

# BROADCAST ENGINEERING

Fall Issue 1985/\$20

1985

Spec Book

Buyers' Guide

# Worth Its Wait In Gold.

## For Harrison Reliability

Sure, Harrison has waited to enter the U.S. broadcast market. When you're a stickler for precise engineering and a perfectionist when it comes to quality performance – you've got to take your time to get it right. *Get it just right for you.*

## No Compromises

It can be tough getting the right console to match your specifications. About as easy as fitting a square peg in a round hole, right? Harrison Systems has anticipated your need for versatility. A good deal of time and research goes into our consoles in order to bring you the smartest, most efficient technology and service. We've got the system that fits the size and scope of your needs, whether it be:

- Teleproduction
- Video Sweetening and Post-Production
- Video Edit Suite
- Film Sound Post-Production
- On-Air Broadcasting
- Broadcast Production
- Live Sound Reinforcement
- Music Recording and Scoring

At Harrison Systems, we give you choices – not excuses or unnecessary fluff. Our systems are designed to bring you long-lasting, clean performance and reliability.

## Harrison Puts You In Good Company

Organizations like Swiss Broadcasting and Belgian Radio and Television have believed in the superior quality of Harrison Stereo Broadcast Audio Consoles for years and have chosen Harrison for multiple broadcast installations. Swedish Television has selected 8 TV-3 consoles and has committed to several more. This year's Winter Olympics in Yugoslavia received the main audio feed from a TV-3.

## At Last

At Harrison, we take the time to listen to your needs. We design our consoles with the flexibility to fit your operation. And although our standards may be high for our consoles – our prices are very, very reasonable. We think you'll find it's been worth the wait – in golden, Harrison-true performance. Call us for a demonstration and see for yourself.

## For Harrison Innovation

Introducing Harrison's TV-3, PRO-7 and TV-4, the broadcast consoles you've been waiting for:

**TV-3** For large scale TV audio, remote production, studio production, post-production and sweetening ■ Adapts to wide range of tasks ■ Available in a variety of configurations for customization ■ Plus many options.



Now Available  
**AIR-7** For on-air  
stereo radio  
broadcasting,  
combining  
sophisticated  
technology with  
simple operation.

**PRO-7** Designed for comprehensive use in broadcast, live sound, motion picture teleproduction ■ Two major configurations ■ Simple to operate ■ Cost-effective ■ Independent mix decision capability ■ Long-term performance achieved through thick-film laser-trimmed resistor networks ■ Plus many options.

**TV-4** For medium scale on-air production, remote production, studio production, sweetening and post-production ■ Three major, simplified configurations ■ Easy to install ■ High-speed, low noise, low distortion amplifiers allow for best possible electronic performance ■ Plus many options.

*Harrison's new VSI Fader Section, which allows for simultaneous interface with automation and video editor/switcher, is available for TV-4 and PRO-7 consoles.*



Why wait any longer? Call or write Harrison Systems, Inc., P.O. Box 22964, Nashville, TN 37202; (615) 834-1184, Telex 555133.

**Harrison**



# Professionals on the Road in Florida Midwest and JVC

As the leader in the United States in the design and manufacture of mobile units, Midwest utilizes the finest in video equipment — and that means JVC. We know that when you're on the road you need a camera that will give you top-quality performance.

So when WXEL Public Television in West Palm Beach, Florida ordered two mobile units, we knew how to respond to their need. Utilizing our basic M30 and M1 Mobile Units, we custom designed both units to meet all of WXEL's remote production demands.

WXEL's M30 Mobile Unit carries four JVC KY950U Color Cameras which produce broadcast quality signal-to-noise ratio, resolution and performance. The KY950U uses a prism optical system and

Plumbicon\* pickup tubes.

WXEL's M1 Mobile Production Unit utilizes two JVC KY320U Color Cameras. The KY320U also uses the newly designed 2/3" electrostatic focus/electromagnetic deflection Plumbicon\* tubes to give it excellent dynamic range suitable for the wide variety of applications demanded in on-location work.

So join with WXEL and get on the road with the Professionals—Midwest and JVC. Midwest has the expertise to custom design a mobile unit that fits all of YOUR production needs!



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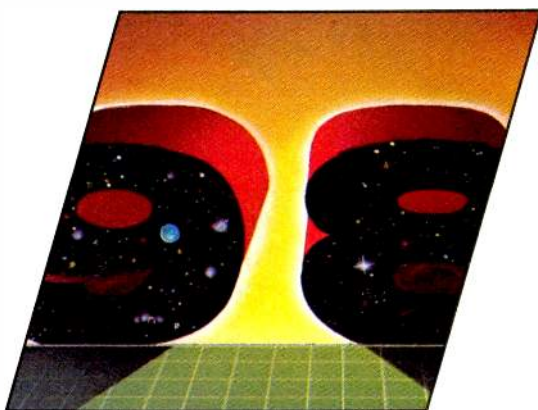
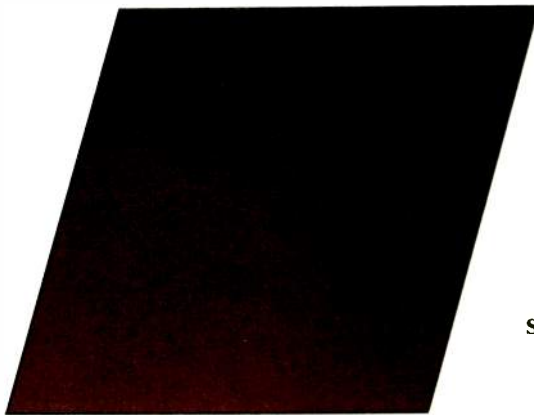
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800-543-1584

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Fall 1985 • Volume 27 • Number 13



## ON THE COVER

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

## BROADCAST ENGINEERING

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When the Hitachi HR-230's real-time diagnostic system spots a potential problem during operation, it tells you what happened, and exactly where it happened. And it tells you in plain English.

