast Equipment Div.
Sony Corp. of America
TeleMation, Inc.
Tele Measurements Inc.
Teltron, Inc.
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television

Cameras, TV Color Portable Broadcast

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Akai America, Ltd.
Anixter-Pruzan CATV Division
Commercial Elect.
Cramer Video and Audio Systems
Editel Productions
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
GPL Div. Singer Gen.
Ikegami Tsushinki Co., Ltd. Export Department
International Video Corp.
Norelco, Philips Bcst. Equip. Corp.
Subs. North American Philips Corp.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast Equipment Div.
TeleMation, Inc.
Tele Measurements Inc.

Cameras, TV Color Studio Broadcast

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Ameco Inc.
Ampex Corp. Audio-Video Systems Division
Anixter-Pruzan CATV Division
Arnold Barnes Company
CHESTER ELECTRONIC LABS., INC.
GTE Information Systems Inc.
Commercial Elect.
Cramer Video and Audio Systems
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
International Video Corp.
Marconi Electronics Inc.
Maze Corporation
Norelco, Philips Bcst. Equip. Corp.
Subs. North American Philips Corp.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast Equipment Div.

Soll, Inc., Joseph M.
TeleMation, Inc.
Tele Measurements Inc.
Video Engineering Co. Inc.

Cameras, TV Remote Control Broadcast

Commercial Elect.
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
International Video Corp.
Marconi Electronics Inc.
Norelco, Philips Bcst. Equip. Corp.
Subs. North American Philips Corp.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
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Teltron, Inc.
Video Engineering Co. Inc.

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Alto Communications Inc. Broadcast Marketing Div.
Ampro Corp.
Arnold Barnes Company
Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Cine Sonic Sound Inc.
Collins Radio Company Broadcast Division
Dyma Engineering, Inc.
Gates Division of Harris-Intertype
International Tapetronics Corp.
MacKenzie Laboratories, Inc.
Mastertone Company
McCurdy Radio Ind. Inc.
QRK Electronic Prod.
RAPID-Q Div. of Garron Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Schafer Electronics Corp.
Singer Products Co., Inc.
Spotmaster Broadcast Electronics
Systems Engineering Co., Inc.
Systems Marketing Corp. And Sono-Mag Corp.
Telectro Systems Corp.
Visual Electronics Corp.
Wilkinson Electronics, Inc.

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Ampro Corp.
Arnold Barnes Company
Blanchard Electronics
Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Cine Sonic Sound Inc.
Collins Radio Company Broadcast Division
Communication Medias
Dyma Engineering, Inc.
IGM
International Tapetronics Corp.
MacKenzie Laboratories, Inc.
Magnatech Company
Mastertone Company
QRK Electronic Prod.
Radio Mfg. Co. (RMC)
RAPID-Q Div. of Garron Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Spotmaster Broadcast Electronics
Systems Engineering Co., Inc.
Systems Marketing Corp. And Sono-Mag Corp.
Telectro Systems Corp.

Telex Communications Division
VIF International
Visual Electronics Corp.
Wilkinson Electronics, Inc.

Cartridge Machine, Random Access

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Alto Communications Inc. Broadcast Marketing Div.
Ampro Corp.
Autogram Corporation
Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Cine Sonic Sound Inc.
Conrac Corporation Cramer Division
Gates Division of Harris-Intertype IGM
MacKenzie Laboratories, Inc.
Mastertone Company
RAPID-Q Div. of Garron Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Schafer Electronics Corp.
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Systems Marketing Corp. And Sono-Mag Corp.
Telectro Systems Corp.
Telex Communications Division
VIF International
Wilkinson Electronics, Inc.

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Alto Communications Inc. Broadcast Marketing Div.
Ampro Corp.
Arnold Barnes Company
Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Cine Sonic Sound Inc.
Collins Radio Company Broadcast Division
Communication Medias
Contel Mfg. Div. of Continental Electronic Wholesale Corp.
Dyma Engineering, Inc.
Gates Division of Harris-Intertype IGM
International Tapetronics Corp.
LPB Inc.
MacKenzie Laboratories, Inc.
Magnatech Company
Mastertone Company
McCurdy Radio Ind. Inc.
QRK Electronic Prod.
Radio Mfg. Co. (RMC)
RAPID-Q Div. of Garron Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Schafer Electronics Corp.
Schultz Inc., Albert
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Systems Engineering Co., Inc.
Systems Marketing Corp. And Sono-Mag Corp.
Tapecaster TCM, Inc.
Telectro Systems Corp.
Telex Communications Division
Tri-Tronics
Visual Electronics Corp.
Wilkinson Electronics, Inc.

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Broadcast Electronics
Columbia Broadcast Services
Joa Cartridge Service
Lauderdale Electronic Labs
Marathon Broadcast Equip.
Mastertone Company
Qualitape Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Tapex Corporation
Telectro Systems Corp.

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Communication Medias
Mastertone Company
Pentagon Industries, Inc.
Qualitape Inc.
Radio Mfg. Co. (RMC)
Schultz Inc., Albert
Stanton Magnetics Inc.
Tapex Corporation
Telectro Systems Corp.

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Qualitape Inc.

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Birmingham Tape Cartridge Co., Inc.
Broadcast Electronics
Broadcast Products Inc.
Communication Medias
Spotmaster Broadcast Electronics
Tapecaster TCM, Inc.
Telectro Systems Corp.

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Agfa-Gevaert Inc.
Audio Devices, Inc.
Audio Magnetics Corp.
Autogram Corporation

Broadcast Electronics
Broadcast Products Inc.
BSC Incorporated
CCA Electronics Corp.
Cine Sonic Sound Inc.
Collins Radio Company Broadcast
Division
Columbia Broadcast Services
Communication Medias
Conrac Corporation Cramer Division
Contel Mfg. Div. of Continental
Electronic Wholesale Corp.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Fidelipac Division TelePro Industries,
Inc.
Gates Division of Harris-Intertype
Gould Inc. Instrument Systems Div.
IGM
Joa Cartridge Service
Lauderdale Electronic Labs
MaCarta
Magnatech Company
Magnetic Prod. Div. 3M Company
Marathon Broadcast Equip.
Mastertone Company
Memorex Corporation Audio-Video
Group
QRK Electronic Prod.
Qualitape Inc.
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Schultz Inc., Albert
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Systems Engineering Co., Inc.
Systems Marketing Corp. And
Sono-Mag Corp.
Tapecaster TCM, Inc.
Tapex Corporation
Telectro Systems Corp.
Telex Communications Division
Wilkinson Electronics, Inc.

Cartridges, Phono

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AKG Division North Amer. Philips
Corp.
Bell Sound Studios Electro Sound Div.
Bourns, Inc. BPMC Division
Broadcast Electronics
Broadcast Products Inc.
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Communication Medias
Duotone Co. Inc.
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Gates Division of Harris-Intertype
Lauderdale Electronic Labs
LPB Inc.
Mastertone Company
QRK Electronic Prod.
Qualitape Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rek-O-Kut Inc.
Schultz Inc., Albert
Shure Brothers Inc.
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Systems Engineering Co., Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Wilkinson Electronics, Inc.

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Autogram Corporation
Broadcast Electronics
Broadcast Products Inc.
Collins Radio Company Broadcast
Division
Communication Medias
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Fidelipac Division TelePro Industries,
Inc.
Franz Vertriebs-gesellschaft m.b.H.
Gates Division of Harris-Intertype
Lauderdale Electronic Labs
Marathon Broadcast Equip.
Mastertone Company
QRK Electronic Prod.
Qualitape Inc.
Rek-O-Kut Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Systems Marketing Corp. And
Sono-Mag Corp.
Tapex Corporation
Terminal Hudson Corp. Terminal
Hudson Electronics
Wilkinson Electronics, Inc.

Cartridges, Videotape

Anixter-Pruzan CATV Division
Audio Magnetics Corp.
Cramer Video and Audio Systems
International Video Corp.
K'SON Corporation
Magnetic Prod. Div. 3M Company
Mincom Div. 3M Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Schultz Inc., Albert
Tele Measurements Inc.

Cassette Machine, Dual Deck

Broadcast Products Inc.
Pentagon Industries, Inc.
Schafer International

Cassette Machine, Multiple Deck

Broadcast Products Inc.
Conrac Corporation Cramer Division
Pentagon Industries, Inc.
Schafer International

Cassette Machine, Random Access

Ampex Corp. Audio-Video Systems
Division
Broadcast Products Inc.
Conrac Corporation Cramer Division
Schafer International

Cassette Machine, Single Deck

Broadcast Products Inc.
Conrac Corporation Cramer Division
Mincom Div. 3M Co.
Schafer International
Telex Communications Division

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Character Generators

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Ameco Inc.
American Data Corp. an AIRPAX
Company
Atlantic Research Corp. Teleproducts
Dept.
Broadcast Electronics
CBS Labs

Chiron Telesystems Systems
Resources Corp.
Chrono-Log Corp.
Communication Medias
Cooke Engineering Co.
Cramer Video and Audio Systems
Datavision, Inc.
Dyma Engineering, Inc.
Electronic Engineering Co. of California
Marconi Electronics Inc.
Nasco Television Systems
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
SPI-ITT Instruments Metrix Division
Spotmaster Broadcast Electronics
Sterling Television Presentations Inc.
Sterling Communications Co.
Tektronix Inc.
TeleMation, Inc.
TELESTRATOR Industries
Test & Measuring Instruments, Inc. a
North American Philips Co.
Time & Frequency Tech., Inc.
Video Data Systems, Inc.
Video Devices Co.
Video Engineering Co. Inc.
VIF International

Choppers

CCA Electronics Corp.
Comark Industries Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Tektronix Inc.

Chroma Keyers

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Arnold Barnes Company
CBS Labs
Central Dynamics Corp.
Cramer Video and Audio Systems
Danscoll Ltd.
Grass Valley Group, Inc.
Shintron Co. Inc. Video Products Div.
Telemet Co.

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Miller-Stephenson Chemical Co.

Cleaner, Magnetic Tape Head

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Miller-Stephenson
Chemical Co. 21

Ampex Corp. Audio-Video Systems
Division
Audio Magnetics Corp.
Broadcast Electronics
Communication Medias
Duotone Co. Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
G.C. Electronics
Javelin Div. of Apollo Lasers
Lauderdale Electronic Labs
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Mastertone Company
Miller-Stephenson Chemical Co.
Nortronics Co., Inc. Recorder Care Div.
Qualitape Inc.
Spotmaster Broadcast Electronics
Systems Marketing Corp. And
Sono-Mag Corp.
Telectro Systems Corp.
Television Equipment Associates
Texwipe Co.
VIF International

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American Data Corp. an AIRPAX
Company
Audio Devices, Inc.
Bradford Information Systems
Broadcast Electronics
Broadcast Products Inc.
Bulova American Time Products
Cetec Inc. Subs. Computer Equipment
Corp.
Chrono-Log Corp.
Communication Medias
Cooke Engineering Co.
Edwards Company, Inc.
ES Enterprises
Gates Division of Harris-Intertype
General Time Service A Talley
Industries Co.
Harwood Mfg. Co.
IGM
Logiconcepts, Inc.
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Racine & Co., Inc., Jules
Radio Mfg. Co. (RMC)
Spotmaster Broadcast Electronics
Standard Electric Time Div. of Johnson
Service Co.
Systems Marketing Corp. And
Sono-Mag Corp.
Tapecaster TCM, Inc.
TelComp Division Television and
Computer Corp.
Time & Frequency Tech., Inc.
Video Devices Co.
Video Engineering Co. Inc.
Visual Electronics Corp.

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American Data Corp. an AIRPAX
Company
Applied Video Electronics, Inc.
Audio Devices, Inc.
Autogram Corporation
Broadcast Products Inc.
Bulova American Time Products
Chrono-Log Corp.
Conrac Corporation Cramer Division
Cooke Engineering Co.
Datatron, Inc.
ES Enterprises
Kaitronics Corporation
Mastertone Company
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Orbit Radio and Video
PRD Electronics, Inc.
Quasar Microsystems Inc.
Sparta Electronic Corp.
Tapecaster TCM, Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Time & Frequency Tech., Inc.
United Systems Corp. Subs. of
Monsanto Co.
Video Devices Co.
Vitec Communications Ltd.

Clocks, Station Master Control

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Audio Devices, Inc. 45

American Data Corp. an AIRPAX
Company
Audio Devices, Inc.
Arnold Barnes Company
Broadcast Products Inc.
Bulova American Time Products
Chrono-Log Corp.
Conrac Corporation Cramer Division

Dyma Engineering, Inc.
 ES Enterprises
 Gates Division of Harris-Intertype
 Kaitronics Corporation
 Micro-Trak Corporation (Formerly:
 Gray Research & Dev.)
 Quasar Microsystems Inc.
 Radio Mfg. Co. (RMC)
 Standard Electric Time Div. of Johnson
 Service Co.
 Systems Marketing Corp. And
 Sono-Mag Corp.
 Tapecaster TCM, Inc.
 Time & Frequency Tech., Inc.
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Ramko Research

Color Correction Equipment

Ampex Corp. Audio-Video Systems
 Division
 Arnold Barnes Company
 CBS Labs
 Datatek Corp.
 Marconi Electronics Inc.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 Rank Cintel, Electronic Systems Div.
 Rank Precision Industries Ltd.
 Rank Precision Ind. Broadcast Div.
 Riker Communications Inc.
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 Dielectric Communications Div. of Sola
 Basic
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 Sparta Electronic Corp.

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 Andrews Tower Inc.
 Atlantic Research Corp. Teleproducts
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 Belcom Electronics Mfg. Co.
 Cablewave Systems Inc. Subs. Phelps
 Dodge and Kabelmetal
 CCA Electronics Corp.
 Dyma Engineering, Inc.
 General Electric Co. Mobile Radio
 Dept.
 Miles Reproducer Co.
 Moseley Assoc. Inc.
 Paso Sound Products Inc.
 Phelps Dodge Communications Co.
 Div. Phelps Dodge Industries Inc.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Scientific Systems, Inc. Broadcast
 Equipment Div.
 Scintrex Inc. Communications Div.
 Siemens Corporation
 Singer Products Co., Inc.

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 Andrew Corp.
 Andrews Tower Inc.
 Atlantic Research Corp. Teleproducts
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 Belcom Electronics Mfg. Co.
 Cablewave Systems Inc. Subs. Phelps
 Dodge and Kabelmetal
 Dyma Engineering, Inc.
 GTE Lenkurt Incorporated
 Moseley Assoc. Inc.
 Raytheon Company Raytheon Data
 Systems Co.
 RHG Elect Labs, Inc.
 Scientific Systems, Inc. Broadcast
 Equipment Div.
 Scott-Buttner Coastcom, Inc.
 Siemens Corporation
 Singer Products Co., Inc.
 Soladyne International
 Tele Measurements Inc.
 Theta-Com of California AML Division
 Varian Solid State Div. Micro-Link
 Products

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 Catel, a Div. of United Scientific Corp.
 Dorado Systems
 GTE Lenkurt Incorporated
 Moseley Assoc. Inc.
 Raytheon Company Raytheon Data
 Systems Co.
 Scott-Buttner Coastcom, Inc.
 Siemens Corporation
 Singer Products Co., Inc.
 Taft Communication Systems, Inc.
 Trepac Corp. America

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 Belcom Electronics Mfg. Co.
 Cablewave Systems Inc. Subs. Phelps
 Dodge and Kabelmetal
 CCA Electronics Corp.
 Comm/Scope Company
 David Clark Co., Inc.
 Dyma Engineering, Inc.
 GTE Lenkurt Incorporated
 Marti Electronics
 Mastertone Company
 Microwave Assoc. Inc.
 Moseley Assoc. Inc.
 Phelps Dodge Communications Co.
 Div. Phelps Dodge Industries Inc.
 RHG Elect Labs, Inc.
 Scott-Buttner Coastcom, Inc.
 Singer Products Co., Inc.
 Soladyne International
 Tele Measurements Inc.
 Trepac Corp. America
 Varian Solid State Div. Micro-Link
 Products

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Atlantic Research Corp. Teleproducts
 Dept.
 Broadcast Products Inc.
 GTE Lenkurt Incorporated
 Moseley Assoc. Inc.
 Singer Products Co., Inc.
 Trepac Corp. America

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Central Dynamics Corp.
 Compu/Net, Inc.
 Data Disc Inc.
 Datavision, Inc.
 Grass Valley Group, Inc.
 Hewlett Packard Co.
 Moseley Assoc. Inc.
 PRD Electronics, Inc.
 Raytheon Company Raytheon Data
 Systems Co.
 RCA Corporation RCA Missile &
 Surface Radar Div.
 Schafer Electronics Corp.
 STEP Corporation
 Systems Marketing Corp. And
 Sono-Mag Corp.
 Tektronix Inc.
 Union Connector Co., Inc.
 Visual Communication Products Oper.
 General Electric Co.

Connectors, Cable

Amphenol RF Division
 AVA Electronics Corp.
 Arnold Barnes Company
 Blonder-Tongue Labs.
 Enterprise Electronics Corp.
 G.C. Electronics
 General Radio Co.
 Gilbert Engineering Co.
 Hollingsworth Solderless Terminal Co.
 Magnavox Company CATV Division
 Phelps Dodge Communications Co.
 Div. Phelps Dodge Industries Inc.
 Switchcraft Inc.
 Systems Marketing Corp. And
 Sono-Mag Corp.
 Times Wire and Cable Sub. of Insilco
 Corp.
 TRW Electronic Supply Co. Div. of
 TRW
 Video Engineering Co. Inc.
 Wilkinson Electronics, Inc.

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 Ampro Corp.
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 Audio Interface Systems, Inc.
 Autogram Corporation
 Arnold Barnes Company
 Blanchard Electronics
 Broadcast Electronics
 Broadcast Products Inc.
 CCA Electronics Corp.
 Ceco Communications Inc.
 Central Dynamics Corp.

Cetec Inc. Subs. Computer Equipment
 Corp.
 Collins Radio Company Broadcast
 Division
 Communication Medias
 Concept 70, A Div. of Dyma
 Engineering, Inc.
 Delta Electronics Inc. (Va.)
 Dyma Engineering, Inc.
 Electro-Voice Inc. Subs. of Gulton
 Industries, Inc.
 Fairchild/Robbins Fairchild Sound
 Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Granger Assoc.
 IGM
 Ikegami Tsushinki Co., Ltd. Export
 Department
 Lauderdale Electronic Labs
 LPB Inc.
 Mastertone Company
 Maze Corporation
 McCurdy Radio Ind. Inc.
 McMartin Industries
 Neve Inc., Rupert
 Orbit Radio and Video
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 QRK Electronic Prod.
 Radio Mfg. Co. (RMC)
 Ramko Research
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Rupert Neve Incorporated
 Russco Electronics Mfg. Inc.
 Sarks Tarzian Inc. Broadcast
 Equipment Div.
 Scientific Systems, Inc. Broadcast
 Equipment Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spectra Sonics
 Spotmaster Broadcast Electronics
 Systems Engineering Co., Inc.
 TelComp Division Television and
 Computer Corp.
 Tele Measurements Inc.
 Tri-Tronics
 Ultra Audio Products
 United Radio Supply Inc.
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 Industries
 UREI a URC Company
 Visual Communication Products Oper.
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 Arnold Barnes Company
 Blanchard Electronics
 Broadcast Electronics
 Broadcast Products Inc.
 CCA Electronics Corp.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment
 Corp.

Collins Radio Company Broadcast Division
 Communication Medias
 Concept 70, A Div. of Dyma Engineering, Inc.
 Dyma Engineering, Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Ikegami Tsushinki Co., Ltd. Export Department
 Lauderdale Electronic Labs LPB Inc.
 Mastertone Company
 Maze Corporation
 McCurdy Radio Ind. Inc.
 McMartin Industries
 Neve Inc., Rupert
 Orbit Radio and Video
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 QRK Electronic Prod.
 Radio Mfg. Co. (RMC)
 Ramko Research
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rupert Neve Incorporated
 Scientific Systems, Inc. Broadcast Equipment Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spectra Sonics
 Spotmaster Broadcast Electronics
 Systems Engineering Co., Inc.
 TelComp Division Television and Computer Corp.
 Tele Measurements Inc.
 Tri-Tronics
 Ultra Audio Products
 United Radio Supply Inc.
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 Visual Communication Products Oper. General Electric Co.
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 American Electronics, Inc.
 Ampro Corp.
 Audio Designs & Mfg.
 Broadcast Electronics
 Broadcast Products Inc.
 CCA Electronics Corp.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
 Communication Medias
 Concept 70, A Div. of Dyma Engineering, Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 LPB Inc.
 Magnatech Company
 Mastertone Company
 Maze Corporation
 McCurdy Radio Ind. Inc.
 McMartin Industries
 Neve Inc., Rupert
 Orbit Radio and Video
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Pulse Dynamics Mfg. Corp.
 QRK Electronic Prod.
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rupert Neve Incorporated
 Russco Electronics Mfg. Inc.
 Scientific Systems, Inc. Broadcast Equipment Div.
 Sennheiser Electronics Corp.

Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spectra Sonics
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Systems Engineering Co., Inc.
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 Broadcast Prod. Co. Inc. Bcst. Division
 Broadcast Products Inc.
 CCA Electronics Corp.
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 Communication Medias
 Concept 70, A Div. of Dyma Engineering, Inc.
 Dyma Engineering, Inc.
 Elektromesstechnik E M T Wilhelm Franz G M B H
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Gotham Audio Corp.
 Head Sound, Inc.
 IGM
 Lamb Laboratories
 Lang Electronics Inc.
 LPB Inc.
 Magnatech Company
 Magna-Tech Electronic Co., Inc.
 Maze Corporation
 McCurdy Radio Ind. Inc.
 McMartin Industries
 Nemo Recording Labs
 Neve Inc., Rupert
 Orbit Radio and Video
 Pacific Recorders and Engrg. Corp.
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 QRK Electronic Prod.
 Quad-Eight Electronics
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rupert Neve Incorporated
 Scientific Systems, Inc. Broadcast Equipment Div.
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 Systems Engineering Co., Inc.
 TASCAM Corporation
 TelComp Division Television and Computer Corp.
 Total Technology
 Ultra Audio Products
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 Collins Radio Company Broadcast Division
 Communication Medias
 Concept 70, A Div. of Dyma Engineering, Inc.
 Cramer Video and Audio Systems
 Delta Electronics Inc. (Va.)
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 GBC Closed Circuit TV Corp.
 GPL Div. Singer Gen.
 IGM
 Ikegami Tsushinki Co., Ltd. Export Department
 Interntl. Nuclear Corp.
 Lang Electronics Inc.
 LPB Inc.
 Marconi Electronics Inc.
 Maze Corporation
 McCurdy Radio Ind. Inc.
 Neve Inc., Rupert
 Orbit Radio and Video
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 QRK Electronic Prod.
 Quad-Eight Electronics
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Riker Communications Inc.
 Rupert Neve Incorporated
 Sarks Tarzian Inc. Broadcast Equipment Div.
 Scientific Systems, Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spectra Sonics
 Spotmaster Broadcast Electronics
 Systems Engineering Co., Inc.
 TelComp Division Television and Computer Corp.
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 CCA Electronics Corp.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
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 Concept 70, A Div. of Dyma Engineering, Inc.
 Dyma Engineering, Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gates Division of Harris-Intertype
 Head Sound, Inc.
 LPB Inc.
 Magnatech Company
 Mastertone Company
 Maze Corporation
 McMartin Industries
 Neve Inc., Rupert
 QRK Electronic Prod.
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 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rupert Neve Incorporated
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 Central Dynamics Corp.
 CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Cramer Video and Audio Systems
 Danscoll Ltd.
 Gately Electronics
 Gates Division of Harris-Intertype
 GBC Closed Circuit TV Corp.
 Grass Valley Group, Inc.
 Interntl. Nuclear Corp.
 Nasco Television Systems
 Orbit Radio and Video
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Richmond Hill Laboratories Inc.
 Riker Communications Inc.
 Shintron Co. Inc. Video Products Div.
 Singer Co. Simulation Products Div.
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 Applied Video Electronics, Inc.
 Central Dynamics Corp.
 CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Cramer Video and Audio Systems
 Danscoll Ltd.
 Gately Electronics
 Gates Division of Harris-Intertype
 GBC Closed Circuit TV Corp.
 GPL Div. Singer Gen.
 Grass Valley Group, Inc.
 Interntl. Nuclear Corp.
 Marconi Electronics Inc.
 Nasco Television Systems
 Orbit Radio and Video
 Panasonic Video Systems Div.
 Matsushita Electric Corp. of America
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Quad-Eight Electronics
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Richmond Hill Laboratories Inc.
 Riker Communications Inc.
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Shintron Co. Inc. Video Products Div.
 Singer Products Co., Inc.
 Sylvania Comm. Electronic
 TeleMation, Inc.
 Telemet Co.
 Vicon Industries, Inc.
 Video Engineering Co. Inc.
 Viscount Industries Ltd.
 Visual Communication Products Oper. General Electric Co.
 Vital Industries Inc.

Converters

AEL Communications Corp., Subs. American Electronic Labs., Inc.
 Anixter-Pruzan CATV Division
 Berkey-Colortran Inc.
 Bristol Div. of Acco
 Bulova American Time Products
 Catel, a Div. of United Scientific Corp.
 CATV Equipment Co.
 C-COR Electronics, Inc.
 Fung Engineering Co.
 General Electric Company Tubes/MW Devices
 General Microwave Corp.
 Ikegami Tsushinki Co., Ltd. Export Department
 K'SON Corporation
 Lectronic Res. Labs. Inc.
 Magnavox Company CATV Division
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 Conrac Corporation Cramer Division
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 Danscoll Ltd.
 ES Enterprises
 Fluke, John, Mfg. Co. Inc.
 Hewlett Packard Co.

Lectronic Res. Labs. Inc.
 Tapecaster TCM, Inc.
 Test & Measuring Instruments, Inc. a North American Philips Co.
 Time & Frequency Tech., Inc.
 United Systems Corp. Subs. of Monsanto Co.

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 Eidson Electronic Co.

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 Heath Co.
 Sansui Electronics Corp.

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 Moseley Assoc. Inc.
 Scott-Buttner Coastcom, Inc.
 Trepac Corp. America

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 Lauderdale Electronic Labs
 Marathon Broadcast Equip.
 Mastertone Company
 Qualitape Inc.
 Sparta Electronic Corp.

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 Amphenol RF Division
 Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
 Control Concepts Corporation
 Dynasciences Corp. Video Products Div.
 Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
 ESC Electronics Corp.
 Eventide Clock Works Inc. Broadcast Products Div.
 Franz Vertriebs-gesellschaft m.b.H.
 Kappa Networks, Inc.
 Lectronic Res. Labs. Inc.
 Phelps Dodge Communications Co. Div. Phelps Dodge Industries Inc.
 Quad-Eight Electronics
 Tektronix Inc.
 Television Equipment Associates
 Television Microtime, Inc. Subs. Andersen Laboratories, Inc.
 Terminal Hudson Corp. Terminal Hudson Electronics
 Times Wire and Cable Sub. of Insilco Corp.
 United Recording Electronics Industries
 UREI a URC Company

Delay Measuring Set, Envelope

Arnold Barnes Company
 Datatek Corp.
 Dranetz Engineering Labs., Inc.
 Siemens Corporation
 Tektronix Inc.

Telemet Co.
 Test & Measuring Instruments, Inc. a North American Philips Co.

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 Data Disc Inc.
 ESC Electronics Corp.
 Kappa Networks, Inc.
 Television Equipment Associates
 Television Microtime, Inc. Subs. Andersen Laboratories, Inc.

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 Broadcast Electronics
 Broadcast Products Inc.
 Communication Medias
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Fidelipac Division TelePro Industries, Inc.
 Gates Division of Harris-Intertype
 G.C. Electronics
 Joa Cartridge Service
 Lauderdale Electronic Labs
 Marathon Broadcast Equip.
 Mastertone Company
 Minnesota Mining & Mfg. Co.
 Nortronics Co., Inc. Recorder Care Div.
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Recordex Corporation
 Scully/Metrotech Divs. of Dictaphone Corp.
 Shallco, Incorporated
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
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 Arnold Barnes Company
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 Catel, a Div. of United Scientific Corp.
 Comark Industries Inc.
 Conrac Div. Conrac Corp.
 Cramer Video and Audio Systems
 DYNAIR Electronics, Inc.
 EiE-Electronic Industrial Engineering A Division of RCA
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 Kahn Research Lab. Inc.
 National Electrolab Ltd.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RHG Elect Labs, Inc.
 Riker Communications Inc.
 Rohde & Schwarz Sales Co.
 SC Electronics, Inc. Subs. of Audiotronics Corp.
 Scott-Buttner Coastcom, Inc.
 Siemens Corporation
 Telemet Co.
 Universal Media Corp.
 Video Engineering Co. Inc.

Detectors, Microwave

American Electronics Lab., Inc.
 Comark Industries Inc.
 General Electric Company Tubes/MW Devices
 General Microwave Corp.
 General Radio Co.
 Hewlett Packard Co.
 Lectronic Res. Labs. Inc.
 Microwave Assoc. Inc.
 Mosler Electronic Systems Div.
 Narda Microwave Corp., The
 PRD Electronics, Inc.
 RCA Corporation RCA Electromagnetic & Aviation Systems Div.
 Solitron Devices Inc. Semiconductor Div.
 Sylvania Semiconductor
 Test & Measuring Instruments, Inc. a North American Philips Co.
 Texscan Corp.
 Thomson-CSF Electron Tubes

Detectors, RF

Alford Mfg. Co.
 Anixter-Pruzan CATV Division
 Bird Electronic Corp.
 Blender-Tongue Labs.
 CCA Electronics Corp.
 Comark Industries Inc.
 General Microwave Corp.
 General Radio Co.
 Harwald Company
 Kaitronics Corporation
 Kay Elemetrics Corp.
 Lectronic Res. Labs. Inc.
 Microwave Assoc. Inc.
 Narda Microwave Corp., The
 National Electrolab Ltd.
 North American Radio Corp.
 RTI Research Technology Inc.
 Solitron Devices Inc. Semiconductor Div.
 Television Technology Corp.
 Telonic Industries Inc.
 Texscan Corp.
 Thomson-CSF Electron Tubes
 TV Cable Supply Co., Inc.

Detectors, Standing Wave

Bird Electronic Corp.
 Collins Radio Company Broadcast Division
 General Radio Co.
 Hewlett Packard Co.
 Lectronic Res. Labs. Inc.
 Micro Communications, Inc.
 Moseley Assoc. Inc.
 Mosler Electronic Systems Div.
 Narda Microwave Corp., The
 PRD Electronics, Inc.
 Rohde & Schwarz Sales Co.
 Telonic Industries Inc.
 Texscan Corp.

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 CCA Electronics Corp.
 CCA RF Industries, Inc.
 Collins Radio Company Broadcast Division
 Comark Industries Inc.
 Continental Electronics Mfg. Co.

Electromagnetic Specialties
Ikegami Tsushinki Co., Ltd. Export
Department
Integral Data Devices Inc.
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Micro Communications, Inc.
Microwave Assoc. Inc.
Multronics, Inc.
Narda Microwave Corp., The
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
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General Television Ntwk.
GPL Div. Singer Gen.
Ikegami Tsushinki Co., Ltd. Export
Department
Marconi Electronics Inc.
OMNIX
Photo Research Div. of Kollmorgen
Corp.
Reynolds/Leteron Co.
Robert Bosch Corp. Fernseh Div.
Shintron Co. Inc. Video Products Div.
Sterling Television Presentations Inc.
Sterling Communications Co.
Sylvania Comm. Electronic
Tektronix Inc.
Teledyne Brown Engineering Co.
Science & Engrg. Div.
TeleMation, Inc.
TELESTRATOR Industries
Telesync Corp.
Theta-Com of California AML Division
Ultra Audio Products
Video Data Systems, Inc.
Video Devices Co.
Video Engineering Co. Inc.
Westinghouse Electric Corp. Electric
Tube Div.
Wilson Corp., H.

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ES Enterprises

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Company
Autogram Corporation
Datavision, Inc.
Time & Frequency Tech., Inc.

Dividers, Frequency

Bulova American Time Products
General Electric Company Tubes/MW
Devices
Hartley Prod. Corp.
Total Technology

Dividers, Power

Alford Mfg. Co.
Bird Electronic Corp.
Collins Radio Company Broadcast
Division
Dielectric Communications Div. of Sola
Basic
Enterprise Electronics Corp.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Lectronic Res. Labs. Inc.
Micro Communications, Inc.
Microwave Assoc. Inc.
Moseley Assoc. Inc.
Multronics, Inc.
Narda Microwave Corp., The
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Scala Radio Corp.
Shively Laboratories, Inc.
Tektronix Inc.
Trompeter Electronics
Weinschel Engineering Co.

Dividers, Voltage

Burwen Laboratories
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Enterprise Electronics Corp.
Fluke, John, Mfg. Co. Inc.
General Electric Company Tubes/MW
Devices
General Radio Co.
Hickok Elect. Instrument
ITT Jennings
Lectronic Res. Labs. Inc.
RCA Corporation RCA Electronic
Components
Shallco, Incorporated
Tech Laboratories Inc.

Dust Control Unit, Video

Enviroco
Liberty Industries

Edit Code Generator

Central Dynamics Corp.
Electronic Engineering Co. of California
Kaitronics Corporation
Quad-Eight Electronics
Recortec Inc.
Telemet Co.

Edit Code Receiver

Central Dynamics Corp.
Electronic Engineering Co. of California
Kaitronics Corporation
Telemet Co.

Editors, Audio Tape

Broadcast Electronics
Central Dynamics Corp.
ELPA Marketing Industries, Inc.
Marathon Broadcast Equip.
Nemo Recording Labs
Radio Mfg. Co. (RMC)
Spotmaster Broadcast Electronics

Editors, Film

CMX Systems
Comquip, Inc.
F&B/Ceco Industries, Inc.
Harwald Company
Kalart Victor Corp.
Lipsner-Smith Corp.
Neumade Prod. Corp.
Precision Laboratories Precision Cine
Equipment Corp.
RTI Research Technology Inc.
Victor Duncan, Inc.

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Division
Arnold Barnes Company
Central Dynamics Corp.
CMX Systems
Cramer Video and Audio Systems
Datatron, Inc.
Dynasciences Corp. Video Products
Div.
Electronic Engineering Co. of California
GBC Closed Circuit TV Corp.
Gotham Audio Corp.
Kaitronics Corporation
Nortronics Co., Inc. Recorder Care Div.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Tele-Cine Inc.
Telemet Co.
Video Aids Corp. of Colorado
Video Devices Co.
Video Engineering Co. Inc.

Enclosures, Module Card Tray

Bud Radio Inc.
Quad-Eight Electronics
Roh Corporation

Encoding Systems, Quad

CBS Labs
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Gately Electronics
Sansui Electronics Corp.

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American Data Corp. an AIRPAX
Company
Arnold Barnes Company
CHESTER ELECTRONIC LABS., INC.
GTE Information Systems Inc.
Computer Image Corp.
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
Lenco Inc. Electronics Division
Marco Video Systems, Inc.
Marconi Electronics Inc.
Mincom Div. 3M Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Richmond Hill Laboratories Inc.
Robert Bosch Corp. Fernseh Div.
TeleMation, Inc.
Tele Measurements Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Engineering Co. Inc.

Encoder, Four Channel Stereo

Audio Designs & Mfg.
CBS Labs
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Gately Electronics
Sansui Electronics Corp.

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Arnold Barnes Company
CBS Labs
Cohu, Inc. Electronics Division
Dynasciences Corp. Video Products
Div.
Gates Division of Harris-Intertype
Grass Valley Group, Inc.
OMNIX
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Shintron Co. Inc. Video Products Div.
Tele Measurements Inc.
Video Engineering Co. Inc.

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ALTEC
Audio Designs & Mfg.
Audio Distributor Inc.
Burwen Laboratories
CBS Labs
Central Dynamics Corp.
Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
Communication Medias
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gately Electronics
Head Sound, Inc.
Lang Electronics Inc.
Maze Corporation
McCurdy Radio Ind. Inc.
Melcor Electronics Corp.
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Neve Inc., Rupert
Novatec Electronic Industries Ltd.
Orbit Radio and Video
Pulse Techniques Inc.
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Roh Corporation
Rupert Neve Incorporated
Shallco, Incorporated
Spectra Sonics
Spectrum Instruments, Inc.
Systems Engineering Co., Inc.
TT Electronics, Inc.
Ultra Audio Products
United Recording Electronics
Industries
UREI a URC Company

Equalizers, Vertical Aperture

CBS Labs
Dynasciences Corp. Video Products
Div.
Grass Valley Group, Inc.
Mincom Div. 3M Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Video Engineering Co. Inc.

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Grass Valley Group, Inc.

Grass Valley Group, Inc. 3

Grass Valley Group, Inc.

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Beau Motor Division U.M.C. Electronics Co.
 Broadcast Electronics
 Broadcast Products Inc.
 Collins Radio Company Broadcast Division
 Communication Medias
 Duotone Co. Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Fidelipac Division TelePro Industries, Inc.
 Gates Division of Harris-Intertype
 G.C. Electronics
 International Tapetronics Corp.
 Joa Cartridge Service
 Mastertone Company
 MINNEAPOLIS MAGNETICS, INC.
 Nortronics Co., Inc. Recorder Care Div.
 Precision Laboratories Precision Cine Equipment Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Recordex Corporation
 Recortec Inc.
 Schultz Inc., Albert
 Senstrol Division UMC Electronics Co.
 Shallco, Incorporated
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Taber Mfg. & Engr. Co.

Exciters, AM

Arnold Barnes Company
 CCA Electronics Corp.
 Continental Electronics Mfg. Co.
 Gates Division of Harris-Intertype
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Siemens Corporation
 Wilkinson Electronics, Inc.

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American Electronics Lab., Inc.
 Arnold Barnes Company
 Belar Electronics Lab., Inc.
 CCA Electronics Corp.
 Collins Radio Company Broadcast Division
 Dyma Engineering, Inc.
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 Granger Assoc.
 Magnatech Company
 Mastertone Company
 McMartin Industries
 North American Radio Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RHG Elect Labs, Inc.
 Rohde & Schwarz Sales Co.
 Siemens Corporation
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Exciters, SCA

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Moseley Assoc. Inc. 7

American Electronics Lab., Inc.
 CCA Electronics Corp.
 Collins Radio Company Broadcast Division
 Dyma Engineering, Inc.
 Gates Division of Harris-Intertype
 Mastertone Company
 McMartin Industries
 Moseley Assoc. Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Sparta Electronic Corp.

Wilkinson Electronics, Inc.

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Moseley Assoc. Inc. 7

American Electronics Lab., Inc.
 CCA Electronics Corp.
 Collins Radio Company Broadcast Division
 Dyma Engineering, Inc.
 Gates Division of Harris-Intertype
 Mastertone Company
 McMartin Industries
 Moseley Assoc. Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Film, Photographic

ABTO, Inc.
 Agfa-Gevaert Inc.
 Comquip, Inc.
 Eastman Kodak Co.
 F&B/Ceco Industries, Inc.
 GAF Corp.
 Image Devices Incorporated

Film Chain Light Level Control

Beston Electronics Inc.
 Gates Division of Harris-Intertype
 TeleMation, Inc.

Film Chain System

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Ameco Inc.
 Arnold Barnes Company
 Bell & Howell Consumer Products Group
 Blonder-Tongue Labs.
 CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Cohu, Inc. Electronics Division
 Comquip, Inc.
 Cramer Video and Audio Systems
 Diamond Power Specialty Corp. Subs.
 Babcock & Wilcox Co.
 Gates Division of Harris-Intertype
 International Video Corp.
 Kalart Victor Corp.
 L-W Photo, Inc.
 Marco Video Systems, Inc.
 Marconi Electronics Inc.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 Rank Cintel, Electronic Systems Div.
 Rank Precision Industries Ltd.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Riker Communications Inc.
 Robert Bosch Corp. Fernseh Div.
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Singer Co. Simulation Products Div.
 Soll, Inc., Joseph M.
 TeleMation, Inc.
 Tele Measurements Inc.
 Video Engineering Co. Inc.
 Visual Communication Products Oper.
 General Electric Co.

Film Processing Chemicals, B&W

Eastman Kodak Co.
 GAF Corp.
 Harwald Company
 Hunt Chemical Corp., Philip A.
 RTI Research Technology Inc.

Film Processing Chemicals, Color

Eastman Kodak Co.
 GAF Corp.
 Harwald Company
 Hunt Chemical Corp., Philip A.

Norelco, Philips Bcst. Equip. Corp.
 Subs. North American Philips Corp.
 RTI Research Technology Inc.

Film Processing Services

Eastman Kodak Co.
 Jamieson Film Co.
 Lipsner-Smith Corp.
 Photo Lab Inc.
 Treise Engineering

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 Head Sound, Inc.
 Multimetrics Industries Div. of Comstron Corp.
 Siemens Corporation
 Spectra Sonics
 Total Technology
 TT Electronics, Inc.
 United Recording Electronics Industries
 UREI a URC Company

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Gates 10

Ameco Inc.
 Anixter-Prusan CATV Division
 Barker & Williamson, Inc.
 Bird Electronic Corp.
 Continental Electronics Mfg. Co.
 Gates Division of Harris-Intertype
 G.C. Electronics
 Jampro Antenna Co. Div. of Computer Equipment Corp.
 Micro Communications, Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Telonic Industries Inc.
 TT Electronics, Inc.
 Video Engineering Co. Inc.

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Broadcast Products Inc.
 ELPA Marketing Industries, Inc.
 Gately Electronics
 Multimetrics Industries Div. of Comstron Corp.
 Neve Inc., Rupert
 Novatec Electronic Industries Ltd.
 Pulse Techniques Inc.
 Quad-Eight Electronics
 Radio Mfg. Co. (RMC)
 Roh Corporation
 Rupert Neve Incorporated
 Scott-Buttner Coastcom, Inc.
 Solar Electronics Co.
 Spectra Sonics
 Spectrum Instruments, Inc.
 Total Technology
 TT Electronics, Inc.
 United Recording Electronics Industries
 UREI a URC Company

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 Burwen Laboratories
 Central Dynamics Corp.
 Gately Electronics
 Multimetrics Industries Div. of Comstron Corp.
 Neve Inc., Rupert
 Novatec Electronic Industries Ltd.
 Quad-Eight Electronics
 Rupert Neve Incorporated
 Scott-Buttner Coastcom, Inc.
 Solar Electronics Co.
 TT Electronics, Inc.
 UREI a URC Company

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Bourns, Inc. BPMC Division
 Comark Industries Inc.
 ESC Electronics Corp.
 Gately Electronics
 Multimetrics Industries Div. of Comstron Corp.
 Multronics, Inc.
 Pulse Techniques Inc.
 Quad-Eight Electronics
 Scott-Buttner Coastcom, Inc.
 Solar Electronics Co.
 Telonic Industries Inc.
 Total Technology
 TT Electronics, Inc.
 UREI a URC Company

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Evedite Clock Works Inc. Broadcast Products Div.
 Gately Electronics
 Neve Inc., Rupert
 Pulse Techniques Inc.
 Radio Mfg. Co. (RMC)
 Rupert Neve Incorporated
 TT Electronics, Inc.