The HR-230's computer controlled self-diagnostics continually monitors 49 different operational, maintenance, and troubleshooting parameters during both playback and recording. And it gives you the whole story up front on a console display and on the monitor.

Plus, you don't have to keep your eyes glued to the machine. Because the HR-230 stores it all in memory—along with the exact location—so you can go back and check later on.

But the HR-230 has a lot more going for it than just a great memory. Our retracting tape guides and tension arms—along with a non-contact



air scanner system dramatically reduce head and tape wear. It's compatible with all major editing systems. And such features as master/slave operation of up to 48 VTRs through its built-in editor, complete autosection, pre-aligned replacement scanner, and a built-in TBC save you a lot of time and trouble.

And the HR-230 will save you money. Because nobody offers you so complete a machine for so modest a price.

For a demonstration in your studio, contact Hitachi Denshi America Ltd., Broadcast and Professional Division, 175 Crossways Park West, Woodbury, NY 11797. Or phone (516) 921-7200 or (800) 645-7510. In Canada, contact Hitachi Denshi Ltd. (Canada), 65 Melford Drive, Scarborough, Ontario M1B 2G6; (416) 299-5300.



**HITACHI**

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# THE FIRST 1-INCH VTR THAT TELLS YOU WHERE TO GO.



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

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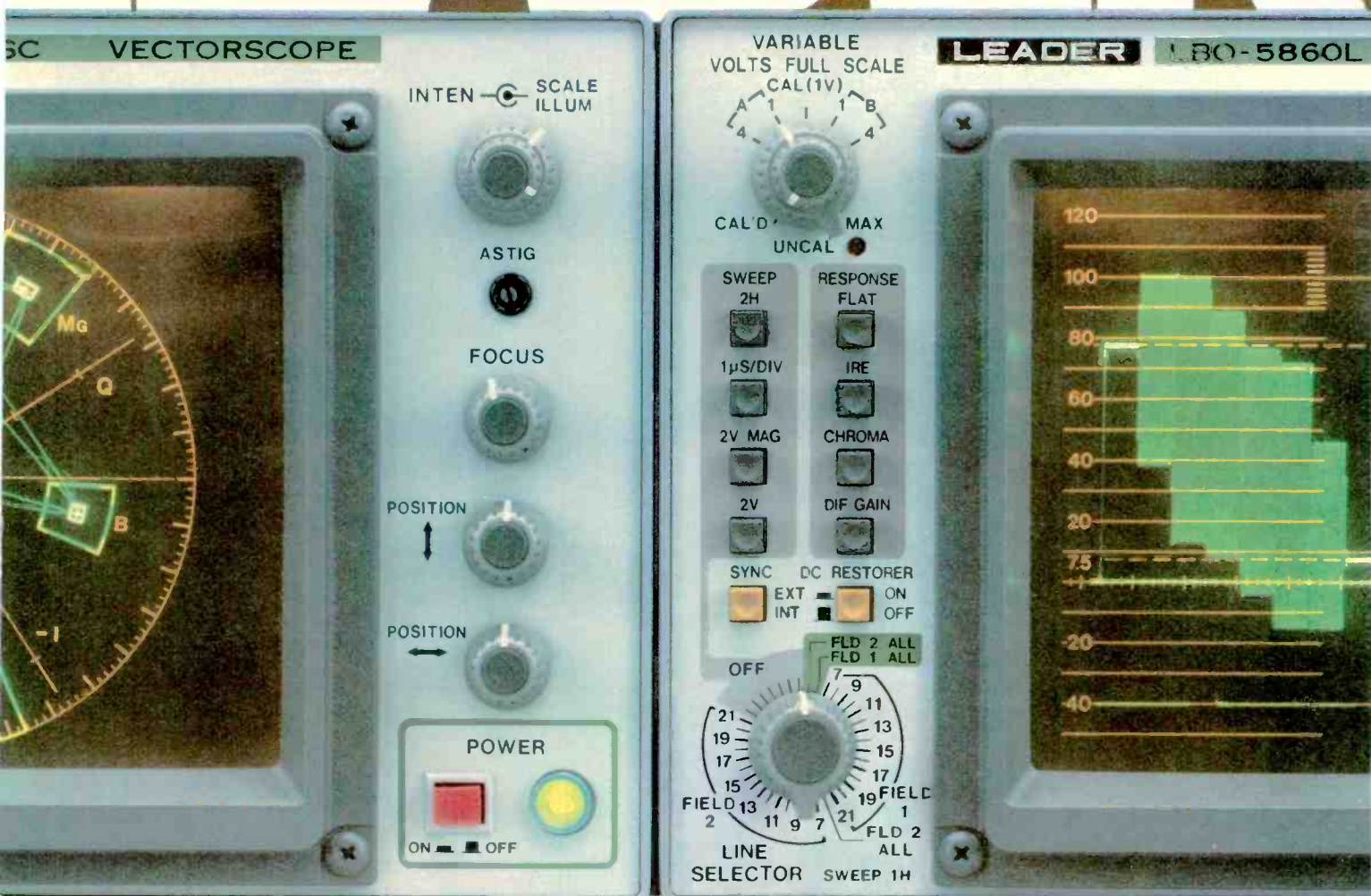
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ACTUAL SIZE