Filters, Variable and Fixed Tuned

Gately Electronics
 Multimetrics Industries Div. of Comstron Corp.
 Multronics, Inc.
 Neve Inc., Rupert
 Rupert Neve Incorporated
 Scott-Buttner Coastcom, Inc.
 Spectra Sonics
 Television Equipment Associates
 Telonic Industries Inc.
 Total Technology
 TT Electronics, Inc.

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Audio-Video Engineering Co.
 Comark Industries Inc.
 Datatek Corp.
 ESC Electronics Corp.
 Multimetrics Industries Div. of Comstron Corp.
 Scott-Buttner Coastcom, Inc.
 Tektronix Inc.
 Television Equipment Associates
 TT Electronics, Inc.

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ALTEC

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Ailtech (Formerly: Microdot)
ALTEC
B & K Instruments Inc.
Conway Electronic Enterprises Limited
ELPA Marketing Industries, Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Hewlett Packard Co.
Hickok Elect. Instrument
Radio Mfg. Co. (RMC)
Siemens Corporation
Telonic Industries Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Total Technology
United Recording Electronics
Industries
UREI a URC Company

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CBS Labs
Central Dynamics Corp.
Danscoll Ltd.
Dynasciences Corp. Video Products
Div.
Grass Valley Group, Inc.
OMNIX
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Shintron Co. Inc. Video Products Div.
TeleMation, Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Data Systems, Inc.

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Alpha Electronic Services Inc.
American Data Corp. an AIRPAX
Company
CBS Labs
Central Dynamics Corp.
Cohu, Inc. Electronics Division
Datapulse Div. of Systron-Donner
Dragnet Engineering Labs., Inc.
Dynasciences Corp. Video Products
Div.
Grass Valley Group, Inc.
Ikegami Tsushinki Co., Ltd. Export
Department
Lenco Inc. Electronics Division
OMNIX
Rohde & Schwarz Sales Co.
Shintron Co. Inc. Video Products Div.
Tektronix Inc.
TeleMation, Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Engineering Co. Inc.

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OMNIX 42
American Data Corp. an AIRPAX
Company
Applied Electro Mechanics, Inc.
Arnold Barnes Company

CBS Labs
Cohu, Inc. Electronics Division
Dyma Engineering, Inc.
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Engineering Associates
Heath Co.
Hickok Elect. Instrument
Ikegami Tsushinki Co., Ltd. Export
Department
Internatl. Nuclear Corp.
Leader Instruments Corp.
Lectrotech Inc.
Marconi Electronics Inc.
Marconi Instruments
Mincom Div. 3M Co.
OMNIX
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Robert Bosch Corp. Fernseh Div.
Shintron Co. Inc. Video Products Div.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Telemet Co.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Troy Electronic Sales Co.
Video Engineering Co. Inc.

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Ameco Inc.
American Data Corp. an AIRPAX
Company
Arnold Barnes Company
CBS Labs
Central Dynamics Corp.
Control Concepts Corporation
Cramer Video and Audio Systems
Danscoll Ltd.
Dyma Engineering, Inc.
Dynasciences Corp. Video Products
Div.
Grass Valley Group, Inc.
Lenco Inc. Electronics Division
Panasonic Video Systems Div.
Matsushita Electric Corp. of
America
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Rohde & Schwarz Sales Co.
Tektronix Inc.
TeleMation, Inc.
Telemet Co.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Aids Corp. of Colorado
Video Engineering Co. Inc.

Generators, Convergence

CBS Labs
Dynasciences Corp. Video Products
Div.
Lectrotech Inc.
Tektronix Inc.

Generators, Digital Sync

American Data Corp. an AIRPAX
Company
CBS Labs
Central Dynamics Corp.
Control Concepts Corporation
Electronic Designers Inc.
Lenco Inc. Electronics Division
Test & Measuring Instruments, Inc. a
North American Philips Co.

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American Electronics Lab., Inc.
Catel, a Div. of United Scientific Corp.
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Gates Division of Harris-Intertype
Leader Instruments Corp.
Magnatech Company
Marti Electronics
Mastertone Company
McMartin Industries
Moseley Assoc. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Rohde & Schwarz Sales Co.
Scott-Buttner Coastcom, Inc.
Singer Products Co., Inc.
Sparta Electronic Corp.
Tektronix Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Wilkinson Electronics, Inc.

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Dynasciences Corp. 37

American Data Corp. an AIRPAX
Company
Arnold Barnes Company
CBS Labs
Dyma Engineering, Inc.
Dynasciences Corp. Video Products
Div.
Marconi Electronics Inc.
OMNIX
Rohde & Schwarz Sales Co.
Shintron Co. Inc. Video Products Div.
Tektronix Inc.
TeleMation, Inc.
Telemet Co.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Engineering Co. Inc.

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General Electric Company Tubes/MW
Devices
Kato Engineering Co.
Onan
Singer Products Co., Inc.

Generators, Powered (Gasoline Engine)

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F&B/Ceco Industries, Inc.
Kato Engineering Co.
Mole Richardson Co.
Onan
Singer Products Co., Inc.
TV Cable Supply Co., Inc.

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CCA Electronics Corp.
Gates Division of Harris-Intertype
Mastertone Company
McMartin Industries
Moseley Assoc. Inc.
Sparta Electronic Corp.

Tektronix Inc.
Wilkinson Electronics, Inc.

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Ailtech (Formerly: Microdot)
ALTEC
Barker & Williamson, Inc.
Bulova American Time Products
Control Concepts Corporation
Conway Electronic Enterprises Limited
Datapulse Div. of Systron-Donner
Delta Electronics Inc. (N.C.)
Dragnet Engineering Labs., Inc.
Dyma Engineering, Inc.
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
ELPA Marketing Industries, Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gates Division of Harris-Intertype
General Radio Co.
Gibbs Mfg. & Research Co.
Heath Co.
Hewlett Packard Co.
Instrument Laboratories
Kay Elemetrics Corp.
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Marconi Instruments
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Roh Corporation
Rohde & Schwarz Sales Co.
Siemens Corporation
SPI-ITT Instruments Metrix Division
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Texscan Corp.
TM Systems, Inc.
Total Technology
United Recording Electronics
Industries
UREI a URC Company

Generators, Signal Dot Bar

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OMNIX 42

American Data Corp. an AIRPAX
Company
Arnold Barnes Company
CBS Labs
Colorado Video Inc.
Control Concepts Corporation
Dyma Engineering, Inc.
Eico Elect. Inst. Co., Inc.
Grass Valley Group, Inc.
Heath Co.
Leader Instruments Corp.
Lectrotech Inc.
Marconi Electronics Inc.
Marconi Instruments
OMNIX
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Robert Bosch Corp. Fernseh Div.
Sencore Inc.
Shintron Co. Inc. Video Products Div.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Telemet Co.
Troy Electronic Sales Co.
Video Engineering Co. Inc.

Generators, Signal Marker

Blonder-Tongue Labs.
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Kay Elemetrics Corp.

Leader Instruments Corp.
Lectrotech Inc.
Marconi Instruments
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Telonic Industries Inc.
Troy Electronic Sales Co.
Video Engineering Co. Inc.

Generators, Signal Pulse

Acrodyne Industries
Ailtech (Formerly: Microdot)
Atlantic Research Corp. Teleproducts
Dept.
B & K Instruments Inc.
Bulova American Time Products
Central Dynamics Corp.
Control Concepts Corporation
Datapulse Div. of Systron-Donner
Delta Electronics Inc. (Va.)
Dragnet Engineering Labs., Inc.
Dynasciences Corp. Video Products
Div.
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
F&B/Ceco Industries, Inc.
Hewlett Packard Co.
Kay Elemetrics Corp.
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Marconi Electronics Inc.
Marconi Instruments
Narda Microwave Corp., The
PRD Electronics, Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Ryder Magnetic Sales Corp.
Spencer-Kennedy Labs., Inc.
Tasker Systems Div. of Whittaker
Corp.
Tektronix Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Trepac Corp. America
United Systems Corp. Subs. of
Monsanto Co.
Video Engineering Co. Inc.

Generators, Signal RF

Acrodyne Industries
Ailtech (Formerly: Microdot)
Blonder-Tongue Labs.
Boonton Electronics
C-COR Electronics, Inc.
Collins Radio Company Broadcast
Division
Conway Electronic Enterprises Limited
Delta Electronics Inc. (Va.)
Dynascan Corp. B & K Division
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Eico Elect. Inst. Co., Inc.
Engineering Associates
Enterprise Electronics Corp.
General Radio Co.
Gibbs Mfg. & Research Co.
Heath Co.
Hewlett Packard Co.
Kay Elemetrics Corp.
Lampkin Lab. Inc.
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Marconi Electronics Inc.
Marconi Instruments
Narda Microwave Corp., The
PRD Electronics, Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Rohde & Schwarz Sales Co.
Sadelco, Inc.
Siemens Corporation
Singer Instrumentation Los Angeles
Operation
Singer Co., The Palo Alto Operation

Spencer-Kennedy Labs., Inc.
SPI-ITT Instruments Metrix Division
Tasker Systems Div. of Whittaker
Corp.
Telonic Industries Inc.
Texscan Corp.
United Systems Corp. Subs. of
Monsanto Co.

Generators, Signal Square Wave

Acrodyne Industries
Ailtech (Formerly: Microdot)
American Data Corp. an AIRPAX
Company
Atlantic Research Corp. Teleproducts
Dept.
Bulova American Time Products
Conway Electronic Enterprises Limited
Datapulse Div. of Systron-Donner
Dynascan Corp. B & K Division
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Eico Elect. Inst. Co., Inc.
General Radio Co.
Gibbs Mfg. & Research Co.
Heath Co.
Hewlett Packard Co.
Leader Instruments Corp.
Marconi Instruments
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Rohde & Schwarz Sales Co.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Telemet Co.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Total Technology
Troy Electronic Sales Co.
United Recording Electronics
Industries
United Systems Corp. Subs. of
Monsanto Co.
UREI a URC Company
Weinschel Engineering Co.

Generators, Signal TV Synchronizing

American Data Corp. an AIRPAX
Company
Arnold Barnes Company
CBS Labs
Central Dynamics Corp.
Chrono-Log Corp.
Cleveland Electronics, Inc.
Cohu, Inc. Electronics Division
Colorado Video Inc.
Control Concepts Corporation
Cramer Video and Audio Systems
Dyma Engineering, Inc.
DYN AIR Electronics, Inc.
Dynasciences Corp. Video Products
Div.
Electronic Designers Inc.
Enterprise Electronics Corp.
GPL Div. Singer Gen.
Grass Valley Group, Inc.
Ikegami Tsushinki Co., Ltd. Export
Department
Internatl. Nuclear Corp.
Marconi Electronics Inc.
Marconi Instruments
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Richmond Hill Laboratories Inc.
Robert Bosch Corp. Fernseh Div.
Rohde & Schwarz Sales Co.
Shintron Co. Inc. Video Products Div.
Sylvania Comm. Electronic
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Telemet Co.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Texscan Corp.

TRACOR, Inc. Instruments Group
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television
Visual Educom Inc. MTI Television

Generators, Signal VITS

American Data Corp. an AIRPAX
Company
CBS Labs
Electronic Designers Inc.
Marconi Instruments
Richmond Hill Laboratories Inc.
Rohde & Schwarz Sales Co.
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Telemet Co.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Engineering Co. Inc.

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Ameco Inc.
American Data Corp. an AIRPAX
Company
Applied Electro Mechanics, Inc.
Ball Bros. Research Corp. Miratel
Division
Central Dynamics Corp.
Cleveland Electronics, Inc.
Colorado Video Inc.
Cramer Video and Audio Systems
Danscoll Ltd.
DYN AIR Electronics, Inc.
Grass Valley Group, Inc.
Hitachi Shibaden Corp. of America
Internatl. Nuclear Corp.
Leader Instruments Corp.
Marconi Electronics Inc.
Modern Video Engineering Co.
OMNIX
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Richmond Hill Laboratories Inc.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Shintron Co. Inc. Video Products Div.
Singer Co. Simulation Products Div.
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Telemet Co.
TELESTRATOR Industries
Total Technology
Ultra Audio Products
Video Engineering Co. Inc.
Viscount Industries Ltd.
Vital Industries Inc.

Generators, Staircase

American Data Corp. an AIRPAX
Company
CBS Labs
Colorado Video Inc.
Control Concepts Corporation
Marconi Instruments
OMNIX
Richmond Hill Laboratories Inc.
Rohde & Schwarz Sales Co.
Tektronix Inc.
TeleMation, Inc.
Telemet Co.
Video Engineering Co. Inc.
VIF International

Generators, Stereo

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American Electronics Lab., Inc.
Catel, a Div. of United Scientific Corp.
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Fung Engineering Co.
Heath Co.
Leader Instruments Corp.
Mastertone Company
Moseley Assoc. Inc.
RCA Corporation RCA Electronic
Components
Rohde & Schwarz Sales Co.
Sparta Electronic Corp.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Wilkinson Electronics, Inc.

Generators, Subcarrier

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CBS Labs
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Control Concepts Corporation
Shintron Co. Inc. Video Products Div.
Sparta Electronic Corp.

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American Data Corp. an AIRPAX
Company
Arnold Barnes Company
Bulova American Time Products
CBS Labs
Ceco Communications Inc.
Cohu, Inc. Electronics Division
Control Concepts Corporation
Cramer Video and Audio Systems
Danscoll Ltd.
Datapulse Div. of Systron-Donner
DYN AIR Electronics, Inc.
Dynasciences Corp. Video Products
Div.
Electronic Designers Inc.
Enterprise Electronics Corp.
Gates Division of Harris-Intertype
Gen. Electrodynamics
Grass Valley Group, Inc.
Hitachi Shibaden Corp. of America
Internatl. Nuclear Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Rohde & Schwarz Sales Co.
Shintron Co. Inc. Video Products Div.
Tektronix Inc.
TeleMation, Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Aids Corp. of Colorado
Video Engineering Co. Inc.

Generators, Thermoelectric

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Teledyne Isotopes Energy Systems
Division

Generators, Time Code (Reader)

Scully/Metrotech Divs. of Dictaphone
Corp.

Generators, Video Carrier

Enterprise Electronics Corp.
Rohde & Schwarz Sales Co.
Tektronix Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
TRACOR, Inc. Instruments Group
Video Engineering Co. Inc.

Generators, Video Sweep

Ailtech (Formerly: Microdot)
Leader Instruments Corp.
Lectrotech Inc.
Marconi Electronics Inc.
Marconi Instruments
RCA Corporation RCA Electronic
Components
Rohde & Schwarz Sales Co.
SPI-ITT Instruments Matrix Division
Tektronix Inc.
Telemet Co.
Telonic Industries Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Troy Electronic Sales Co.

Head Alignment Gauge

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Sparta Electronic Corp.

Head Cleaning Products, Video

Nortronics Co., Inc. Recorder Care Div.

Head Nest Rebuilding Services

Communication Medias
Mastertone Company
Nortronics Co., Inc. Recorder Care Div.
Radio Mfg. Co. (RMC)
Taber Mfg. & Engr. Co.

Headphones, Announcers Earpiece

Broadcast Electronics
Broadcast Products Inc.
Collins Radio Company Broadcast
Division
Communication Medias
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Lauderdale Electronic Labs
Mastertone Company
Spotmaster Broadcast Electronics
Telex Communications Division
Wilkinson Electronics, Inc.

Headphones, Broadcast Monitoring

Beyer (Revox Corporation)
Broadcast Electronics
Broadcast Products Inc.
Collins Radio Company Broadcast
Division
Communication Medias
Conway Electronic Enterprises Limited
F&B/Ceco Industries, Inc.
Koss Corp
Lauderdale Electronic Labs
Mastertone Company
Maze Corporation
Pulse Dynamics Mfg. Corp.
Scintrex Inc. Communications Div.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Television Equipment Associates
Telex Communications Division
VIF International
Wilkinson Electronics, Inc.

Headphones, Mono

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AKG Division North Amer. Philips
Corp.
Beyer (Revox Corporation)
Broadcast Electronics
Broadcast Products Inc.
Collins Radio Company Broadcast
Division
Communication Medias
Conway Electronic Enterprises Limited
David Clark Co., Inc.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
G.C. Electronics
Gotham Audio Corp.
Heath Co.
Koss Corp
Lauderdale Electronic Labs
Magnatech Company
Mastertone Company
Paso Sound Products Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Scintrex Inc. Communications Div.
Sennheiser Electronics Corp.
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Superscope, Inc.
Systems Engineering Co., Inc.
Television Equipment Associates
Telex Communications Division
Terminal Hudson Corp. Terminal
Hudson Electronics
Victor Duncan, Inc.
Video Engineering Co. Inc.
VIF International
Wilkinson Electronics, Inc.

Headphones, Stereo

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Associates..... 139

AKG Division North Amer. Philips
Corp.
Astrocom Electronics, Inc.
Beyer (Revox Corporation)
Broadcast Electronics
Broadcast Products Inc.
Collins Radio Company Broadcast
Division
Communication Medias
Conway Electronic Enterprises Limited
David Clark Co., Inc.
Duotone Co. Inc.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
G.C. Electronics
Heath Co.
Koss Corp
Lauderdale Electronic Labs
Mastertone Company
Paso Sound Products Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Sansui Electronics Corp.
Scintrex Inc. Communications Div.
Sennheiser Electronics Corp.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Superscope, Inc.
Systems Engineering Co., Inc.
Television Equipment Associates
Telex Communications Division
Victor Duncan, Inc.
Video Engineering Co. Inc.
VIF International
Wilkinson Electronics, Inc.

Head, Contactor

Nortronics Co., Inc. Recorder Care Div.

Heads, Erase Magnetic

Broadcast Electronics
Broadcast Products Inc.

Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
Communication Medias
ELPA Marketing Industries, Inc.
Gates Division of Harris-Intertype
Joa Cartridge Service
Lipps Inc.
Magnusonic Devices Inc.
Mastertone Company
Michigan Magnetics
MINNEAPOLIS MAGNETICS, INC.
Norton Assoc. Inc.
Nortronics Co., Inc. Recorder Care Div.
Precision Laboratories Precision Cine
Equipment Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Recortec Inc.
Spin Physics, Inc.
Spotmaster Broadcast Electronics
Taber Mfg. & Engr. Co.

Heads, Film Stripe

Nortronics Co., Inc. Recorder Care Div.

Heads, Reconditioned or Reconditioning Services for Video

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Computer Magnetics Corp.

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Broadcast Electronics
Computer Magnetics Corp.
MINNEAPOLIS MAGNETICS, INC.
Nortronics Co., Inc. Recorder Care Div.
Taber Mfg. & Engr. Co.

Heads, Recording Magnetic

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Taber Mfg. & Engr.
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Broadcast Electronics
Broadcast Products Inc.
Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
Communication Medias
Hitachi Shibaden Corp. of America
Joa Cartridge Service
Lipps Inc.
Magnusonic Devices Inc.
Mastertone Company
Michigan Magnetics
MINNEAPOLIS MAGNETICS, INC.
Norton Assoc. Inc.
Nortronics Co., Inc. Recorder Care Div.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Recordex Corporation
Spin Physics, Inc.
Spotmaster Broadcast Electronics
Taber Mfg. & Engr. Co.
Tapecaster TCM, Inc.
Video Engineering Co. Inc.
Vikron

Headset with Microphone

AKG Division North Amer. Philips
Corp.
Broadcast Products Inc.
Conway Electronic Enterprises Limited

David Clark Co., Inc.
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Gates Division of Harris-Intertype
Hitachi Shibaden Corp. of America
Magnatech Company
Mastertone Company
Paso Sound Products Inc.
Pulse Dynamics Mfg. Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Scintrex Inc. Communications Div.
Sennheiser Electronics Corp.
Telectro Systems Corp.
Television Equipment Associates
Telex Communications Division
Video Aids Corp. of Colorado
Video Engineering Co. Inc.
VIF International

Heater, Antenna Control

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Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Mastertone Company
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Valad Electric Heating Corp.
Wilkinson Electronics, Inc.

Heaters, Station Van

Precision Laboratories Precision Cine
Equipment Corp.
Valad Electric Heating Corp.

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Audio-Video Engineering Co.
TeleMation, Inc.
Video Engineering Co. Inc.

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Alcor Inc.
Alma Engineering Inc.
American Data Corp. an AIRPAX
Company
Ampex Corp. Audio-Video Systems
Division
Anaconda Electronics
Applied Video Electronics, Inc.
ATV Research
Audiotronics Corp.
AVA Electronics Corp.
Ball Bros. Research Corp. Miratel
Division
Arnold Barnes Company
Berkey-Colortran Inc.
Blonder-Tongue Labs.
Boston Insulated Wire & Cable Co.
Bradford Information Systems
Catel, a Div. of United Scientific Corp.
Cohu, Inc. Electronics Division
Colorado Video Inc.
Comquip, Inc.
Cramer Video and Audio Systems
Diebold Incorporated
DYNAIR Electronics, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
Gen. Electrodynamics
General Television Ntwk.
GPL Div. Singer Gen.
Gulf Telephone & Electronics
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export
Department
Internl. Nuclear Corp.
Janson Industries
Javelin Div. of Apollo Lasers
Jos. Schneider & Co. Optische Werke
Div.
Lerro Electrical Corp.

Nasco Television Systems
Orbit Radio and Video
Panasonic Video Systems Div.
Matsushita Electric Corp. of
America
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Precision Electrical Mfg. Div. Circuit
Science Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Rust Corp.
SC Electronics, Inc. Subs. of
Audiotronics Corp.
Scientific Systems, Inc. Broadcast
Equipment Div.
Shintron Co. Inc. Video Products Div.
Singer Co. Simulation Products Div.
Sylvania Comm. Electronic
Tasker Systems Div. of Whittaker
Corp.
Tektronix Inc.
Tele-Cine Inc.
Teledyne Brown Engineering Co.
Science & Engrg. Div.
TeleMation, Inc.
Tele Measurements Inc.
Teltron, Inc.
Video Engineering Co. Inc.
Vikoa Inc.
Visual Communication Products Oper.
General Electric Co.
Visual Educom Inc. DAGE Television
Visual Educom Inc. MTI Television
Vitec Communications Ltd.

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Austin Insulator Div. Decca Radar
Canada (1967) Ltd.

Insulators, Guy Strain

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Austin Insulator Div. 141

Austin Insulator Div. Decca Radar
Canada (1967) Ltd.

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American Electronics Lab., Inc.
A-Tel-A-Matic
Heintz and Kaufman Ltd.
Hewlett Packard Co.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Melcor Electronics Corp.
Motorola Semiconduct Motorola Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Solitron Devices Inc. Semiconductor
Div.
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Visual Communication Products Oper.
General Electric Co.

Intercom Systems

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Video Aids Corp. of
Colorado 112

Bogen Division Lear Siegler Inc.
Central Dynamics Corp.
Clear-Com Div. of Lumiere
Productions, Inc.
Cramer Video and Audio Systems
David Clark Co., Inc.
Emerson Elec./Artolier Lighting &
Sound Rittenhouse Div.

Fisher Berkeley Corp.
G.C. Electronics
Heath Co.
Holland Electronics
McMartin Industries
Nasco Television Systems
Paso Sound Products Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Roh Corporation
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Shintron Co. Inc. Video Products Div.
Soundolier, Inc.
Systems Engineering Co., Inc.
Telectro Systems Corp.
Television Equipment Associates
Terminal Hudson Corp. Terminal
Hudson Electronics
Video Aids Corp. of Colorado
Visual Electronics Corp.

Isocouplers

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Sparta Electronic Corp.

ITFS System

Alford Mfg. Co.
Andrew Corp.
CHESTER ELECTRONIC LABS., INC.
GTE Information Systems Inc.
Cramer Video and Audio Systems
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
RF Systems, Inc.
TeleMation, Inc.
Varian Solid State Div. Micro-Link
Products

Jack Panel Assemblies

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Audio Devices, Inc. 45

A-Tel-A-Matic
Atlantic Research Corp. Teleproducts
Dept.
Audio Accessories Inc.
Audio Devices, Inc.
AVA Electronics Corp.
Central Dynamics Corp.
Collins Radio Company Broadcast
Division
Cooke Engineering Co.
Delta Electronics Inc. (Va.)
Gates Division of Harris-Intertype
Gulf Telephone & Electronics
Lectronic Res. Labs. Inc.
Mastertone Company
McCurdy Radio Ind. Inc.
Potomac Instruments, Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Switchcraft Inc.
Systems Engineering Co., Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Trompeter Electronics
Video Engineering Co. Inc.

Keyers, Video Insert

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Grass Valley Group,
Inc. 3

Grass Valley Group, Inc.

Kits

ATV Research
Bardwell & McAlister Div. of F &
B/Ceco Industries
Comquip, Inc.
Eico Elect. Inst. Co., Inc.
Engineering Associates
ES Enterprises

Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gately Electronics
G.C. Electronics
Heath Co.
Hollingsworth Solderless Terminal Co.
Hughey & Phillips Inc.
Lectronic Res. Labs. Inc.
Mole Richardson Co.
Oaktron Industries Inc.
PRD Electronics, Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
SPI-ITT Instruments Matrix Division
Terminal Hudson Corp. Terminal
Hudson Electronics
Texwipe Co.
TRW Electronic Supply Co. Div. of
TRW
Vaco Products Co.

Knobs, Control

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Alco Electronic Products, Inc.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.

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Ampro Corp.
Broadcast Equipment Leasing Corp.
Div. Anchor Leasing Corp.
Broadcast Products Inc.
CBS Labs
Communication Medias
D AND S CORLEY LIMITED
International Tapetronics Corp.
Sparta Electronic Corp.
Tele-Cine Inc.
Wilkinson Electronics, Inc.

Lenses, Optical Fixed

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Angenieux Corp. of America
Arriflex Company of America
A-Tel-A-Matic
ATV Research
Canon USA, Inc. Optics Division
Comquip, Inc.
Cosmicar Optical Co., Ltd.
Cramer Video and Audio Systems
Cunningham Corp. Subs. of Gleason
Works
Denson Electronic Corp.
Eastcoast Camera Center, Inc.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
Image Devices Incorporated
Javelin Div. of Apollo Lasers
Jos. Schneider & Co. Optische Werke
Div.
Lenzar Optics Corp.
Rank Precision Industries
Rank Precision Ind. Broadcast Div.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Schneider Corp. of America
Tele-Cine Inc.
Tele Measurements Inc.
Vicon Industries, Inc.
Victor Duncan, Inc.
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television

Lenses, Optical Zoom

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America 137

Amperex Corp.
Angenieux Corp. of America
Arriflex Company of America
ATV Research
Canon USA, Inc. Optics Division
Comquip, Inc.
Cosmicar Optical Co., Ltd.
Cramer Video and Audio Systems
Cunningham Corp. Subs. of Gleason
Works
Denson Electronic Corp.
Eastcoast Camera Center, Inc.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
Hitachi Shibaden Corp. of America
Image Devices Incorporated
Javelin Div. of Apollo Lasers
Jos. Schneider & Co. Optische Werke
Div.
Lenzar Optics Corp.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Rank Precision Industries
Rank Precision Ind. Broadcast Div.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Schneider Corp. of America
Tele-Cine Inc.
Tele Measurements Inc.
Vicon Industries, Inc.
Victor Duncan, Inc.
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television

Lighting, Preset Dimmer

Berkey-Colortran Inc.
Century Strand, Inc.
Cramer Video and Audio Systems
Janson Industries
Kliegl Bros. Lighting
Skirpan Lighting Control Corp.
Tele Measurements Inc.
Video Engineering Co. Inc.

Lighting, TV Controls

Berkey-Colortran Inc.
Century Strand, Inc.
Cramer Video and Audio Systems
F&B/Ceco Industries, Inc.
Janson Industries
Kliegl Bros. Lighting
Mole Richardson Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Skirpan Lighting Control Corp.
Tele Measurements Inc.
Ultra Audio Products
Utility Tower Co.
Video Engineering Co. Inc.
Waber Electronics Inc. Div. SGL
Industries, Inc.

Lighting, TV Portable System

Berkey-Colortran Inc.
Century Strand, Inc.
Comquip, Inc.
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
GTE Sylvania Inc. Lighting Products
Group
Harwood Mfg. Co.
Janson Industries
Kliegl Bros. Lighting
Mole Richardson Co.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Skirpan Lighting Control Corp.
TeleMation, Inc.
Tele Measurements Inc.
Union Connector Co., Inc.
Video Engineering Co. Inc.

Lighting, TV Studio System

Bardwell & McAlister Div. of F & B/Ceco Industries
 Berkey-Colortran Inc.
 Century Strand, Inc.
 Cramer Video and Audio Systems
 F&B/Ceco Industries, Inc.
 Gates Division of Harris-Intertype
 Janson Industries
 Kliegl Bros. Lighting
 Mole Richardson Co.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Skirpan Lighting Control Corp.
 TeleMation, Inc.
 Tele Measurements Inc.
 Union Connector Co., Inc.
 Utility Tower Co.
 Video Engineering Co. Inc.

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Berkey-Colortran Inc.

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Austin Insulator Div. Decca Radar Canada (1967) Ltd.

Lightning Arresters

Andrews Tower Inc.
 AVA Electronics Corp.
 Broadcast Tower Service
 Collins Radio Company Broadcast Division
 Cook Electric Co.
 G.C. Electronics
 General Electric Company Tubes/MW Devices
 Joslyn Electronic Sys.
 Siemens Corporation
 TV Cable Supply Co., Inc.
 Utility Tower Co.
 Vikoa Inc.

Lightning Protection Systems

Collins Radio Company Broadcast Division
 Cook Electric Co.
 General Electric Company Tubes/MW Devices
 LightNing Elimination Associates
 Wilkinson Electronics, Inc.

Lights, Studio Set

Berkey-Colortran Inc.
 Comquip, Inc.
 Cramer Video and Audio Systems
 F&B/Ceco Industries, Inc.
 GTE Sylvania Inc. Lighting Products Group
 Kliegl Bros. Lighting
 Mole Richardson Co.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 TeleMation, Inc.
 Union Connector Co., Inc.
 Video Engineering Co. Inc.

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Hughey & Phillips Inc. 128C

Broadcast Tower Service
 Gates Division of Harris-Intertype
 Hughey & Phillips Inc.
 Jampro Antenna Co. Div. of Computer Equipment Corp.
 Mastertone Company
 Radio Mfg. Co. (RMC)

Lights, Tower Obstruction

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Andrews Tower Inc.
 Broadcast Tower Service
 Collins Radio Company Broadcast Division
 Dielectric Communications Div. of Sola Basic
 Electronic Lights Inc.
 Fort Worth Tower Co., Inc.
 Gates Division of Harris-Intertype
 Hughey & Phillips Inc.
 Jampro Antenna Co. Div. of Computer Equipment Corp.
 Mastertone Company
 Rohn Manufacturing Div. of Unarco Industries Inc.
 Sparta Electronic Corp.
 Utility Tower Co.

Limiter Compressor

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Arnold Barnes Company
 Broadcast Electronics
 Burwen Laboratories
 CCA Electronics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
 Communication Medias
 Franz Vertriebs-gesellschaft m.b.H.
 Gately Electronics
 Gates Division of Harris-Intertype
 Inovonics
 Magnatech Company
 Mastertone Company
 Neve Inc., Rupert
 Pacific Recorders and Engrg. Corp.
 Precision Elect. Inc.
 Roh Corporation
 Rupert Neve Incorporated
 Sparta Electronic Corp.
 Spectra Sonics
 Spotmaster Broadcast Electronics
 Wilkinson Electronics, Inc.

Line Surge Protector

C-COR Electronics, Inc.
 Collins Radio Company Broadcast Division
 Cook Electric Co.
 Gates Division of Harris-Intertype
 Mastertone Company
 Wilkinson Electronics, Inc.

Load Resistor, Coaxial

AVA Electronics Corp.
 Bird Electronic Corp.
 Electro Impulse, Inc.
 Lectronic Res. Labs. Inc.
 Micro Communications, Inc.
 Rohde & Schwarz Sales Co.
 Weinschel Engineering Co.

Maintenance Services, AM

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 Audio Services, Inc.
 Broadcast Tower Service
 Telatronics
 Tri-Tronics

Maintenance Services, Cartridge Tape

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Applied Video Electronics, Inc.
 Audio Devices, Inc.
 Broadcast Prod. Co. Inc. Bcst. Division
 Communication Medias
 Gates Division of Harris-Intertype
 Joa Cartridge Service
 Lauderdale Electronic Labs
 Liberty Industries
 Marathon Broadcast Equip.
 Mastertone Company
 RCA Corporation RCA Service Company Div.
 Sparta Electronic Corp.
 Taber Mfg. & Engr. Co.
 Tapex Corporation
 Tri-Tronics

Maintenance Services, FM

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Audio Devices, Inc. 45
Audio Services, Inc. 32

American Electronics Lab., Inc.
 Audio Devices, Inc.
 Audio Services, Inc.
 Broadcast Tower Service
 Collins Radio Company Broadcast Division
 Fort Worth Tower Co., Inc.
 Liberty Industries
 RCA Corporation RCA Service Company Div.
 Soll, Inc., Joseph M.
 Telatronics
 Tri-Tronics
 Utility Tower Co.

Maintenance Services, Microwave

American Electronics Lab., Inc.
 Broadcast Tower Service
 Fort Worth Tower Co., Inc.
 Liberty Industries
 Microwave Assoc. Inc.
 Raytheon Company Raytheon Data Systems Co.
 RCA Corporation RCA Service Company Div.
 Telatronics
 Utility Tower Co.

Maintenance Services, TV

Alcor Inc.
 Angenieux Corp. of America
 Applied Video Electronics, Inc.
 Broadcast Tower Service
 Cramer Video and Audio Systems
 Fort Worth Tower Co., Inc.
 GBC Closed Circuit TV Corp.
 Liberty Industries
 RF Systems, Inc.
 Soll, Inc., Joseph M.
 Teledyne Brown Engineering Co. Science & Engrg. Div.
 Tele Measurements Inc.
 Television Technology Corp.
 Utility Tower Co.
 Visual Communication Products Oper. General Electric Co.

Meters, Antenna Base

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 Gates Division of Harris-Intertype

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A-Tel-A-Matic
 Atlantic Research Corp. Teleproducts Dept.
 Collins Radio Company Broadcast Division
 Conway Electronic Enterprises Limited
 Dyma Engineering, Inc.
 ELPA Marketing Industries, Inc.
 Gates Division of Harris-Intertype
 Heath Co.
 Hewlett Packard Co.
 Hickok Elect. Instrument
 Lectronic Res. Labs. Inc.
 The London Company
 Marconi Instruments
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Vu-Data Corporation

Meters, Field Strength AM and FM

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Collins Radio Company Broadcast Division
 Defense Electronics
 Delta Electronics Inc. (Va.)
 Engineering Associates
 Gates Division of Harris-Intertype
 Hickok Elect. Instrument
 Leader Instruments Corp.
 Lectronic Res. Labs. Inc.
 Narda Microwave Corp., The
 Potomac Instruments, Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Singer Instrumentation Los Angeles Operation
 Solar Electronics Co.
 Sparta Electronic Corp.
 SPI-ITT Instruments Matrix Division
 Terminal Hudson Corp. Terminal Hudson Electronics
 Wilkinson Electronics, Inc.

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 Anixter-Pruzan CATV Division
 Arnold Barnes Company
 Blender-Tongue Labs.
 CATV Equipment Co.
 Defense Electronics
 Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
 Engineering Associates
 Fung Engineering Co.
 Leader Instruments Corp.
 Lectronic Res. Labs. Inc.
 Potomac Instruments, Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Sadelco, Inc.
 Sencore Inc.
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 Vikoa Inc.

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Conway Electronic Enterprises Limited
ELPA Marketing Industries, Inc.
Franz Vertriebs-gesellschaft m.b.H.
Gotham Audio Corp.
Kay Elemetrics Corp.
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Sentinel, Inc.
TASCAM Corporation

Meters, Frequency AF

Belar Electronics Lab., Inc.
B & K Instruments Inc.
Bulova American Time Products
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Conway Electronic Enterprises Limited
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Engineering Associates
General Electric Company Tubes/MW Devices
General Radio Co.
Hewlett Packard Co.
Hickok Elect. Instrument
Lampkin Lab. Inc.
Lectronic Res. Labs. Inc.
Marubeni America Corp. Miida Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Siemens Corporation
Simpson Electric Co.
Singer Instrumentation Los Angeles Operation
SPI-ITT Instruments Metrix Division
Test & Measuring Instruments, Inc. a North American Philips Co.
Time & Frequency Tech., Inc.
United Systems Corp. Subs. of Monsanto Co.

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Conway Electronic Enterprises Limited
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Engineering Associates
ES Enterprises
General Electric Company Tubes/MW Devices
Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
Lampkin Lab. Inc.
Lectronic Res. Labs. Inc.
Marubeni America Corp. Miida Electronics
Multronics, Inc.
Narda Microwave Corp., The
PRD Electronics, Inc.
Rohde & Schwarz Sales Co.
Siemens Corporation
Singer Instrumentation Los Angeles Operation
SPI-ITT Instruments Metrix Division
Test & Measuring Instruments, Inc. a North American Philips Co.
Time & Frequency Tech., Inc.
United Systems Corp. Subs. of Monsanto Co.

Meters, Frequency Calibrating

Bulova American Time Products
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
General Radio Co.
Lampkin Lab. Inc.
Lectronic Res. Labs. Inc.

Marubeni America Corp. Miida Electronics
Narda Microwave Corp., The
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Singer Instrumentation Los Angeles Operation
Test & Measuring Instruments, Inc. a North American Philips Co.

Meters, Grind Dip

Conway Electronic Enterprises Limited
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Leader Instruments Corp.

Meters, Intermodulation

Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Heath Co.
Rohde & Schwarz Sales Co.

Meters, Line Voltage

Alco Electronic Products, Inc.
Heath Co.
Hickok Elect. Instrument
Lectronic Res. Labs. Inc.
RCA Corporation RCA Electronic Components
Simpson Electric Co.
Terminal Hudson Corp. Terminal Hudson Electronics
Test & Measuring Instruments, Inc. a North American Philips Co.
Triplett Corporation

Meters, Panel Replacement

G.C. Electronics
General Microwave Corp.
Lectronic Res. Labs. Inc.
Minarik Elect.
Simpson Electric Co.
Triplett Corporation

Meters, Phase Angle

Collins Radio Company Broadcast Division
Conway Electronic Enterprises Limited
Dranetz Engineering Labs., Inc.
General Electric Company Tubes/MW Devices
Lectronic Res. Labs. Inc.
Neve Inc., Rupert
Potomac Instruments, Inc.
PRD Electronics, Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Rupert Neve Incorporated
Siemens Corporation
Singer Instrumentation Los Angeles Operation
Time & Frequency Tech., Inc.

Meters, Power

Bird Electronic Corp.
Boonton Electronics
CCA Electronics Corp.
Collins Radio Company Broadcast Division
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Electro Impulse, Inc.
Engineering Associates
General Microwave Corp.
Hickok Elect. Instrument
Lectronic Res. Labs. Inc.
Marconi Instruments
Narda Microwave Corp., The
National Electrolab Ltd.
PRD Electronics, Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Siemens Corporation
Simpson Electric Co.
Terminal Hudson Corp. Terminal Hudson Electronics

Meters, Signal Level

Ameco Inc.
Siemens Corporation
Test & Measuring Instruments, Inc. a North American Philips Co.

Meters, Spectrum Analyzer

B & K Instruments Inc.
Dranetz Engineering Labs., Inc.
Marconi Electronics Inc.
Test & Measuring Instruments, Inc. a North American Philips Co.

Meters, Standing Wave

Bird Electronic Corp.
B & K Instruments Inc.
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Delta Electronics Inc. (Va.)
General Radio Co.
Hewlett Packard Co.
Lectronic Res. Labs. Inc.
PRD Electronics, Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
SPI-ITT Instruments Metrix Division
Telonic Industries Inc.
Weinschel Engineering Co.

Meters, Video Noise

Vista Systems, Inc.

Meters, Volt Ohm

Alco Electronic Products, Inc.
Arnold Barnes Company
Conway Electronic Enterprises Limited
ES Enterprises
Heath Co.
Hickok Elect. Instrument
Instrument Laboratories
International Instrument Div. Sigma Instruments, Inc.
Leader Instruments Corp.
Marubeni America Corp. Miida Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic Components
Simpson Electric Co.
SPI-ITT Instruments Metrix Division
Terminal Hudson Corp. Terminal Hudson Electronics
Test & Measuring Instruments, Inc. a North American Philips Co.
Triplett Corporation
United Systems Corp. Subs. of Monsanto Co.

Meters, VU

Audio Designs & Mfg.
Burwen Laboratories
Cetec Inc. Subs. Computer Equipment Corp.
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Gately Electronics
G.C. Electronics
Hickok Elect. Instrument
Instrument Laboratories
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Lectronic Res. Labs. Inc.
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Burwen Laboratories
CATV Equipment Co.
CCA Electronics Corp.
Century Strand, Inc.
Collins Radio Company Broadcast Division
Communication Medias
Comquip, Inc.
Cramer Video and Audio Systems
Custom Craft Designs
Dyma Engineering, Inc.
Electro-Voice Inc. Subs. of Gulton Industries, Inc.
F&B/Ceco Industries, Inc.
Gately Electronics
Gates Division of Harris-Intertype
G.C. Electronics
Image Devices Incorporated
Innovative Television Equipment, Inc.
Maze Corporation
Mole Richardson Co.
Norelco, Philips Bcast. Equip. Corp. Subs. North American Philips Corp.
Paso Sound Products Inc.
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
Primo Co. Ltd.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RCA Corporation RCA Service Company Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Schultz Inc., Albert
Scientific Systems, Inc. Broadcast Equipment Div.
Sennheiser Electronics Corp.
Shure Brothers Inc.
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Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Tele Measurements Inc.
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Communication Medias
Comquip, Inc.
Cramer Video and Audio Systems

Denson Electronic Corp.
 Dyma Engineering, Inc.
 Electro-Voice Inc. Subs. of Gulton Industries, Inc.
 Gately Electronics
 Gates Division of Harris-Intertype
 G.C. Electronics
 Gotham Audio Corp.
 Image Devices Incorporated
 Innovative Television Equipment, Inc.
 Lauderdale Electronic Labs
 Mole Richardson Co.
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 Norelco, Philips Bcst. Equip. Corp.
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 Cetec Inc. Subs. Computer Equipment Corp.
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 Gately Electronics
 Gates Division of Harris-Intertype
 G.C. Electronics
 Gotham Audio Corp.
 Javelin Div. of Apollo Lasers
 Lauderdale Electronic Labs
 Mastertone Company
 Nagra Magnetic Recorders, Inc.
 Norelco, Philips Bcst. Equip. Corp.
 Subs. North American Philips Corp.
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 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
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 Sescom, Inc.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics

Superscope, Inc.
 Systems Engineering Co., Inc.
 Tapecaster TCM, Inc.
 TEAC Corp of America
 Tele Measurements Inc.
 Television Equipment Associates
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 Collins Radio Company Broadcast Division
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 Cramer Video and Audio Systems
 Electro-Voice Inc. Subs. of Gulton Industries, Inc.
 Gately Electronics
 Gates Division of Harris-Intertype
 G.C. Electronics
 Gotham Audio Corp.
 Lauderdale Electronic Labs
 Mastertone Company
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 Norelco, Philips Bcst. Equip. Corp.
 Subs. North American Philips Corp.
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 CATV Equipment Co.
 CCA Electronics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.

Collins Radio Company Broadcast Division
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 Electro-Voice Inc. Subs. of Gulton Industries, Inc.
 Gately Electronics
 Gates Division of Harris-Intertype
 G.C. Electronics
 Image Devices Incorporated
 Lauderdale Electronic Labs
 Mastertone Company
 Miles Reproducer Co.
 Nagra Magnetic Recorders, Inc.
 Norelco, Philips Bcst. Equip. Corp.
 Subs. North American Philips Corp.
 Paso Sound Products Inc.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 Pulse Dynamics Mfg. Corp.
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 Singer Products Co., Inc.
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 Spotmaster Broadcast Electronics
 Superscope, Inc.
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 TEAC Corp of America
 Tele Measurements Inc.
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 Gately Electronics
 Gates Division of Harris-Intertype
 G.C. Electronics
 Gotham Audio Corp.
 Image Devices Incorporated
 Lauderdale Electronic Labs
 Mastertone Company
 Miles Reproducer Co.
 Nagra Magnetic Recorders, Inc.
 Norelco, Philips Bcst. Equip. Corp.
 Subs. North American Philips Corp.
 Paso Sound Products Inc.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 Pulse Dynamics Mfg. Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Electronic Components
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Ryder Magnetic Sales Corp.
 Schultz Inc., Albert

Sennheiser Electronics Corp.
 Shure Brothers Inc.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Systems Engineering Co., Inc.
 Tapecaster TCM, Inc.
 Tele Measurements Inc.
 Television Equipment Associates
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 Electro-Voice Inc. Subs. of Gulton Industries, Inc.
 F&B/Ceco Industries, Inc.
 Image Devices Incorporated
 Lauderdale Electronic Labs
 Mastertone Company
 Nagra Magnetic Recorders, Inc.
 Radio Mfg. Co. (RMC)
 Ryder Magnetic Sales Corp.
 Schultz Inc., Albert
 Sennheiser Electronics Corp.
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CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Communication Medias
 Comquip, Inc.
 Conway Electronic Enterprises Limited
 Cramer Video and Audio Systems
 F&B/Ceco Industries, Inc.
 Image Devices Incorporated
 Lauderdale Electronic Labs
 Miles Reproducer Co.
 North Amer. Electronics
 Orbit Radio and Video
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Ryder Magnetic Sales Corp.
 Schultz Inc., Albert
 Sennheiser Electronics Corp.
 Sparta Electronic Corp.
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 Collins Radio Company Broadcast Division
 Gates Division of Harris-Intertype

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 Mastertone Company
 Maze Corporation
 Microwave Assoc. Inc.
 Moseley Assoc. Inc.
 Narda Microwave Corp., The
 North Amer. Electronics
 Radio Research Instrument Co., Inc.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Sparta Electronic Corp.
 TeleMation, Inc.
 Tele Measurements Inc.
 Varian Solid State Div. Micro-Link
 Products
 Video Engineering Co. Inc.
 Wilkinson Electronics, Inc.

Microwave Systems, 2500 MHz

Alcor Inc.
 Andrew Corp.
 Broadcast Products Inc.
 CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Collins Radio Company Broadcast
 Division
 Cramer Video and Audio Systems
 EMCEE Broadcast Products Div. of
 Electronics, Missiles &
 Communications, Inc.
 General Electric Company Tubes/MW
 Devices
 Microwave Assoc. Inc.
 North Amer. Electronics
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation
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 CCA Electronics Corp.
 Central Dynamics Corp.
 Cetec Inc. Subs. Computer Equipment
 Corp.
 Collins Radio Company Broadcast
 Division
 Communication Medias
 Comquip, Inc.
 Concept 70, A Div. of Dyma
 Engineering, Inc.
 Danscoll Ltd.
 Delta Electronics Inc. (N.C.)
 Dyma Engineering, Inc.
 Fairchild/Robbins Fairchild Sound
 Equipment Corp.
 Gately Electronics
 Gates Division of Harris-Intertype
 Gotham Audio Corp.
 Grass Valley Group, Inc.
 Head Sound, Inc.
 Lamb Laboratories
 Lang Electronics Inc.
 Magnatech Company
 McMartin Industries
 Melcor Electronics Corp.

Nasco Television Systems
 Neve Inc., Rupert
 North Amer. Electronics
 OMNIX
 Orbit Radio and Video
 Paso Sound Products Inc.
 PRD Electronics, Inc.
 Pulse Techniques Inc.
 QRK Electronic Prod.
 Quad-Eight Electronics
 Radio Mfg. Co. (RMC)
 Ramko Research
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Roh Corporation
 Rupert Neve Incorporated
 Russco Electronics Mfg. Inc.
 Ryder Magnetic Sales Corp.
 Schultz Inc., Albert
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Switchcraft Inc.
 Systems Marketing Corp. And
 Sono-Mag Corp.
 TASCAM Corporation
 TeleMation, Inc.
 Tele Measurements Inc.
 Video Engineering Co. Inc.
 Vital Industries Inc.
 Weinschel Engineering Co.

Mobile Communications Van, TV

Editel Productions
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.

Modulators, TV

Acrodyne Industries
 Ameco Inc.
 Anixter-Prizan CATV Division
 Catel, a Div. of United Scientific Corp.
 CCA Electronics Corp.
 Comark Industries Inc.
 Cramer Video and Audio Systems
 DYNAIR Electronics, Inc.
 EiE-Electronic Industrial Engineering A
 Division of RCA
 Gates Division of Harris-Intertype
 Hitachi Shibaden Corp. of America
 North Amer. Electronics
 Orbit Radio and Video
 RCA Corporation RCA Broadcast
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 Melcor Electronics Corp.
 Metron Instruments
 National Electrolab Ltd.
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 Rupert Neve Incorporated
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Sparta Electronic Corp.
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 Karg Laboratories, Inc.
 Kenwood Electronics, Inc.
 The London Company
 Magnatech Company
 Mastertone Company
 McMartin Industries
 North American Radio Corp.
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Bird Electronic Corp.
 Delta Electronics Inc. (Va.)
 Electro Impulse, Inc.
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 Equipment Corp.
 Marti Electronics
 Neve Inc., Rupert
 Radio Mfg. Co. (RMC)
 Rupert Neve Incorporated

Scientific Systems, Inc. Broadcast Equipment Div.
Siemens Corporation
Sparta Electronic Corp.

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Anixter-Pruzan CATV Division
Audiotronics Corp.
Ball Bros. Research Corp. Miratel Division
Arnold Barnes Company
Belar Electronics Lab., Inc.
Cohu, Inc. Electronics Division
Conrac Div. Conrac Corp.
Cramer Video and Audio Systems
Cunningham Corp. Subs. of Gleason Works
Diebold Incorporated
Electrohome Ltd.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
GBC Closed Circuit TV Corp.
GPL Div. Singer Gen.
Hitachi Shibaden Corp. of America
Ikegami Tsushinki Co., Ltd. Export Department
Javelin Div. of Apollo Lasers
Leader Instruments Corp.
North Amer. Electronics
Orbit Radio and Video
Panasonic Video Systems Div.
Matsushita Electric Corp. of America
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
Precision Electrical Mfg. Div. Circuit Science Inc.
Rank Cintel, Electronic Systems Div.
Rank Precision Industries Ltd.
RCA Corporation RCA Service Company Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Richmond Hill Laboratories Inc.
Robert Bosch Corp. Fernseh Div.
SC Electronics, Inc. Subs. of Audiotronics Corp.
Siemens Corporation
Singer Co. Simulation Products Div.
Sony Corp. of America
Systems Engineering Co., Inc.
Tektronix Inc.
Tele-Cine Inc.
Teledyne Brown Engineering Co. Science & Engrg. Div.
TeleMation, Inc.
Tele Measurements Inc.
Video Engineering Co. Inc.
Visual Electronics Corp.

Monitors, Video Color

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Electrohome Ltd. 24

Television Equipment Associates 141

Anixter-Pruzan CATV Division
Audiotronics Corp.
Ball Bros. Research Corp. Miratel Division
Arnold Barnes Company
Belar Electronics Lab., Inc.
CHESTER ELECTRONIC LABS., INC.
GTE Information Systems Inc.
Cohu, Inc. Electronics Division
Conrac Div. Conrac Corp.
Cramer Video and Audio Systems
Cunningham Corp. Subs. of Gleason Works
Dyma Engineering, Inc.
Electrohome Ltd.
F&B/Ceco Industries, Inc.
Gates Division of Harris-Intertype
Ikegami Tsushinki Co., Ltd. Export Department
Leader Instruments Corp.
Orbit Radio and Video
Panasonic Video Systems Div.
Matsushita Electric Corp. of America
Precision Electrical Mfg. Div. Circuit Science Inc.
Rank Cintel, Electronic Systems Div.
Rank Precision Industries Ltd.
RCA Corporation RCA Service Company Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Richmond Hill Laboratories Inc.
Robert Bosch Corp. Fernseh Div.
SC Electronics, Inc. Subs. of Audiotronics Corp.
Siemens Corporation
Systems Engineering Co., Inc.
Tektronix Inc.
Tele-Cine Inc.
TeleMation, Inc.
Television Equipment Associates
Universal Media Corp.
Video Aids Corp. of Colorado
Video Engineering Co. Inc.
Visual Electronics Corp.
World Video Inc.

Monitors, Video Pulse Cross

Cramer Video and Audio Systems
Cunningham Corp. Subs. of Gleason Works
Electrohome Ltd.
Orbit Radio and Video
Precision Electrical Mfg. Div. Circuit Science Inc.
Systems Engineering Co., Inc.
Tektronix Inc.
Ultra Audio Products
Universal Media Corp.

Monitors, Waveform

Ball Bros. Research Corp. Miratel Division
California Instruments Co.
Cohu, Inc. Electronics Division
Colorado Video Inc.
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
Ikegami Tsushinki Co., Ltd. Export Department
Leader Instruments Corp.
Marconi Instruments
North Amer. Electronics
Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
Robert Bosch Corp. Fernseh Div.
Tektronix Inc.
Tele-Cine Inc.
Teledyne Brown Engineering Co. Science & Engrg. Div.
Tele Measurements Inc.
Ultra Audio Products
Video Engineering Co. Inc.
Vu-Data Corporation

Multiplexers

See Adv. Page

Collins Radio Company 19 Sparta Electronic Corp. 8

Alford Mfg. Co.
Collins Radio Company Broadcast Division
Comark Industries Inc.
Cramer Video and Audio Systems
Dorado Systems
Gates Division of Harris-Intertype
GPL Div. Singer Gen.
Ikegami Tsushinki Co., Ltd. Export Department
Kalart Victor Corp.
Marco Video Systems, Inc.
Micro Communications, Inc.
North Amer. Electronics
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan, Inc.
Sarkes Tarzian Inc. Broadcast Equipment Div.
Scott-Buttner Coastcom, Inc.
Shively Laboratories, Inc.
Solitron Devices Inc. Semiconductor Div.
Sparta Electronic Corp.
Tektronix Inc.
TeleMation, Inc.
Tele Measurements Inc.
Test & Measuring Instruments, Inc. a North American Philips Co.
Video Engineering Co. Inc.

Narrow Band FM Equipment

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Moseley Assoc. Inc. 7

Acrodyne Industries
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Moseley Assoc. Inc.
Scientific Systems, Inc. Broadcast Equipment Div.
Scintrex Inc. Communications Div.
Scott-Buttner Coastcom, Inc.
Singer Products Co., Inc.

Networks, Matching Audio

Allen Avionics Inc.
ALTEC
Cetec Inc. Subs. Computer Equipment Corp.
Collins Radio Company Broadcast Division
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
ESC Electronics Corp.
Gately Electronics
Quad-Eight Electronics
Roh Corporation
Tele Measurements Inc.
TT Electronics, Inc.

Networks, Matching RF

Alford Mfg. Co.
Allen Avionics Inc.
Collins Radio Company Broadcast Division
Comark Industries Inc.
Continental Electronics Mfg. Co.
Electro Impulse, Inc.
General Radio Co.
Hy-Power Electronics Co.
Integral Data Devices Inc.
Micro Communications, Inc.
Sparta Electronic Corp.
TT Electronics, Inc.

Networks, Mixing

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Roh Corporation 124

Roh Corporation

Networks, Phasing -- See also Phasing Units

Allen Avionics Inc.
A-Tel-A-Matic
CCA Electronics Corp.

Collins Radio Company Broadcast Division
Comark Industries Inc.
Continental Electronics Mfg. Co.
Eventide Clock Works Inc. Broadcast Products Div.
Hy-Power Electronics Co.
Multronics, Inc.
RCA Corporation RCA Electromagnetic & Aviation Systems Div.
Sparta Electronic Corp.
Tele Measurements Inc.
TT Electronics, Inc.

Ohmmeters

Anixter-Pruzan CATV Division
Arnold Barnes Company
California Instruments Co.
Collins Radio Company Broadcast Division
Conway Electronic Enterprises Limited
Edison Electronics, Div. of McGraw-Edison Co., Daven & Measurements
Fluke, John, Mfg. Co. Inc.
Franz Vertriebs-gesellschaft m.b.H. Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
ITT Jennings
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic Components
Rohde & Schwarz Sales Co.
Simpson Electric Co.
SPI-ITT Instruments Matrix Division
Triplett Corporation

Operating Impedance Bridge

Delta Electronics Inc. (Va.)
Dranetz Engineering Labs., Inc.
General Radio Co.
Rohde & Schwarz Sales Co.

Oscillator Transformers

Nortronics Co., Inc. Recorder Care Div.

Oscillators, AM

Ailtech (Formerly: Microdot)
Bulova American Time Products
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Conway Electronic Enterprises Limited
Dyma Engineering, Inc.
Engineering Associates
Gates Division of Harris-Intertype
Gibbs Mfg. & Research Co.
Heath Co.
Hewlett Packard Co.
Instrument Laboratories
Kay Elemetrics Corp.
Leader Instruments Corp.
Marconi Instruments
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Singer Products Co., Inc.
Test & Measuring Instruments, Inc. a North American Philips Co.
Trepac Corp. America

Oscillators, FM

Ailtech (Formerly: Microdot)
Belar Electronics Lab., Inc.
Bulova American Time Products
CCA Electronics Corp.
Collins Radio Company Broadcast Division
Conway Electronic Enterprises Limited
Gates Division of Harris-Intertype
Heath Co.
Kay Elemetrics Corp.
Leader Instruments Corp.
Marconi Electronics Inc.
Marconi Instruments
Microwave Assoc. Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.

Rohde & Schwarz Sales Co.
Singer Co., The Palo Alto Operation
Singer Products Co., Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.

Oscillators, Tone

Belcom Electronics Mfg. Co.
Bulova American Time Products
CCA Electronics Corp.
Cetec Inc. Subs. Computer Equipment
Corp.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gates Division of Harris-Intertype
General Radio Co.
Neve Inc., Rupert
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
Roh Corporation
Rupert Neve Incorporated
Total Technology
Trepac Corp. America

Oscillators, TV

Ailtech (Formerly: Microdot)
Heath Co.
Kay Elemetrics Corp.
Lectrotech Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Riker Communications Inc.
Rohde & Schwarz Sales Co.
Tektronix Inc.

Oscilloscope Camera

Conway Electronic Enterprises Limited
Enterprise Electronics Corp.
Hewlett Packard Co.
Polaroid
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.

Oscilloscope Vector Display

Beston Electronics Inc.
Heath Co.
Lectrotech Inc.
Tektronix Inc.
Tele-Cine Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Ultra Audio Products

Oscilloscopes, Dual Trace

Arnold Barnes Company
Conway Electronic Enterprises Limited
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Enterprise Electronics Corp.
Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
Marconi Instruments
Marubeni America Corp. Miida
Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Tele-Cine Inc.
Telonic Industries Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Troy Electronic Sales Co.

Oscilloscopes, Rack Type

Conway Electronic Enterprises Limited
Hewlett Packard Co.
Hickok Elect. Instrument
Lectronic Res. Labs. Inc.
Marubeni America Corp. Miida
Electronics

RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Tele-Cine Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Video Engineering Co. Inc.
Vu-Data Corporation

Oscilloscopes, Triggered Sweep

Conway Electronic Enterprises Limited
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Enterprise Electronics Corp.
Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
Marubeni America Corp. Miida
Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Simpson Electric Co.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Tele-Cine Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Troy Electronic Sales Co.
Vu-Data Corporation

Oscilloscopes, Wideband

Conway Electronic Enterprises Limited
Eico Elect. Inst. Co., Inc.
Enterprise Electronics Corp.
Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
Mercury Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Simpson Electric Co.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Tele-Cine Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Troy Electronic Sales Co.
Vu-Data Corporation

Oscilloscopes with Plug-ins

California Instruments Co.
Conway Electronic Enterprises Limited
Enterprise Electronics Corp.
Hewlett Packard Co.
Lectronic Res. Labs. Inc.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Tele-Cine Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.

Patch Panel

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Gates 10
Atlantic Research Corp. Teleproducts
Dept.
Audio Accessories Inc.
AVA Electronics Corp.
Arnold Barnes Company
Collins Radio Company Broadcast
Division
Comark Industries Inc.
Cooke Engineering Co.
Cramer Video and Audio Systems
Dielectric Communications Div. of Sola
Basic
Gates Division of Harris-Intertype

Micro Communications, Inc.
Mincom Div. 3M Co.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Potomac Instruments, Inc.
Quad-Eight Electronics
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Shively Laboratories, Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Trompeter Electronics
Video Engineering Co. Inc.
Virginia Panel Corporation

Phase Enhancer, Stereo

RAPID-Q Div. of Garron Electronics

Phasing Units -- See also Networks, Phasing

American Electronics Lab., Inc.
A-Tel-A-Matic
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Continental Electronics Mfg. Co.
Eventide Clock Works Inc. Broadcast
Products Div.
Hy-Power Electronics Co.
Multronics, Inc.
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Robert Bosch Corp. Fernseh Div.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Wilkinson Electronics, Inc.

Power Supplies, AC

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Sparta Electronic Corp. 8

Advanced High Voltage Co., Inc.
ALTEC
Ameco Inc.
American Data Corp. an AIRPAX
Company
Anaconda Electronics
Anixter-Pruzan CATV Division
A-Tel-A-Matic
Belcom Electronics Mfg. Co.
Bulova American Time Products
California Instruments Co.
C-COR Electronics, Inc.
Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
David Clark Co., Inc.
Delta-Benco-Cascade Ltd.
Delta Electronics Inc. (N.C.)
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Eico Elect. Inst. Co., Inc.
Engineering Associates
Enterprise Electronics Corp.
Essex International Inc. RBM Div.
F&B/Ceco Industries, Inc.
Fisher Berkeley Corp.
Fluke, John, Mfg. Co. Inc.
G.C. Electronics
General Electric Company Tubes/MW
Devices
Heath Co.
Ikegami Tsushinki Co., Ltd. Export
Department
Kato Engineering Co.
Lectronic Res. Labs. Inc.
Magnavox Company CATV Division
Melcor Electronics Corp.
Mole Richardson Co.
PRD Electronics, Inc.
Quad-Eight Electronics
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Sparta Electronic Corp.
Systems Engineering Co., Inc.
Tektronix Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics

Test & Measuring Instruments, Inc. a
North American Philips Co.
Topaz Electronics
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.

Power Supplies, Precision

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Roh Corporation 124

Advanced High Voltage Co., Inc.
ALTEC
American Data Corp. an AIRPAX
Company
A-Tel-A-Matic
Bristol Div. of Acco
Bulova American Time Products
Burwen Laboratories
Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
Engineering Associates
Fluke, John, Mfg. Co. Inc.
Heath Co.
Hewlett Packard Co.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
PRD Electronics, Inc.
Precision Laboratories Precision Cine
Equipment Corp.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Roh Corporation
Spectra Sonics
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.
Troy Electronic Sales Co.
Video Engineering Co. Inc.

Preamplifiers, Audio

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Mfg. Inc. 128
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Acrodyne Industries
Alcor Inc.
ALTEC
American Data Corp. an AIRPAX
Company
Ampro Corp.
Audio Designs & Mfg.
Autogram Corporation
Bell P/A Prod. Corp.
B & K Instruments Inc.
Bogen Division Lear Siegler Inc.
Bradford Information Systems
Broadcast Electronics
Burwen Laboratories
CCA Electronics Corp.
Cetec Inc. Subs. Computer Equipment
Corp.
Collins Radio Company Broadcast
Division
Communication Medias
Concept 70, A Div. of Dyma
Engineering, Inc.
Crown International
Danscoll Ltd.
David Clark Co., Inc.
Delta Electronics Inc. (N.C.)
Delta Electronics Inc. (Va.)
Denrad Mfg. Co. Inc.
Dyma Engineering, Inc.
DYNAIR Electronics, Inc.
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Electronic Designers Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gately Electronics
Gates Division of Harris-Intertype
Head Sound, Inc.
Interntl. Nuclear Corp.
Lang Electronics Inc.

Leader Instruments Corp.
LPB Inc.
Marti Electronics
Mastertone Company
McCurdy Radio Ind. Inc.
McMartin Industries
Melcor Electronics Corp.
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Neve Inc., Rupert
Orbit Radio and Video
Paso Sound Products Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
PRD Electronics, Inc.
Precision Elect. Inc.
Precision Laboratories Precision Cine
Equipment Corp.
Pulse Dynamics Mfg. Corp.
QRK Electronic Prod.
Quad-Eight Electronics
Ramko Research
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electromagnetic
& Aviation Systems Div.
RHA Audio Communications Corp.
RHG Elect Labs, Inc.
Roh Corporation
Rupert Neve Incorporated
Russco Electronics Mfg. Inc.
Schafer Electronics Corp.
Schultz Inc., Albert
Scientific Systems, Inc. Broadcast
Equipment Div.
Sescom, Inc.
Shure Brothers Inc.
Sparta Electronic Corp.
Spectra Sonics
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Superscope, Inc.
Systems Engineering Co., Inc.
Systems Marketing Corp. And
Sono-Mag Corp.
Tape-Athon Corp.
Telex Communications Division
Total Technology
United Recording Electronics
Industries
UREI a URC Company
Video Engineering Co. Inc.
VIF International
Visual Communication Products Oper.
General Electric Co.
Wilkinson Electronics, Inc.
ZERO-Impedance Systems, Inc.

Preamplifiers, Turntable

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Broadcast Electronics 34
Micro-Trak Corporation 128B
Ramko Research 20
Russco Electronics
Mfg. Inc. 128
Sparta Electronic Corp. 8

Ampro Corp.
Autogram Corporation
Broadcast Electronics
Burwen Laboratories
CCA Electronics Corp.
Cetec Inc. Subs. Computer Equipment
Corp.
Communication Medias
Dyma Engineering, Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gately Electronics
Gates Division of Harris-Intertype
Head Sound, Inc.
Mastertone Company
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Neve Inc., Rupert
Pulse Dynamics Mfg. Corp.
QRK Electronic Prod.
Quad-Eight Electronics
Radio Mfg. Co. (RMC)
Ramko Research
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rek-O-Kut Inc.
Roh Corporation
Rupert Neve Incorporated

Russco Electronics Mfg. Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Stanton Magnetics Inc.
Systems Engineering Co., Inc.
Video Engineering Co. Inc.
Wilkinson Electronics, Inc.

Preamplifiers, Video

Acrodyne Industries
Ameco Inc.
AMF Electrical Products Development
Division
C-COR Electronics, Inc.
Cramer Video and Audio Systems
Gen. Electrodynamics
Internatl. Nuclear Corp.
Kay Elemetrics Corp.
OMNIX
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RHG Elect Labs, Inc.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Shintron Co. Inc. Video Products Div.
Tele Measurements Inc.
TV Cable Supply Co., Inc.
Video Engineering Co. Inc.

Pressurization Equipment, Transmission Line

Andrew Corp.
Anixter-Pruzan CATV Division
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
Collins Radio Company Broadcast
Division
Cook Electric Co.
Dielectric Communications Div. of Sola
Basic
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Micro Communications, Inc.
Prodelin Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Soll, Inc., Joseph M.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Probes, Oscilloscope

Conway Electronic Enterprises Limited
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Enterprise Electronics Corp.
Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
ITT Jennings
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
Mercury Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
Components
Sencore Inc.
SPI-ITT Instruments Metrix Division
Tektronix Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Texscan Corp.
Troy Electronic Sales Co.
Vu-Data Corporation

Processors, Bleach Regeneration

Profit Recovery Systems Div. of CPAC

Processors, Film B&W

Comquip, Inc.
Eastman Kodak Co.
F&B/Ceco Industries, Inc.
Filmline Corp.
Photo-Pic Systems

Precision Laboratories Precision Cine
Equipment Corp.
Technology Incorporated HF Photo
Systems Div.
Treise Engineering

Processors, Film Color

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Technology
Incorporated 44

Comquip, Inc.
F&B/Ceco Industries, Inc.
Filmline Corp.
Jamieson Film Co.
Photo-Pic Systems
Precision Laboratories Precision Cine
Equipment Corp.
Technology Incorporated HF Photo
Systems Div.
Treise Engineering

Processors, Pollution Control

Profit Recovery Systems Div. of CPAC

Processors, Silver Recovery Unit

Eastman Kodak Co.
Filmline Corp.
Photo-Pic Systems
Profit Recovery Systems Div. of CPAC
Technology Incorporated HF Photo
Systems Div.
Treise Engineering

Processors, VTR

Cramer Video and Audio Systems
Danscoll Ltd.
Mincom Div. 3M Co.
Television Microtime, Inc. Subs.
Andersen Laboratories, Inc.

Programmed Music

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Cine Sonic Sound Inc. 137

Cine Sonic Sound Inc.

Programmers, Patchboard/Thumbwheel

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ES Enterprises 43

ES Enterprises

Projectors, Film

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Bell & Howell 55
Comquip, Inc. 141

ABTO, Inc.
Arriflex Company of America
Bell & Howell Consumer Products
Group
Christie Electric Corp.
Comquip, Inc.
Eastman Kodak Co.
F&B/Ceco Industries, Inc.
GAF Corp.
Gates Division of Harris-Intertype
Kalart Victor Corp.
Lipsner-Smith Corp.
Listec TV Equip. Corp.
L-W Photo, Inc.
Magna-Tech Electronic Co., Inc.
Paillard Incorporated
Palmer Films, Inc., W. A.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Precision Laboratories Precision Cine
Equipment Corp.
Rank Cintel, Electronic Systems Div.
Rank Precision Industries Ltd.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.

Robert Bosch Corp. Fernseh Div.
TeleMation, Inc.
Video Engineering Co. Inc.
Wilcam Photo Research Inc.

Projectors, Film Cassette Loading

Comquip, Inc.
Hokushin Elect. Co.
Listec TV Equip. Corp.

Projectors, Film Rear

Christie Electric Corp.
F&B/Ceco Industries, Inc.
Kalart Victor Corp.
Video Engineering Co. Inc.
Wilson Corp., H.

Projectors, Slide

ABTO, Inc.
Christie Electric Corp.
Eastman Kodak Co.
F&B/Ceco Industries, Inc.
GAF Corp.
Gates Division of Harris-Intertype
Harwald Company
Kliegl Bros. Lighting
Listec TV Equip. Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
R. H. Tyler Co. Div. of Weather Scan,
Inc.
RTI Research Technology Inc.
Sarkes Tarzian Inc. Broadcast
Equipment Div.
Spindler & Sauppe, Inc.
TeleMation, Inc.
Telesync Corp.

Projectors, TV Large Screen

Comquip, Inc.
Cramer Video and Audio Systems
F&B/Ceco Industries, Inc.
GBC Closed Circuit TV Corp.
General Television Ntwk.
GPL Div. Singer Gen.
Hokushin Elect. Co.
Janson Industries
Kalart Victor Corp.
K'SON Corporation
Tele Measurements Inc.
Video Engineering Co. Inc.

Projectors, Video Test Slide

Photo Research Div. of Kollmorgen
Corp.
Robert Bosch Corp. Fernseh Div.
Spindler & Sauppe, Inc.

Quadraphonic Systems

Catel, a Div. of United Scientific Corp.
CBS Labs
Concept 70, A Div. of Dyma
Engineering, Inc.
Gately Electronics
Heath Co.
Neve Inc., Rupert
Rupert Neve Incorporated
Universal Research Labs
ZERO-Impedance Systems, Inc.

Radar, Weather

Radio Research Instrument Co., Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RF Systems, Inc.
Tasker Systems Div. of Whittaker
Corp.

Radomes

See Adv. Page

Gates 10

Advance Industries
Andrew Corp.

Collins Radio Company Broadcast Division
 Gates Division of Harris-Intertype
 Jampro Antenna Co. Div. of Computer Equipment Corp.
 Magnatech Company
 Micro Communications, Inc.
 Prodelin Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Missile & Surface Radar Div.
 Shively Laboratories, Inc.
 Wilkinson Electronics, Inc.

Receivers, AM

Bell P/A Prod. Corp.
 Bogen Division Lear Siegler Inc.
 Conway Electronic Enterprises Limited
 Cooke Engineering Co.
 Heath Co.
 Ikegami Tsushinki Co., Ltd. Export Department
 Kahn Research Lab. Inc.
 Marconi Instruments
 National Electrolab Ltd.
 Potomac Instruments, Inc.
 Precision Elect. Inc.
 RCA Corporation RCA Electromagnetic & Aviation Systems Div.
 RHA Audio Communications Corp.
 RHG Elect Labs, Inc.
 Schultz Inc., Albert
 Siemens Corporation
 Singer Products Co., Inc.
 Terminal Hudson Corp. Terminal Hudson Electronics
 Wilkinson Electronics, Inc.

Receivers, Data

GTE Lenkurt Incorporated
 Trepac Corp. America
 Vitec Communications Ltd.

Receivers, EBS

Ball Bros. Research Corp. Miratel Division
 Mastertone Company
 McMartin Industries
 Tri-Tronics

Receivers, FM

Ameco Inc.
 Bell P/A Prod. Corp.
 Beyer (Revox Corporation)
 B & K Instruments Inc.
 Bogen Division Lear Siegler Inc.
 Catel, a Div. of United Scientific Corp.
 Cooke Engineering Co.
 Eico Elect. Inst. Co., Inc.
 GTE Lenkurt Incorporated
 Heath Co.
 Ikegami Tsushinki Co., Ltd. Export Department
 Lectronic Res. Labs. Inc.
 Marconi Instruments
 Marti Electronics
 McMartin Industries
 Paso Sound Products Inc.
 Permadyne Electronics Corp.
 Potomac Instruments, Inc.
 Precision Elect. Inc.
 RCA Corporation RCA Electromagnetic & Aviation Systems Div.
 RCA Corporation RCA Service Company Div.
 RHG Elect Labs, Inc.
 Sansui Electronics Corp.
 Schultz Inc., Albert
 Singer Products Co., Inc.
 Tandberg of America Inc.
 Terminal Hudson Corp. Terminal Hudson Electronics
 Wilkinson Electronics, Inc.

Receivers, HF

American Electronics Lab., Inc.
 Collins Radio Company Broadcast Division
 Conway Electronic Enterprises Limited
 Cooke Engineering Co.
 Engineering Associates

Heath Co.
 International Video Corp.
 Karg Laboratories, Inc.
 Marconi Electronics Inc.
 Marconi Instruments
 Narda Microwave Corp., The
 PRD Electronics, Inc.
 RHG Elect Labs, Inc.
 Rohde & Schwarz Sales Co.
 Siemens Corporation
 Singer Products Co., Inc.

Receivers, Multiplex

Belar Electronics Lab., Inc.
 Eico Elect. Inst. Co., Inc.
 GTE Lenkurt Incorporated
 Heath Co.
 Johnson Electronics, Inc.
 Karg Laboratories, Inc.
 McMartin Industries
 Moseley Assoc. Inc.
 Permadyne Electronics Corp.
 Precision Elect. Inc.
 RHG Elect Labs, Inc.
 Schultz Inc., Albert
 Singer Products Co., Inc.
 Superscope, Inc.
 Trepac Corp. America

Receivers, SCA

Belar Electronics Lab., Inc.
 Eico Elect. Inst. Co., Inc.
 Karg Laboratories, Inc.
 Marti Electronics
 Mastertone Company
 McMartin Industries
 Permadyne Electronics Corp.
 Scientific Systems, Inc. Broadcast Equipment Div.
 Singer Products Co., Inc.

Receivers, Time Signal

Arnold Barnes Company
 Catel, a Div. of United Scientific Corp.
 Electrohome Ltd.
 Lectronic Res. Labs. Inc.
 Radio Mfg. Co. (RMC)
 SIMEX/COAST NAVIGATION SCHOOL
 Singer Products Co., Inc.

Receivers, TV Color

Admiral Corporation
 Anixter-Pruzan CATV Division
 Audiotronics Corp.
 CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Cramer Video and Audio Systems
 Cunningham Corp. Subs. of Gleason Works
 Diamond Power Specialty Corp. Subs. Babcock & Wilcox Co.
 Electrohome Ltd.
 Heath Co.
 Panasonic Video Systems Div.
 Matsushita Electric Corp. of America
 Precision Electrical Mfg. Div. Circuit Science Inc.
 RCA Corporation RCA Service Company Div.
 SC Electronics, Inc. Subs. of Audiotronics Corp.
 Singer Co. Simulation Products Div.
 Soll, Inc., Joseph M.
 Sylvania Comm. Electronic
 Tele Measurements Inc.
 Video Aids Corp. of Colorado
 Video Engineering Co. Inc.

Receivers, TV Monochrome

Admiral Corporation
 Anixter-Pruzan CATV Division
 Audiotronics Corp.
 Cohu, Inc. Electronics Division
 Cramer Video and Audio Systems
 Cunningham Corp. Subs. of Gleason Works
 Heath Co.
 Nemo Recording Labs
 Panasonic Video Systems Div.
 Matsushita Electric Corp. of America

Precision Electrical Mfg. Div. Circuit Science Inc.
 Rank Precision Ind. Broadcast Div.
 SC Electronics, Inc. Subs. of Audiotronics Corp.
 Singer Co. Simulation Products Div.
 Sony Corp. of America
 Sylvania Comm. Electronic
 Telesync Corp.
 Video Engineering Co. Inc.

Recorder Care Kits, Video

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Nortronics Co., Inc. 133
 Nortronics Co., Inc. Recorder Care Div.

Recorder Drive Motor Power Supply

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Pacific Recorders and Engrg. Corp. 118
 Pacific Recorders and Engrg. Corp.

Recorder Replacement Motor

Beau Motor Division U.M.C. Electronics Co.
 Broadcast Products Inc.
 Mastertone Company
 Minarik Elect.
 Tapecaster TCM, Inc.
 Telectro Systems Corp.
 VIF International

Recorders, Audio Reel-to-Reel

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Crown International 121
Mastertone Company 139
Scully/Metrotech 111
Tape-Athon Corp. 113

Ampex Corp. Audio-Video Systems Division
 Autogram Corporation
 Arnold Barnes Company
 Beyer (Revox Corporation)
 Broadcast Electronics
 Collins Radio Company Broadcast Division
 Communication Medias
 Crown International
 ELPA Marketing Industries, Inc.
 F&B/Ceco Industries, Inc.
 Gates Division of Harris-Intertype
 Image Devices Incorporated
 International Tapetronics Corp.
 Mastertone Company
 Nagra Magnetic Recorders, Inc.
 Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp.
 Pentagon Industries, Inc.
 Peripheral Data Machines, Inc. (PER DATA)
 Schafer Electronics Corp.
 Scully/Metrotech Divs. of Dictaphone Corp.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Systems Engineering Co., Inc.
 Tandberg of America Inc.
 Tape-Athon Corp.
 TASCAM Corporation
 TEAC Corp of America
 Telectro Systems Corp.
 Telex Communications Division
 Test & Measuring Instruments, Inc. a North American Philips Co.
 Victor Duncan, Inc.
 VIF International
 Wilkinson Electronics, Inc.

Recorders, Camera Tape to Film

Image Devices Incorporated
 Palmer Films, Inc., W. A.
 Teledyne Camera Systems
 Victor Duncan, Inc.

Recorders, Cassette

Astrocom Electronics, Inc.
 Audiotronics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Conrac Corporation Cramer Division
 Heath Co.
 Image Devices Incorporated
 K'SON Corporation
 P. R. Mallory & Co. Inc. Mallory Distributor Products Co.
 Martel Electronics Inc.
 Mincom Div. 3M Co.
 Panasonic Video Systems Div.
 Matsushita Electric Corp. of America
 Pentagon Industries, Inc.
 RAPID-Q Div. of Garron Electronics
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Recordex Corporation
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Sansui Electronics Corp.
 Schafer International
 Superscope, Inc.
 Tandberg of America Inc.
 Telectro Systems Corp.
 Telex Communications Division
 Terminal Hudson Corp. Terminal Hudson Electronics
 Test & Measuring Instruments, Inc. a North American Philips Co.
 Victor Duncan, Inc.

Recorders, Disc Magnetic

Ampex Corp. Audio-Video Systems Division
 CMX Systems
 Colorado Video Inc.
 Data Disc Inc.
 Dyma Engineering, Inc.
 Schultz Inc., Albert
 Systems Marketing Corp. And Sono-Mag Corp.
 TeleMation, Inc.

Recorders, Film Light

Magna-Tech Electronic Co., Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.

Recorders, Film Magnetic

Cetec Inc. Subs. Computer Equipment Corp.
 Comquip, Inc.
 Magna-Tech Electronic Co., Inc.
 Precision Laboratories Precision Cine Equipment Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Stancil-Hoffman Corp.
 Tele-Cine Inc.
 Victor Duncan, Inc.

Recorders, Logging Magnetic

Alto Communications Inc. Broadcast Marketing Div.
 Broadcast Products Inc.
 CCA Electronics Corp.
 Gould Inc. Instrument Systems Div.
 Honeywell Inc. Test Instruments Div.
 Lang Electronics Inc.
 Magnatech Company
 Miles Reproducer Co.
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Richmond Hill Laboratories Inc.
 Scully/Metrotech Divs. of Dictaphone Corp.
 Soundsciber Corporation
 Stancil-Hoffman Corp.
 Systems Marketing Corp. And Sono-Mag Corp.
 Tape-Athon Corp.
 Telectro Systems Corp.
 Test & Measuring Instruments, Inc. a North American Philips Co.

Recorders, Magnetic Tape Logging

Alto Communications Inc. Broadcast Marketing Div.
 Autogram Corporation
 B & K Instruments Inc.
 Broadcast Products Inc.
 CCA Electronics Corp.
 Collins Radio Company Broadcast Division
 Honeywell Inc. Test Instruments Div.
 Magnatech Company
 Mastertone Company
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Schafer Electronics Corp.
 Scully/Metrotech Divs. of Dictaphone Corp.
 Singer Products Co., Inc.
 Soundscriber Corporation
 Sparta Electronic Corp.
 Stancil-Hoffman Corp.
 Systems Marketing Corp. And Sono-Mag Corp.
 Tape-Athon Corp.
 Telex Communications Division
 Test & Measuring Instruments, Inc. a North American Philips Co.

Recorders, Magnetic Tape Video

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Ampex Corp. 26, 27

Akai America, Ltd.
 Alcor Inc.
 Ampex Corp. Audio-Video Systems Division
 Arvin Systems, Inc.
 Audiotronics Corp.
 BSC Incorporated
 CATV Equipment Co.
 Cramer Video and Audio Systems
 Diamond Power Specialty Corp. Subs. Babcock & Wilcox Co.
 F&B/Ceco Industries, Inc.
 GBC Closed Circuit TV Corp.
 General Television Ntwk.
 GPL Div. Singer Gen.
 Hitachi Shibaden Corp. of America
 Ikegami Tsuchinko Co., Ltd. Export Department
 International Video Corp.
 Javelin Div. of Apollo Lasers
 K' SON Corporation
 Mincom Div. 3M Co.
 Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp.
 Panasonic Video Systems Div.
 Matsushita Electric Corp. of America
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Rank Cintel, Electronic Systems Div.
 Rank Precision Industries Ltd.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Riker Communications Inc.
 Robert Bosch Corp. Fernseh Div.
 Singer Co. Simulation Products Div.
 Sony Corp. of America
 Video Engineering Co. Inc.

Recorders, Paper Logging and Graphic

Bristol Div. of Acco
 Collins Radio Company Broadcast Division
 Fluke, John, Mfg. Co. Inc.
 General Electric Company Tubes/MW Devices
 General Radio Co.
 Gould Inc. Instrument Systems Div.
 Gulton Industries, Inc. Recorder Systems Div.
 Heath Co.
 Honeywell Inc. Test Instruments Div.
 Lectronic Res. Labs. Inc.
 Rust Corp.
 Simpson Electric Co.

Systems Marketing Corp. And Sono-Mag Corp.
 Test & Measuring Instruments, Inc. a North American Philips Co.

Recorders, Program Logging

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Video Sentry System126

Broadcast Products Inc.
 Central Dynamics Corp.
 Communication Medias
 Radio Mfg. Co. (RMC)
 Schafer Electronics Corp.
 Scully/Metrotech Divs. of Dictaphone Corp.
 Tandberg of America Inc.
 Tape-Athon Corp.
 Video Sentry System

Recorders, Tape Audio

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Scully/Metrotech 111
Sparta Electronic Corp. 8
Tape-Athon Corp. 113

Accurate Sound Corp.
 Alcor Inc.
 Alto Communications Inc. Broadcast Marketing Div.
 Ampex Corp. Audio-Video Systems Division
 Ampro Corp.
 Arriflex Company of America
 Astrocom Electronics, Inc.
 Audio Distributor Inc.
 Audiotronics Corp.
 Arnold Barnes Company
 Bell & Howell Consumer Products Group
 Beyer (Revox Corporation)
 B & K Instruments Inc.
 Broadcast Electronics
 Broadcast Products Inc.
 CCA Electronics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Cine Sonic Sound Inc.
 Collins Radio Company Broadcast Division
 Communication Medias
 Comquip, Inc.
 Conrac Corporation Cramer Division
 Crown International
 Denson Electronic Corp.
 ELPA Marketing Industries, Inc.
 Gates Division of Harris-Intertype
 General Radio Co.
 IGM
 Inovonics
 International Tapetronics Corp.
 Lang Electronics Inc.
 Magnatech Company
 Magna-Tech Electronic Co., Inc.
 Martel Electronics Inc.
 Mastertone Company
 Miles Reproducer Co.
 Nagra Magnetic Recorders, Inc.
 Nemo Recording Labs
 Norelco, Philips Bcst. Equip. Corp. Subs. North American Philips Corp.
 Orbit Radio and Video
 Otari of America, Ltd.
 Paso Sound Products Inc.
 Pentagon Industries, Inc.
 Peripheral Data Machines, Inc. (PER DATA)
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Radio Mfg. Co. (RMC)
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Recordex Corporation
 Roberts Div. of Rheem Mfg. Co.
 Ryder Magnetic Sales Corp.
 Schafer Electronics Corp.
 Schultz Inc., Albert

Scientific Systems, Inc. Broadcast Equipment Div.
 Scully/Metrotech Divs. of Dictaphone Corp.
 Singer Products Co., Inc.
 Soundscriber Corporation
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Stancil-Hoffman Corp.
 Superscope, Inc.
 Systems Marketing Corp. And Sono-Mag Corp.
 Tandberg of America Inc.
 Tape-Athon Corp.
 TASCAM Corporation
 TEAC Corp of America
 Tele Measurements Inc.
 Telex Communications Division
 Terminal Hudson Corp. Terminal Hudson Electronics
 Victor Duncan, Inc.
 VIF International
 Wilkinson Electronics, Inc.