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Check the racks of the industry's leaders, and you'll find Leader instruments. At ABC, Sony Broadcast, Reeves, Zenith, HBO, RCA, A.F. Associates, Group W, ATC, Midwest Corporation, and NBC, to name a few... where quality is paramount, Leader has been their choice.

## You could pay more for others. But you'll get more from Leader.

For instance, our half-rack LBO-5860A Waveform Monitor makes it easy for you to select

lines 14-21 (fields 1 and 2) from the front panel. And there's an L model that shows you lines 7-21 for coding information, too. Our half-rack LVS-5850B Vectorscope is the perfect mate, with selectable, electronically-generated targets\* that can be read from across the room. Electronically-generated targets also provide the highest level of measurement accuracy, even if you misalign the CRT center dot. It also has an internal etched graticule, and gives a VITS display with strobe input.

## More than just competitively priced.

The convenience of viewing both vector and waveform displays simultaneously gives you uninterrupted monitoring capability.

Top broadcasters rely on Leader quality. It's backed by a two-year warranty (including CRT's) and factory service depots on both coasts.

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# 1985

## Spec Book

## Buyers' Guide

Welcome to **Broadcast Engineering's Buyers' Guide/Spec Book**. For more than 15 years, we have published an annual update of the *Buyers' Guide*, a reference manual to assist you in your

recommendation and purchasing responsibilities. For four years, we also have published our *Spec Book*, which provides you with comparative specs of different manufacturers' equipment. These two

guides have always been published separately. However, this year, we at **Broadcast Engineering** decided to combine the two issues into one bound version to make it a more valuable tool



The Monroe Model 5002 Remote Control will handle channel selection for two dual audio or voice cue modules for the Scientific Atlanta DAT-32\* and the Comtech DART-384\*. It will also provide remote transponder selection for the DART-384\*.

**THE NEW 5002 WILL SAVE YOU TIME AND MONEY AS YOU REDUCE THE NUMBER OF DEDICATED LINES AND CHANNEL CARDS.**

- Control by phone
- Access Code
- Memory
- Automatic Disconnect
- Low Priced

Write or phone today for literature.

## A NEW DAT REMOTE CONTROL FROM MONROE ELECTRONICS

**M** MONROE ELECTRONICS, INC.  
**E**

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\* Registered Trade Names

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# EVERYTHING A SYNC AND TEST SIGNAL GENERATOR SHOULD BE. INCLUDING AFFORDABLE.

Now in a single, compact package... the test signals you need plus the advantages of full master and genlock sync capability. With the new TSG-170A you get all this plus Tek quality and performance at a reasonable price.

**The TSG-170A is designed for easy operation and flexibility.** It includes a 10-bit digital test generator, with a full complement of test signals, and a stable RS-170A sync generator. Genlock timing, sync timing and test signal selection are all easily accessible from the front panel or through the remote connector.

As an option the TSG-170A offers SMPTE color bars with

programmable ID and audio tone output. As a result, bars can be available on a continuous basis for the operational side of your facility.

What's more, the TSG-170A's rugged, 1¾-inch package makes it ideal for remote vans or anywhere space is at a premium.

**Get the full story on this flexible test signal and sync generator.** Contact a Tektronix Professional Video Dealer, or your local Tektronix Sales Engineer, listed in major-city directories.

BEHIND THE SCENES IN  
QUALITY TELEVISION



**Tektronix**  
COMMITTED TO EXCELLENCE

Circle (8) on Reply Card

## NOW YOU CAN ELIMINATE 100% OF ALL LIGHTNING STRIKES.

WE GUARANTEE IT.

Unlike lightning rods, LEC Dissipation Array Systems prevent lightning entirely.

Based on the basic scientific principle of natural dissipation, it's the safest and most reliable system available.

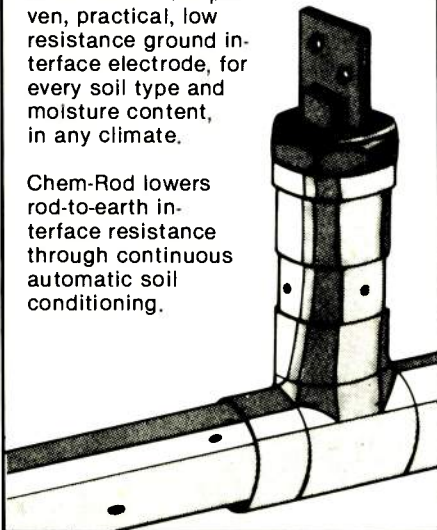
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## WHY USE 10 GROUND RODS WHEN 1 CHEM-ROD WILL DO MUCH MORE?

Chem-Rod is the proven, practical, low resistance ground interface electrode, for every soil type and moisture content, in any climate.