Recorders, Tape Audio Cartridge

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Alto Communications Inc. Broadcast Marketing Div.
 Ampro Corp.
 Autogram Corporation
 Arnold Barnes Company
 Bell & Howell Consumer Products Group
 Broadcast Electronics
 Broadcast Prod. Co. Inc. Bcst. Division
 Broadcast Products Inc.
 CCA Electronics Corp.
 Cetec Inc. Subs. Computer Equipment Corp.
 Collins Radio Company Broadcast Division
 Communication Medias
 Conrac Corporation Cramer Division
 Contel Mfg. Div. of Continental Electronic Wholesale Corp.
 Dyma Engineering, Inc.
 Franz Vertriebs-gesellschaft m.b.H.
 Gates Division of Harris-Intertype IGM
 International Tapetronics Corp.
 Lang Electronics Inc.
 MaCarta
 MacKenzie Laboratories, Inc.
 Mastertone Company
 Maze Corporation
 Nemo Recording Labs
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 QRK Electronic Prod.
 RAPID-Q Div. of Garron Electronics
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Recordex Corporation
 Roberts Div. of Rheem Mfg. Co.
 Schafer Electronics Corp.
 Schultz Inc., Albert
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Systems Engineering Co., Inc.
 Systems Marketing Corp. And Sono-Mag Corp.
 Tandberg of America Inc.
 Tapecaster TCM, Inc.
 Tele Measurements Inc.
 Telex Communications Division
 Test & Measuring Instruments, Inc. a North American Philips Co.

Recorders, Time Base Corrector

Ampex Corp. Audio-Video Systems Division
 Cramer Video and Audio Systems

Recorders, Video Kinescope

Comquip, Inc.
 Palmer Films, Inc., W. A.
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Teledyne Camera Systems
 Tele Measurements Inc.
 Video Engineering Co. Inc.

Recorders, Video Tape Clean Air Hood

Enviroco
 Liberty Industries
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Television Equipment Associates
 Video Engineering Co. Inc.

Recording Services, Audio Tape

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The CnB Studios141

Accurate Sound Corp.
 Alto Communications Inc. Broadcast Marketing Div.
 Ampro Corp.
 Audio Magnetics Corp.
 Bell Sound Studios Electro Sound Div.
 Cine Sonic Sound Inc.
 The CnB Studios
 IGM
 Nemo Recording Labs
 Orbit Radio and Video
 Pentagon Industries, Inc.
 Qualitape Inc.
 Radio Mfg. Co. (RMC)
 Schafer Electronics Corp.
 Superscope, Inc.
 Tape-Athon Corp.
 Ultra Audio Products
 United Recording Electronics Industries

Recording Services, Videotape to Film

Cramer Video and Audio Systems
 Mediatech
 Palmer Films, Inc., W. A.

Recording Synchronizers

Electronic Engineering Co. of California
 Magna-Tech Electronic Co., Inc.
 Nagra Magnetic Recorders, Inc.
 Quad-Eight Electronics
 Ryder Magnetic Sales Corp.

Reels, Cable and Mike

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Hannay Reels106

Hannay Reels Clifford B. Hannay & Son Inc.
 Industrial Electric Reel
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Roll-A-Reel
 Ryder Magnetic Sales Corp.

Reels, Magnetic Tape

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Polyline Corp.137

Audio Devices, Inc.
 Audio Magnetics Corp.
 Broadcast Electronics
 Broadcast Products Inc.
 Collins Radio Company Broadcast Division
 Communication Medias
 Duotone Co. Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Lauderdale Electronic Labs.
 Magnetic Prod. Div. 3M Company
 Mastertone Company

Pentagon Industries, Inc.
Polyline Corp.
Qualitape Inc.
Recordex Corporation
Schafer Electronics Corp.
Spotmaster Broadcast Electronics
Wide Response
Wilkinson Electronics, Inc.

Reels, Video Tape

Audio Magnetics Corp.
Comquip, Inc.
Cramer Video and Audio Systems
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Harwald Company
Magnetic Prod. Div. 3M Company
Polyline Corp.
Recordex Corporation
RTI Research Technology Inc.
Wide Response

Reflectors, Passive

Advance Industries
Andrews Tower Inc.
Collins Radio Company Broadcast
Division
Fort Worth Tower Co., Inc.
Microflex Co. Inc.
Rohn Manufacturing Div. of Unarco
Industries Inc.
Utility Tower Co.

Regulators, Voltage

California Instruments Co.
Collins Radio Company Broadcast
Division
General Electric Company Tubes/MW
Devices
General Radio Co.
Kato Engineering Co.
Lectronic Res. Labs. Inc.
Northlake Engineering, Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
Topaz Electronics
Total Technology
Video Engineering Co. Inc.

Remote Control Monitors, VIT

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Telemet Co. IBC

Gates Division of Harris-Intertype
Telemet Co.
Video Engineering Co. Inc.

Remote Control Systems

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Mastertone Company 139
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Alto Communications Inc. Broadcast
Marketing Div.
Ampro Corp.
Atlantic Research Corp. Teleproducts
Dept.
Audio Devices, Inc.
Belcom Electronics Mfg. Co.
Bristol Div. of Acco
CCA Electronics Corp.
Central Dynamics Corp.
CMX Systems
Collins Radio Company Broadcast
Division
Continental Electronics Mfg. Co.
Display Systems Corp.
Dorado Systems
Engineering Associates
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gates Division of Harris-Intertype
General Electric Company Tubes/MW
Devices
Magnatech Company
Magna-Tech Electronic Co., Inc.
Marti Electronics

Mastertone Company
Miles Reproducer Co.
Moseley Assoc. Inc.
National Electrolab Ltd.
North American Radio Corp.
Pulsecom
Ramko Research
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RHA Audio Communications Corp.
Richmond Hill Laboratories Inc.
Roh Corporation
Rust Corp.
Ryder Magnetic Sales Corp.
Scott-Buttner Coastcom, Inc.
Sparta Electronic Corp.
Systems Marketing Corp. And
Sono-Mag Corp.
Tele-Cine Inc.
Telemet Co.
Trepac Corp. America
Video Engineering Co. Inc.
Wilkinson Electronics, Inc.

Remote Pickup Systems, Radio

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Marti Electronics 128D
Moseley Assoc. Inc. 7
Sparta Electronic Corp. 8

CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Marti Electronics
Mastertone Company
Miles Reproducer Co.
Moseley Assoc. Inc.
Pulse Dynamics Mfg. Corp.
Schafer Electronics Corp.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Reverberation Systems

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Sparta Electronic Corp. 8

AKG Division North Amer. Philips
Corp.
Audio Distributor Inc.
B & K Instruments Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Franz Vertriebs-gesellschaft m.b.H.
Sparta Electronic Corp.
TASCAM Corporation

Rewinders, Film

Comquip, Inc.
F&B/Ceco Industries, Inc.
Harwald Company
Image Devices Incorporated
Kalart Victor Corp.
Neumade Prod. Corp.
Precision Laboratories Precision Cine
Equipment Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RTI Research Technology Inc.

Rewinders, Tape

Bell Sound Studios Electro Sound Div.
Broadcast Products Inc.
Collins Radio Company Broadcast
Division
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Marathon Broadcast Equip.
Neumade Prod. Corp.
Pentagon Industries, Inc.
Radio Mfg. Co. (RMC)
Ramko Research
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Recordex Corporation
Recortec Inc.
Singer Products Co., Inc.
Sparta Electronic Corp.

Safety Devices, Ladder

Air Space Devices Inc.

Anixter-Pruzan CATV Division
Antenna Products Company
TV Cable Supply Co., Inc.

Scramblers, Speech

Kahn Research Lab. Inc.
Singer Products Co., Inc.
Trepac Corp. America

Screens, Projection Front

Comquip, Inc.
Eastman Kodak Co.
F&B/Ceco Industries, Inc.
Tele Measurements Inc.
Telesync Corp.
Video Engineering Co. Inc.

Screens, Projection Rear

F&B/Ceco Industries, Inc.
Tele Measurements Inc.
Video Engineering Co. Inc.
Wilson Corp., H.

Semiconductors, IC's

Amperex Electronic Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Hewlett Packard Co.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Solitron Devices Inc. Semiconductor
Div.
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.

Semiconductors, Rectifier General

Amperex Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Collins Radio Company Broadcast
Division
General Electric Company Tubes/MW
Devices
Heintz and Kaufman Ltd.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Sylvania Semiconductor
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Semiconductors, Rectifier High Voltage Stack

Amperex Electronic Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Collins Radio Company Broadcast
Division
Heintz and Kaufman Ltd.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Terminal Hudson Corp. Terminal
Hudson Electronics
Thor Electronics Corp.
Westinghouse Electric Corp.
Wilkinson Electronics, Inc.

Semiconductors, Rectifier Power

Amperex Corp.

Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Collins Radio Company Broadcast
Division
General Electric Company Tubes/MW
Devices
Heintz and Kaufman Ltd.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Siemens Corporation
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Sylvania Semiconductor
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Semiconductors, Rectifier Silicon Controlled-SCR

Amperex Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Collins Radio Company Broadcast
Division
General Electric Company Tubes/MW
Devices
Heintz and Kaufman Ltd.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Siemens Corporation
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.
Wilkinson Electronics, Inc.

Semiconductors, Thyristor

Calvert Electronics Power Tube Div.
Ceco Communications Inc.
General Electric Company Tubes/MW
Devices
Heintz and Kaufman Ltd.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Siemens Corporation
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Semiconductors, Transistor AF

Amperex Electronic Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Heintz and Kaufman Ltd.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Motorola Semiconduct Motorola Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Electronic
Components
Siemens Corporation
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Sylvania Semiconductor
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Semiconductors, Transistor FET

Amperex Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.

Heintz and Kaufman Ltd.
P. R. Mallory & Co. Inc. Mallory
Distributor Products Co.
Motorola Semiconduct Motorola Inc.
RCA Corporation RCA Electronic
Components
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Semiconductors, Transistor General

Amperex Electronic Corp.
Calvert Electronics Power Tube Div.
CATV Equipment Co.
Ceco Communications Inc.
General Electric Company Tubes/MW
Devices
Motorola Semiconduct Motorola Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Electronic
Components
Siemens Corporation
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Sylvania Semiconductor
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Semiconductors, Transistor RF

Amperex Electronic Corp.
Calvert Electronics Power Tube Div.
Ceco Communications Inc.
Heintz and Kaufman Ltd.
Hewlett Packard Co.
Motorola Semiconduct Motorola Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Electronic
Components
Siemens Corporation
Singer Products Co., Inc.
Solitron Devices Inc. Semiconductor
Div.
Sylvania Semiconductor
Terminal Hudson Corp. Terminal
Hudson Electronics
Texas Instrument Components Group
Thor Electronics Corp.
Westinghouse Electric Corp.

Shifters, Phase Microwave

Hewlett Packard Co.
Lectronic Res. Labs. Inc.
Micro Communications, Inc.
Microwave Assoc. Inc.
Narda Microwave Corp., The
Raytheon Company Raytheon Data
Systems Co.
Television Microtime, Inc. Subs.
Andersen Laboratories, Inc.
Weinschel Engineering Co.

Slow Scan TV Systems

ATV Research
Colorado Video Inc.
Cramer Video and Audio Systems
Gates Division of Harris-Intertype
Gen. Electrodynamics
Hughes Aircraft Company Ind. Prod.
Div.-Image Devices
Teledyne Brown Engineering Co.
Science & Engrg. Div.
Teltron, Inc.
Video Engineering Co. Inc.

Sound Effect Systems

Radio Mfg. Co. (RMC)
Universal Research Labs

Sound Systems, Outdoor

Alcor Inc.
ALTEC
Ancha Electronics Inc.
Applied Electro Mechanics, Inc.
ATLAS Sound
Audio Distributor Inc.
Bell P/A Prod. Corp.
Bogen Division Lear Siegler Inc.
Cetec Inc. Subs. Computer Equipment
Corp.
Concept 70, A Div. of Dyma
Engineering, Inc.
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Head Sound, Inc.
Jensen Sound Laboratories Div.
Pemcor, Inc.
McMartin Industries
Paso Sound Products Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Pulse Dynamics Mfg. Corp.
Q-TV Sales & Distributing Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Shure Brothers Inc.
Spectra Sonics
Terminal Hudson Corp. Terminal
Hudson Electronics
Ultra Audio Products

Sound Systems, Portable

Alcor Inc.
ALTEC
Ancha Electronics Inc.
Applied Electro Mechanics, Inc.
ATLAS Sound
Audio Distributor Inc.
Bell P/A Prod. Corp.
Bogen Division Lear Siegler Inc.
CCA Electronics Corp.
Cetec Inc. Subs. Computer Equipment
Corp.
Concept 70, A Div. of Dyma
Engineering, Inc.
Cramer Video and Audio Systems
Custom Craft Designs
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
F&B/Ceco Industries, Inc.
Gately Electronics
Head Sound, Inc.
Jensen Sound Laboratories Div.
Pemcor, Inc.
McMartin Industries
Neve Inc., Rupert
Paso Sound Products Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Pulse Dynamics Mfg. Corp.
Q-TV Sales & Distributing Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Roberts Div. of Rheem Mfg. Co.
Rupert Neve Incorporated
Shure Brothers Inc.
Singer Products Co., Inc.
Spectra Sonics
Tape-Athon Corp.
Terminal Hudson Corp. Terminal
Hudson Electronics
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Ampro Corp.
Ancha Electronics Inc.
Audio Designs & Mfg.
Broadcast Electronics
CCA Electronics Corp.
Cetec Inc. Subs. Computer Equipment
Corp.
Cleveland Electronics, Inc.
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Engineering, Inc.
Cramer Video and Audio Systems
Crown International
Delta Electronics Inc. (N.C.)

Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
Gately Electronics
Gotham Audio Corp.
Jensen Sound Laboratories Div.
Pemcor, Inc.
Magna-Tech Electronic Co., Inc.
McMartin Industries
Melcor Electronics Corp.
Neve Inc., Rupert
Norelco, Philips Bcst. Equip. Corp.
Subs. North American Philips Corp.
Paso Sound Products Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Pulse Dynamics Mfg. Corp.
Quad-Eight Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rupert Neve Incorporated
Shure Brothers Inc.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
Spectra Sonics
Systems Engineering Co., Inc.
Total Technology
(Trusonic) ACS Inc.
Video Aids Corp. of Colorado

Sound Systems, Theater

Alcor Inc.
ALTEC
Ancha Electronics Inc.
ATLAS Sound
Audio Designs & Mfg.
Audio Distributor Inc.
Bell P/A Prod. Corp.
Bell Sound Studios Electro Sound Div.
Bogen Division Lear Siegler Inc.
Cetec Inc. Subs. Computer Equipment
Corp.
Concept 70, A Div. of Dyma
Engineering, Inc.
Delta Electronics Inc. (N.C.)
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
Fairchild/Robbins Fairchild Sound
Equipment Corp.
F&B/Ceco Industries, Inc.
Gately Electronics
Jensen Sound Laboratories Div.
Pemcor, Inc.
Melcor Electronics Corp.
Neve Inc., Rupert
Paso Sound Products Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Q-TV Sales & Distributing Corp.
Quad-Eight Electronics
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
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Division
Communication Medias
Crown International
Electro-Voice Inc. Subs. of Gulton
Industries, Inc.
G.C. Electronics
Gotham Audio Corp.
Hartley Prod. Corp.

Heath Co.
Jensen Sound Laboratories Div.
Pemcor, Inc.
Koss Corp
Micro-Trak Corporation (Formerly:
Gray Research & Dev.)
Oaktron Industries Inc.
Paso Sound Products Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
Pulse Dynamics Mfg. Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Sansui Electronics Corp.
Schultz Inc., Albert
Scientific Systems, Inc. Broadcast
Equipment Div.
Singer Products Co., Inc.
Soundolier, Inc.
Sparta Electronic Corp.
Spectra Sonics
Spotmaster Broadcast Electronics
Superscope, Inc.
Systems Engineering Co., Inc.
Tandberg of America Inc.
TEAC Corp of America
Tele Measurements Inc.
Terminal Hudson Corp. Terminal
Hudson Electronics
(Trusonic) ACS Inc.
Victor Duncan, Inc.

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Marketing Div.
Andrews Tower Inc.
Belcom Electronics Mfg. Co.
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
David Clark Co., Inc.
Dyma Engineering, Inc.
Electromagnetic Sciences, Inc.
Gates Division of Harris-Intertype
GTE Lenkurt Incorporated
Magnatech Company
Marti Electronics
Mastertone Company
Microwave Assoc. Inc.
Moseley Assoc. Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RHG Elect Labs, Inc.
Richmond Hill Laboratories Inc.
Schafer Electronics Corp.
Scott-Buttner Coastcom, Inc.
Singer Products Co., Inc.
Sparta Electronic Corp.
Trepac Corp. America
Varian Solid State Div. Micro-Link
Products
Visual Communication Products Oper.
General Electric Co.
Wilkinson Electronics, Inc.

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Janson Industries
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 Atlantic Research Corp. Teleproducts Dept.
 Audio Designs & Mfg.
 Ball Bros. Research Corp. Miratel Division
 Central Dynamics Corp.
 CHESTER ELECTRONIC LABS., INC. GTE Information Systems Inc.
 Cohu, Inc. Electronics Division
 Concept 70, A Div. of Dyma Engineering, Inc.
 Cramer Video and Audio Systems
 Cunningham Corp. Subs. of Gleason Works
 Danscoll Ltd.
 DYNNAIR Electronics, Inc.
 Dynasciences Corp. Video Products Div.
 Essex International Inc. RBM Div.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 GBC Closed Circuit TV Corp.
 Grass Valley Group, Inc.
 IGM
 Interntl. Nuclear Corp.
 Javelin Div. of Apollo Lasers
 Kay Elemetrics Corp.
 Marconi Electronics Inc.
 McCurdy Radio Ind. Inc.
 Nasco Television Systems
 Neve Inc., Rupert
 OMNIX
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 R. H. Tyler Co. Div. of Weather Scan, Inc.
 Richmond Hill Laboratories Inc.
 Riker Communications Inc.
 Roh Corporation
 Rupert Neve Incorporated
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Seacor Inc.
 Shintron Co. Inc. Video Products Div.
 Sparta Electronic Corp.
 Systems Marketing Corp. And Sono-Mag Corp.
 TeleMation, Inc.
 Telemet Co.
 Theta-Com of California AML Division
 Total Technology
 Vicon Industries, Inc.
 Video Aids Corp. of Colorado
 Video Engineering Co. Inc.
 Vikoa Inc.
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 American Electronics Lab., Inc.
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 Andrew Corp.
 A-Tel-A-Matic
 Atlantic Research Corp. Teleproducts Dept.
 Arnold Barnes Company
 Bird Electronic Corp.
 Blonder-Tongue Labs.
 Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
 CATV Equipment Co.
 Collins Radio Company Broadcast Division
 Comark Industries Inc.
 Delta Electronics Inc. (Va.)
 Dielectric Communications Div. of Sola Basic
 Electronic Inst. & Spec.
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 General Microwave Corp.
 Integral Data Devices Inc.
 ITT Jennings
 Jampro Antenna Co. Div. of Computer Equipment Corp.
 Kay Elemetrics Corp.
 Lectronic Res. Labs. Inc.
 Magnecraft Electric Co.
 Matrix Systems Corp.
 Micro Communications, Inc.
 OAK Industries Inc. CATV Division
 Prodelin Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Shively Laboratories, Inc.
 Singer Products Co., Inc.
 Soll, Inc., Joseph M.
 Sparta Electronic Corp.
 Switchcraft Inc.
 Telonic Industries Inc.
 Terminal Hudson Corp. Terminal Hudson Electronics
 Texscan Corp.
 Trompeter Electronics
 Virginia Panel Corporation

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 Atlantic Research Corp. Teleproducts Dept.
 Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
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 Cramer Video and Audio Systems
 Cunningham Corp. Subs. of Gleason Works
 Delta Electronics Inc. (Va.)
 Integral Data Devices Inc.
 Interntl. Nuclear Corp.
 Marconi Electronics Inc.
 Matrix Systems Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Robert Bosch Corp. Fernseh Div.
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 Switchcraft Inc.
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Bradford Information Systems
 Broadcast Products Inc.
 Cablewave Systems Inc. Subs. Phelps Dodge and Kabelmetal
 Central Dynamics Corp.
 CHESTER ELECTRONIC LABS., INC. GTE Information Systems Inc.
 Cleveland Electronics, Inc.
 CMX Systems
 Cohu, Inc. Electronics Division
 Concept 70, A Div. of Dyma Engineering, Inc.
 Cramer Video and Audio Systems
 Cunningham Corp. Subs. of Gleason Works
 Danscoll Ltd.
 Datatek Corp.
 Delta Electronics Inc. (Va.)
 DYNNAIR Electronics, Inc.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gates Division of Harris-Intertype
 Grass Valley Group, Inc.
 Holland Electronics
 IGM
 Integral Data Devices Inc.
 Interntl. Nuclear Corp.
 International Video Corp.
 ITT General Controls
 Javelin Div. of Apollo Lasers
 Marco Video Systems, Inc.
 Marconi Electronics Inc.
 Mastertone Company
 Matrix Systems Corp.
 McCurdy Radio Ind. Inc.
 Multronics, Inc.
 Nasco Television Systems
 OMNIX
 Q-TV Sales & Distributing Corp.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 Richmond Hill Laboratories Inc.
 Riker Communications Inc.
 Robert Bosch Corp. Fernseh Div.
 Roh Corporation
 Sarkes Tarzian Inc. Broadcast Equipment Div.
 Schafer Electronics Corp.
 Soll, Inc., Joseph M.
 Switchcraft Inc.
 Systems Marketing Corp. And Sono-Mag Corp.
 Tasker Systems Div. of Whittaker Corp.
 Tech Laboratories Inc.
 TeleMation, Inc.
 Telemet Co.
 Trepac Corp. America
 Trompeter Electronics
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 Vikoa Inc.
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 Audio Magnetics Corp.
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 Bell Sound Studios Electro Sound Div.
 Birmingham Tape Cartridge Co., Inc.
 Broadcast Electronics
 Broadcast Products Inc.

BSC Incorporated
 CCA Electronics Corp.
 Cine Sonic Sound Inc.
 Collins Radio Company Broadcast Division
 Columbia Broadcast Services
 Communication Medias
 Comquip, Inc.
 Crown International
 Duotone Co. Inc.
 Elecktromesstechnik E M T Wilhelm Franz G M B H
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Gates Division of Harris-Intertype
 Image Devices Incorporated
 Irish Magnetic Recording Tape Div. Morhan Nat'l. Sales Co. Inc.
 Karex, Inc. Subs. of Rohm and Haas Co.
 Lauderdale Electronic Labs
 Magnatech Company
 Magnetic Prod. Div. 3M Company
 P. R. Mallory & Co. Inc. Mallory Distributor Products Co.
 Mastertone Company
 Memorex Corporation Audio-Video Group
 Miles Reproducer Co.
 Otari of America, Ltd.
 Pentagon Industries, Inc.
 Philips Broadcast Equipment Corp. Subs. North American Philips Corp.
 Q-TV Sales & Distributing Corp.
 Qualitape Inc.
 RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
 RCA Corporation RCA Electronic Components
 Recordex Corporation
 Ryder Magnetic Sales Corp.
 Schafer Electronics Corp.
 Schultz Inc., Albert
 Singer Products Co., Inc.
 Soundscriber Corporation
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Systems Marketing Corp. And Sono-Mag Corp.
 Tape-Athon Corp.
 TDK Electronics Corp.
 Tele Measurements Inc.
 Victor Duncan, Inc.
 VIF International
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 Wilkinson Electronics, Inc.

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 Bell Sound Studios Electro Sound Div.
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 Broadcast Electronics
 Broadcast Prod. Co. Inc. Bcst. Division
 Broadcast Products Inc.
 BSC Incorporated
 Cine Sonic Sound Inc.
 Collins Radio Company Broadcast Division
 Columbia Broadcast Services
 Communication Medias
 Conrac Corporation Cramer Division
 Contel Mfg. Div. of Continental Electronic Wholesale Corp.
 Fairchild/Robbins Fairchild Sound Equipment Corp.
 Fidelipac Division TelePro Industries, Inc.
 Gates Division of Harris-Intertype
 IGM
 Irish Magnetic Recording Tape Div. Morhan Nat'l. Sales Co. Inc.

Joa Cartridge Service
 Lauderdale Electronic Labs
 Magnetic Prod. Div. 3M Company
 P. R. Mallory & Co. Inc. Mallory
 Distributor Products Co.
 Marathon Broadcast Equip.
 Mastertone Company
 Memorex Corporation Audio-Video
 Group
 Nemo Recording Labs
 Paso Sound Products Inc.
 QRK Electronic Prod.
 Q-TV Sales & Distributing Corp.
 Qualitape Inc.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 RCA Corporation RCA Electronic
 Components
 Recordex Corporation
 Schafer Electronics Corp.
 Schultz Inc., Albert
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Systems Engineering Co., Inc.
 Systems Marketing Corp. And
 Sono-Mag Corp.
 Tapecaster TCM, Inc.
 Tapex Corporation
 TDK Electronics Corp.
 Wilkinson Electronics, Inc.

Tape, Magnetic Recording Computer

Ampex Corp. Audio-Video Systems
 Division
 Audio Devices, Inc.
 Magnetic Prod. Div. 3M Company
 Memorex Corporation Audio-Video
 Group
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Systems Marketing Corp. And
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 Division
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 Fidelipac Division TelePro Industries,
 Inc.
 G.C. Electronics
 International Tapetronics Corp.
 Mastertone Company
 Nortronics Co., Inc. Recorder Care Div.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Schultz Inc., Albert
 Systems Marketing Corp. And
 Sono-Mag Corp.
 Taber Mfg. & Engr. Co.
 TASCAM Corporation
 Telectro Systems Corp.
 Victor Duncan, Inc.
 VIF International

Tape, Magnetic Recording Video

Ampex Corp. Audio-Video Systems
 Division
 Anixter-Pruzan CATV Division
 Audio Magnetics Corp.
 BSC Incorporated
 Columbia Broadcast Services
 Computer Image Corp.
 Comquip, Inc.
 Cramer Video and Audio Systems
 Diamond Power Specialty Corp. Subs.
 Babcock & Wilcox Co.
 GBC Closed Circuit TV Corp.
 Hitachi Shibaden Corp. of America
 Irish Magnetic Recording Tape Div.
 Morhan Nat'l. Sales Co. Inc.
 Javelin Div. of Apollo Lasers
 Karex, Inc. Subs. of Rohm and Haas
 Co.
 K'SON Corporation

Magnetic Prod. Div. 3M Company
 Memorex Corporation Audio-Video
 Group
 Panasonic Video Systems Div.
 Matsushita Electric Corp. of
 America
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Recordex Corporation
 R. H. Tyler Co. Div. of Weather Scan,
 Inc.
 Robert Bosch Corp. Fernseh Div.
 Schultz Inc., Albert
 Sony Corp. of America
 TDK Electronics Corp.
 Tele Measurements Inc.
 Video Engineering Co. Inc.
 Wide Response

Tape, Recording Logging

Alto Communications Inc. Broadcast
 Marketing Div.
 Audio Devices, Inc.
 Broadcast Products Inc.
 Cine Sonic Sound Inc.
 IGM
 Lauderdale Electronic Labs
 Magnetic Prod. Div. 3M Company
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 Qualitape Inc.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Richmond Hill Laboratories Inc.
 Schafer Electronics Corp.
 Singer Products Co., Inc.
 Soundscriber Corporation
 Sparta Electronic Corp.
 Stancil-Hoffman Corp.
 Systems Marketing Corp. And
 Sono-Mag Corp.
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Audio Magnetics Corp.
 Arnold Barnes Company
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 Equipment Corp.
 Harwald Company
 Lauderdale Electronic Labs
 Lipsner-Smith Corp.
 Miller-Stephenson Chemical Co.
 Nortronics Co., Inc. Recorder Care Div.
 Recortec Inc.
 RTI Research Technology Inc.
 Taber Mfg. & Engr. Co.
 TEAC Corp of America
 Television Equipment Associates
 Virginia Panel Corporation

Tape Decks, Magnetic

Accurate Sound Corp.
 Alto Communications Inc. Broadcast
 Marketing Div.
 Ampro Corp.
 Astrocom Electronics, Inc.
 Beyer (Revox Corporation)
 Broadcast Electronics
 Broadcast Products Inc.
 BSC Incorporated
 CCA Electronics Corp.
 Cetec Inc. Subs. Computer Equipment
 Corp.
 CHESTER ELECTRONIC LABS., INC.
 GTE Information Systems Inc.
 Cine Sonic Sound Inc.
 Collins Radio Company Broadcast
 Division
 Communication Medias
 Comquip, Inc.
 Conrac Corporation Cramer Division
 Crown International
 Gates Division of Harris-Intertype
 Gould Inc. Instrument Systems Div.
 Honeywell Inc. Test Instruments Div.
 IGM
 International Tapetronics Corp.
 Lang Electronics Inc.
 Magnatech Company
 Mastertone Company
 Mincom Div. 3M Co.
 Otari of America, Ltd.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
 Q-TV Sales & Distributing Corp.
 Radio Mfg. Co. (RMC)
 RAPID-Q Div. of Garron Electronics
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Recordex Corporation
 Roberts Div. of Rheem Mfg. Co.
 Sansui Electronics Corp.
 Schafer Electronics Corp.
 Schultz Inc., Albert
 Scully/Metrotech Divs. of Dictaphone
 Corp.
 Singer Products Co., Inc.
 Soundscriber Corporation
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Superscope, Inc.
 Systems Marketing Corp. And
 Sono-Mag Corp.
 Tape-Athon Corp.
 Tapecaster TCM, Inc.
 TASCAM Corporation
 TEAC Corp of America
 Telectro Systems Corp.
 Tele Measurements Inc.
 Telex Communications Division
 VIF International
 Wilkinson Electronics, Inc.

Tape Duplicators

Alcor Inc.
 Ampex Corp. Audio-Video Systems
 Division
 Audiotronics Corp.
 Bell Sound Studios Electro Sound Div.
 Broadcast Products Inc.
 Cetec Inc. Subs. Computer Equipment
 Corp.
 Cramer Video and Audio Systems
 Inovonics
 Lang Electronics Inc.
 Mastertone Company
 Orbit Radio and Video
 Pentagon Industries, Inc.
 Philips Broadcast Equipment Corp.
 Subs. North American Philips Corp.
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 Recortec Inc.
 Schultz Inc., Albert
 Telectro Systems Corp.
 TeleMation, Inc.
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 Fairchild/Robbins Fairchild Sound
 Equipment Corp.
 Fidelipac Division TelePro Industries,
 Inc.
 Gates Division of Harris-Intertype
 Harwald Company
 Joa Cartridge Service
 Lauderdale Electronic Labs
 Mastertone Company
 Micro-Trak Corporation (Formerly:
 Gray Research & Dev.)
 Neumade Prod. Corp.
 QRK Electronic Prod.
 RTI Research Technology Inc.
 Sparta Electronic Corp.
 Spotmaster Broadcast Electronics
 Systems Engineering Co., Inc.
 Tapex Corporation
 Tele Measurements Inc.

Tape Recording Accessories

Ampex Corp. Audio-Video Systems
 Division
 Audio Devices, Inc.
 Broadcast Electronics
 Broadcast Products Inc.
 Electro-Voice Inc. Subs. of Gulton
 Industries, Inc.
 ELPA Marketing Industries, Inc.
 Fairchild/Robbins Fairchild Sound
 Equipment Corp.
 Fidelipac Division TelePro Industries,
 Inc.
 G.C. Electronics
 Lauderdale Electronic Labs
 Mastertone Company
 Micro-Trak Corporation (Formerly:
 Gray Research & Dev.)
 Nortronics Co., Inc. Recorder Care Div.
 Pacific Recorders and Engrg. Corp.
 Qualitape Inc.
 Ramko Research
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Recortec Inc.
 Scully/Metrotech Divs. of Dictaphone
 Corp.
 Sparta Electronic Corp.
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 Inc.
 G.C. Electronics
 Lauderdale Electronic Labs
 Nortronics Co., Inc. Recorder Care Div.
 Spotmaster Broadcast Electronics

Victor Duncan, Inc.

Tape Transport

Ampro Corp.
Broadcast Electronics
Broadcast Products Inc.
Cetec Inc. Subs. Computer Equipment Corp.
Cine Sonic Sound Inc.
Conrac Corporation Cramer Division
Cook Electric Co.
Gates Division of Harris-Intertype
Gould Inc. Instrument Systems Div.
IGM
International Tapetronics Corp.
Mastertone Company
Peripheral Data Machines, Inc. (PER DATA)
Radio Mfg. Co. (RMC)
Recordex Corporation
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Systems Marketing Corp. And Sono-Mag Corp.
Tape-Athon Corp.
Telectro Systems Corp.
VIF International

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Audio Engineering Co.
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Trepac Corp. America

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Electro Impulse, Inc.

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Conway Electronic Enterprises Limited
ELPA Marketing Industries, Inc.
OMNIX
Roh Corporation
Sadelco, Inc.
Telecommunications Industries Ltd.
Telemet Co.
Test & Measuring Instruments, Inc. a North American Philips Co.
TM Systems, Inc.

Test Slides, Video

Cramer Video and Audio Systems
D AND S CORLEY LIMITED
Marconi Electronics Inc.

RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Telecommunications Industries Ltd.
Tele Measurements Inc.
Television Equipment Associates
Teltron, Inc.
Video Engineering Co. Inc.

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Testers, Semiconductor

Acrodyne Industries
American Electronics Lab., Inc.
Conway Electronic Enterprises Limited
Datatron, Inc.
Delta Electronics Inc. (N.C.)
Delta Electronics Inc. (Va.)
Eico Elect. Inst. Co., Inc.
Heath Co.
Hickok Elect. Instrument
Jud Williams Company
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
PRD Electronics, Inc.
Ramko Research
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic Components
Rohde & Schwarz Sales Co.
Sencore Inc.
SPI-ITT Instruments Matrix Division
Tektronix Inc.
Terminal Hudson Corp. Terminal Hudson Electronics
Test & Measuring Instruments, Inc. a North American Philips Co.
Testline Instruments Div. Roger Boatman & Associates, Inc.
Triplett Corporation
Troy Electronic Sales Co.

Testers, Vacuum Tube

Conway Electronic Enterprises Limited
Eico Elect. Inst. Co., Inc.
Heath Co.
Hickok Elect. Instrument
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Lectrotech Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Sencore Inc.
Singer Products Co., Inc.
SPI-ITT Instruments Matrix Division
Terminal Hudson Corp. Terminal Hudson Electronics
Triplett Corporation

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Jones Int'l. Ltd.
Howard W. Sams & Co., Inc.

Time Announcers

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Ampro Corp.
ES Enterprises
Gates Division of Harris-Intertype
Mastertone Company
Schafer Electronics Corp.
Sparta Electronic Corp.
Stancil-Hoffman Corp.
Systems Marketing Corp. And Sono-Mag Corp.

Time Base Corrector, Helical Scan and Quad

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Television Microtime, Inc. 41

Ampex Corp. Audio-Video Systems Division
Consolidated Video Systems
Cramer Video and Audio Systems
Television Microtime, Inc. Subs. Andersen Laboratories, Inc.

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ES Enterprises43

American Data Corp. an AIRPAX Company
Ampro Corp.
Cooke Engineering Co.
Danscoll Ltd.
ES Enterprises
Standard Electric Time Div. of Johnson Service Co.
Tapecaster TCM, Inc.
Test & Measuring Instruments, Inc. a North American Philips Co.
Time & Frequency Tech., Inc.
Video Devices Co.

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Jensen Tools & Alloys137
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Anixter-Pruzan CATV Division
Automation Products Co. (International Industries, Inc.)
Channellock, Inc.
Greenlee Tool Co.
Heath Co.
Jensen Tools & Alloys
Systems Marketing Corp. And Sono-Mag Corp.
Terminal Hudson Corp. Terminal Hudson Electronics
Upton Tools Inc.
Vaco Products Co.
Western Electronic Prods. Co.
Xcelite

Tower Beacon Light Flashers

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Hughey & Phillips Inc. 128C

Broadcast Tower Service
Collins Radio Company Broadcast Division
Electronic Lights Inc.
Hughey & Phillips Inc.
Jampro Antenna Co. Div. of Computer Equipment Corp.
Mastertone Company
Radio Mfg. Co. (RMC)
Rohn Manufacturing Div. of Unarco Industries Inc.
Utility Tower Co.

Tower Light Indicator Panels

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Hughey & Phillips Inc. 128C
Moseley Assoc. Inc. 7

CCA Electronics Corp.
Collins Radio Company Broadcast Division
Hughey & Phillips Inc.
Mastertone Company
Moseley Assoc. Inc.

Tower Lighting Isolation Transformers

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Hughey & Phillips Inc. 128C

Austin Insulator Div. Decca Radar Canada (1967) Ltd.
Collins Radio Company Broadcast Division
Hughey & Phillips Inc.
Mastertone Company
North American Radio Corp.

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Dielectric Communications Div. of Sola Basic

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Advance Industries
Allied Tower Company, Inc.
Andrews Tower Inc.
Antenna Products Company
Broadcast Tower Service
Collins Radio Company Broadcast Division
Dyma Engineering, Inc.
E Z Way Prod. Inc.
Fort Worth Tower Co., Inc.
Gates Division of Harris-Intertype
G.C. Electronics
Gulf Telephone & Electronics
Jampro Antenna Co. Div. of Computer Equipment Corp.
Kline Iron & Steel Co. Tower Division
Magnatech Company
Mastertone Company
Microflect Co. Inc.
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
RF Systems, Inc.
Rohn Manufacturing Div. of Unarco Industries Inc.
Sparta Electronic Corp.
Stainless, Incorporated
Swager Tower Corp.
Tri-Ex Tower Corp.
Up Right Scaffolds
Utility Tower Co.

Towers, Antenna Receiving

Allied Tower Company, Inc.
Ameco Inc.
Andrews Tower Inc.
Anixter-Pruzan CATV Division
Antenna Products Company
Broadcast Tower Service
E Z Way Prod. Inc.
Gulf Telephone & Electronics
Microflect Co. Inc.
RF Systems, Inc.
Rohn Manufacturing Div. of Unarco Industries Inc.
Singer Products Co., Inc.
Stainless, Incorporated
Swager Tower Corp.
TV Cable Supply Co., Inc.
Up Right Scaffolds
Utility Tower Co.

Towers, Antenna Transmitting AM

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Gates 10

Advance Industries
Allied Tower Company, Inc.
Alto Communications Inc. Broadcast Marketing Div.
Andrews Tower Inc.
Antenna Products Company

Broadcast Tower Service
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
E Z Way Prod. Inc.
Fort Worth Tower Co., Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Kline Iron & Steel Co. Tower Division
Mastertone Company
Microflect Co. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rohn Manufacturing Div. of Unarco
Industries Inc.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
Stainless, Incorporated
Swager Tower Corp.
Tri-Ex Tower Corp.
Up Right Scaffolds
Utility Tower Co.
Wilkinson Electronics, Inc.

Towers, Antenna Transmitting FM

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Gates 10

Advance Industries
Allied Tower Company, Inc.
Alto Communications Inc. Broadcast
Marketing Div.
Andrews Tower Inc.
Antenna Products Company
Broadcast Tower Service
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
E Z Way Prod. Inc.
Fort Worth Tower Co., Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Kline Iron & Steel Co. Tower Division
Magnatech Company
Mastertone Company
Microflect Co. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rohn Manufacturing Div. of Unarco
Industries Inc.
Shively Laboratories, Inc.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
Stainless, Incorporated
Swager Tower Corp.
Up Right Scaffolds
Utility Tower Co.
Wilkinson Electronics, Inc.

Towers, Antenna Transmitting TV

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Gates 10
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Advance Industries
Allied Tower Company, Inc.
Andrews Tower Inc.
Antenna Products Company
E Z Way Prod. Inc.
Fort Worth Tower Co., Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Kline Iron & Steel Co. Tower Division
Microflect Co. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rohn Manufacturing Div. of Unarco
Industries Inc.
Shively Laboratories, Inc.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
Stainless, Incorporated
Swager Tower Corp.
Tri-Ex Tower Corp.
Up Right Scaffolds
Utility Tower Co.

Transformers, Audio

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Sescom, Inc.

Translator Systems, High Power

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**Television Technology
Corp.** 128C

Acrodyne Industries
CCA Electronics Corp.
D. N. Latus & Co., Inc.
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Jampro Antenna Co. Div. of Computer
Equipment Corp.
TeleMation, Inc.
Television Technology Corp.

Translator Systems, Low Power

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Gates 10
**Television Technology
Corp.** 128C

Acrodyne Industries
CCA Electronics Corp.
Delta-Benco-Cascade Ltd.
D. N. Latus & Co., Inc.
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
Ikegami Tsushinki Co., Ltd. Export
Department
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RF Systems, Inc.
RHA Audio Communications Corp.
Rodelco Corp.
Rohde & Schwarz Sales Co.
Singer Products Co., Inc.
TeleMation, Inc.
Television Technology Corp.

Transmission Lines

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Gates 10

Alto Communications Inc. Broadcast
Marketing Div.
Ameco Inc.
Andrew Corp.
Belden Corp. Electronic Division
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Columbia Electronic Cbl.
Comark Industries Inc.
Dyma Engineering, Inc.
Gates Division of Harris-Intertype
Jampro Antenna Co. Div. of Computer
Equipment Corp.
Lectronic Res. Labs. Inc.
Magnatech Company
Mastertone Company
Micro Communications, Inc.
Phelps Dodge Communications Co.
Div. Phelps Dodge Industries Inc.
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Shively Laboratories, Inc.
Siemens Corporation
Singer Products Co., Inc.
Soll, Inc., Joseph M.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmission Sets

Atlantic Research Corp. Teleproducts
Dept.
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
GTE Lenkurt Incorporated
Lectronic Res. Labs. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
United Recording Electronics
Industries
UREI a URC Company

Transmitter Kits

Gates Division of Harris-Intertype
Heath Co.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

Transmitters, AM Carrier

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Inc.** 140

Arnold Barnes Company
Bristol Div. of Acco
CCA Electronics Corp.
Ceco Communications Inc.
Dyma Engineering, Inc.
GTE Lenkurt Incorporated
LPB Inc.
Mastertone Company
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Sparta Electronic Corp.