Chem-Rod lowers rod-to-earth interface resistance through continuous automatic soil conditioning.



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& Consultants**  
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Santa Fe Springs, CA 90670  
(213) 946-6886  
TWX 910-586-1381

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for you.

### Buyers' Guide

Both sections still offer the same basic format. The *Buyers' Guide* is still divided into three basic categories: Product Listings; Manufacturers Addresses; and Product Dealers/Distributors. However, we have revised our Product Listings format this year. Our revisions divide the product listings into seven new subgroups, which allow us to reference equipment in more usable category breakdowns. Our new subgroups are Audio Products; Video Products; Meters, Monitors and Test Equipment; Automation and Computer Products; Miscellaneous Products and Services and Rentals. In all of these subgroups, we have more than 400 distinct product categories, referencing more than 1,000 broadcast equipment manufacturers.

As in previous years, manufacturers who have advertised in this issue are printed in red ink. The page number of their advertisements also are listed in red. This serves as another vehicle for you to use to obtain more information. For example, a manufacturer of character generators who has also advertised in this issue might have more information about its character generator on the page in which the advertisement appears. The reader service number associated with the advertisement allows you to send for additional information on the advertised product.

All manufacturers found in the product listing are alphabetically listed in Manufacturers' Addresses, which begins on page 92. This industry directory includes the complete mailing addresses and telephone numbers for the headquarters of each company. To help you find the nearest manufacturing representative, many of the listings include sales and service locations.

The dealer/distributor directory follows the addresses and is listed according to states. This directory begins on page 118. Each directory category indicates the type of products handled and the states served from that office.

### Spec Book

As we have done in years past, the *Spec Book* is divided into major equipment categories. This year the categories are Audio Products, Video Products and Transmitting/Test and Measuring equipment.

In each of the categories, equipment is compared point by point. Although performance specifications may not be directly comparable because of variations in references used by manufacturers in determining these specifications, they are evaluated on a common basis for a more fair comparison. You should discuss equipment performance with the manufacturers' representatives before you make your final equipment purchasing decisions. A complete listing of the specified equipment categories and their exact locations can be found by using the table of contents.

### Guide material

There are two vital guides that we have included to help you, the broadcast engineer, obtain information rapidly from this reference issue. This year, for the first time we have included pull-out tabs that divide this resource book into the major sections. The six category tabs of Product Listings, Manufacturers' Addresses, Dealers/Distributors, Audio Specs, Video Specs and Transmitting/Test and Measuring Specs should make this issue a convenient reference guide that you can pull out and find the information you need rapidly.

The second aid incorporated into this issue is the Reader Service Card bound into the back of this issue. If you need additional information about one or more of the products mentioned throughout this book, you can circle the number associated with the listing on the Reader Service Card and mail it in. The manufacturer will then send you additional information on the specific product.

We at **Broadcast Engineering** hope that this combined issue of the *Buyers' Guide* and the *Spec Book* is the most useful reference guide you keep on your shelf.

The Editors

P.S. If your schedule permits, take time to enter our Third Annual SPECTacular Contest. If you answer all the entry blanks correctly, you could join previous winners, Marv Collins (KFI-AM/KOST-FM), Richard Johnson (KAKE-TV) and Randy Paul (WVNA-AM/FM) in the *Spec Book* hall of fame. This year 10 entrants who have accurately filled in the entry blank will be selected and will receive Sony Watchman black-and-white televisions. For more information about the contest, see page 127. Good luck.

# The 1680. Drives like a 1600. With twice the production power.

More inputs and more capability for effects mixing — for twice the production power. It's the 1680 series from Grass Valley Group. We've combined the feel, quality and reliability you love, with the production power you need.

The 1680 series. Find out about it from your Grass Valley Group distributor or representative today.

## Grass Valley Group®

A TEKTRONIX COMPANY

P.O. Box 1114,  
Grass Valley, CA 95945 USA  
Telephone (916) 273-8421 — TKT: 160432

### CREATIVE CONTROL OF POST PRODUCTION

The 1680-10X features a single mix/effects system plus E-MEM™ Effects Memory System. The 10X is particularly well adapted for post production editing systems, providing complete system integration and total creative control.



### DOUBLE YOUR PRODUCTION POWER

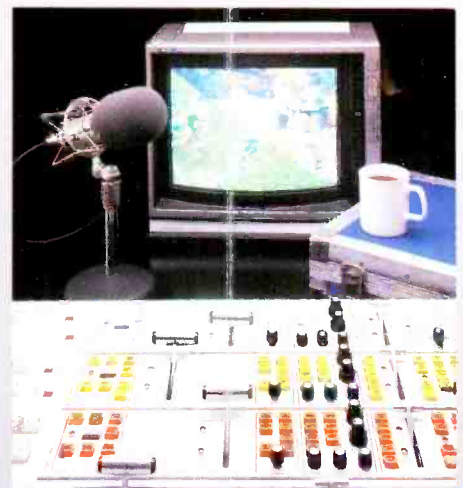
The 1680 16F/24F provides two mix/effects systems for twice the effects control. Perfect for complex post production or studio use, where extra production power is critical.

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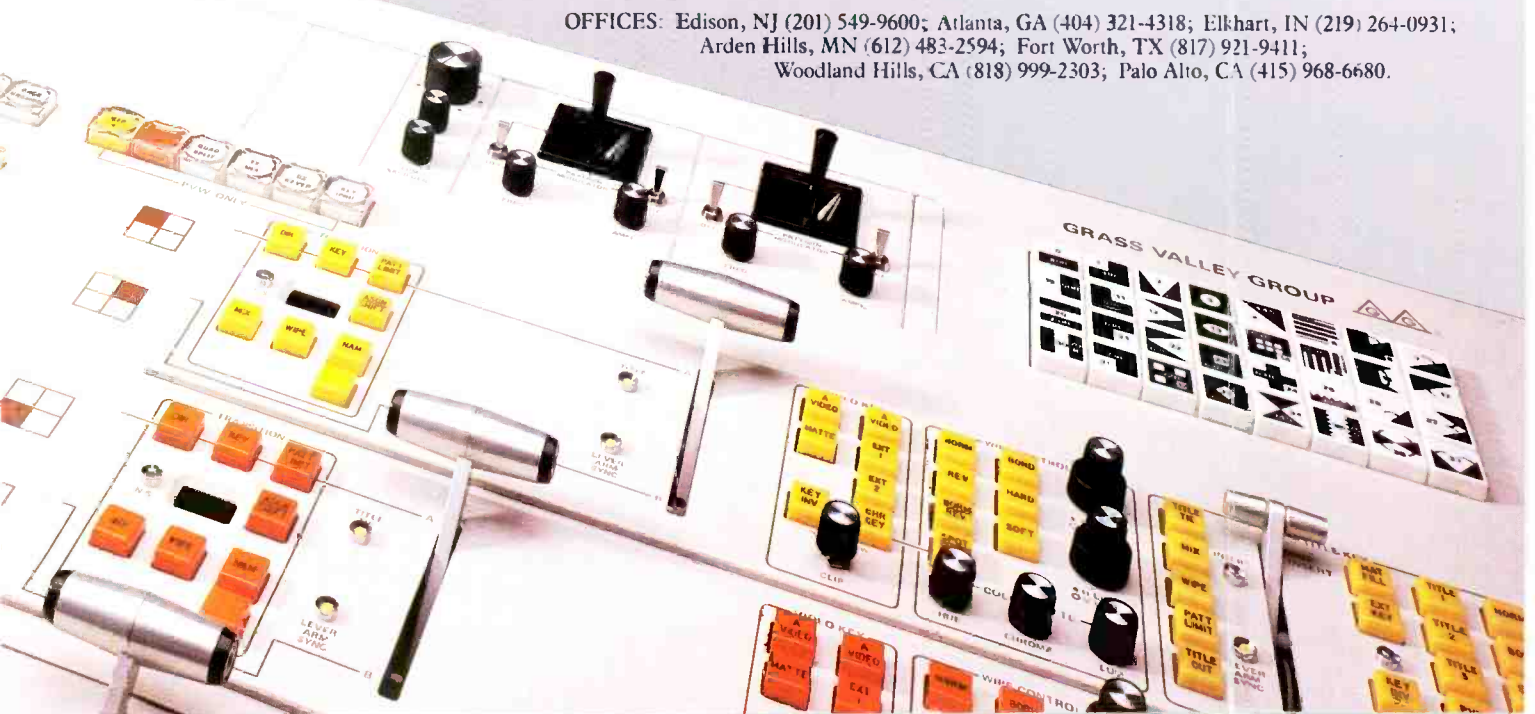


### WHEN TWO HANDS AREN'T ENOUGH

The 1680-16K 24K is the largest 1680, with three separate mix/effects systems. The K series masters the heavy demands of a live sports broadcast or world event where effects must be produced with lightning speed and accuracy.



OFFICES: Edison, NJ (201) 549-9600; Atlanta, GA (404) 321-4318; Elkhart, IN (219) 264-0931;  
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# In the year 2003, this system will be less obsolete than any other master control system available today.

Not even Grass Valley Group knows all the features you'll need in your master control system in 2003.

But we *do* know you'll need stereo audio, second audio program and still store interface. And the only

master control system that has them all today — plus BETACART™ interface — is the Grass Valley Group 1600-4S/M200.

As your needs grow, so will your system — because it's designed,

but it and backed by Grass Valley Group.

Check out the 1600-4S/M200. In 2003, you'll still be glad you did.

## Grass Valley Group®

A TEKTRONIX COMPANY

MODEL 1600-4S/SAP MASTER CONTROL SYSTEM

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THE GRASS VALLEY GROUP, INC.® — P.O. Box 1114 — Grass Valley, CA 95945 USA — Telephone (916) 273-8421 — TRT, 160432  
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# The 1985 BUYERS' GUIDE PRODUCT LISTINGS

## When tracking down a manufacturer....

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**435 product categories  
and nearly 1,100  
listed manufacturers  
are featured in this  
broadcast product  
reference guide.**

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<i>Broadcast Product Dealers/Distributors</i> .....	<i>page 117</i>

The first **Broadcast Engineering Buyers' Guide** issue, 16 years ago, began a tradition to bring the industry the most complete guide to broadcast-applicable equipment possible. As our industry has grown in size and complexity, this reference issue has expanded to encom-

pass the many additional types of products for the radio and TV facility.

This 1985 edition of *Buyers' Guide* introduces a departure from our previous guides. The Product Directory, beginning on page 11, has been divided into seven product sections and are listed below.