Transmitters, AM Low Power

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Sparta Electronic Corp. 8

Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Continental Electronics Mfg. Co.
Gates Division of Harris-Intertype
LPB Inc.
Mastertone Company
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RHA Audio Communications Corp.
Singer Products Co., Inc.
Sparta Electronic Corp.

Transmitters, AM 250 Watt

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**Wilkinson Electronics,
Inc.** 58

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Mastertone Company
Radio Mfg. Co. (RMC)
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, AM 500 Watt

See Adv. Page
Gates 10

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.

Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Mastertone Company
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, AM 1 kw

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Sparta Electronic Corp. 8
**Wilkinson Electronics,
Inc.** 58

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Contel Mfg. Div. of Continental
Electronic Wholesale Corp.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
Mastertone Company
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, AM 3 kw

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Sparta Electronic Corp. 8

Sparta Electronic Corp.

Transmitters, AM 5 kw

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Sparta Electronic Corp. 8
**Wilkinson Electronics,
Inc.** 58

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Contel Mfg. Div. of Continental
Electronic Wholesale Corp.
Continental Electronics Mfg. Co.
Gates Division of Harris-Intertype
Mastertone Company
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Siemens Corporation
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, AM 10 kw

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Collins Radio Company 19
**Continental Electronics
Mfg. Co.** 64
Gates 10
Sparta Electronic Corp. 8
**Wilkinson Electronics,
Inc.** 58

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Contel Mfg. Div. of Continental
Electronic Wholesale Corp.
Continental Electronics Mfg. Co.
Gates Division of Harris-Intertype
Marconi Electronics Inc.

Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, AM 15 kw

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Sparta Electronic Corp. 8
 Sparta Electronic Corp.

Transmitters, AM 25 kw

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Gates 10
 American Electronics Lab., Inc.
 Arnold Barnes Company
 CCA Electronics Corp.
 Contel Mfg. Div. of Continental
 Electronic Wholesale Corp.
 Continental Electronics Mfg. Co.
 Gates Division of Harris-Intertype
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation
 Singer Products Co., Inc.
 Sparta Electronic Corp.

Transmitters, AM 50 kw

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Gates 10
Wilkinson Electronics, Inc. 58
 American Electronics Lab., Inc.
 Arnold Barnes Company
 CCA Electronics Corp.
 Continental Electronics Mfg. Co.
 Gates Division of Harris-Intertype
 Hy-Power Electronics Co.
 Marconi Electronics Inc.
 Nasco Television Systems
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation
 Singer Products Co., Inc.
 Visual Communication Products Oper.
 General Electric Co.
 Wilkinson Electronics, Inc.

Transmitters, AM over 50 kw

See Adv. Page

Gates 10
 American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Continental Electronics Mfg. Co.
 Gates Division of Harris-Intertype
 Hy-Power Electronics Co.
 Marconi Electronics Inc.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation

Transmitters, AM to order

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Collins Radio Company 19
Gates 10
 American Electronics Lab., Inc.
 Arnold Barnes Company
 CCA Electronics Corp.
 Collins Radio Company Broadcast
 Division
 Continental Electronics Mfg. Co.
 Gates Division of Harris-Intertype
 Hy-Power Electronics Co.
 North American Radio Corp.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM

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Sparta Electronic Corp. 8

American Electronics Lab., Inc.
 Arnold Barnes Company
 Bristol Div. of Acco
 CCA Electronics Corp.
 Ceco Communications Inc.
 Collins Radio Company Broadcast
 Division
 Dyma Engineering, Inc.
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 GTE Lenkurt Incorporated
 Marconi Electronics Inc.
 Mastertone Company
 Miles Reproducer Co.
 North American Radio Corp.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 RCA Corporation RCA Electromagnetic
 & Aviation Systems Div.
 Singer Products Co., Inc.
 Soll, Inc., Joseph M.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 10 Watt

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Sparta Electronic Corp. 8
Wilkinson Electronics, Inc. 58
 American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Collins Radio Company Broadcast
 Division
 Gates Division of Harris-Intertype
 GTE Lenkurt Incorporated
 Magnatech Company
 Marti Electronics
 Mastertone Company
 McMartin Industries
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 50 Watt

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Wilkinson Electronics, Inc. 58
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Rohde & Schwarz Sales Co.
 Singer Products Co., Inc.
 Wilkinson Electronics, Inc.

Transmitters, FM 100 Watt

A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Marti Electronics
 Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Singer Products Co., Inc.
 Wilkinson Electronics, Inc.

Transmitters, FM 250 Watt

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Sparta Electronic Corp. 8

Wilkinson Electronics, Inc. 58

A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Mastertone Company
 North American Radio Corp.
 Siemens Corporation
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 500 Watt

A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 1 kw

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Gates 10
Sparta Electronic Corp. 8
Wilkinson Electronics, Inc. 58

American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Collins Radio Company Broadcast
 Division
 Fung Engineering Co.
 Gates Division of Harris-Intertype
 Marconi Electronics Inc.
 Mastertone Company
 North American Radio Corp.
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 2.5 kw

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Gates 10
Wilkinson Electronics, Inc. 58

American Electronics Lab., Inc.
 Arnold Barnes Company
 Collins Radio Company Broadcast
 Division
 Gates Division of Harris-Intertype
 Mastertone Company
 North American Radio Corp.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 3 kw

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Gates 10
 American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Magnatech Company
 Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.

Transmitters, FM 5 kw

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Gates 10
Wilkinson Electronics, Inc. 58

American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Collins Radio Company Broadcast
 Division
 Gates Division of Harris-Intertype
 Marconi Electronics Inc.
 Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 7.5 kw

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Gates 10
Wilkinson Electronics, Inc. 58

American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Mastertone Company
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 10 kw

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Collins Radio Company 19
Gates 10
Wilkinson Electronics, Inc. 58

American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Collins Radio Company Broadcast
 Division
 Gates Division of Harris-Intertype
 Magnatech Company
 Marconi Electronics Inc.
 Mastertone Company
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Siemens Corporation
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 12 kw

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Gates 10
 American Electronics Lab., Inc.
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 Sparta Electronic Corp.

Transmitters, FM 15 kw

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Gates 10
 A&R Transmitters
 Arnold Barnes Company
 CCA Electronics Corp.
 Gates Division of Harris-Intertype
 RCA Corporation RCA Broadcast
 Equip., Comm. Sys. Div.
 Singer Products Co., Inc.
 Sparta Electronic Corp.
 Wilkinson Electronics, Inc.

Transmitters, FM 20 kw

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Collins Radio Company 19
Gates 10
Wilkinson Electronics, Inc. 58

A&R Transmitters

Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Magnatech Company
Mastertone Company
North American Radio Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, FM 25 kw

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**American Electronics
Lab., Inc.** 15
Gates 10

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Wilkinson Electronics, Inc.

Transmitters, FM 40 kw

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Collins Radio Company 19
Gates 10
**Wilkinson Electronics,
Inc.** 58

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
Mastertone Company
North American Radio Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, FM 50 kw

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**American Electronics
Lab., Inc.** 15

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, FM 100 kw

American Electronics Lab., Inc.
A&R Transmitters
Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Singer Products Co., Inc.

Transmitters, FM to order

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Sparta Electronic Corp. 8

American Electronics Lab., Inc.
Arnold Barnes Company
CCA Electronics Corp.
Collins Radio Company Broadcast
Division
Gates Division of Harris-Intertype
North American Radio Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Singer Products Co., Inc.
Sparta Electronic Corp.
Wilkinson Electronics, Inc.

Transmitters, TV

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
CCA RF Industries, Inc.
Cramer Video and Audio Systems
DYNAIR Electronics, Inc.
Gates Division of Harris-Intertype
Ikegami Tsushinki Co., Ltd. Export
Department
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Soll, Inc., Joseph M.
Television Technology Corp.
Varian Solid State Div. Micro-Link
Products
Visual Communication Products Oper.
General Electric Co.

Transmitters, TV 1 Watt

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
Cramer Video and Audio Systems
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Fung Engineering Co.
Gates Division of Harris-Intertype
GTE Lenkurt Incorporated
Orbit Radio and Video
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rohde & Schwarz Sales Co.
Television Technology Corp.
Varian Solid State Div. Micro-Link
Products

Transmitters, TV 10 Watt

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
Cramer Video and Audio Systems
Delta-Benco-Cascade Ltd.
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
GTE Lenkurt Incorporated
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rodelco Corp.
Television Technology Corp.
Varian Solid State Div. Micro-Link
Products

Transmitters, TV 20 Watt

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
Cramer Video and Audio Systems
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rodelco Corp.
Television Technology Corp.

Transmitters, TV 60 Watt

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
Cramer Video and Audio Systems
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rodelco Corp.

Transmitters, TV 100 Watt

See Adv. Page

Gates 10

Acrodyne Industries
Arnold Barnes Company

CCA Electronics Corp.
Cramer Video and Audio Systems
Delta-Benco-Cascade Ltd.
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Rodelco Corp.
Television Technology Corp.

Transmitters, TV 500 Watt

See Adv. Page

Gates 10

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Siemens Corporation

Transmitters, TV 1 kw

See Adv. Page

Gates 10

Acrodyne Industries
Arnold Barnes Company
CCA Electronics Corp.
EMCEE Broadcast Products Div. of
Electronics, Missiles &
Communications, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

Transmitters, TV 2 kw

See Adv. Page

Gates 10

Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

Transmitters, TV 5 kw

See Adv. Page

Gates 10

Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

Transmitters, TV 6 kw

See Adv. Page

Gates 10

Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

Transmitters, TV 10 kw

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Gates 10

Arnold Barnes Company

CCA Electronics Corp.
CCA RF Industries, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Siemens Corporation

Transmitters, TV 11 kw

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Gates 10

Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

Transmitters, TV 12 kw

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Arnold Barnes Company
CCA Electronics Corp.
Gates Division of Harris-Intertype
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

Transmitters, TV 15 kw

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Arnold Barnes Company
CCA Electronics Corp.
CCA RF Industries, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

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Arnold Barnes Company
CCA Electronics Corp.
CCA RF Industries, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

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Arnold Barnes Company
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CCA RF Industries, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

Transmitters, TV 35 kw

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Arnold Barnes Company

CCA Electronics Corp.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

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Arnold Barnes Company
CCA Electronics Corp.
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Gates Division of Harris-Intertype
Marconi Electronics Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.

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Arnold Barnes Company
CCA Electronics Corp.
CCA RF Industries, Inc.
Gates Division of Harris-Intertype
Marconi Electronics Inc.
Philips Broadcast Equipment Corp.
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Equip., Comm. Sys. Div.
Visual Communication Products Oper.
General Electric Co.

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General Electric Co.

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Visual Communication Products Oper.
General Electric Co.

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Heath Co.
Lauderdale Electronic Labs LPB Inc.
Mastertone Company
McCurdy Radio Ind. Inc.
Micro-Trak Corporation (Formerly: Gray Research & Dev.)
QRK Electronic Prod.
Ramko Research
RCA Corporation RCA Broadcast Equip., Comm. Sys. Div.
Rek-O-Kut Inc.
Russco Electronics Mfg. Inc.
Sansui Electronics Corp.
Schultz Inc., Albert
Singer Products Co., Inc.
Sparta Electronic Corp.
Spotmaster Broadcast Electronics
Superscope, Inc.
Systems Engineering Co., Inc.
Video Engineering Co. Inc.
Wilkinson Electronics, Inc.

TV Systems, Closed Circuit

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Ameco Inc.
American Data Corp. an AIRPAX Company
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Anaconda Electronics
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Gen. Electrodynamics
General Television Ntwk.
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Ikegami Tsushinki Co., Ltd. Export Department
Internatl. Nuclear Corp.
International Video Corp.
Janson Industries
Javelin Div. of Apollo Lasers
K'SON Corporation
Lerro Electrical Corp.
Listec TV Equip. Corp.
Marconi Electronics Inc.
Mosler Electronic Systems Div.
Nasco Television Systems
Orbit Radio and Video

Panasonic Video Systems Div.
Matsushita Electric Corp. of America
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RCA Corporation RCA Electromagnetic & Aviation Systems Div.
Riker Communications Inc.
Robert Bosch Corp. Fernseh Div.
Sarkes Tarzian Inc. Broadcast Equipment Div.
Singer Co. Simulation Products Div.
Soll, Inc., Joseph M.
Sylvania Comm. Electronic
Tasker Systems Div. of Whittaker Corp.
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Teledyne Brown Engineering Co. Science & Engrg. Div.
TeleMation, Inc.
Tele Measurements Inc.
Telesync Corp.
Teltron, Inc.
TV Cable Supply Co., Inc.
Varian Solid State Div. Micro-Link Products
Vicon Industries, Inc.
Video Engineering Co. Inc.
Vikoa Inc.
Visual Communication Products Oper. General Electric Co.
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Visual Educom Inc. MTI Television
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Westinghouse Electric Corp. Electric Tube Div.

Vacuum Tubes, Camera Image-Orthicon

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Calvert Electronics Power Tube Div.
Ceco Communications Inc.
General Electric Co. Imaging Devices Operation
General Electric Company Tubes/MW Devices
Heintz and Kaufman Ltd.
Hitachi Shibaden Corp. of America
Hughes Aircraft Company Ind. Prod. Div.-Image Devices
RCA Corporation RCA Electronic Components
Robert Bosch Corp. Fernseh Div.
Tele Measurements Inc.
Teltron, Inc.
Terminal Hudson Corp. Terminal Hudson Electronics
Thor Electronics Corp.
Video Engineering Co. Inc.
Visual Communication Products Oper. General Electric Co.

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Cramer Video and Audio Systems
Gates Division of Harris-Intertype
Hitachi Shibaden Corp. of America
Philips Broadcast Equipment Corp.
Subs. North American Philips Corp.
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Tele Measurements Inc.
Teltron, Inc.
Terminal Hudson Corp. Terminal Hudson Electronics
Thor Electronics Corp.
Video Engineering Co. Inc.
Westinghouse Electric Corp.

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General Electric Company Tubes/MW Devices
Hughes Aircraft Company Ind. Prod. Div.-Image Devices
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Teltron, Inc.

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Amperex Electronic Corp.
A-Tel-A-Matic
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Gen. Electrodynamics
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Javelin Div. of Apollo Lasers
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Texas Instrument Components Group
Thomson-CSF Electron Tubes
Thor Electronics Corp.
Video Engineering Co. Inc.

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General Electric Co.
Westinghouse Electric Corp. Electric
Tube Div.

Vacuum Tubes, Cathode Ray Oscilloscope

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Div.-Image Devices
Lectronic Res. Labs. Inc.
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Hudson Electronics
Thomson-CSF Electron Tubes
Thor Electronics Corp.
Video Engineering Co. Inc.

Vacuum Tubes, Cathode Ray TV Color

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Hudson Electronics
Thomson-CSF Electron Tubes
Thor Electronics Corp.
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Vacuum Tubes, Cathode Ray TV Monochrome

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General Electric Company Tubes/MW
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Vacuum Tubes, Rectifier

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Westinghouse Electric Corp. Electric
Tube Div.

Vacuum Tubes, Translator

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Ceco Communications Inc.
General Electric Company Tubes/MW
Devices
Heintz and Kaufman Ltd.
Thomson-CSF Electron Tubes

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Ceco Communications Inc.

Collins Radio Company Broadcast
Division
Eimac Div. Varian Associates
Gates Division of Harris-Intertype
General Electric Company Tubes/MW
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ITT Electron Tube Div.
Joa Cartridge Service
Lectronic Res. Labs. Inc.
Machlett Laboratories Subs. of
Raytheon Co. Inc.
Raytheon Company Raytheon Data
Systems Co.
RCA Corporation RCA Electronic
Components
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Hudson Electronics
Thomson-CSF Electron Tubes
Thor Electronics Corp.

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Econco Broadcast Service Inc.
Freeland Products Co.
Heintz and Kaufman Ltd.
Terminal Hudson Corp. Terminal
Hudson Electronics
Westinghouse Electric Corp. Electric
Tube Div.

Vector Display, Color

Beston Electronics Inc.
Lectrotech Inc.
Tele-Cine Inc.

Viewfinder for Closed Circuit Cameras

Javelin Div. of Apollo Lasers
Precision Electrical Mfg. Div. Circuit
Science Inc.
Video Engineering Co. Inc.
Visual Educom Inc. DAGE Television

Voltmeters, AC

A-Tel-A-Matic
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Bristol Div. of Acco
California Instruments Co.
Conway Electronic Enterprises Limited
Dragnet Engineering Labs., Inc.
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Fluke, John, Mfg. Co. Inc.
General Electric Company Tubes/MW
Devices
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Hewlett Packard Co.
Hickok Elect. Instrument
Instrument Laboratories
International Instrument Div. Sigma
Instruments, Inc.
ITT Jennings
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Minarik Elect.
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Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
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Simpson Electric Co.
SPI-ITT Instruments Metrix Division
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Triplett Corporation
Vu-Data Corporation

Voltmeters, DC

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B & K Instruments Inc.
Boonton Electronics
Bristol Div. of Acco
California Instruments Co.

Conway Electronic Enterprises Limited
Dynascan Corp. B & K Division
Eico Elect. Inst. Co., Inc.
Fluke, John, Mfg. Co. Inc.
General Electric Company Tubes/MW
Devices
General Microwave Corp.
Heath Co.
Hewlett Packard Co.
Hickok Elect. Instrument
International Instrument Div. Sigma
Instruments, Inc.
ITT Jennings
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
Minarik Elect.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
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Simpson Electric Co.
SPI-ITT Instruments Metrix Division
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Triplett Corporation
Vu-Data Corporation

Voltmeters, FET

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Heath Co.
Hickok Elect. Instrument
Leader Instruments Corp.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
Sencore Inc.
Simpson Electric Co.
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Triplett Corporation

Voltmeters, Vacuum Tube

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Boonton Electronics
Conway Electronic Enterprises Limited
Dynascan Corp. B & K Division
Edison Electronics, Div. of
McGraw-Edison Co., Daven &
Measurements
Eico Elect. Inst. Co., Inc.
Heath Co.
Hewlett Packard Co.
Instrument Laboratories
Leader Instruments Corp.
Lectronic Res. Labs. Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RCA Corporation RCA Electronic
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Simpson Electric Co.
SPI-ITT Instruments Metrix Division
Terminal Hudson Corp. Terminal
Hudson Electronics
Test & Measuring Instruments, Inc. a
North American Philips Co.
Triplett Corporation
United Recording Electronics
Industries

Wattmeters

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Boonton Electronics
Conway Electronic Enterprises Limited
Eico Elect. Inst. Co., Inc.
General Electric Company Tubes/MW
Devices
General Microwave Corp.
Instrument Laboratories
Lectronic Res. Labs. Inc.
Micro Communications, Inc.
RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
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Singer Products Co., Inc.

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RCA Corporation RCA Broadcast
Equip., Comm. Sys. Div.
RF Systems, Inc.
Test & Measuring Instruments, Inc. a
North American Philips Co.

Weather Instruments

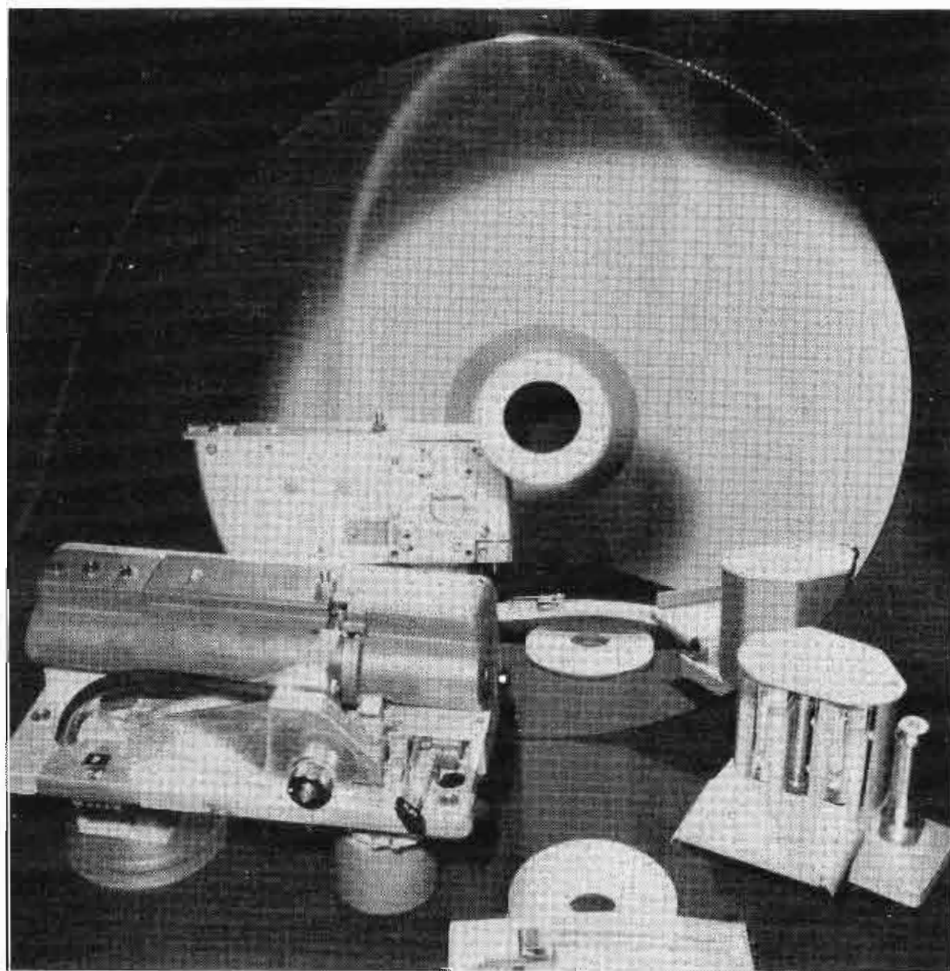
Gates Division of Harris-Intertype
Mastertone Company
R. H. Tyler Co. Div. of Weather Scan,
Inc.
Taylor Instrument Consumer Prod.
Div. Sybron Corp.
TeleMation, Inc.
Texas Electronics

Wiring and Cabling Services

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Alpha Wire
Ancha Electronics Inc.
Applied Electro Mechanics, Inc.
Applied Video Electronics, Inc.
A-Tel-A-Matic
Audio Accessories Inc.
AVA Electronics Corp.
Belden Corp. Electronic Division
Boston Insulated Wire & Cable Co.
Cablewave Systems Inc. Subs. Phelps
Dodge and Kabelmetal
Concept 70, A Div. of Dyma
Engineering, Inc.
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July 13, 1972

Mr. Morris T. Covington
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Dear Morris:

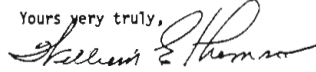
This long overdue letter will let you know how very pleased we are with the continuing good service from our Taft Audio Distribution Amplifiers.

As you know, I had six of these amplifiers on the test bench for six weeks and abused them in every way possible. I did not experience a single failure; in addition, they held their specifications in every way.

I had evaluated several "well-known" distribution amplifiers before I tested the Taft DA, and I knew then that this was the DA for us. It is right in every way: size, individual power supply, number of outputs and performance. After several months of hard and continuous service, I am still well pleased with all fifty two of them.

I will recommend your Model 5002 Audio Distribution Amplifier, and also your Model 4002 Monitor/Power Amplifier without a moment's hesitation.

Yours very truly,



William E. Thomson
Audio Engineer



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book review

Test Procedures

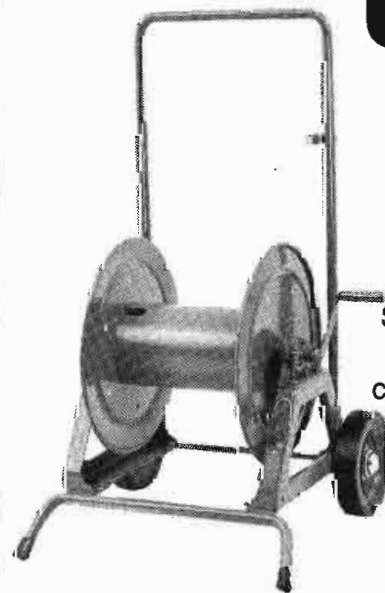
Basic Electronic Test Procedures is a step-by-step guide to all types of basic electronics measurements, using simple, inexpensive test instruments. The ability to make meaningful measurements and to put the resulting information to work is essential in any area of electronics. The job is much easier with an array of sophisticated instruments, but few have access to such expensive test equipment. However, the student or "pro" who really understands the reasoning behind each test doesn't need complex gear to accomplish his purpose. In fact, he can take useful readings with readily-available instruments.

In this new book, the mysteries usually associated with many electronics tests are unveiled. The author shows how to get accurate, meaningful measurements with ordinary VOMs, electronic meters, oscilloscopes, etc., by taking into consideration the errors inherent in most test instruments. The important thing is knowing —and understanding—the true nature of what is to be measured.

For example, it is surprising what can be done with the ohmmeter, allowing, of course for inaccuracies and

(Continued on page 108)

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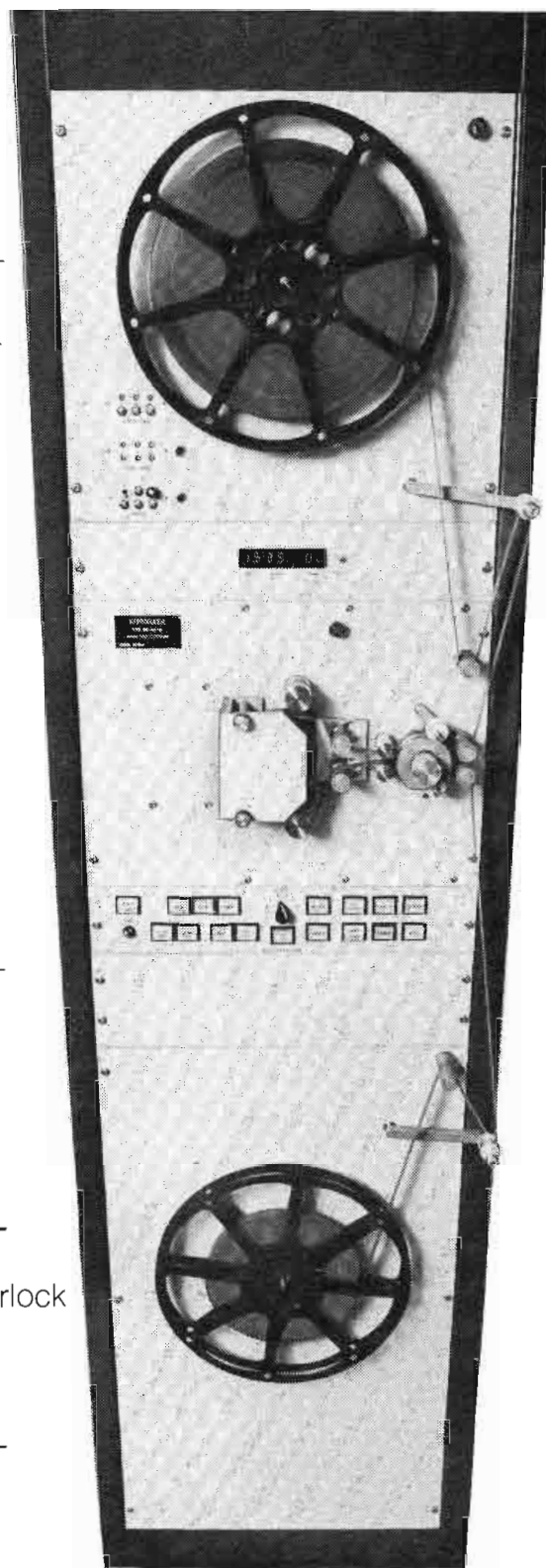
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The state of the art in film sound just took a giant step forward. In Speed, Flexibility, Safety, and Ease of Operation. For sound transfers, looping, re-recording, double-system screening and telecine interlock.

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 - automatic safety shutdown
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- compatible with conventional interlock systems
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-
- pushbutton-selected 16 or 35 speed and 24 or 25 frame rate, forward or reverse
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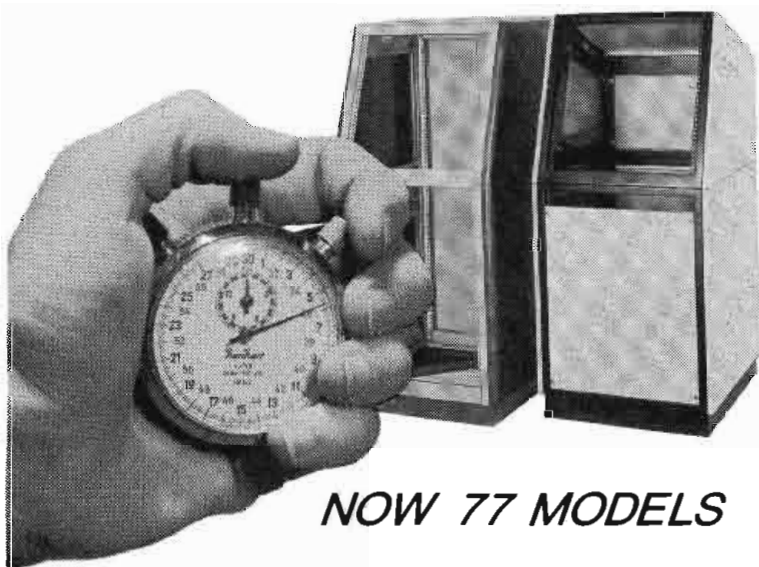
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(Continued from page 106)

deceptions. The reader will learn the advantages, and more importantly, the disadvantages of resistance measurements in solid-state circuits. It's all a matter of understanding the circuit or component under test.

The book contains 416 pages and 178 illustrations. It is available through Tab Books, Blue Ridge Summit, Pa.

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Intrusion Alarms

The electronic security system plays an important role in offsetting the constant threat that exists to one's security. **Building & Installing Electronic Intrusion Alarms**, written by John E. Cunningham, explains how to select, construct, install, operate and maintain electronic intrusion alarms.

The book is divided into sixteen chapters, each dealing with a particular phase of electronic intrusion alarms. It discusses electromechanical intrusion alarms, sensors and switches, audio and vibration alarms, photoelectric intrusion alarms and proximity alarms.

Also covered are closed-circuit television, access control switches, telephone attachments, an automobile protection system and other commonly used types of intrusion alarms. To further assist the reader, an

(Continued on page 110)

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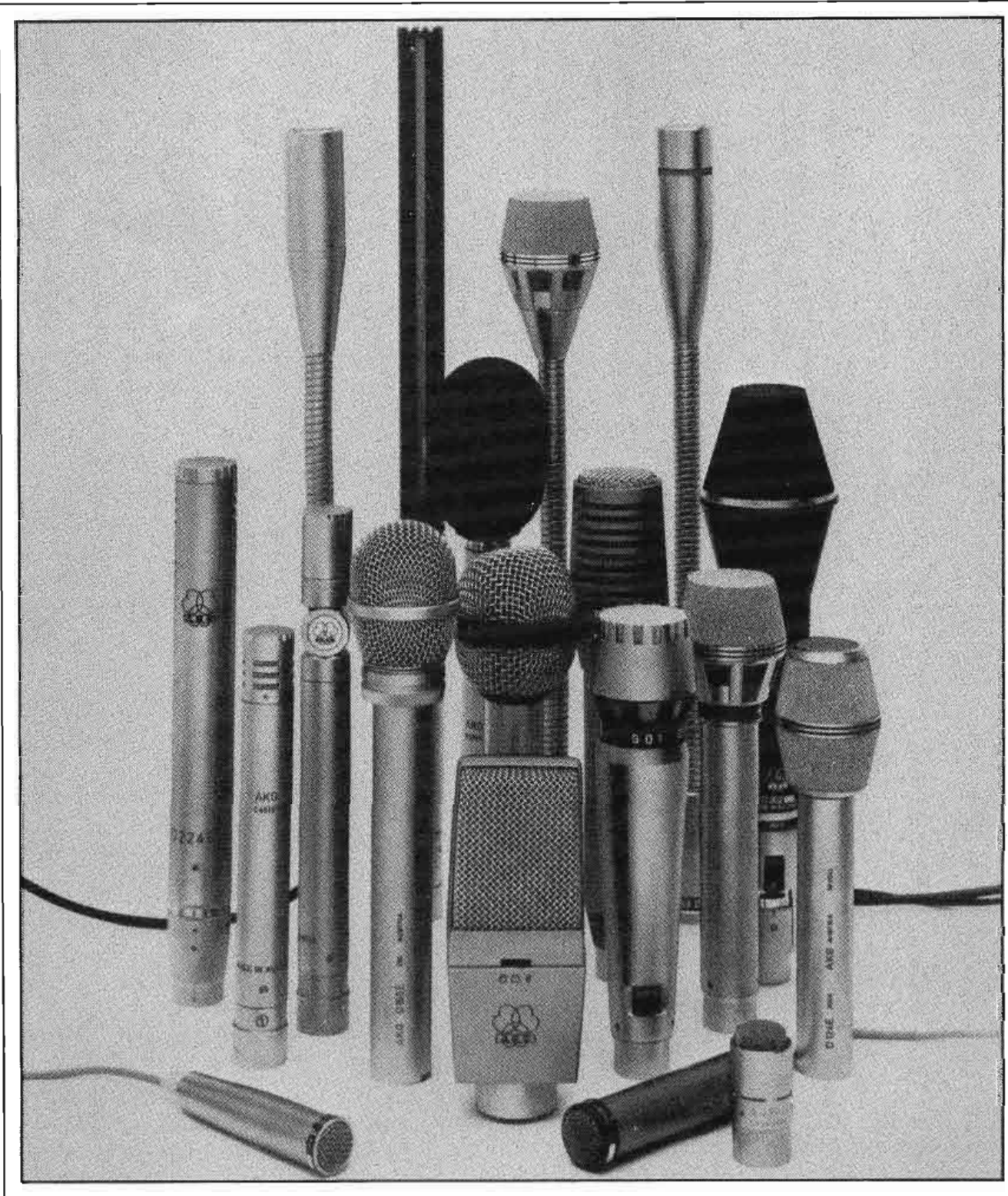
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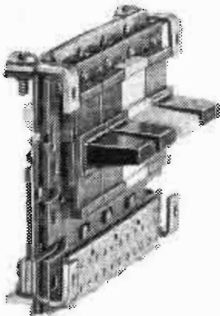
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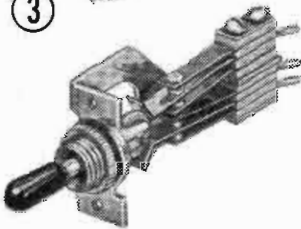
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(Continued from page 108)

appendix contains a general listing of companies that supply alarms and accessories.

This easy-to-read book has been written for everyone who is interested in electronic security systems, whether he is a novice who wishes to build his own security system or a skilled technician who wants to enter the field of security electronics.

The book is available through Howard W. Sams & Co., Inc., Indianapolis, Ind.

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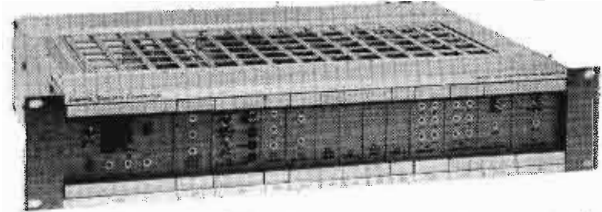
Transistor Audio Amplifiers

Today, the design of audio amplifiers requires a thorough understanding of transistor characteristics and the various circuit possibilities. Also, since a design is usually a compromise between several factors such as cost and performance, it is important to understand the basis of the performance requirements. **Transistor Audio Amplifiers**, written by P. Tharma, considers these aspects of design in detail, and is based on the work done by the audio application group of the Mullard Central Application Laboratory.

The first two chapters deal with transistor characteristics: following chapters over circuit design and measurements, and a final section of the book considers various applications and describes circuits to

(Continued on page 112)

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*Digital Sync Generator Model 800

Control Concepts Corporation introduces a new generation of low cost digital sync generators designed primarily for single line pulse distribution systems. The Model 800 plus CCC's Model 601 Master Sync Generator comprise a complete system which features:

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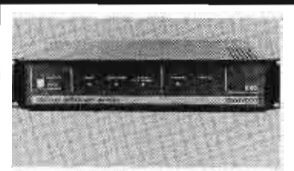
For more information contact your Scully Distributor or write direct to Scully/Metrotech.



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Color Sync Gen

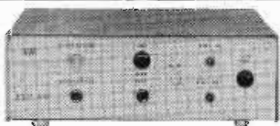
Video Aids New Color Genlock Sync Gen., Model 5000 Offers: *H, B, V, Dual Sync burst flag and subcarrier *Phase lock indicator *External Sync present indicator *Loop thru BNC video input *Low cost *Meets all NTSC/RS 170 requirements and specifications *No add-on options or accessories *MOS/LSI technology improves reliability by drastically reducing parts. *All output pulse widths are digitally controlled to eliminate drift from temperature and aging.



Meets all NTSC/RS 170 Specs. Color Genlock H, B, V, dual sync, burst flag and subcarrier. \$1244.00

"EDIT AID"™

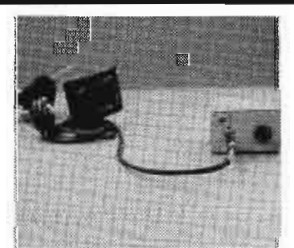
EDIT-AID AR-1: Low-cost editor-programmer. Unit removes common editing errors that develop unless the video tape recorder operator presses his edit and stop pushbuttons at the exact split second. Can program edit-in and edit-out functions precisely at the same place automatically. With the exception of frame-by-frame editing for animation the edit-aid programmer accomplishes most precise editing needs. Can also be used for controlling projectors, recorders or other devices.



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(Continued from page 110)

illustrate the design principles. Particular attention is given to the extensive use of direct-coupled audio amplifier circuits. Noise and "acoustic roughness" due to non-linearity are considered in detail. The book contains 399 pages and includes 245 diagrams.

This book is available through the Van Nostrand Reinhold Co., New York.

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Solid State Experimental Designs

If you are a serious hobbyist or experimenter who is interested in the "why" and "how to" of solid-state circuit design then **Solid-State Circuits for Hobbyists & Experimenters**, by Jon L. Turino has valuable information for you.

It is a practical book that assists you in designing circuitry for a great many useful projects or adapting and modifying existing circuit designs to suit a specific purpose. Procedures of design are given, starting with "how" to explain your idea using a simple block diagram. The design procedures then progress from developing a single stage to combining several stages, adding a voltage source for power, and finally connecting an input.

This book is available through Howard W. Sams & Co., Inc., Indianapolis, Ind.

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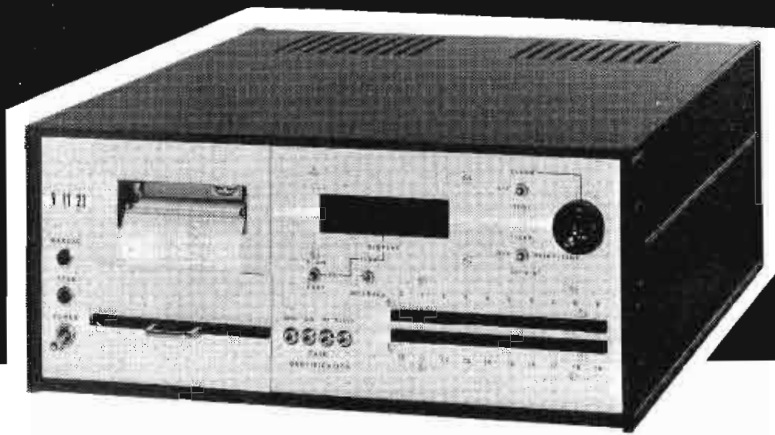
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Digital Logic

(Continued from page 33)

fastest form of logic available today. Its flexibility and good speed-power product make it very attractive for use in new designs.

Figure 10 shows the design of a basic ECL gate. The input circuitry is nothing more than a differential amplifier with one side biased to a constant voltage V_{BB} . V_{BB} then becomes the switching threshold for the other inputs. Whenever any input is above V_{BB} , the corresponding input transistor is turned on. This turns off the output transistor Q1, and turns on Q2. Only when all inputs are below V_{BB} will Q1 be on and Q2 off. Thus the output at Q1 is high only when all inputs are low and is low only when all inputs are high. This output represents the NOR function of the inputs.

By symmetry, the output at Q2 is seen to be the OR function. Providing complimentary outputs is another feature of flexibility of the ECL logic family.

Propagation delay times of from

(Continued on page 116)

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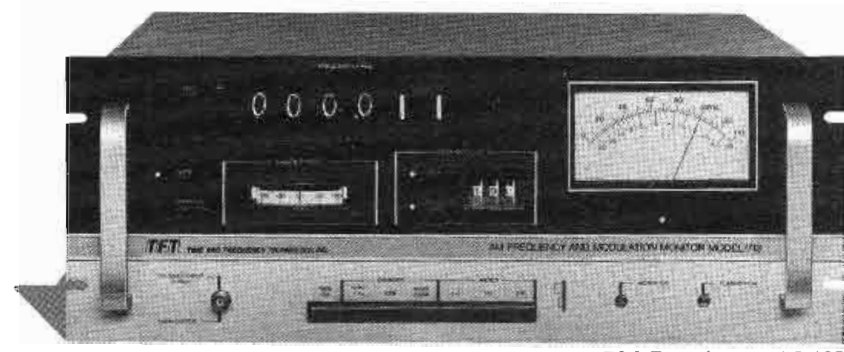
But prove it to yourself. Just ask anyone who owns one (a complete customer list is available on request). Then, let us demonstrate on your frequency. Contact your local TFT representative, or call us collect.

TV (UHF & VHF)



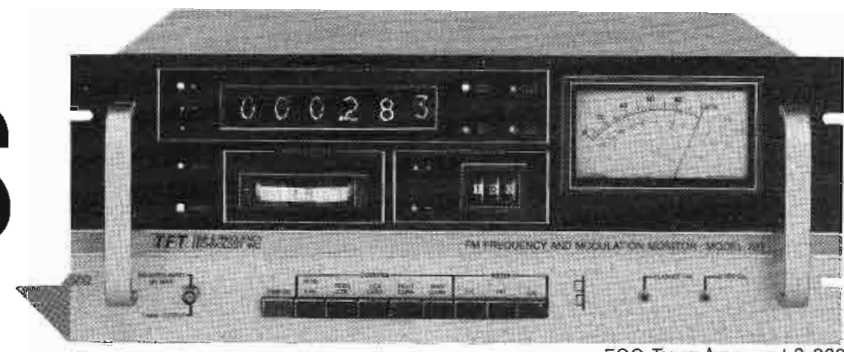
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(Continued from page 114)

1-4 nsec and flip-flop toggle frequencies to 400 MHz make this family ideal for very high speed applications. Due to its popularity, the cost per gate is also decreasing and flexibility is increasing.