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

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

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

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

If your information needs do not require immediate contact with a representative, Reader Service Cards are located inside the back cover of this issue. Circling the appropriate numbers on the card will have information on its way to you within a few weeks. This customer service is in effect until December 1986.

# ALL "STATE-OF-THE-ART" HAVE JUST BECOME



Sony Broadcast Products Company, 1600 Queen Anne Rd., Teaneck, NJ 07666. © 1985 Sony Corp. of America.  
Sony is a registered trademark and Betacam is a trademark of Sony Corp.

# E-ART™ CAMERAS ME ART HISTORY.

For all those keeping close watch on the art of video, Sony is proud to unveil a masterpiece: the BVP-30. A new 3-tube camera which, with a single stroke, has turned its technologically-advanced competitors into technologically-advanced relics.

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A tube that offers you all the advantages of the mixed-field Saticon™ tube, including the best resolution, registration and signal-to-noise ratio in the industry.

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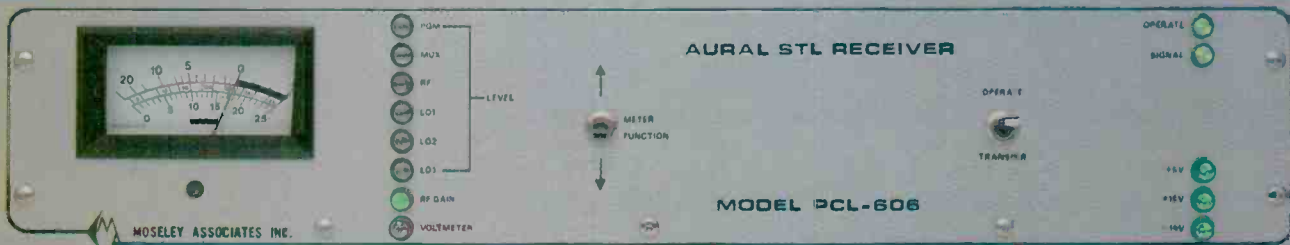
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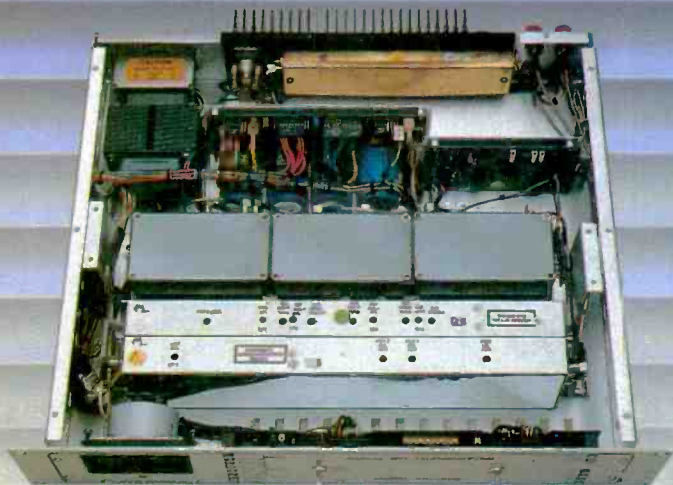
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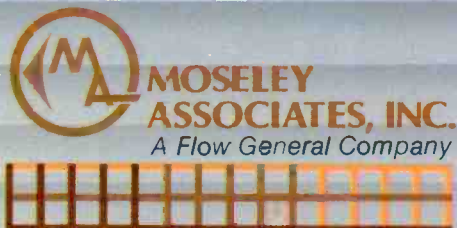
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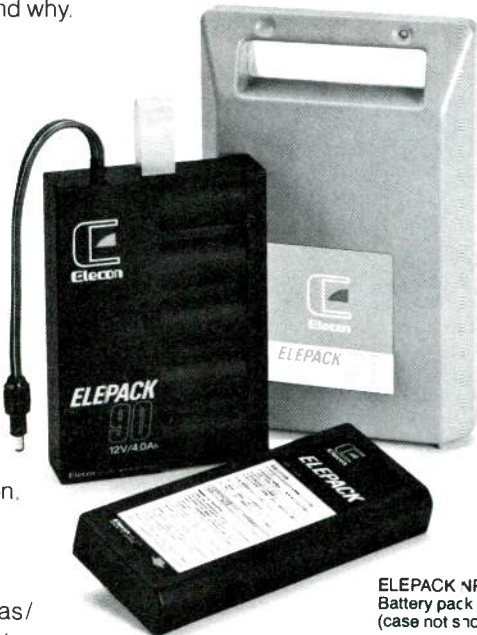
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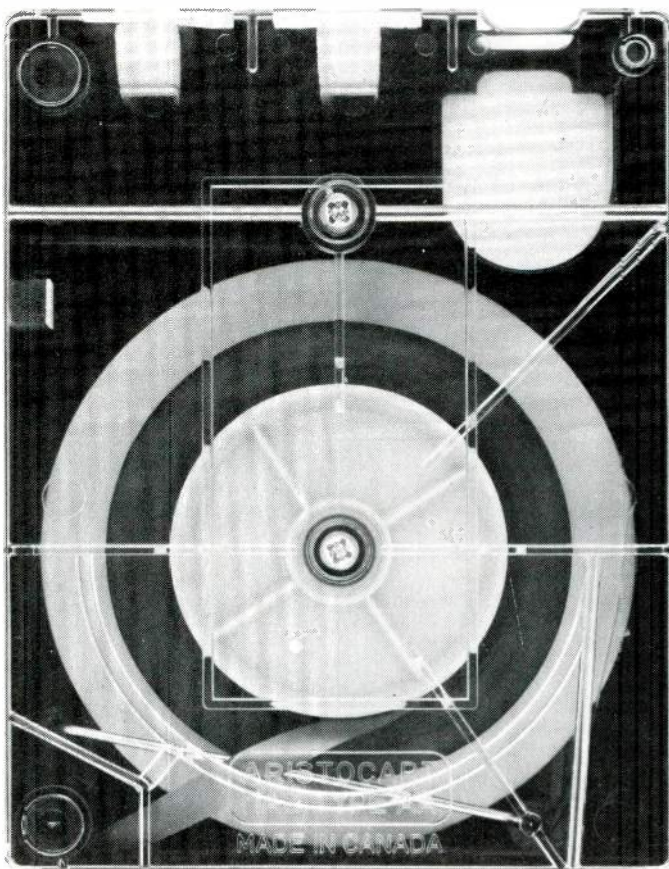
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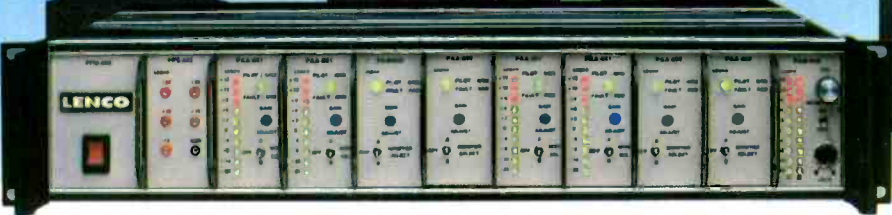
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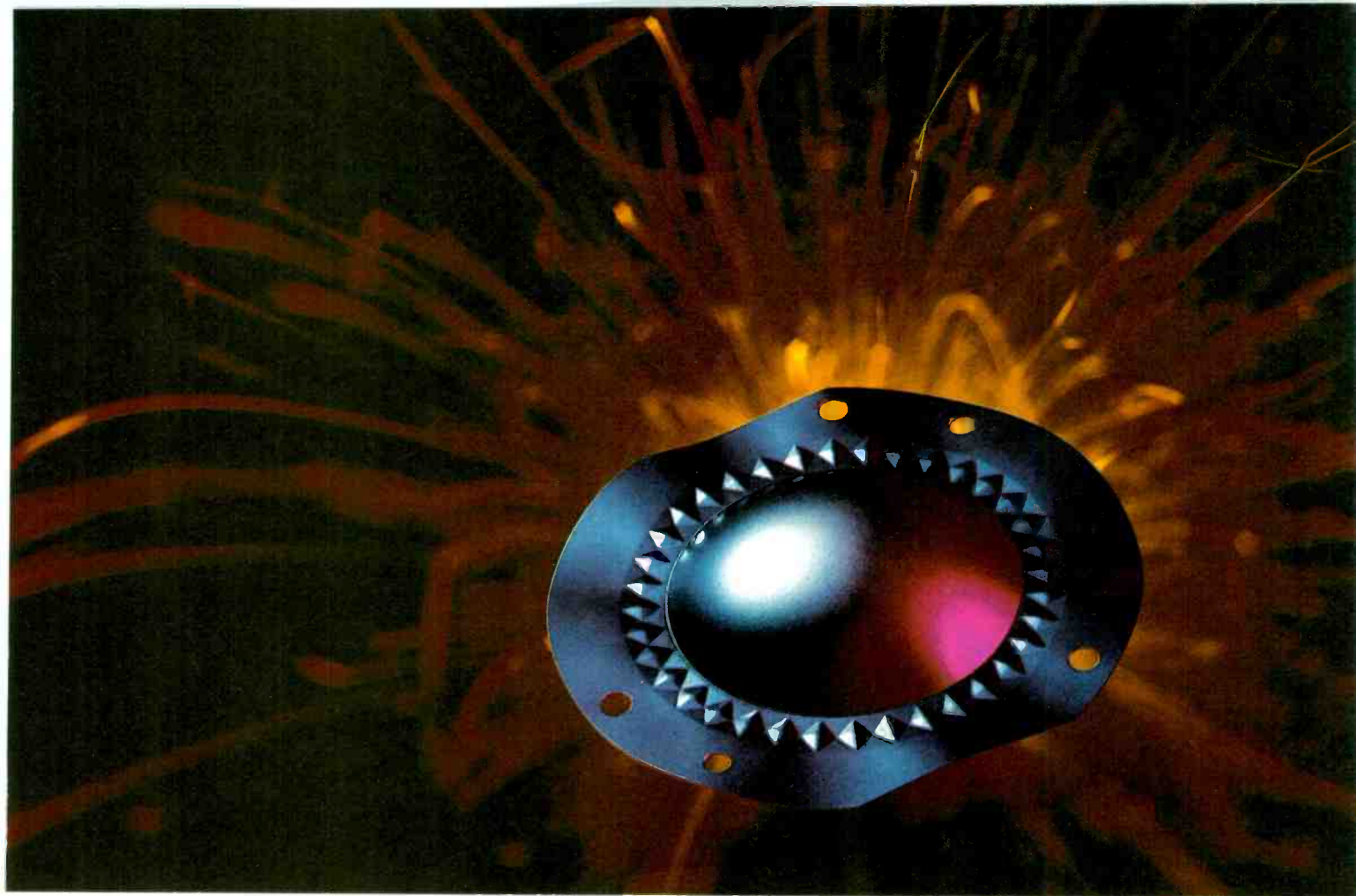