MOS Devices

MOS devices use the field effect transistor (FET) as a basic building block as opposed to the junction transistors used in the bi-polar technologies. An FET can be thought of as a switch. When it is turned off, very little current flows from the source to the drain. It then acts as an open switch. When it is turned on, the impedance from the source to drain drops by several orders of magnitude and the FET acts as a closed switch.

There are two basic types of FET's. The P-channel and the N-channel. For the P-channel devices, a negative voltage on the gate turns on the FET. N-channel devices are turned on by a positive potential.

Figure 11 shows the basic gate of a P-MOS device. (P-MOS means a logic device built with P-channel

(Continued on page 118)



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(Continued from page 116)

FET's). As you can see, whenever any input is low (negative), it will turn on its FET. Since the FET acts like a low impedance the output goes to the higher level. Whenever all inputs are high, all input FET's will be turned off and the output will be pulled to the lower voltage (-13V). Thus all inputs high results in a low output. This is the NAND function.

Because of ease in processing, P-MOS devices are more readily available and are used more often than N-MOS. Much effort is currently being made to develop the N-MOS technology.

P-MOS is characterized by relatively long propagation delay times (typically 300 ns) and low flip-flop toggle frequency (2MHz). It has two important advantages, though, first is very low power consumption (typically .2 to 10 mW) and the ability to design many complex functions on one IC chip. P-MOS is a growing logic family.

While most devices used today are built for custom applications, there are developing lines of

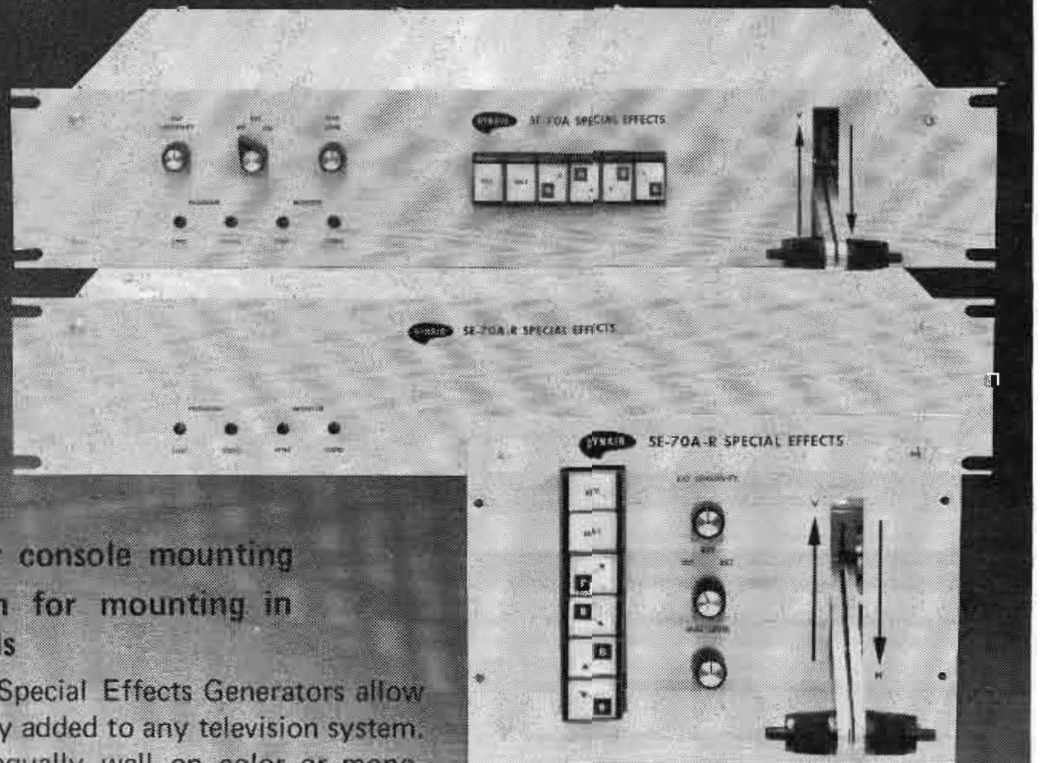
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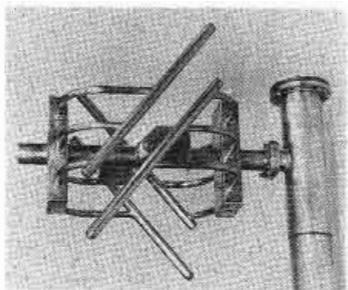
SE-70A: \$1095.00
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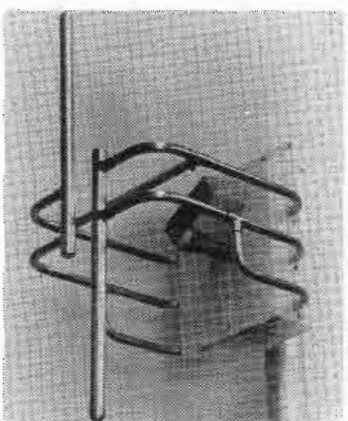
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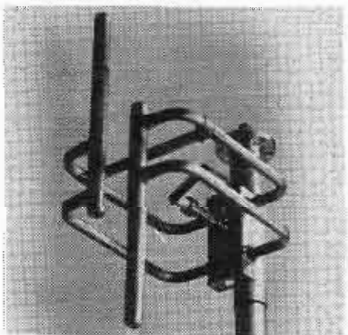
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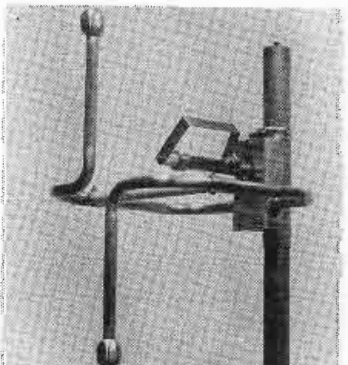
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standard devices for off-the-shelf design.

The CMOS Design

CMOS is an extension or marriage of the P-channel and N-channel MOS technologies. Both P and N channel FET's are used in the design of a CMOS gate. The simple gate in Figure 12 illustrates the operation of a CMOS device. When any input is high, the series connection of P-channel FET's will be broken and at the same time, one of the parallel N-channel devices will be turned on. Thus the output will be pulled to the low (VSS) state.

Only when all inputs are low, will all the P-channel devices be on and thus the output pulled high. (Note that if all P-channel devices are on, then all the N-channel devices are off.) This then is the NOR logic function.

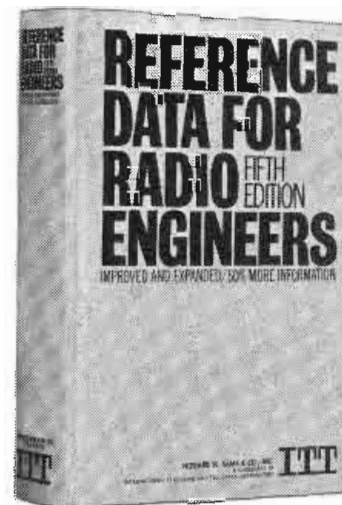
CMOS offers many design advantages. Extremely low power consumption (.01-1 mW), good noise immunity, and medium speed (around 50 ns propagation delay time) make this one of the fastest growing logic families in both use and number of new devices being developed. In areas where speed is unimportant and power-consumption crucial, CMOS seems to offer the best trade off of the logic families discussed. □

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when a group of
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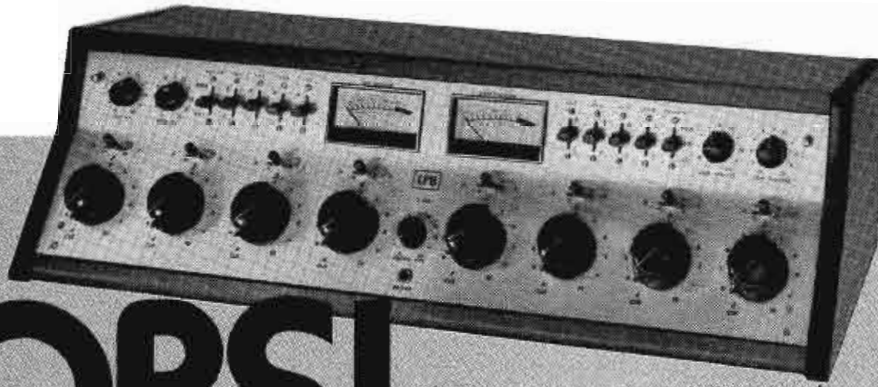
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For More Details Circle (76) on Reply Card



TOPS!

That's LPB's stereo S-13B console, our top-line audio control center. Features include:

- 18 stereo and 6 mono inputs.
- Step attenuator mixers.
- Telephone-type switches.
- Plug-in fiberglass circuits.
- Stereo 12 watt/channel monitor.
- Internal cue amp and speaker.
- All transformer input and output.

The features and quality of LPB's S-13B just can't be found in other consoles at comparable prices. Take a hard look at the S-13B before you make a mistake!

LPB has a complete line of mono consoles, too, and everything that goes with them. Call or write today for complete information.



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520 Lincoln Highway, Frazer, Pa. 19355
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NEW PRODUCTS

(Use circle number on reader service card for further information)

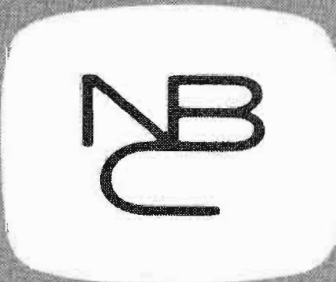
Tone Arms

Shure, Evanston, Illinois has announced the Shure-SME Model 3009 Series II Improved Tone Arm featuring reduction in the effective tone arm mass, and improved anti-skating control.

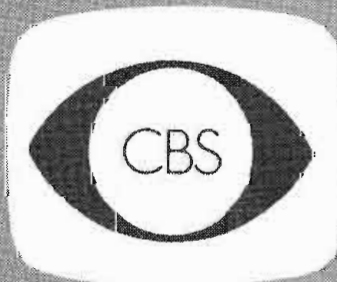
Other improvements in the Model 3009 Series II Improved include less overhang of the counterweight, making the new arm suitable for use with most turntables, and easier balance adjustment incorporating a rotating counterweight at the rear of the tone arm.

By reducing the effective mass of the Model 3009 Improved, the resultant resonant frequency of the tone arm/cartridge combination has

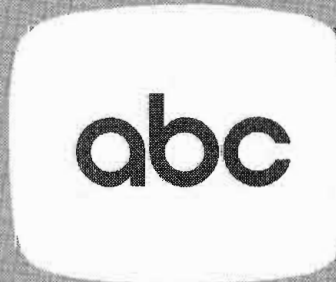
(Continued on page 122)



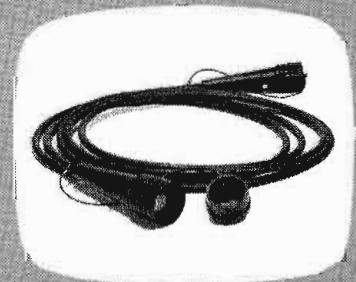
At NBC...



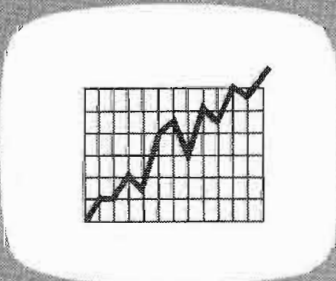
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The major networks prefer BIW TV cable for the same reasons local stations do. For one thing, they get proven reliability. BIW was the first TV cable manufacturer, has more experience than anybody else. We're now the supplier of cable for all TV cameras, plus accessory equipment for other studio cable and connector requirements. We also have both East and West Coast facilities for on-the-spot supply, service, and technical help. Write for literature. Or call.

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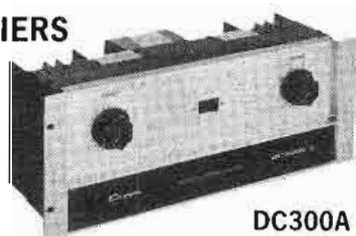
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YEAR AFTER YEAR... CROWN EQUIPMENT PAYS FOR ITSELF

*with reliable performance
and superior audio quality*

STUDIO MONITOR AMPLIFIERS

All models have complete internal protection. IM distortion is better than 0.05% from 0.01 watt to full power. All units mount in a 19-inch rack. Three year warranties cover parts, labor and round-trip shipping.



DC300A

delivers 150 watts RMS per channel into 8 ohms, or 600 watts output in monaural operation; height 7 inches.



D150

delivers 75 watts RMS per channel into 8 ohms; height 5 1/4 inches.



D60

delivers 30 watts RMS per channel into 8 ohms; height 1 3/4 inches.

26 YEARS EXPERIENCE IN BROADCAST AND PROFESSIONAL STUDIO EQUIPMENT. Every product is ruggedly constructed, rigorously tested and guaranteed to meet or exceed printed specifications. All circuits are outstanding for low noise and distortion, wide bandwidth and high frequency response.

DISTORTION ANALYZER

Model IMA tests audio equipment easily, quickly and accurately. Both intermodulation distortion analyzer and internal oscillators are enclosed in one compact unit. Even an inexperienced technician can take ten power level measurements in 5dB steps in just 60 seconds. The ranges are 100, 30, 10, 3, 1, 0.3, and 0.1%.

MAGNETIC TAPE EQUIPMENT.....IN THE PRODUCTION STUDIO

All models are designed to work 18 hours a day, 7 days a week for 10 years with three head replacements. Modular construction and plug-in circuit boards mean fast, easy field servicing. These precision instruments will make clean, accurate recordings years after the economical semi-pro decks are retired. All models handle 1/4-inch tape and 7-inch and 10 1/2-inch reels. All mount in 19-inch racks. Standard speeds are 15, 7 1/2 and 3 3/4 ips. There are individual record, erase and play heads for 1 to 4 channels. Over 40 standard models are available with numerous professional accessories.

CX822 Mastering Recorder

computer logic control for safe, rapid tape handling and editing ■ full remote control optional ■ TracSync available ■ each channel has two mixing inputs and individual bias adjust and equalizers ■ third-head monitor for meters or headphones with A/B switch



...IN THE CONTROL ROOM

SP722 Studio Player

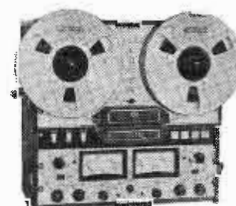
simple tape transport system has only 9 moving parts ■ remote start/stop optional, automatic stop in play mode



...ON LOCATION

SX822 Recorder/Mixer

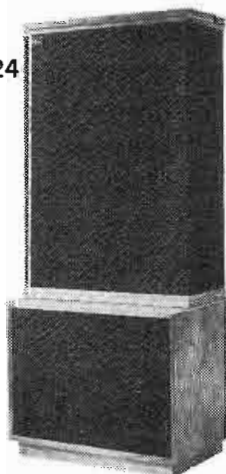
integral mixing facility simplifies setup ■ same tape transport system and meter monitoring as CX822 ■ two mic or line inputs per channel



STUDIO TRANSDUCERS

Four models of superior quality speaker systems have advanced-design electrostatic elements for midrange and treble and acoustic suspension base woofers, for finest possible reproduction for the professional recording studio. Two models of excellent cone speakers provide fine sound for broadcast monitoring.

ES224



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cue clue:

GET A GOOD INTERCOM SYSTEM!

Clear-Com Portable Intercom System. For sound, lighting and camera crews. Designed specifically for the high noise level encountered in concerts, theaters, arenas, and TV and recording remotes. Clear-Com is a wired system. One main station powers up to 30 remote belt-pack stations. All stations are equipped with headphones and dynamic high-intensity noise-canceling microphones.

OTHER FEATURES INCLUDE:

- Interconnects with standard microphone cable, compatible with most audio/video systems.
- Call lights and cue buttons to cue operators who have removed headphones.
- Individual volume control at each station.

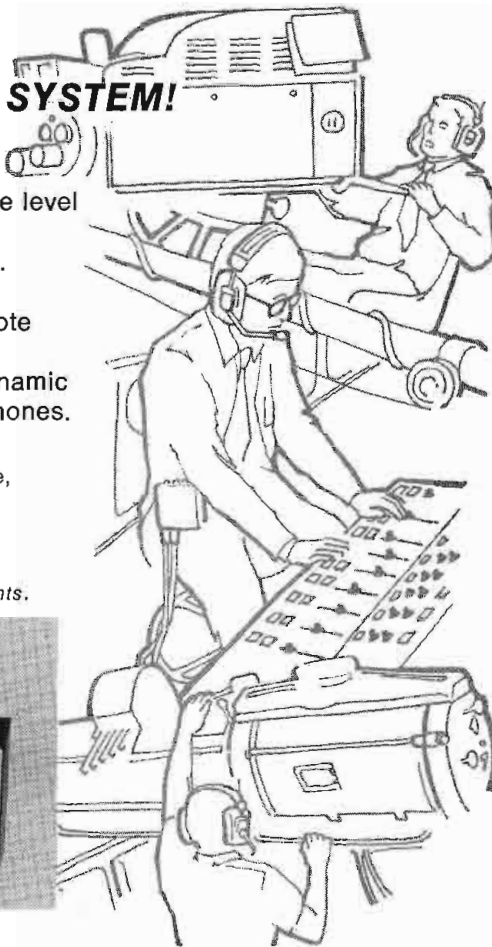
Full one-year warranty guarantees all components.



Write or call today:

CLEAR-COM DIVISION OF LUMIERE PRODUCTIONS, INC.
759 Harrison Street, San Francisco, CA 94107 (415) 989-1130

For More Details Circle (80) on Reply Card



(Continued from page 120)

been increased, resulting in more positive tracking of warped records and less susceptibility to vibration. This was made possible by reducing the counterweight mass and incorporating a nonremovable cartridge shell. For anyone preferring a removable shell, there is the Model 3009/S2 Improved, with a slightly higher effective mass than the 3009 Improved.

For More Details Circle (168) on Reply Card

2-Meter Transceiver

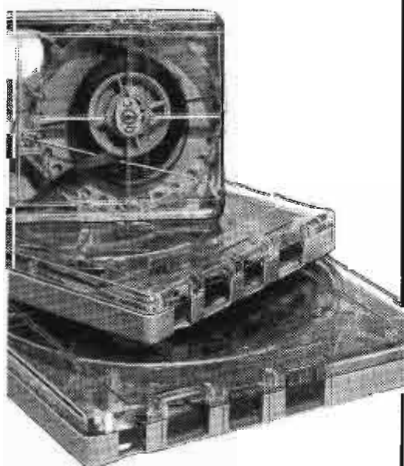
One of the latest and hottest all solid state items off **Heathkits** bench is their completely new 2-meter transceiver and lineup of matching accessories.

The basic kit is called the HW-202, and it offers 36-channel capability, hitting it with a minimum of 10 Watts in such a way that the unit will continue to operate even into an infinite VSWR without failure.

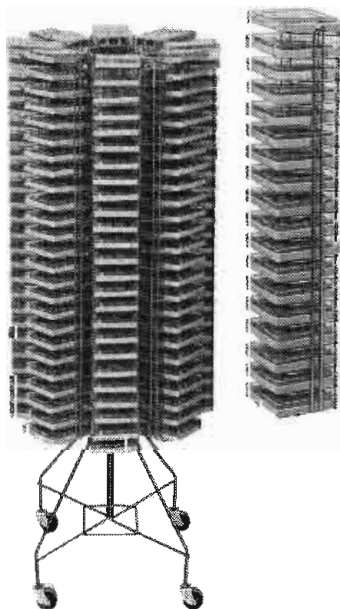
Transmitter deviation is fully adjustable from 0 to 7.5 kHz, with instantaneous deviation limiting.

(Continued on page 124)

Here's Our Line...



Fidelipac's Automatic Tape Cartridges: The standard of the industry with more in use than all other brands combined.



The convertible Cart-A-round Cartridge Storage Racks: Floor standing or wall mount.



New Cart-E-raise Demagnetizers: Hand held or Table Top Models. Plus blank tape, repair and splicing kits and splicing tape.

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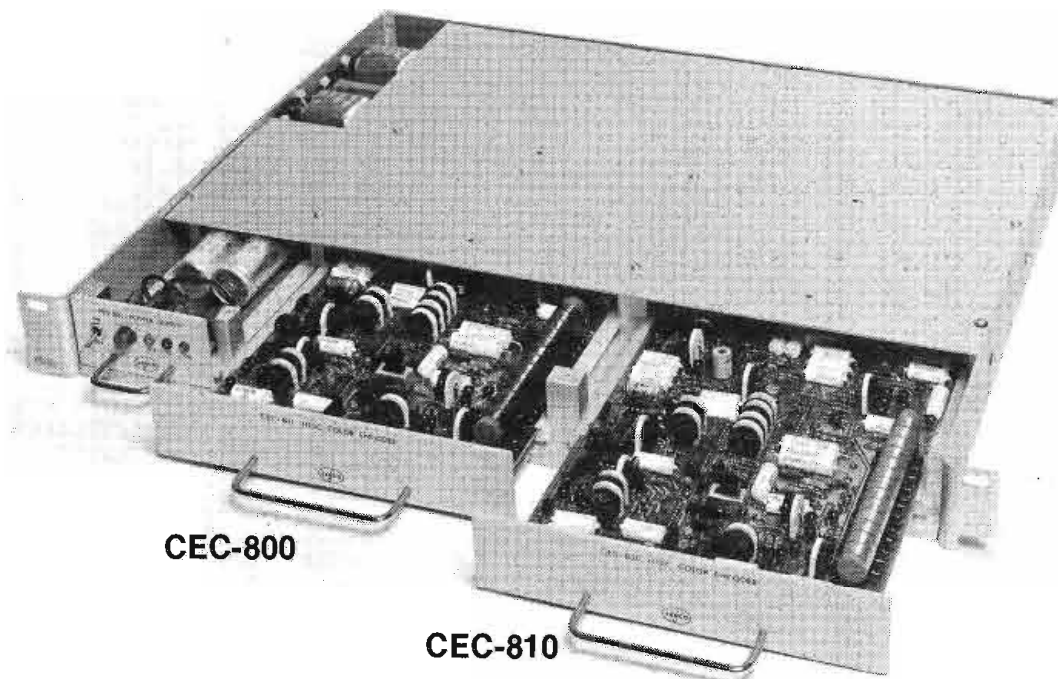


For More Details Circle (81) on Reply Card

LENCO ELECTRONICS

presents

The winning pair



CEC-800

CEC-810

NTSC COLOR ENCODERS

The CEC-800 and CEC-810 Encoders are designed for maximum stability with simplified alignment. They can be used as a plug-in replacement for the R-Y, B-Y Encoder used in IVC's model 90 and model 150 color camera or as pictured, rack mounted in the PFM-801 frame, for use with any make or model R, G, B color camera. A green tie switch is included for alignment or monochrome operation. Horizontal aperture correction is "contours out of green". Chroma can be phased 360°. Encoders operate on RGB, sync, blanking, and subcarrier.

The CEC-800 can be aligned within 5%, using only a waveform monitor.

The CEC-810 has the added feature of an inbuilt color bar generator for internal, as well as monitor alignment.

CEC-800 Plug-In Module	\$995.00
CEC-810 Plug-In Module	\$1,195.00
PFM-801 Frame w/Power Supply, holds 2 Encoders	\$400.00

OTHER LENCO PRODUCTS

CSG-700	Color Sync Generator	PVA-100	Video Distribution Amplifier
CSL-710	Gen-Lock Generator	PVA-101	Video D.A. w/Differential Input
CSG-CO-1	Sync Changeover Switch	PVA-102	Video D.A. w/Breezeway Clamp
BB-500	Black Burst, Pattern Generator	PPA-110	Pulse Distribution Amplifier
CPA-200	Clamping-AGC Video Amplifier	PPA-111	Pulse D.A. w/Pulse Delay
VP-1	Video Presence Detector	PSA-120	Subcarrier Distribution Amplifier



LENCO ELECTRONICS

A DIVISION OF LENCO, INC.

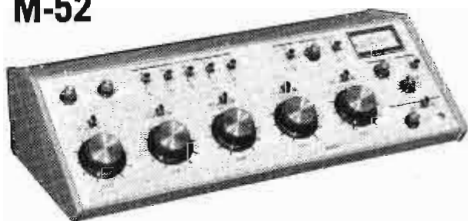
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For More Details Circle (82) on Reply Card

AUDIO INTERFACE SYSTEMS BUILD

MORE CONSOLE FOR THE MONEY

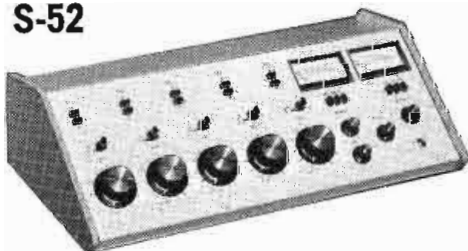
M-52



5 CH-MONO
DUAL OUTPUT

\$675

S-52



5 CH-STEREO

\$995

M-82



8 CH-MONO
DUAL OUTPUT

\$995

S-82



8 CH-STEREO

\$1895

M-41



4 CH-MONO

\$369



Audio Interface Systems, Inc.

(205) 595-6469 P.O. BOX 6911
2708 5th AVENUE S. • IRONDALE, ALA. 35210

For More Details Circle (83) on Reply Card

(Continued from page 122)

The unit is supplied with a push-to-talk ceramic mic. The receiver uses dual gate MOSFETS in the front end, an IC IF that completely limits with less than 10uV signal. It's dual conversion, with excellent impulse noise rejection.

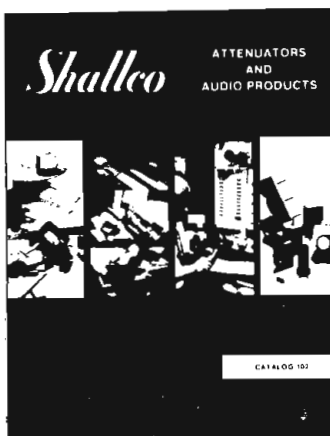
This unit is far advanced from the "lunch bucket" days. Aside from its impressive specs, the accessories include a tone burst encoder accessible from the front panel, an AC power supply, a 40-Watt amp, a wattmeter, and base and mobile antenna. On our BE bench, we found that the HW-202 meets or exceeds the manual specs.

For More Details Circle (169) on Reply Card

Digital Sync Generator

Control Concepts Corporation, Rockville, Maryland, introduces a new generation of low cost digital sync generators designed primarily for single line pulse distribution systems. The Model 800 plus CCC's Model 601 Master Sync Generator

(Continued on page 126)



ATTENUATORS AND AUDIO PRODUCTS

The above catalog provides 16 pages of information, including applications, charts, tables, and a selection guide. Send for your copy today.

Shalleco

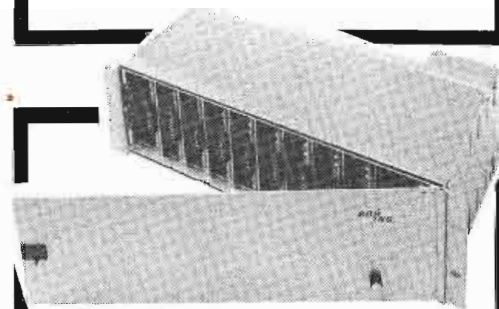
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ROH fits right in

***New Products
for '74**

Roh audio systems fit your needs, fit your budget, and always fit right in with existing equipment. Start with a single module or several. Then build from there. You'll be ahead in quality, performance and price.



MODULES

Model	Description	Price
210	10 Watt Power Amplifier	60.00
*211	1x6 DA, Source Terminated Differential Outputs	90.00
*212	1x6 DA, Individual Transformer Outputs	130.00
213	12x1 Active Mixing Network	60.00
214	Microphone/Line Preamplifier	90.00
215	Program/Line Amplifier	75.00
216	4 Channel LDR Attenuator/Switch	75.00
217	4x1 Solid State Crosspoint Switch	110.00
218	Dual Channel Phono Tape Preamplifier	75.00
219	Audio Processing AGC Amplifier	150.00
220	Dual 10 Watt Single 30 Watt Power Amplifier	110.00
221	4 Stage Binary Tally Logic Driver	90.00
*222	Diode Matrix for cascading 221's	45.00
*223	6x1 Differential Input Active Mixing Network	75.00
*224	Dual Channel model of 214	150.00
*225	Dual Channel model of 215	130.00
*230	Generator, Volt Meter Test Set for 200 series systems	350.00

ENCLOSURES

201	10 Module Enclosure	190.00
202	9 Module Enclosure Accepts Model 205 Power Supply	230.00
203	3 Module Enclosure	130.00
204	2 Module Enclosure with Power Supply	170.00
250	1 Module Enclosure with Power Supply	110.00

Roh Corporation

150 Technology Park/Atlanta Suite 15
Norcross, Georgia 30071 Ph: 404/449-0873

For More Details Circle (85) on Reply Card

What you don't see

is also what you get.

When you look into our coaxial cables, the completeness of the line is the first thing that strikes you. It's unique. We're the only manufacturer to offer a coax to meet every need: copper corrugated, smooth aluminum, foam dielectric and air dielectric; both types with a choice of constructions in a wide range of sizes and continuous lengths. A check on the performance of these coaxial cables in the lab or in the field would present convincing evidence of a high degree of mechanical integrity and outstanding electrical characteristics. Request a quotation and a glance at price and delivery will be the clincher.

These qualities are obvious to anyone who cares to look for them but our coax customers get still more not so readily seen. For instance, fast reaction to your RFQ's and prompt, accurate, response to requests for technical data and assistance in system or subsystem design. Perhaps a custom cut length of coax or a special assembly, terminated and ready to slip into place is what you need. No problem. After-sales service is not an empty statement with us. It's an article of faith.

May we tell you more? Write for your copy of our new 64-page catalog today. Cablewave Systems Inc., 60 Dodge Avenue, North Haven, Connecticut 06473. (203) 239-3311.



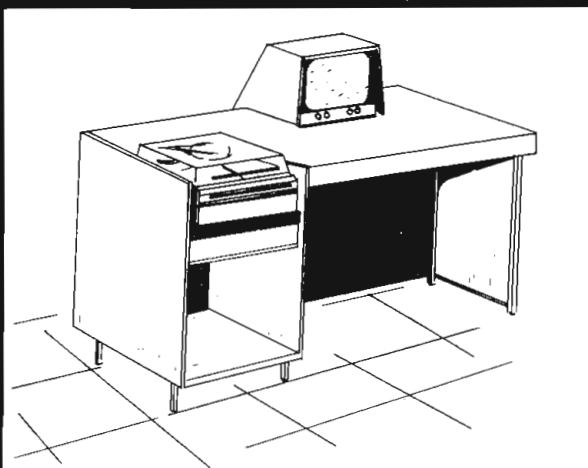
Cablewave Systems Inc.

A Corporation owned by Phelps Dodge and Kabelmetal

For More Details Circle (86) on Reply Card

There are other things to do besides watching T.V. all day.

The VIDEO SENTRY is designed especially for the busy, cost conscious broadcaster. This system records both audio and video content of your T.V. programming and automatically superimposes time and date on each frame, second by second.



VIDEO SENTRY is ideal for:

- Program content studies
- Commercial verification
- Daily program logging

FEATURES:

- Automatic unattended operation
- Costs as little as .12 cents per minute for tape
- Keyboard, single frame stop action
- Perfect playback (no noise bars) in real time
- Up to 12 hours of programming on a single 1/2 inch width roll of video tape
- High speed search and playback

The VIDEO SENTRY includes:

- Recorder/Player
- T.V. Receiver/Monitor
- Headset/Speaker
- Custom Console Cabinet
- Electronic Video Clock with optional station I.D.
- One Roll Video Tape

Call or write:

VIDEO SENTRY SYSTEMS

1080 Route 46, Clifton, New Jersey 07013, (201) 777-7600

For More Details Circle (87) on Reply Card

(Continued from page 124)

comprise a complete system.

Specific features are: modular construction; separate modules for programming pulses in 70 ns increments and for horizontal phase (9µs advance, 6µs delay in increments of 70 ns). Zero or one line vertical phase advance. Optional modules - additional pulse and subcarrier outputs; black burst; dot/grating.

For More Details Circle (170) on Reply Card

Quad Console

Dyma Engineering has a new quadrasonic console designed specifically for broadcast application. In addition to the many normal human engineering features on DYMA consoles, the Custom Quad features simplified control of quadrasonic sources. It also provides mixing capabilities for conventional stereo signals and mono signals with pan control on many of the channels.

The console features peak flasher units for each of the four channels, peak flashers and total modulation indication, illuminated transmitter status indication, and digital clock and timer.

Many additional variations are offered.

For More Details Circle (171) on Reply Card

One Tube 2.5 kW Transmitter

Wilkinson Electronics, Inc., now has available a single tube transmitter representing a solid shift to solid state. With the exception of the 5CX1500 final amplifier, this 2.5 kW FM transmitter is all solid state.

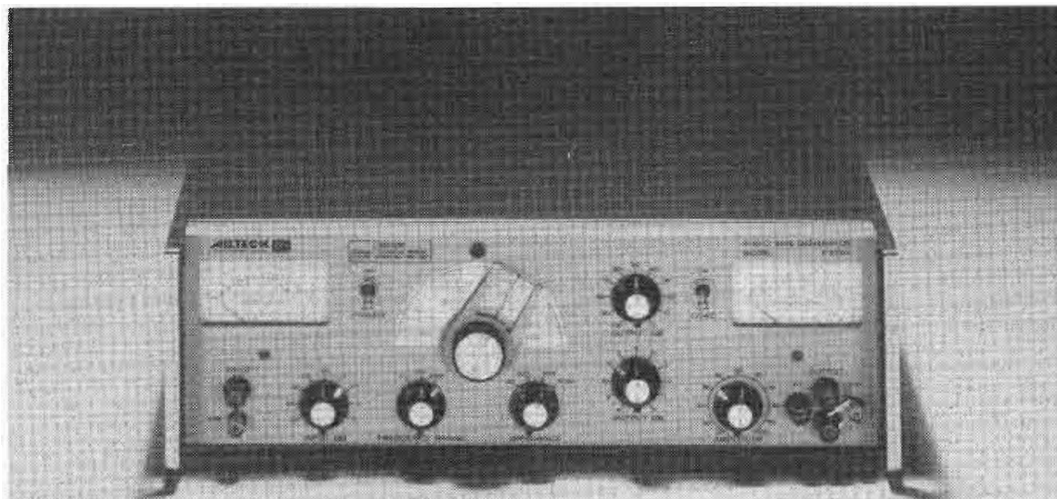
Operating at 2.5 kW, the FM-2500E transmitter has at least another 250 Watts available. And it requires only 5¼ square feet of space.

The FM-2500E uses vacuum capacitor tuning and loading, and it requires no neutralization. Even the power supply is solid state.

For More Details Circle (172) on Reply Card

Video Discassette Recorder

Arvin Systems, Inc., demonstrated their new direct video animation device for attendees at the NCTA convention this year. Using the Arvin Video Discassette Re-



HIGH watts are a must for the effective testing of audio range devices. For such applications as measuring return loss, AILTECH's Model F370 Audio Sine Generator has all the specifications you'll ever need. Model F370 has a frequency range of 20 Hz to 20 KHz; a built-in voltmeter; 110 db control and impedances of 50 to 5000 ohms. If your requirements include input level metering and secondary metering, Model F370 has it all—for only \$625. Write today for information on the finest high watt audio sine generator built — AILTECH's **Model F370.**

AILTECH MODEL F370A AUDIO SINE GENERATOR

AILTECH 
A CUTLER-HAMMER COMPANY CONTROL

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WEST COAST • 19535 EAST WALNUT DRIVE • CITY OF INDUSTRY, CA. 91748 • (213) 965-4911

order, they demonstrated how animated ads could be built in a matter of minutes for advertising products or for use in designing unique animated promos.

Within the system, the image is recorded directly onto a flexible magnetic disc that can be played back immediately to check for timing and effects.

The Discassette demonstration included titling, freeze frames, and other special effects. This machine would be applicable to commercial and non-commercial TV, as well as cable TV and industrial TV.

For More Details Circle (173) on Reply Card

Professional Recorder/Reproducer

How about 72 dB signal/noise ratio? Scully/Metrotech is saying it about the new 280-B professional recorder/reproducer.

The 72 dB they claim is on full track .25" tapes, with a high dynamic range. The two-track quarter-inch and four-track 280B is designed to give a clean 69 dB on a NAB weighted basis.

The new unit includes an optical motion sensing system that eliminates deck plate sensor mechanisms. These units also are designed for easy maintenance.

For More Details Circle (174) on Reply Card

Antenna Monitor

Delta Electronics' new DAM-1 antenna monitor is designed to meet the requirements of the FCC Rules changes for monitoring antennas by remote control. It is a true digital instrument using integrated circuit and TTL techniques.

The unit reads phase and true current ratio for up to six towers with different reference towers and different powers for DA-2.

Specs include: phase accuracy at ± 1 degree; phase resolution at ± 0.1 degree; and ratio accuracy at ± 2 percent. Phase range is ± 180 degrees.

For More Details Circle (175) on Reply Card

Audio-Video Television Modulator

Dynair has introduced their Dyna-Mod II, representing an improvement on their industry

(Continued on page 128)

new

AUDIO or VIDEO LEVELS MONITORED AUTOMATICALLY

- SOLID STATE • COMPACT
- ACCURATE • RELIABLE

We Guarantee It For 5 Years



TREPAC MODEL 553 A/V AUDIO/VIDEO AUTOMATIC LINE PROGRAM ALARM senses variations of signal level, and provides automatic control of alarm or other associated equipment. It eliminates the need for continuous personal attention. The unit is activated whenever the audio or video line program level deteriorates below a preset threshold.

The output power "switches" either off or on as desired when level drops for a predetermined (adjustable) length of time. In the absence of a signal, the unit will "switch" off after a fixed duration. Whenever programming returns to its nominal level, the output control instantly "switches"

on. All "switching" is done automatically. Accurate time control predetermines wide range of timing intervals available. The time duration (or delay) is adjustable from 0.1 seconds to as long as 30 minutes, depending on your application. There are many more features that make the compact 553 A/V AUDIO/VIDEO AUTOMATIC LINE PROGRAM ALARM valuable in audio/video monitoring and control applications.

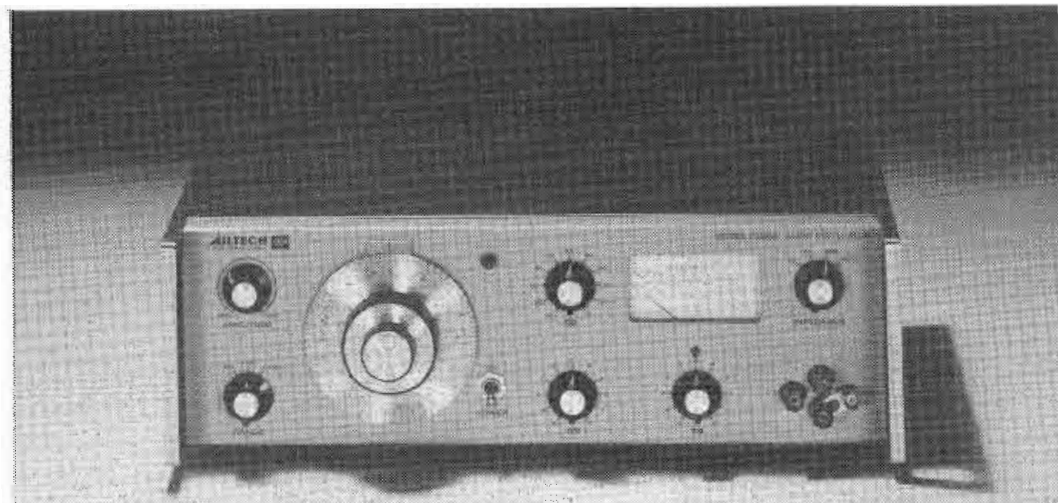
Write today for more information about the 553 A/V and how you may obtain a unit for free evaluation on your program lines. **WITHOUT OBLIGATION.**

TREPAC CORPORATION OF AMERICA

SOLID STATE ELECTRONICS FOR TELECOMMUNICATIONS

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For More Details Circle (89) on Reply Card



LOW distortion a requirement for the testing, monitoring, and maintenance of your broadcast instrumentation? AILTECH's Model F380A Audio Sine Generator has proof accuracy in one box. Total distortion is less than 0.1%; it has a built-in voltmeter, calibrated in volt and db; a balanced 150/600 ohm output; and a .20 Hz to 20 KHz frequency span. All that for only \$925. If you're interested in only the finest in broadcast test instrumentation, AILTECH's Model F380A can guarantee **proof of performance.**

AILTECH MODEL F380A AUDIO SINE GENERATOR

AILTECH CONTROL
A CUTLER-HAMMER COMPANY

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Quality and economy can go together... we did it with Encore tape cartridge equipment



Encore Reproducer \$475

Some broadcasters want and need an economy line of tape cartridge equipment. We incorporated the best features of our premium line into Encore. We simplified systems, circuits and manufacturing techniques. And we created further economies by selling direct, with payment due when you order. We offer a 30-day guarantee of satisfaction plus a one year warranty. Call us collect today and find out why many broadcasters are finding quality and economy under the Encore name.

Encore Recorder/Reproducer \$630



Call 309-828-1381 collect for details on the Encore series

INTERNATIONAL TAPETRONICS CORPORATION
2425 South Main Street,
Bloomington, Illinois 61701

For More Details Circle (91) on Reply Card

(Continued from page 127)

tested Dyna-Mod unit.

The unit accepts separate audio and video inputs from which it generates a broadcast quality VHF television signal on a specified channel. It contains a sideband response filter and output amplifier which is designed assure performance in adjacent-channel color systems without the addition of external filters.

An optional envelope-delay correction filter also is available.

Maximum RF output is 500,000 microvolts with a second output providing a 10 dB reduction.

For More Details Circle (176) on Reply Card

Audio Consoles

Broadcast Electronics, an old line audio manufacturer, has developed a new line of mono and stereo consoles for the broadcaster.

The mono consoles have from 11 high/low inputs into 5 mixers up to 20 high/low inputs into 8 mixers.

On the stereo side, the new units offer from 11 pairs of high/low



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For More Details Circle (92) on Reply Card



We just feel like singing about RUSSCO's New STUDIO/MASTER 505 Audio-Mixer — LOOK! 5 mixing channels, 4 channels with built-in Preamps! Each adjustable for mic, phono or hi-level! Channel 5 has 5 hi-level push-button balanced inputs! Built-in Monitor Amp, cue-speaker, headset amplifier! Push-button key switching with LED indicators! Allen-Bradley Mod Pots! FET monitor muting and much more! Available in attractive cabinet or as a rack mount (in 5 1/2" space) model. Mod colors — maroon & black face, blue-grey cabinet! PRICES THAT START AT UNDER \$500!!!



RUSSCO STUDIO-PRO and CUE MASTER turntables offer the ultimate in rugged long-wear dependability and ease of operation . . . only 3 moving parts! No-slip starting and reliable Bodine synchronous motor. The finest professional engineering with prices starting at a low \$152.00



The perfect tone arm for the finest turntable! The RUSSCO TA-12 all metal anti-skating tone arm — only \$59.00



You get the most "headroom" for the money (+18 DBM) with RUSSCO's New "FIDELITY-PRO" and "FIDELITY-MASTER" phono pre-amps. 8 models stereo or mono to fit your needs, self-powered and featuring a unique "easy-service" case. Years ahead in engineering with economical prices starting at \$92.00



ELECTRONICS INCORPORATED
1070 Brookhaven, Clovis, Calif. 93612
Phone (209) 299-2167

For More Details Circle (93) on Reply Card

inputs into 5 mixers up to 14 pairs of high/low inputs into 8 mixers.

FET's are used for switching of the input channels, and there are low and high level preamps for each channel. Ladder attenuators are standard, but carbon pots are optional at lower cost on mono models.

Completely self-contained and solid state, these models have identical program and audition output channels for dual console capability.

Please note that requests for further information should be on

company stationery and mailed to: Broadcast Electronics, 8810 Brookville Road, Silver Spring, Md. 20910.

Video Monitors

SC Electronics, Inc., is now offering a line of 16 sq. inch video monitors in single or triple unit combinations. These monitors take up only 7 inches of vertical rack space.

These professional monitors have a horizontal resolution of 600 lines and are completely solid state. And

the easily removable chassis allows easy access and maintenance.

For More Details Circle (177) on Reply Card

Station Clock Timer System

Time And Frequency Technology, Inc. (TFT) has introduced a versatile clock timer system you can synchronize with any number of remote digital clocks, impulse clocks, event timers and synchronous motor clocks. It can impose time data on a video signal with a

(Continued on page 128B)



CHARGE-UP YOUR BATTERY

WITH
TELAN
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generators

GENERATOR OR BATTERY SYSTEM? There's really no need to choose between the two. TELAN can work *with* your battery system—charging for those peak loads. Power from 10 to several hundred watts. 12-24-48 VDC standard.

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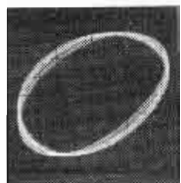
110 W. Timonium Rd. Timonium, Md. 21093 Phone: 301-252-8220 Telex: 87-780

For More Details Circle (94) on Reply Card

STEREO PHASÈ ENHANCER

MODEL
STE-100

DOES YOUR MONO-SUM (L+R) SIGNAL SUFFER FROM PHASE DISTORTION?



STE-100 INPUT

SEE WHAT THE STE-100
STEREO PHASE ENHANCER CAN
DO FOR YOUR STATION!



STE-100 OUTPUT

- Enhances Discrete Stereo Signals
- Affects Only Phase—No Signal Degradation
- Place Before Stereo Generator
- Fail-Safe Bypass
- \$795.00

FROM THE MAKERS OF RAPID-Q™ CARTRIDGE TAPE EQUIPMENT

GARRON ELECTRONICS INC.

1216 KIFER ROAD SUNNYVALE, CALIF. 94086 (408) 736-8737

(Continued from page 128A)

reported accuracy of one second per month.

Called Digit-Sync, the system requires only a single pair of shielded wires to transmit time data and power supply to auxiliary units.

In addition, serial time data can be sent over voice band channels or recorded on tape for time coding of information.

The system is expandable into virtually any size or complexity. And power failure protection is provided by a 12-Volt back-up battery.

For More Details Circle (178) on Reply Card

Audio Control Center

From Cetec comes the new series 10 audio control center for video, AM, FM, or stereo.

The control center series features 10 stereo mixing channels, two monitor amplifiers, 5-position monitor select, 26 stereo inputs (including 8 remotes), and conductive-plastic faders.

The series also offers separate

program, audition and cue outputs with individual channel assignment. All include redundant fail-safe power supplies.

For More Details Circle (179) on Reply Card

Computer Assisted Remote Control

Moseley Associates, Inc., is now producing computer assisted remote control systems that are fully digital for control, telemetry, and for automatic logging.

Their computer option is up to 30 parameters displayed simultaneously with tolerances on all channels.

The Moseley system can offer totally automated transmitter operation. This system includes a CRT readout of parameters.

For More Details Circle (180) on Reply Card

Color Sync Generator

Video Aids Corporation of Colorado® VACC's Model 5000 Color Genlock Sync Generator meets all NTSC/RS 170 requirements and

specifications.

No add-on options or accessories are needed to obtain phase lock. VACC's genlock provision permits synchronization from an entire video system to an external video source such as a VTR or remote line. Indicator lights automatically inform user when unit is on, when composite video or black burst is present at the input and when the Model 5000 is phase locked.

VACC's Model 5000 is housed in a rack-mount cabinet.

For More Details Circle (181) on Reply Card

Special Effects Video Quantizer

Colorado Video has available a unique unit that can be used for image processing, electronic art, or broadcast special effects.

Called the Video Quantizer, this unit (model 606A) is intended primarily for studio special effects production. The principle of operation involves the "slicing" of a normal video signal into eight dis-

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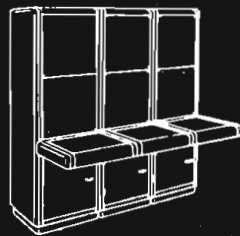
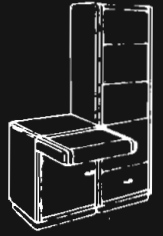
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HOLYOKE, MASS. 01040

For More Details Circle (96) on Reply Card


LET'S TALK FACTS!

STANTRON'S Modular cabinet concept offers:

- FACT: Weight-load capacities to 3,035 pounds**
- FACT: Tapped panel mounting angles**
- FACT: Square-corner or ball-corner design**
- FACT: Eleven paint colors, smooth or textured**
- FACT: Front aluminum trim, two styles**

For additional facts about custom cabinets/enclosures without custom fabrication costs, write or call for our catalog.



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TWX 910-499-2177

DIVISION OF WYCO METAL PRODUCTS

For More Details Circle (97) on Reply Card

BROADCAST ENGINEERING

crete amplitude levels, with subsequent intermixture of these eight signals to achieve a wide range of visual effects.

Effects include: Keying, tone reduction, outlining, brightness, contouring, grey scale inversion, synthetic color generation, tinting, and even psychedelic pattern generation.

For More Details Circle (182) on Reply Card

Wide Range Function Generators

Aitech announces the release of a trio of function generators incorporating an independent yet integrated sawtooth generator.

The 505, 515, and 525 are now available with the capabilities built-in to generate sine waves, triangles, square waves, sawtooth waveforms, pulses, low-duty cycle pulses, tone bursts, swept sine, swept triangle, swept square waves, swept prb, haversines, mono pulses and waveforms, etc.

Each of the units additionally provides a built-in wideband summing amplifier; its "integrator" and sawtooth generator can be operated separately or together. All can be externally triggered, the main generator can be used as a VCG, trigger-gated, mixed, etc.

The main generator can be selected with top frequency of 5 MHz, 10 MHz or 20 MHz. The sawtooth

generator operates from 001 Hz (1000 sec) to 100 KHz. Sawtooth output is 0 to 1.5V into 50 Ohms (0 to 3V open circuit). This can be amplified X4 by the built-in amplifier.

The sawtooth generator can cause the main generator to sweep over a frequency range up to 1000:1, at all the rates mentioned.

For More Details Circle (183) on Reply Card

Directional Antenna Monitor

Potomac Instruments announces FCC type approval of the AM-19 (204) Antenna Monitor. This instrument is the first antenna monitor to be approved under the new rules adopted January 10, 1973.

The AM-19 (204) is a completely solid state device which provides direct readout of phase angle and loop current ratio. Unlike earlier phase monitors, this unit requires no operator adjustments other than tower selection by means of front panel push buttons. Directional arrays of up to twelve (12) towers and up to three (3) separate patterns can be monitored. Free of internal oscillators and mixers, the monitor exhibits an input level dynamic range of 32 dB (.5V rms to 20V rms) without the need for adjustable attenuators. Loop Current Ratio is displayed directly as a

(Continued on page 129)

VIF INTERNATIONAL®
CUSTOM AUTOMATION SYSTEMS. WE WILL SUPPLY ALL OR PART. INTEGRATE YOUR EXISTING TAPE TRANSPORTS, OR WE WILL SUPPLY MAKES AND MODELS OF YOUR CHOICE.

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For More Details Circle (98) on Reply Card

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DESIGNERS AND MANUFACTURERS OF VHF, UHF, FM
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For More Details Circle (99) on Reply Card

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The leader in tower
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and control systems.

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SINGLE AND DOUBLE
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**APPROVED
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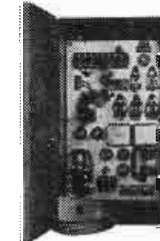
TOWER LIGHTING ISOLATION TRANSFORMERS
750, 1750, 3500, 5000, 7500 Watts

FEATURING...

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- IMPROVED REGULATION
- FIBERGLAS INSULATION
- EPOXY ENCASED
- VERSATILE MOUNTING

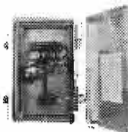


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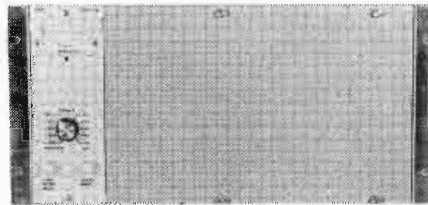
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For More Details Circle (100) on Reply Card

MARTI... the name to remember for *remote pickup* and *studio-transmitter links*



RPU Transmitter



RPU Receiver

Radio Remote Pickup Equipment is versatile, dependable and an entree to profitable radio broadcasting. That is the acclaim given to Marti RPU Equipment by American Radio Broadcasters. "How did we ever operate a radio station without it?", is the comment most often heard after equipment has been purchased and put into service.

The progressive minded, community spirited broadcaster, can find many uses for Remote Pickup Equipment. He will do many more remotes than he is presently doing, simply because the equipment is available at a moment's notice. To coin an old cliché, "It doesn't cost—it pays."

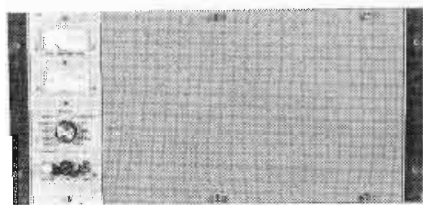
RADIO REMOTE PICKUP

150 - 450 MHZ

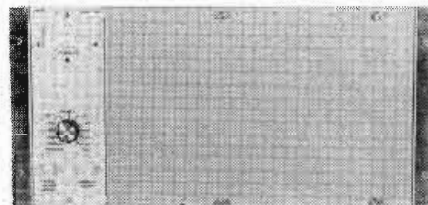
FEATURES:

- *All Solid-State
- *Direct FM Modulator
- *Broadcast Quality—Continuous Duty
- *Four Audio Mixing Channels
- *Plug-in Modular Construction
- *I.F. Crystal Filter
- *Taut Band Meters

COMPLETE LINE OF ACCESSORIES AVAILABLE



STL Transmitter



STL Receiver

Marti Electronics, Inc., has now been actively engaged in the design and manufacturing of Studio-Transmitter Link equipment for both AM and FM Broadcast, and Inter-City Relay Systems, for the past 9 years. Having well over 300 systems on the air and operating throughout the 50 United States and many more internationally, soundness of design, reliability and sound quality are a matter of record.

It is our earnest opinion that the only logical answer to increased telephone line costs, minimum "lost air" time, improved sound quality and a general reduction in operating costs lies in the use of STL, Remote Control and Telemetry equipment.

AURAL STUDIO-TRANSMITTER LINK INTER-CITY RELAY

AM - FM 950 MHZ MONO-STEREO

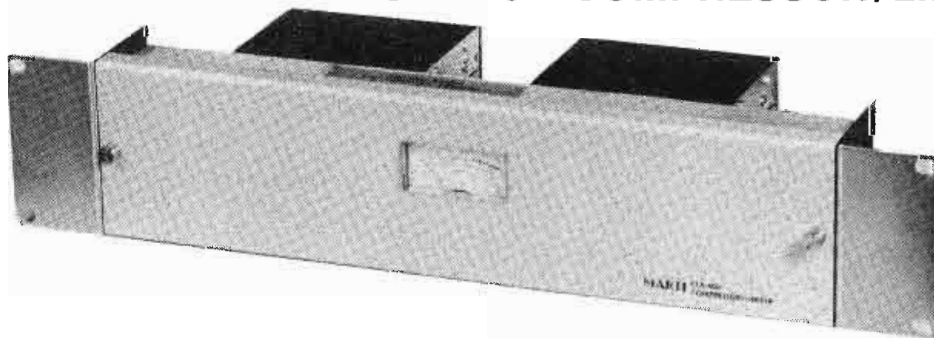
FEATURES:

- *All Solid-State
- *Direct FM Modulator
- *Field Proven Varactor Final
- *Plug-in Modular Construction
- *Solid-State Ovens
- *Hi-Accuracy Crystals

SYSTEM SPECIFICATIONS

Frequency Response: + or - .5 db. from 40 Hz to 15,000 Hz.
Distortion: 0.6% or less, 50 Hz to 15,000 Hz.
Signal To Noise: -65 db. or better. Ref. 400 Hz. Mod. 100%

CLA-40A COMPRESSOR/LIMITER AMPLIFIER



FEATURES:

- *Symmetrical or Asymmetrical Peak Limiting—Switchable
- *Pre-emphasized or Flat Audio Response—AM or FM—Switchable
- *Compress/Limit, Compress Only, Compress Limit Off—Switchable
- *Adjustable Negative and Positive Peaks
- *Well Shielded and Filtered for Strong RF Fields
- *Plug-in Modular Construction
- *Illuminated, Taut Band Meter reads Gain Reduction or Output Level in VU
- *40 DB Dynamic Range with less than 1% Distortion
- *Automatic Gain Control Built In
- *Solid-State
- *Selectable Release

The CLA-40/A Compressor/Limiter, is perhaps the most versatile audio processing device to be found on the market today. Combining the functions of Limiting, Compression, Expansion and Automatic Gain Control, the CLA-40/A fills a variety of requirements, formally accomplished by several different devices.

ALSO AVAILABLE:
Program/Line Amplifier*Monitor Amplifier

MARTI Electronics, Inc.

P. O. Box 661 1501 N. Main Cleburne, Texas 76031 (817) 645-4091

(Continued from page 128C)

percentage of reference tower current. Phase Angle is indicated in degrees and is independent of modulation effects.

Remote indications of Phase Angle and Loop Current Ratio are displayed on the RMP-19 (204) at the remote control point thereby eliminating the need to visit the transmitter within two hours after pattern change. The AM-19 (204) is the current production version of the very popular AM-19 which has a five year history of proven reliability.

The AM-19 is currently used by several hundred broadcasters with virtually every available type of wire and wireless remote control system. Separate normalized analog outputs are provided for each measured parameter without the need for line interface equipment.

For More Details Circle (184) on Reply Card

Noise and Signal Test Set

The new **TM SYSTEMS** Model 510 Test Set is a self contained battery operated transistorized unit measuring signal and VU levels from +23 dBm to -95 dBm, and noise from +113 dBm to -5 dBm.

Longitudinal balance is maintained in excess of 85,000 Ohms across the line while maintaining close tolerances when bridging or terminating lines under test. Frequencies are maintained flat from 30 Hz to 20 kHz as well as modified by active circuitry for C-MSG, High Pass, 3 kHz and 15 kHz weighting.

Provisions for external 48V DC operation is provided and 115/220 Volt power adapters are available. The Model 510 is packaged for ease of operation, portability and maintenance.

For More Details Circle (185) on Reply Card

Dynamic Noise Filter

Burwen Laboratories has taken no less than 40 operational amplifiers and combined them into a unique broadcast unit: a dynamic noise filter.

This unit is a automatically variable bandpass filter with a bandwidth that changes rapidly with each musical note. Its high and low frequency cutoffs are independently

controlled by the spectral content of the input signal. No signal encoding is required.

Burwen claims 100 dB dynamic range with flat response across the entire range.

For More Details Circle (186) on Reply Card

Digital Logging System

McBee Laboratories is now showing their model VII/21 automatic digital logger that records and prints out all the meter readings

you need.

In a complete, self-contained system the VII/21 contains a printer display and print date, time, channel number, and volts, amps, watts, etc. Also capable of sampling, measuring, and displaying analog inputs from single or multiple sources. The unit is equipped with a real time digital clock.

For More Details Circle (187) on Reply Card

(Continued on page 130)

"live" automation will improve productivity

Use the talents of your best people to their full capabilities. Staff members can actually be in production while they are "on-air" with live automation. The SMC SEQUENTIAL system permits scheduling up to 60 events (spots, music, talk, whatever) from as many as 10 different audio sources. Planned programming is significantly improved with your best talents being used constantly rather than on a "shift" basis.

Improve your "live" programming with this easy-to-operate SMC system that you can add to later for future growth. Phone or send for full facts today.

Send complete information on live automation with the SMC SEQUENTIAL!

Name _____

Station _____

Company _____

Address _____

Zip _____

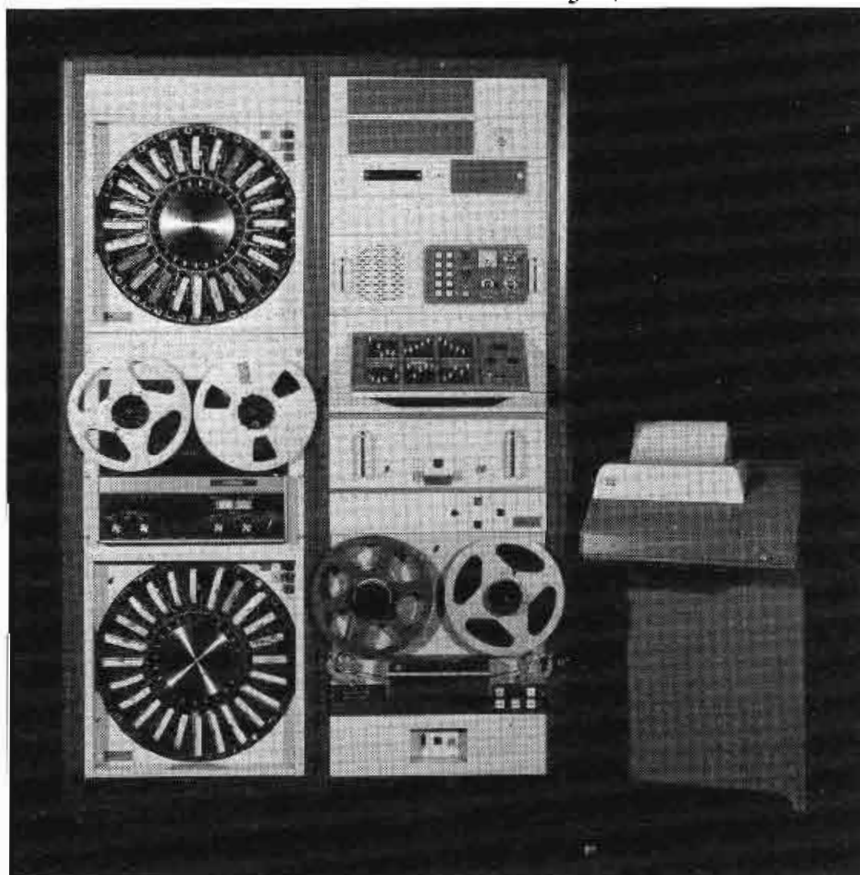
the **COMPUTERCASTERS** from



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For More Details Circle (102) on Reply Card

AMT-G-HANGER

Supports your lights at any height. Adjustable from 0-80 pounds. Write to Berkey Colortran for more information.

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(Continued from page 129)

Turntable And Recorder Test Set

Elpa Marketing has a new recorder test unit - called the RTS-2 - that should be of interest to engineers in broadcasting, recording studios, testing labs, and service shops.

The RTS-2 is a pushbutton operated test instrument that includes a sine wave generator, millivoltmeter, wow and flutter bridge with expanded range, and a harmonic distortion meter with simplified measurements.

Elpa says the setup time is minimal and only two test leads are required.

For More Details Circle (188) on Reply Card

Portable Video Production Switcher

The new Richmond Hill Laboratories portable video production switcher is color capable, and features 12 effects nine inputs available.

The switcher follows the tradition

JOA CARTRIDGE SERVICE OFFERS DISTINCT ADVANTAGES YOU SHOULD KNOW ABOUT

Advantage ONE—NO MINIMUM

Cartridge Reconditioning

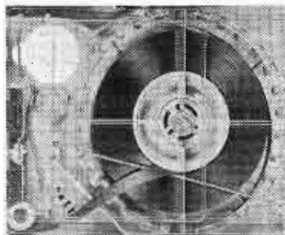
Advantage TWO—NO EXTRA CHARGE for

- (a) foam teflon-faced pressure pads
- (b) replacement of minor parts
- (c) visible splice
- (d) pretesting under actual broadcast conditions
- (e) 72 hour processing
- (f) Scotch heavy-duty lubricated tape

New Cartridges

Advantage THREE

Shipment from stock, of any standard size, or... "prompt shipment" of CUSTOM SIZE Fidelpac precision manufactured NAB cartridges.



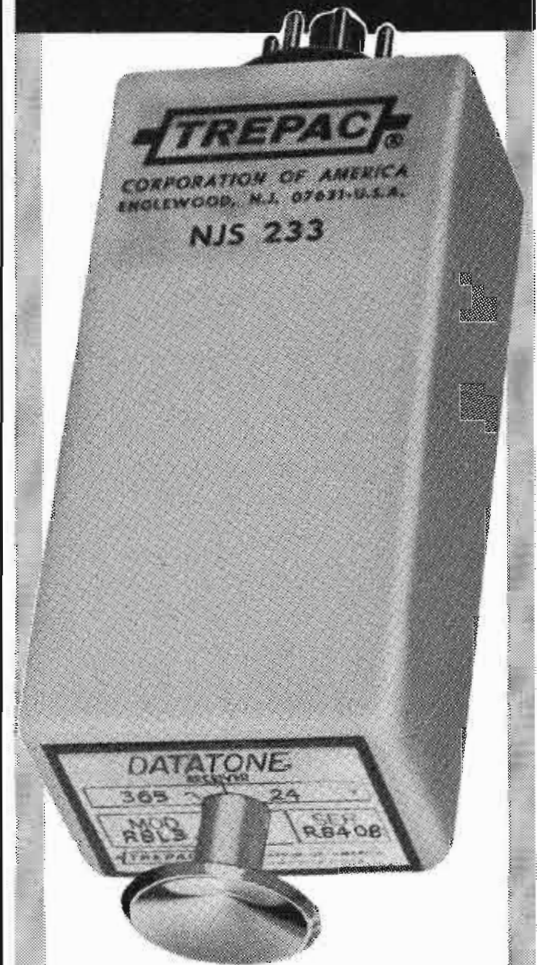
Advantage FOUR—24 or more shipped prepaid. Authorized distributor for NORTRONIC HEADS.

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For More Details Circle (104) on Reply Card

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1/10 THE SIZE



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- No tuning forks • Solid state
- No tuned reeds
- Low cost • Proven reliability
- Thousands in service
- Compatible with standard telephone operating practices

All plug-in sealed modules measure only 1½" x 1¾" x 4".

Freq. range: 300 Hz to 9999Hz.

SPECIFICATIONS

DATATONE TRANSMITTER: Designed to bridge a 600 ohm transmission line with less than 1 db loading and through contact closure deliver an undistorted tone signal level of 1 Milliwatt.

DATATONE RECEIVER: Designed to bridge a 600 ohm transmission line with less than 0.5 db loading, and close contacts or power an external relay load upon receiving a tone pulse from its companion transmitter.

Both units are rated for continuous operation over a temperature range of -30°C to +70°C from a 12/24/36/48 VDC supply. For complete technical data, call or write:

TREPAC
SOLID STATE ELECTRONICS FOR TELECOMMUNICATIONS
CORPORATION OF AMERICA
30 W. Hamilton Ave., Englewood, N. J. 07631
201-567-3810

For More Details Circle (105) on Reply Card

of Richmond Hill, and this one includes totally solid state video switches from Honeywell.

Because of the many features and options of the VPM-41, the switcher could well be used as a control room production switcher.

For More Details Circle (189) on Reply Card

Film Sound Transfer Equipment

Magna-Tech Electronic Company has introduced a new machine that is designed to add speed and flexibility in the operation of sound transfers, looping, re-recording, double system screening, and tele-cine interlock.

Using foolproof IC logic, this unit - called the MTE 600 series - features: stepping motor sprocket drive; optical/electrical high speed interlock; 10 times sync speed in interlock with video tape recorder; and it operates at 6 times sync speed through sprocket in interlock.

For More Details Circle (190) on Reply Card

Audio Routine Test System

Control Concepts Corporation, Rockville, Maryland, has introduced Model HS-4 Audio Routine Test System, which measures audio line quality in less than one minute.

Audio level, frequency response, total harmonic distortion and signal-to-noise ratio are all detected in a 16 second scan sequence and indicated by two meters.

For More Details Circle (191) on Reply Card

Dual Cue Recorder Control

Designed for use with EECO's BE450 Wide Range Synchronizer, the new BE460 Dual Cue Controller provides individual or simultaneous automatic cueing of two video or audio tape recorders.

The BE450 Wide Range Synchronizer, introduced in 1972, automatically synchronizes two mag tapes, whether quad or slant-track video, sprocketed or unsprocketed audio.

EECO's new BE460 Dual Cue Controller now replaces the BE420 Edit Code Reader, which required manual pre-roll parking of recorders prior to actual synchronization. The Dual Cue Controller provides pre-set and automatic location of

desired tape parking points.

The BE460's front panel dimensions are identical to those of the Synchronizer—4.9" high X 8.3" wide. These also match dimensions of other EECO mini "building block" modules in use for electronic indexing, synchronization and editing of video and audio tapes.

For More Details Circle (192) on Reply Card

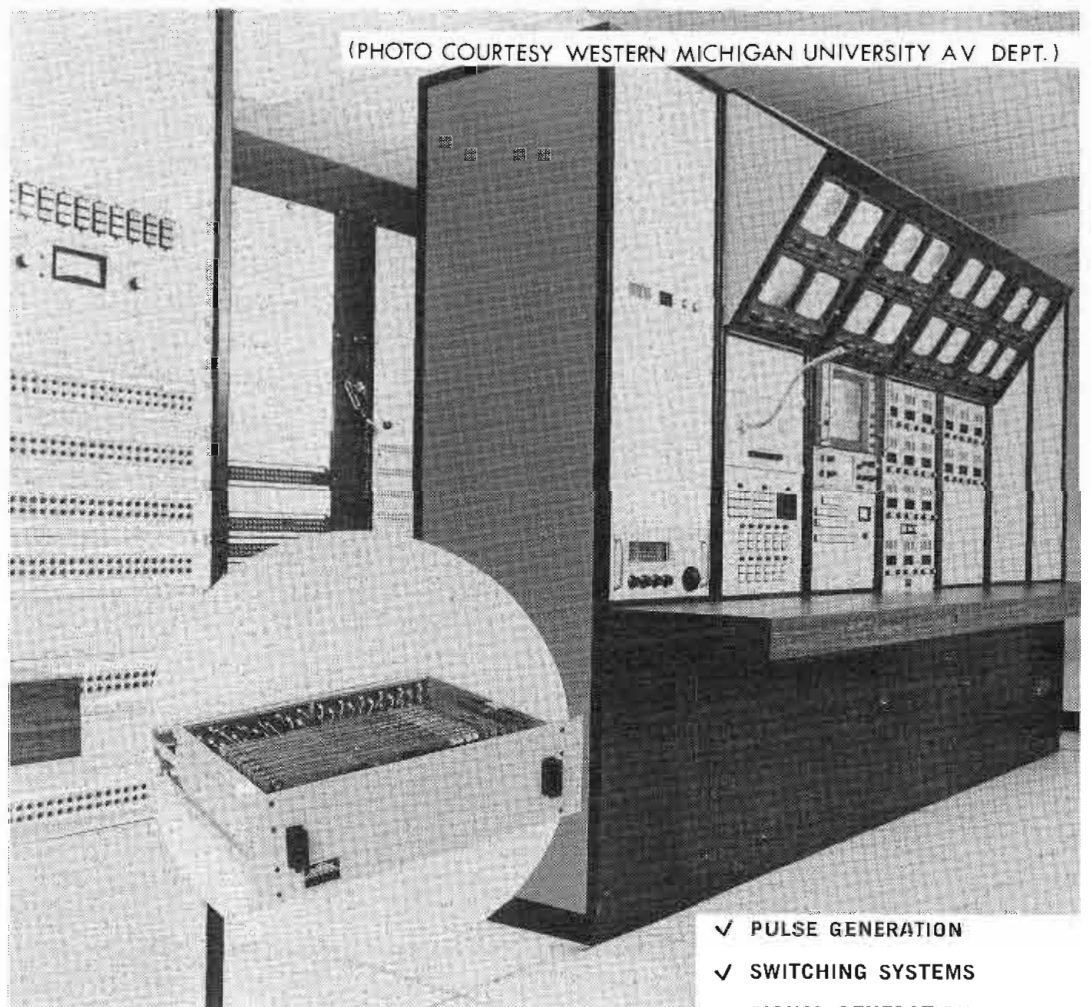
Frequency Counter

United Systems is now offering

the Monsanto model 115A counter that will digitally read out from 5 Hz up to 150 MHz, with sensitivity on the high end at 50 mV. And unlike many counters, the 115A has three selectable gate times, with optional I.F. subtraction for use in communications.

Its input is one megohm shunted by 20 pf. The resolution is selectable at the front panel for 10 kHz, 100 Hz, and 10 Hz. The maximum input on this unit is 500 VDC plus

(Continued on page 132)



(PHOTO COURTESY WESTERN MICHIGAN UNIVERSITY AV DEPT.)

- ✓ PULSE GENERATION
- ✓ SWITCHING SYSTEMS
- ✓ SIGNAL GENERATION
- ✓ AUDIO DISTRIBUTION
- ✓ TIME EQUIPMENT
- ✓ VIDEO DISTRIBUTION
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CHECK THE MANY ADVANTAGES OF

ADC "Custom Configured"

TELEVISION PRODUCTION AND ROUTING SWITCHING SYSTEMS DESIGNED TO MEET YOUR SPECIFIC REQUIREMENTS.



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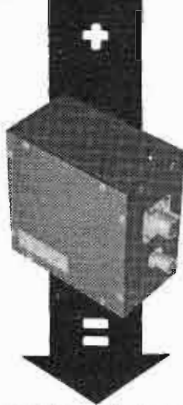
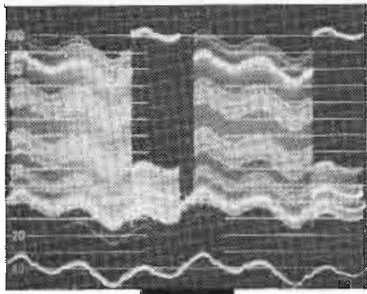
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For More Details Circle (106) on Reply Card

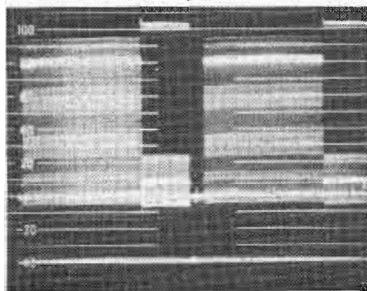
STOP GROUND-LOOP HUM!

VIDEO
HUM STOP COIL
HSC-1



NEW!

NEW!



- Will **ELIMINATE HUM** and other INTERFERENCE in Video Lines caused by differences in Ground Potential!!

- For Color and Black & 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.
- Reversible.
- Passive Device — Failure Free.
- Small Compact Package 4" x 4" x 2 1/4".
- Low Price.

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For Intertruck Hookup
For VTR Units
For Monitoring Lines
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Between Studios & Transmitter
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AUDIO-VIDEO ENGINEERING COMPANY
65 Nancy Blvd., Merrick, N.Y. 11566
Tel. (516) 546-4239

- Please send Add'tl. Inform. on HSC-1
- Please send me HSC-1 coil(s).
- Enclosed is remittance of
- Please Invoice on 10 day Free Trial

Name
Station or Co. Title
Address
City State Zip

For More Details Circle (107) on Reply Card

(Continued from page 131)

peak AC. Peak AC; 10 V at maximum sensitivity and 500 V at minimum sensitivity. Attenuation is continuously variable by a vernier control.

Options include 6, 7, or 8 digit displays, and BCD output. This last option is particularly useful for recording measurements with peripheral equipment. Complete interlocks are provided as necessary for proper acquisition of data without ambiguities. This unit was tested in the BE lab.

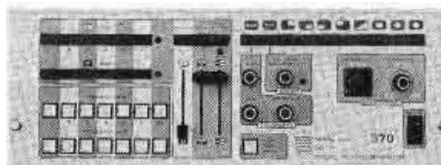
For More Details Circle (193) on Reply Card

Reorder Maintenance Kits

The Recorder Care Division of **Nortronics Company, Inc.**, exhibited their new Recorder Care Products at the 1973 CES Show.

Nortronics' 1973 CES Show exhibit was highlighted by four new inspection and cleaning kits designed for cassette, 8-track cartridge and reel-to-reel recorders and players. The company also showed their

THE ULTIMATE IN COLOR SWITCHERS MODEL 370 MARK II



MODEL 370 CHROMATIC® SEG

Built-in features

- Colorizer
- Background Generator
- Burst Generator
- Elliptomat®/Joystick
- Matte/Key
- Vertical Interval Switching
- Automatic Take & Re-entry
- Complete Tally System
- \$2,496.00 List

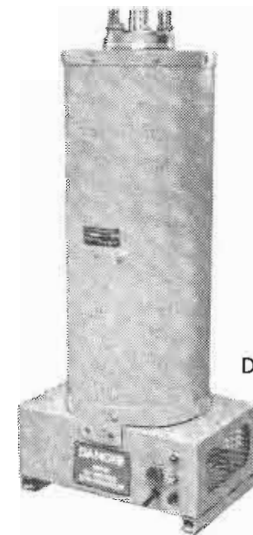
Chromatic® SEGs 370, 366, 360, Sync. Generators, Gen-Locks, VDA, ADA, Keyers, Pointers, Moduline® Consoles.

SHINTRON

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Phone: 617-491-8700

For More Details Circle (108) on Reply Card

DPTC-FM SERIES FM DRY LOADS



DPTC-10KFM

Model	Average Power	Connector	VSWR
DPTC-10KFM	10KW	3/8	1.2:1
DPTC-20KFM	20KW	3/8	1.2:1
DPTC-30KFM	30KW	3/8	1.2:1
DPTC-40KFM	40KW	3/8	1.2:1
DPTC-50KFM	50KW	6/8	1.2:1
DPTC-75KFM	75KW	6/8	1.25:1

Specifications:

Model DPTC-10KFM

Power Rating: 10,000 watts

Duty: Continuous

Frequency: 85-110 MHz

VSWR: 1.2:1

Weight: 37 pounds

Connector: 3/8 standard

Finish: Light Grey

Power Required: 110VAC 50/60Hz Std.

Ambient Temp. Range: -40° to 52°C

Dimensions: 38 h x 11 d x 16" w.

The new **Electro Impulse Dry FM Band Termination** will save the costs of water or expensive installations for other types of Loads.

Consisting of a practically indestructible resistive element in a stream of forced ambient air, the DPTC-10KFM will operate silently for just a few pennies a year... and we guarantee it for 2!

APPLICATION:

Highly dependable Termination for FM Transmitters. Requires only 110 VAC, 30 watts power.

UNIQUE WARRANTY

"This Termination is Unconditionally Guaranteed against defects in parts or workmanship for a period of 25 months, provided it is operated within recommended parameters."



116 CHESTNUT STREET
RED BANK, N.J. 07701
PHONE: 201-741-0404

For More Details Circle (109) on Reply Card

nothing like this RG59/U coax stripper/cutter

Meet No. 590 . . . designed specifically for RG59/U Coax Cable. With three-position lever in selected position, it cuts and strips:

- 1 Jacket, shielding, and dielectric cleanly from conductor.
- 2 Jacket and shielding only.
- 3 Jacket only.

With lever disengaged, it cuts through entire cable.

Cushion grips for comfort. Made in U.S.A. to highest standards.

Request Free
Tool Catalog

nationwide availability
through local distributors

XCELITE

XCELITE, INC.

118 Bank Street, Orchard Park, N.Y. 14127
In Canada contact Charles W. Pointon, Ltd.

For More Details Circle (110) on Reply Card

beat the heat with this handy little heat sink



This is No. 80, Xcelite's little gem for absorbing and dissipating heat when soldering fine wires or working close to delicate electronic components. Solder won't adhere to copper jaws because they're nickel plated. They're spring loaded to "stay put" and have a smooth surface to avoid marring or scratching.

Insulating cushion grips protect fingers. Made in U.S.A. to highest standards.

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XCELITE

XCELITE, INC.

118 Bank Street, Orchard Park, N.Y. 14127
In Canada contact Charles W. Pointon, Ltd.

For More Details Circle (110) on Reply Card
September, 1973

QM-202 Professional Head Demagnetizer which safely and effectively removes residual magnetism from tape heads, rollers and guides, and thus protects expensive pre-recorded tapes.

Nortronics' new QM-211 Professional Bulk Eraser, designed to erase recorded tapes down to the level of virgin tape, was also shown.

Nortronics also exhibited their Broadcast Cartridge, Professional Cassette, 8-Track Cartridge and Reel-to-Reel Alignment tapes and their new QM-5 Video Recorder Care Kit for the total maintenance of video recorders.

For More Details Circle (194) on Reply Card

Master-Slave Clock System

The Quasar Electronic MASTER-SLAVE Clock System is designed for use where many stations are required to have the exact time reading.

The Quasar Electronic MASTER-SLAVE Clock System is dependent for accuracy on the Master Clock, which utilizes a highly accurate Crystal Oscillator.

The Master Clock can be calibrated to Station WWV for time upgrading. All Slaves display the same time as the Master Clock at all remote locations. The Modular Clock circuitry is built on plug-in P.C. boards for ease of maintenance. The Quasar System uses LED Displays, and battery backup, if a power failure occurs. The Master Clock can drive up to 50 slaves.

For More Details Circle (195) on Reply Card

Remote Control Monitors

The new Delta combination remote control unit provides for the control and digital remote readout of Model DAM-1 Antenna Monitor and up to 15 transmitter meter readings. On/raise and off/lower controls are also provided for 15 functions and 8 alarm indicators are provided on the remote unit.

The transmitter interface unit selects any one of 15 DC voltage inputs and the DAM-1 amplitude digital readout provides local display of transmitter or antenna readings. Digital data and control sig-

(Continued on page 134)

recording accessories for demanding professionals

Nortronics — world's leading manufacturer of magnetic heads — now offers professional recording accessories with the quality and reliability that broadcasters and recording studios demand.



PROFESSIONAL ALIGNMENT TAPES

First generation master recordings with the tests and tones required to check and adjust professional recorders. AT-120 for 1/4" Reel-to-Reel to NAB standards; AT-200 for Cassettes; AT-320 for Broadcast Cartridge Spot Announcers.



PROFESSIONAL DEMAGNETIZERS

QM-211 Bulk Eraser for erasing reel, cassettes and cartridges down to the level of virgin tape — QM-202 Professional Head Demagnetizer to remove residual magnetism from heads, capstans and guides.

VIDEO RECORDER CARE KIT

Model QM-5. All the professional accessories required to properly maintain video recorders. Products are completely effective and totally safe for all components in the video tape path.

Nortronics now offers industry's most complete line of recorder care products — a line that sells well and is uniquely profitable to sell. Contact our Sales Manager, Roger J. Czerniak for complete information.



RECORDER CARE DIVISION

NORTRONICS COMPANY, INC.

8101 Tenth Avenue North
Minneapolis, Minnesota 55427
Tel: (612) 544-0381

For More Details Circle (111) on Reply Card

nals are handled by a single voice grade telephone line by means of self-contained FSK modems.

The system provides the accuracy of digital transmission and readout of data with analog to digital conversion in the precision circuits of the DAM-1 Antenna Monitor.

For stations that do not require transmitter control and monitoring the DAML-1 and DAMR-1, remote control units are available for control and readout of the DAM-1 Antenna Monitor.

For More Details Circle (196) on Reply Card

Cameras With Automatic Iris

Cinema Products Corporation announces their CP-16 and CP-16/A camera models will accept the new Angenieux 9.5-95mm and 12-120mm zoom lenses — Both with built-in Angenieux-designed automatic iris. Exposure control is instant and precise with no "hunt-and-peek" time delays.

These improved and advanced Angenieux Automatic Iris zoom lens control systems are ideally suited for operation with ultra light-weight CP-16 camera models, and draw power from the same nicad battery pack powering the entire CP-16 camera system.

For More Details Circle (197) on Reply Card

Dual Section Distribution Amp

Shintron now has available a new addition to its line of distribution amplifiers. Called the model 338 Dual Section Pulse DA, this unit consists of two independent sections of 1 in, 6 out as well as the

capability of providing 1 in, 12 out.

Along with solving fan-out distribution problems, the 338 features automatic amplitude control, fast rise and fall time, high output isolation, and wide range input.

For More Details Circle (198) on Reply Card

Audio Control Center

Cetec, Inc., has announced the introduction of a new audio control center in their Langevin product line. The Series 10 is designed specifically for radio and TV broadcasters and incorporates a wide range of flexibilities with greatly simplified operational functions. Modern-day styling and economical pricing are also highlighted features of this new console.

Highlighted features include built-in stop-start switches for auxiliary sound sources, digital clock, panel mounted on-the-air light, contacts for remote microphone switching, cue speaker, fail safe auto-switched dual power supply and dual 10 Watt monitor amplifier.

Options include quadraphonic output, equalization and a mono version.

For More Details Circle (199) on Reply Card

Fully Automatic Hi Fi Analyzer

The practical automation of audio frequency performance measurements is the target of Radiometer's new BKF10 Automatic Distortion Analyzer.

This unique instrument is actually a complete audio performance test set. It incorporates a distortion meter, a sweepable AF oscillator, an amplitude response meter, and a

frequency indicator, all of which operate automatically.

This equipment simultaneously determines both distortion factor and frequency response, while the input signal is swept through the four frequency decades from 20 Hz to 20 kHz.

Results are continuously displayed on the front panel meters. In addition, recorder output signals allow both the distortion factor and the overall amplitude response to

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| KCIJ | WIRK | KVOL |
| KCIM | WJCW | KWHI |
| WCCO | WJDX | WWST |
| WCMJ | WJLS | WPRS |
| WDAE | WKIZ | WVHI |
| WDAK | KLCN | WDSU |
| KELI | KLIV | KNXR |
| KFDA | WMRI | WHBC |
| WFOR | KOKE | WDWS |
| KGBC | KOMA | WBTM |
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For More Details Circle (113) on Reply Card

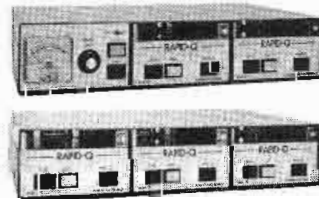
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RAPID-Q

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(408) 736-8737

For More Details Circle (112) on Reply Card

be plotted as a function of frequency. Use of dual channel or X, Y, Y' type recorders permits the plots to be developed simultaneously. The result is a complete, hard copy, dual performance signature with one sweep of the frequency spectrum.

The built-in sweep oscillator supplies a pure signal. Total harmonic distortion is maintained at less than 0.01 percent throughout its frequency range.

For More Details Circle (200) on Reply Card

Professional Recording/Remaining

SON OF 36 GRAND, Model 501, is an expandable, modular professional recording/remixing console from **Auditronics, Inc.** of Memphis, designed to accommodate 24-track recording and quad mixdown. Expandable to 26 inputs with complete metering, expandable patching, and a full line of matching accessories. A distinctive full capacity system at a moderate price.

Up to 26 input channels, each for mic and line with the following: Linear motion fader; microphone gain trim; input on/off switch; solo tape track or input fader; two independent studio cue mixes; echo selectable from monitor channel or input position; echo level control; echo send to four echo chambers in any combination; four knob equalizer; low & high cut filter; equalizer in-out switch; monitor level control; monitor channel assignment L-C-R; monitor sync overdub switch; quad pan pot; quad source selector from monitor matrix or program; independent selection to main 16 output channels.

For More Details Circle (201) on Reply card

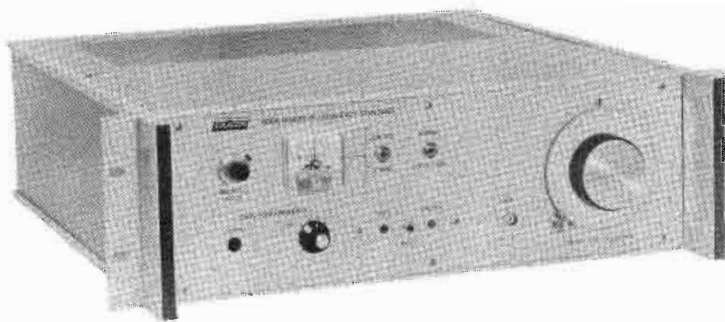
Professional Tape Deck Control Unit

Can you really have precise control over tape speed on tape decks? According to **Pacific Recorders and Engineering Corp.**, yes.

Pacific is in production on unit they call the Multisync MDA-1B. It's a self-contained rack mount or table top unit intended to supply drive motor power to professional

(Continued on page 136)

BIG TIME NETWORK TV STAR.



Tracor Model 600A Rubidium Frequency Standard. Used by NBC, ABC and CBS television networks. Price: \$7,700.

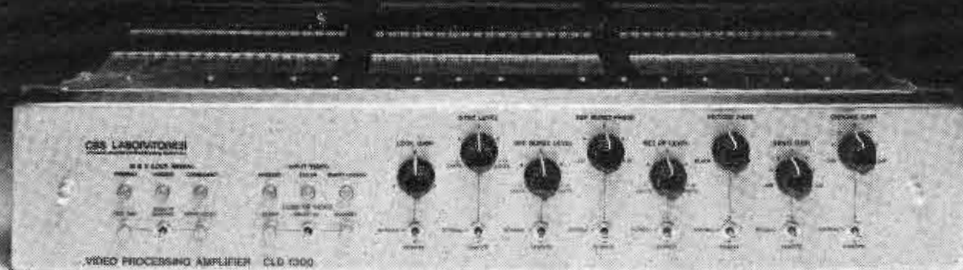
Only rubidium standard found in TV application. Compact, rugged, designed for color subcarrier generation. Utilizes stable quartz crystal oscillator whose frequency is controlled by the atomic resonance in the ground state of rubidium 87. Features continuous rotation phase shifter and built-in Time Scale Selector. Long-term stability is 3×10^{-11} . Write or call for full technical and application information.

Tracor

Industrial Instruments
6500 Tracor Lane • Austin, Texas 78721 • AC 512/926-2800

For More Details Circle (114) on Reply Card

Send only the best.



CBS Laboratories' new Video Processing Amplifier is an outstanding performer! For monochrome or composite color restructuring, CBS Laboratories CLD 1300 is the universal amplifier. High quality restoration is accomplished through individual controls of video, chroma, reference burst, sync and blanking.

In helical or quad tape use, the CLD 1300 actually improves quality dramatically. And the CLD 1300 can even be used simultaneously as a standby sync generator. From CBS Laboratories, of course.

CBS LABORATORIES

A Division of Columbia Broadcasting System, Inc.
227 High Ridge Road, Stamford, Connecticut 06905

tape decks for the purpose of varying tape speed under precise control.

The MDA-1B can give phasing delay effects, compensate for off speed tapes, tune tracks for recording non-tuneable instruments, offer

variable delay for double-tracking, and lengthen or shorten running time of broadcast tapes.

For More Details Circle (202) on Reply Card

Combining Network
Roh Corporation announces a

newly designed 6X1 active combining network which features differential inputs for use with 600 Ohm balanced circuitry. The unit is intended for use as a mixer maintaining source isolation.

This module is a new addition to the Roh 200 series modular audio equipment line and is compatible with the Company's several enclosure offerings.

Important module specifications: 10K Ohm balanced bridging inputs, 60 dB isolation between inputs, 50 dB minimum CMR for each input, unity to 20 dB voltage gain provided by potentiometer adjustment.

For More Details Circle (203) on Reply Card

Listen to the Sound of Performance

INOVONICS MODEL 360 is a completely self-contained solid state unit that enables you to gain new equipment performance from older tube type recorders.

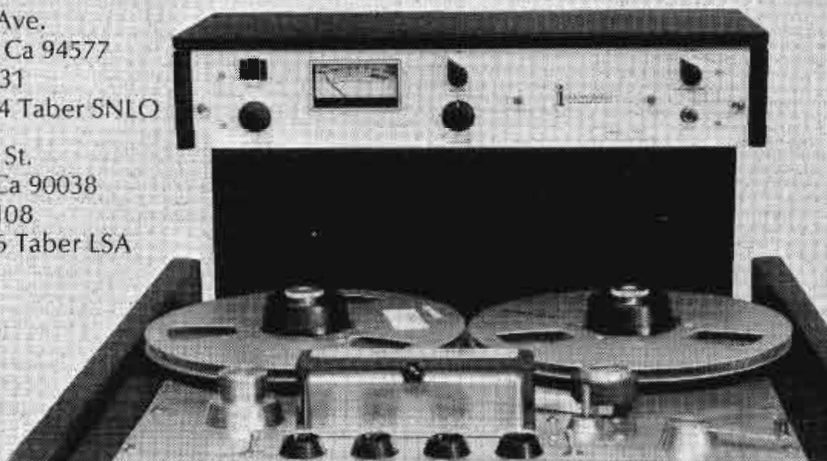
It interfaces directly with Ampex 300, 350 and 351 tape transports and accommodates a wide variety of original equipment and replacement heads. Plug-in circuit cards combine advantages of both IC and discrete circuitry for unexcelled performance and trouble-free operation.

For the distributor in your area - Call or write:

TABER Manufacturing & Engineering Company

2081 Edison Ave.
San Leandro, Ca 94577
(415) 635-3831
Telex 337-714 Taber SNLO

1227 N. Vine St.
Hollywood, Ca 90038
(213) 464-5108
Telex 673-476 Taber LSA



For More Details Circle (116) on Reply Card

Custom Camera Cases

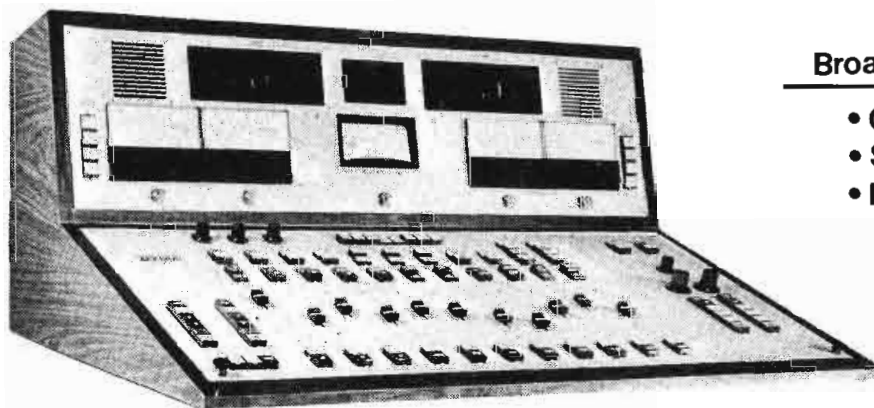
The Arriflex Company of America announces the availability of two, customized Halliburton Camera Cases: One fitted for all Arriflex 16S Cameras, and the other for Arri 16BL cameras.

The case exteriors are made from heat-treated, hard aluminum alloys, formed and ribbed under tremendous pressure, to make a shell of exceptional rigidity. The cases use full length hinges and special latches designed to withstand the hard usage. Interiors are pre-cut foam, whose density is carefully matched to the purpose, and formed to surround and protect the camera completely against shock,

DYMA's Innovation

Matches

Your Imagination



Broadcast Control Centers

- Custom Consoles
- Studio Cabinetry
- Design & Engineering

DYMA ENGINEERING
Route 1 Box 51
Taos, New Mexico 87571
505-758-2686

For More Details Circle (117) on Reply Card

moisture and dirt.

The Halliburton customized Case for the Arriflex 16S, measures overall 26" x 18" x 9" and weighs 15 lbs. It accepts the basic 16S, zoom and fixed focal length lenses, 2 400

ft. magazines, torque motor, and other small accessories.

The Case for the Arri 16BL, measures approximately 21½" x 17" x 12"; and weighs 18 lbs. The customized case accepts the 16BL camera with zoom lens, 2 400 ft. magazines, matte box and other small accessories.

For More Details Circle (204) on Reply Card

**Remote
Origination Link**

Communications Carriers, Inc., a subsidiary of International Microwave Corp., exhibited their RSL-13 system. It's a package of site to studio microwave link equipment that is designed to give the Cable operator the timeliness of news or sports shows that are possible when put on the line live.

The package includes a light weight, battery operated transmitter, a self powered repeater, and the studio receiver.

This system works in the 13 GHz STL (studio to transmitter link) band. The studio receiver terminal contains an antenna which can be mounted on remote operated pan and tilt head along with RF receiver terminal operating at 110 VAC. Battery packs for the transmitter and repeater are designed for a minimum of 10 hours of continuous use.

For More Details Circle (205) on Reply Card

**Reader Service
Card In Sept.
Good For 1 Year**

Color Encoder Board

Lenco Electronics announces a new NTSC Color Encoder board. Designed as a direct replacement for the encoder in IVC 150 and 90 color cameras, it can be rack mounted to encode any R.G.B. signal. The new encoder sells for under \$1,000.00.

For More Details Circle (206) on Reply Card

**ESC ELECTRONICS
LC DELAY LINES**

For the communication and TV Broadcast Industry, Contact ESC, America's oldest delay line specialists for your requirements in delay lines, LC filters or wide band video Transformers. Toll Free 800-631-0853 (except N.J.)

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For More Details Circle (125) on Reply Card

**USE OUR CASH
FOR YOUR NEW
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You choose the equipment; we will lease it to you—3-4 or 5 years with option to buy.

**Broadcast Equipment
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For More Details Circle (126) on Reply Card

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Full line of professional burglar and fire alarm systems and supplies. 80 pages, 400 items. Off-the shelf delivery, quantity prices.



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For More Details Circle (118) on Reply Card



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FOR MAG TAPE**

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Mfrs. of Amerline reels

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CORP.** (312) 489-1757
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For More Details Circle (119) on Reply Card

**LARGEST LIBRARY OF PROGRAMMED
MUSIC** . . . furnished to radio and television stations, including CATV facilities, on a lease basis. Reel-to-Reel up to 14" (7", 10½", 14"). Also, cartridges (1 to 4 track) up to 8 hours. Fits all types of equipment. Your cartridges refilled, repaired and guaranteed to work. Write or call for complete information and prices.

CINE SONIC SOUND, P.O. Box 996, New York, N.Y. 10001, (212) 563-0540.

For More Details Circle (120) on Reply Card

FREE CATALOG

HARD-TO-FIND PRECISION TOOLS

Lists more than 1700 items—pliers, tweezers, wire strippers, vacuum systems, relay tools, optical equipment, tool kits and cases. Also includes four pages of useful "Tool Tips" to aid in tool selection.



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For More Details Circle (122) on Reply Card

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besides supplying our clients with:

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- *reject free Audiopak A-2 cartridges
- *reject free custom length cartridges
- *cartridge reloading
- *Audio Devices ACETATE base tape

- *Audio Devices magnetic tape
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- *magnetic tape accessories
- *high quality duplicator cassettes
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we are here to help you solve any of your tape problems and guarantee your peace of mind. if you are at all troubled call us. (609) 933-2500 (215) 629-1073

QUALITAPE 101 BROADWAY RUNNEMEDE, NEW JERSEY 08078

For More Details Circle (123) on Reply Card

TWO NEW TEST INSTRUMENTS FOR DIRECTIONAL ANTENNAS



**FSM-1
FIELD STRENGTH METER**
 Frequency: Any frequency in the AM band
 Field Strength Range: 100 μ V/m to 1V/m
 Power: Internal battery
 Calibration certificate supplied
 Size: 5-1/2" x 8" x 5" (closed); Weight: 4-3/4 lbs. with batteries

DAM-1 DIGITAL ANTENNA MONITOR

Frequency: Any frequency in the AM band; Phase Range: $\pm 180^\circ$;
 Phase Accuracy: $\pm 1.0^\circ$; Phase Resolution: $\pm 0.1^\circ$; Ratio Range: 0.100 to 2.000;
 Ratio Accuracy: $\pm 2.0\%$; Ratio Resolution: ± 0.001 ; Input Impedance: 50 or 75 ohms



Delta's new Field Strength Meter and Digital Antenna Monitor will help keep your directional antenna system within FCC specifications.

The DAM-1 Antenna Monitor meets the new FCC requirements for remote control. It is a true digital instrument using the latest integrated circuit and TTL techniques. Reads phase and true current ratio for up to six towers with different reference towers and different powers for DA-2. Monitors for larger arrays available on special order.

Delta also offers remote panels and interface units for controlling and reading the DAM-1 Phase Meter over multiconductor, two wire, UHF, or microwave circuits with no reduction in accuracy.

The FSM-1 Field Strength Meter is smaller and much simpler to operate than other field strength meters because it is fixed tuned to your frequency by plug-in modules. If you have to check more than one station, order the FSM-1 with additional frequency modules. For monitor point checks and extensive proof of performance work the FSM-1 will minimize errors and speed up field measurements.

DELTA ELECTRONICS, Department A
 5534 Port Royal Rd., Springfield, Va. 22151
 703/321-9845

DELTA ELECTRONICS



Exporter: DELTA ELECTRONICS, INC.
 International Division, 154 E Boston Post Rd.
 Mamaroneck, N. Y. 10543. Telex 1 37327, Art Rocke

For More Details Circle (127) on Reply Card

(Continued from page 137)

Function Generator

Ailtech announces as standard options and accessories a series of convenience features which can be included as part of any of its "Gold-Line Series 500" function generators.

The units can now be provided with built-in AM, rear-panel concurrent output connectors, plug-access to critical parts of the unit's integrator for phase-lock service, special grounding, special power, special mounting, etc.

The purpose of these features is to allow the user to specify and obtain custom features for his unit, without burdening the standard unit with special interest and cost-consuming characteristics. Further, these features can be obtained without complex ordering instructions/factory calls and so on.

For More Details Circle (207) on Reply Card

Hall Effect Generator

Interdesign, Inc., Sunnyvale, California announces the availability of an integrated Hall Effect

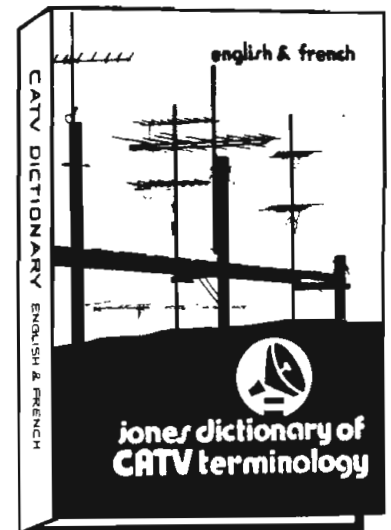
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For the **FIRST** time ever...

Jones CATV Dictionary

over 800 CATV definitions in both French and English

Now the CATV industry has its own comprehensive dictionary of technical terms in both English and French—the Jones Dictionary of CATV Terminology. Because of the smashing success of the English version, Jones Int'l., Ltd. has now published a second, greatly enlarged edition in two languages.



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 Jones Int'l., Ltd.
 880 Continental Bank Bldg.
 Englewood, Colo. 80110

ONLY \$19⁹⁵

For More Details Circle (128) on Reply Card

Generator in its Monochip series. The four terminal device is sensitive to magnetic fields and is used for switching, coupling and sensing.

On the same IC chip a large number of transistors and other components are available as well, so that the output of the Hall generator can be amplified, shaped or combined with other circuit functions.

The company's Monochip series contains three chips in sizes ranging from 110 to 300 integrated components. The components—including the Hall-effect generator—are interconnected with a customized metal layer which can be easily designed by the user.

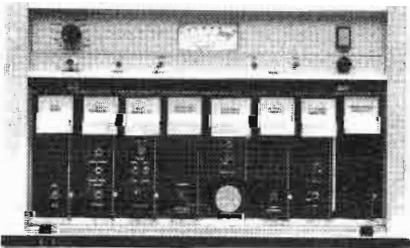
For More Details Circle (208) on Reply Card

TV Monitoring

Marconi Instruments displayed selected instruments from its range of TV measuring equipment.

The major display was the new Automatic TV Broadcast Transmitter Monitoring System which

(Continued on page 140)



10 WATT FM

B-910 series

B-910 monaural exciter
\$1995

B-910 with stereo generator
\$3070

B-910 with stereo & sca
\$3520

B-910T 10 watt transmitter
\$2355

unique phase-lock •
direct fm modulation

precision frequency control •

full metering •

FCC type accepted •

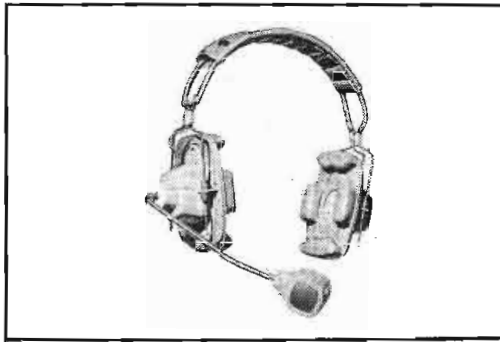
McMartin

McMartin Industries Inc.
4500 South Seventy-sixth Street
Omaha, Nebraska 68127
(402) 331-2000 Telex 048-485

For More Details Circle (163) on Reply Card

September, 1973

exciter



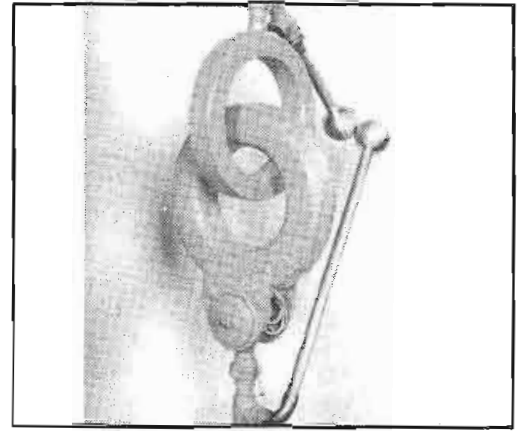
COMFORTABLE HEADSETS

Amplivox makes a headset which stands up to the rough and tumble handling of TV crews without sacrificing the light weight and comfort necessary for all-day use.

Interchangeable soft, ear enveloping foam cushions or ventilated foam cushions which eliminate ear perspiration and accommodate eyeglass frames.

Available single or double side + 300 OHM phone – 100 OHM carbon or noise cancelling carbon mike.
TELEVISION EQUIPMENT ASSOCIATES, Box 1391, BAYVILLE, N.Y. 11709, (516) 628-8068

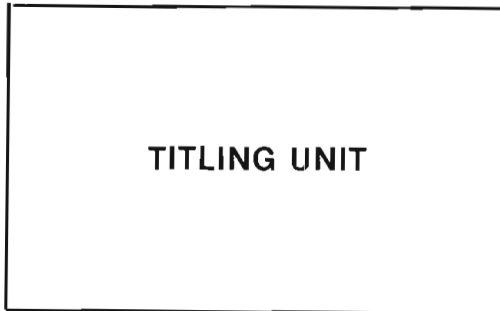
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AUSTIN LIGHTING TRANSFORMER

A high quality efficient transformer providing low capacitance and excellent regulation. Specifically designed to minimize radio frequency losses. Also available as oil immersed unit for maximum isolation voltage. Load capability from 0.7 kVA to 15 kVA.
AUSTIN INSULATOR DIVISION, Decca Radar Canada (1967) Limited, 71 Selby Road, Brampton, Ontario L6W 1K5, Phone (416) 457-8720.

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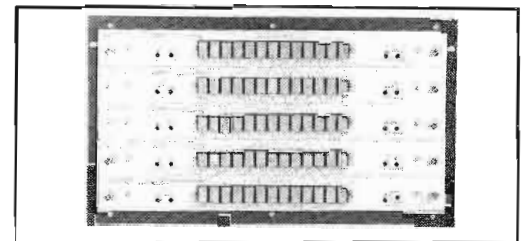


TITLING UNIT

Basic model includes: 2 pages of 8 lines of 16 "high resolution" characters. Will sync to composite video signal or accept separate sync input; keyboard; 2 character sizes; titles keyed into video signal; separate program/preview outputs; vertical interval page switching.

Expandable plug-in modules: 8 pages of memory; horizontal crawl; blinking characters; color backgrounds; character edging; audio tape storage. Priced from \$2500. VIDEO DATA SYSTEMS, 657 Old Willets Path, Hauppauge, N.Y. 11787, (516) 234-1010

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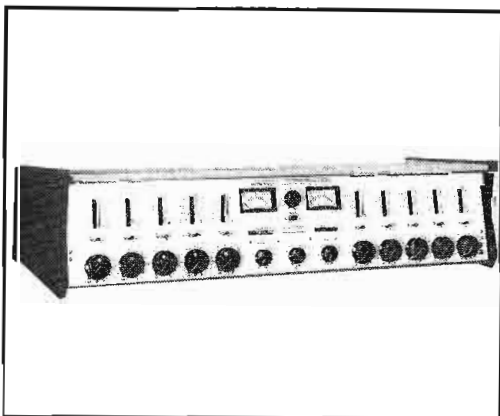
VIDEO/AUDIO ROUTING SWITCHER

The Model 1035 Routing switcher features Solid State Video switching, Solid State Video/Audio input and output circuitry, and full field expansion of inputs and outputs by addition of 12X1 individual plug in Cards. Available in Video, and Audio follow Video configurations. Prices are as follows: (Factory assembled)

INPUT		OUTPUT	VIDEO	AUDIO VIDEO
12	X	5	2330	2690
12	X	10	4910	5110
12	X	15	6560	7530
12	X	20	8890	10,220

DELIVERY: 6 Weeks. VISCOUNT INDUSTRIES LTD., 105 East 69th Ave., Vancouver 15, B.C. CANADA

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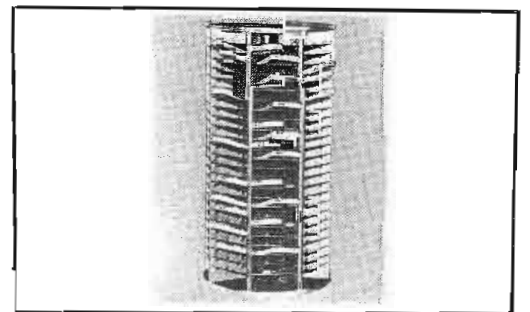


10 CHANNEL STEREO CONSOLE

AMPRO's AC-10-S is one of a new line of 6, 8 and 10 channel dual, stereo and mono consoles. Featuring heavy-duty telephone type switches, 4 switchable mic or high-level inputs to all faders, 4 muting relays with Programming Board and shielded PC board mixing bus, it's priced at \$3,695. Available from AMPRO CORPORATION, 2220 MAPLEWOOD AVENUE, WILLOW GROVE, PENNSYLVANIA 19090.

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ROTA-RAK MODEL 200 TAPE RACK



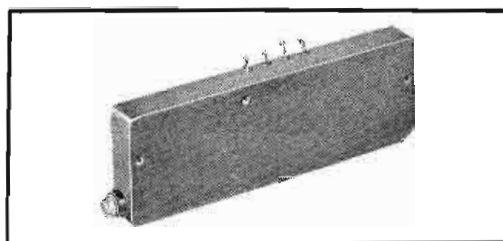
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assesses the picture quality by measurements on a VIT signal. This system comprises of two units an INSERTION ANALYZER, MODEL 2914, illustrated top unit, and DATA MONITOR, MODEL 2915. The Analyzer permits the simultaneous measurement of up to 24 parameters of a previously introduced VIT signal. Some of the basic parameters which may be measured are - the amplitudes of bar, sync and 2T pulses; chrominance/luminance gain, delay and crosstalk; luminance non linearity; noise; LF error; bar tilt; differential phase and gain. In the manual mode, these parameters are expressed in units of mV, nSecs, degrees or as a percentage and can be displayed on a 3½ digit panel



Variable Delay Line Makes Burst Phasing an Operational Adjustment

ESC Model 74-61 Variable delay line is supplied for video tape recorder correction of improper color phasing resulting from variations in quality of production tapes. Inserted between the colortec and proc amp burst routing the screw-driver control is made available for external quick adjustment. Price is \$67.00.

Details regarding use and specification are available from:

ESC ELECTRONICS CORP.
530 Bergen Blvd. Palisades Park, N.J. 07650

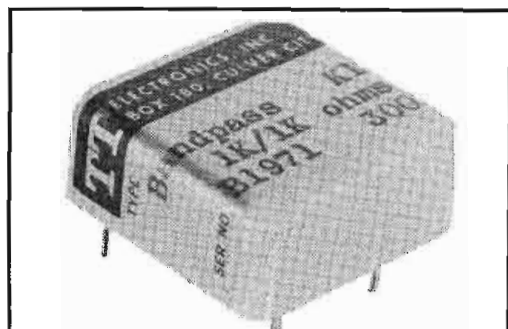
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FILTERS

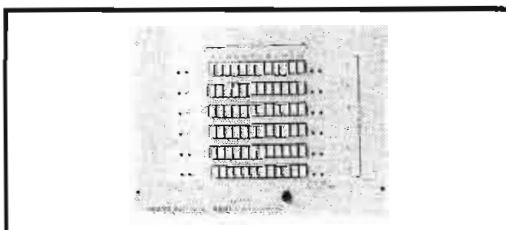
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TTElectronics, Inc. 2214 Barry Ave. Los Angeles, 90064, (213)478-8224

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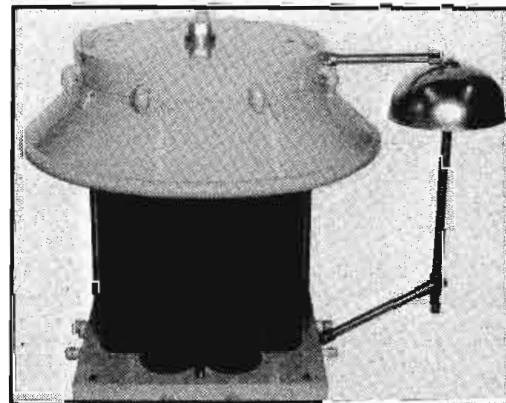
VIDEO/AUDIO ROUTING SWITCHER

The Model 1050 Routing switcher has solid state input and output circuitry to broadcast standards; is available in Video, Audio or Audio follow Video configurations. Switches 12 inputs to any number of outputs. Factory assembled prices are:

INPUT	OUTPUT	VIDEO	AUDIO	AUDIO VIDEO
12 X	3	\$1200	\$ 860	\$1490
12 X	6	1710	1370	2150
12 X	9	2380	1980	3000
12 X	12	2920	2520	3720

DELIVERY: 6 Weeks. **VISCOUNT INDUSTRIES LTD.,** 105 East 69th Avenue, Vancouver 15, B.C. CANADA

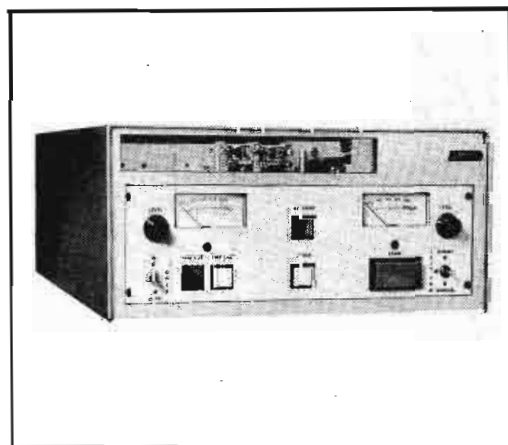
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AUSTIN BASE INSULATOR

High quality insulator specifically designed for radio frequency use. Oil filled to prevent RF loss from condensation; low capacity, smooth finish minimizes leakage and flashover. Available for guyed or self supported towers. Working download to 2,500,000 lb. Working uplift to 455,000 lb. Working RF voltage to 100 kV RMS wet. **AUSTIN INSULATOR DIVISION, Decca Radar Canada (1967) Limited,** 71 Shelby Road, Brampton, Ontario L6W 1K5, Phone (416) 457-8720.

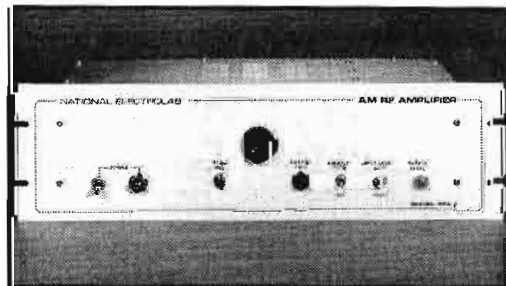
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STEREO CARTRIDGE UNIT

AMPRO's Model 4500 SR Recorder-Reproducer is one 10 new units featuring heavy-duty direct drive 4" Beau Motor, self-aligning pinch roller, air-damped solenoid operation and die-cast deck and front panel. Accepts all NAB Type A, B and C Automatic Tape Cartridges. The Model 4500 SR costs \$1,375. Available from **AMPRO CORPORATION, 2220 MAPLEWOOD AVENUE, WILLOW GROVE, PENNSYLVANIA 19090.**

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RELIABLE AM RF AMPLIFIER

The Model RFA-4 offers proven reliability in driving any AM modulation and frequency monitor. Standard features include a carrier-fail alarm, low distortion audio detector, 10v RF output for modulation monitor. Optional are a clipped RF output for a standard frequency counter, AGC or switchable RF input attenuator, and 10 kHz whistle filter. Available through Gates Radio & Collins.

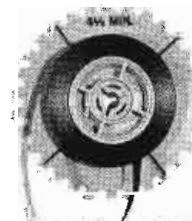
NATIONAL ELECTROLAB LTD., P.O. Box 67, Blaine, Wash. 98230. In Canada: 1130 E. 7th Ave., Vancouver, B.C.

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meter. In the automatic mode, the digitized signal is passed to the data monitor.

The Data Monitor automatically scans each parameter in turn and compares the result to pre-programmed limits. When an out of limits condition occurs, a front panel LED is extinguished and alarms or necessary control action can be initiated.

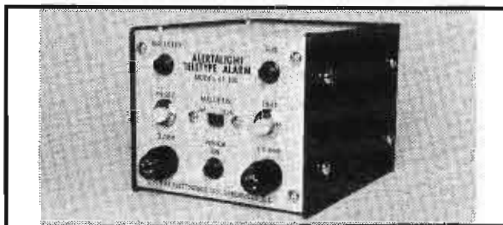
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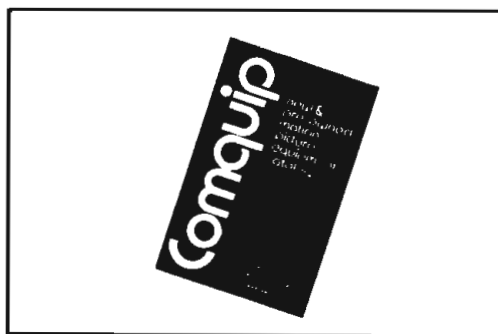
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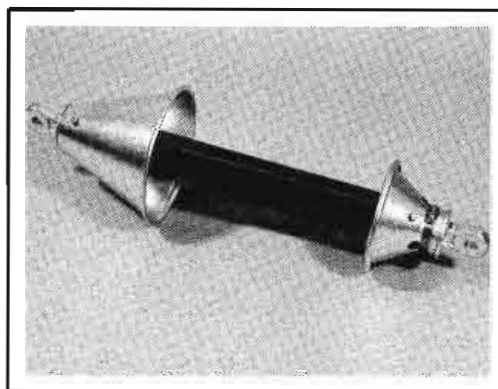
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FREE Catalog

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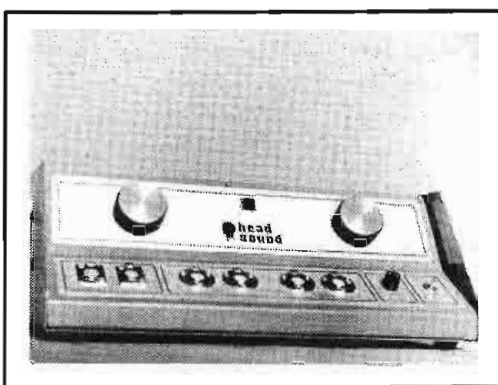
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AUSTIN GUY STRAIN INSULATOR

High quality oil filled insulators specifically designed for high voltage radio frequency operation. Unique design provides long leakage path, low capacity, high internal dielectric strength and self cleaning surface. Range of insulators available for working loads from 6,000 lb. to 275,000 lb. with up to 150 kV R.F. working voltage. **AUSTIN INSULATOR DIVISION, Decca Radar Canada (1967) Limited, 71 Selby Road, Brampton, Ontario L6W 1K5, Phone (416) 457-8720.**

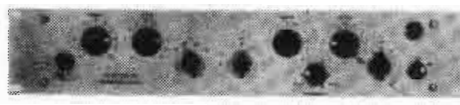
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BASIC POWER AMPLIFIER

Enough of ho-hum black! The MODEL 2 is a blue and orange 2 channel power amplifier with self contained cooling, 2 handles, wrap-around self locking power cord; may be stacked or rack mounted, electronically protected against any improper inputs or outputs, overload recovery is instantaneous. Power output, 220 watts RMS at 8 ohms, 310 watts RMS at 4 ohms. 38 lbs. \$495. **HEAD SOUND, INC., 722 Brooks, Ann Arbor, MI. 48103.**

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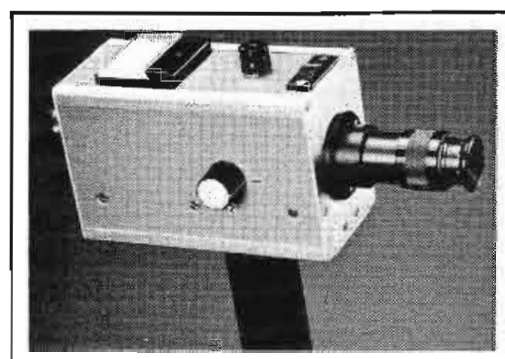
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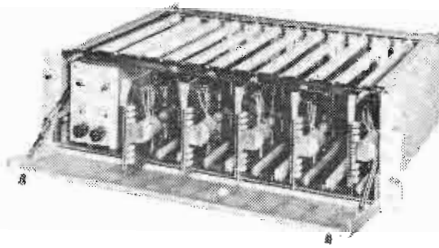
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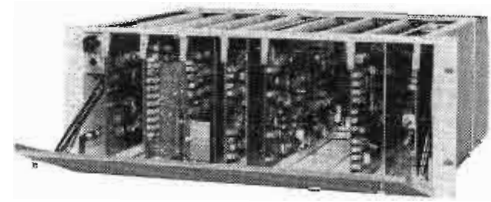
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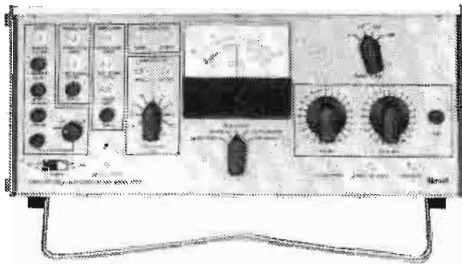
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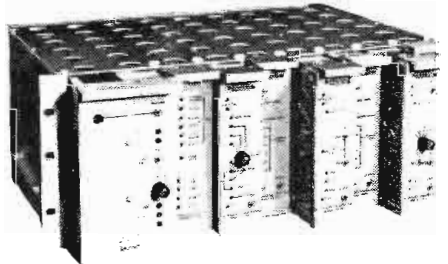
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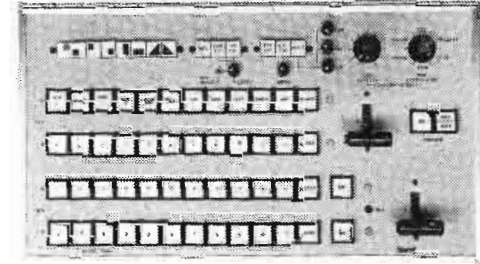
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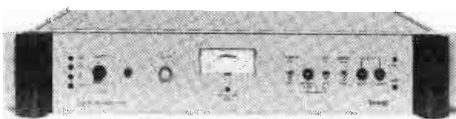
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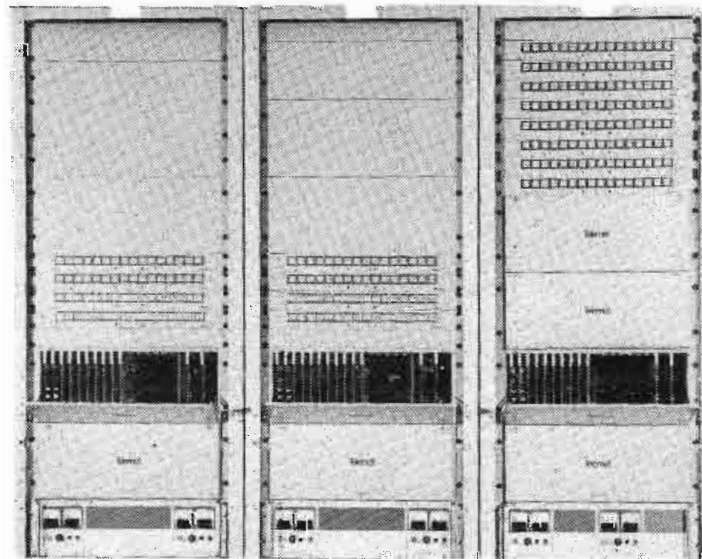
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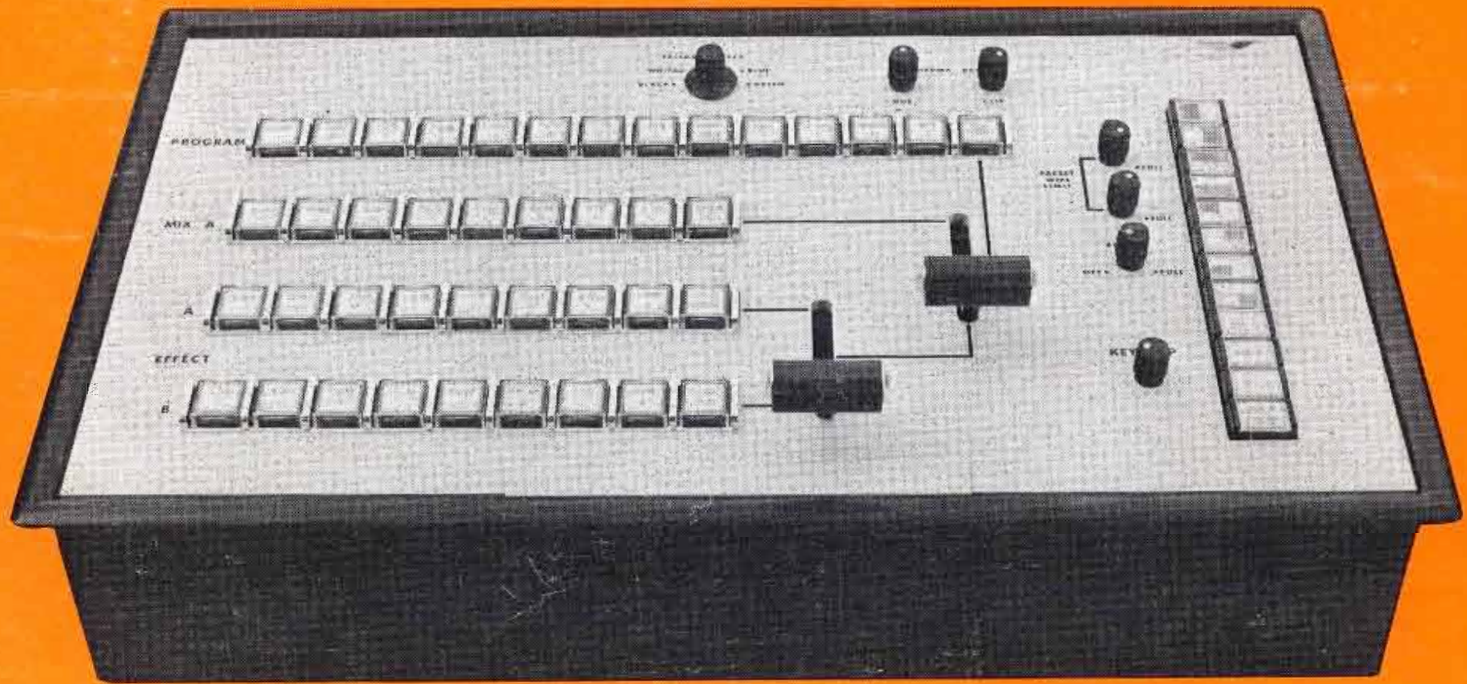
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