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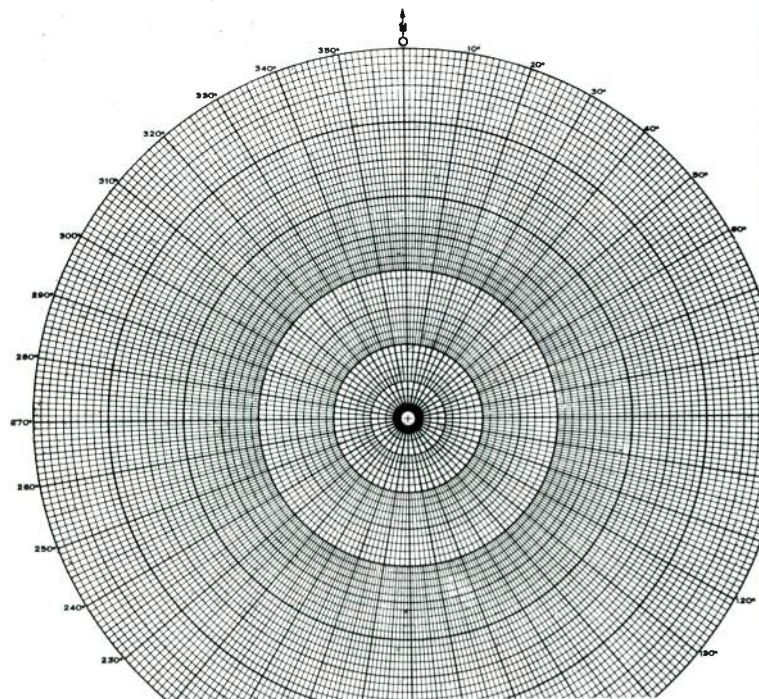
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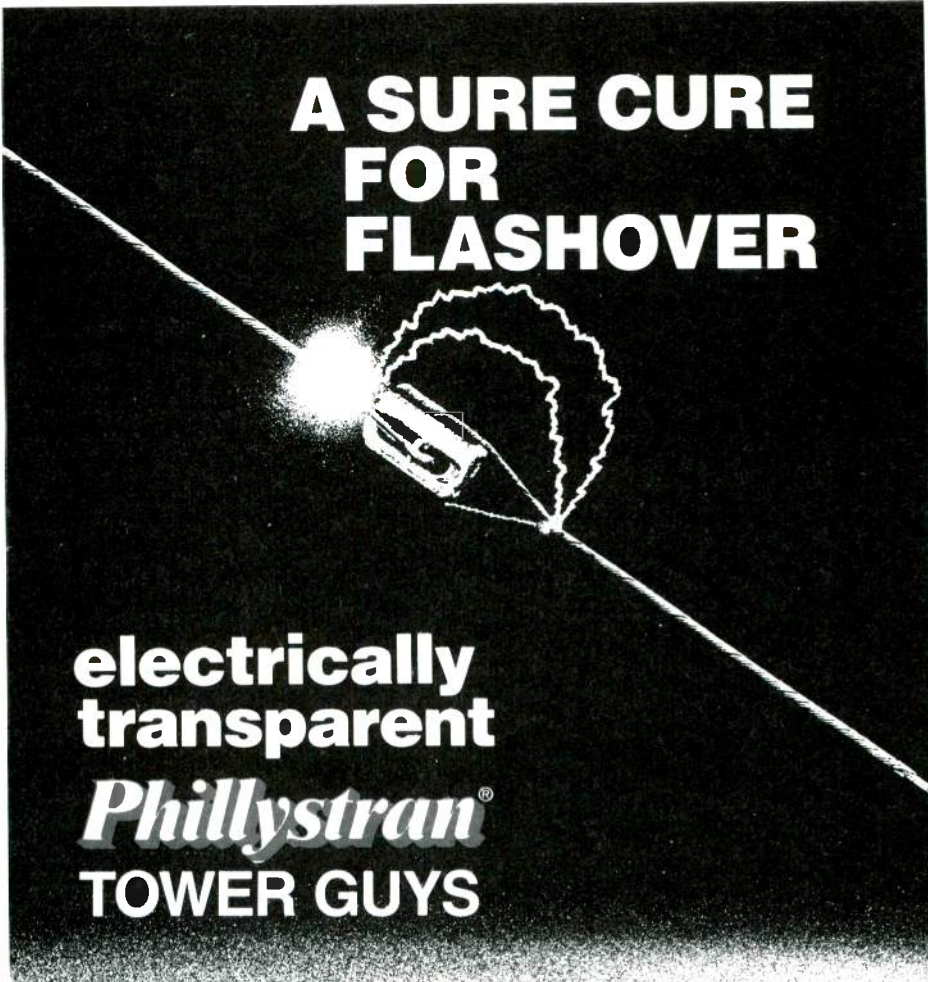
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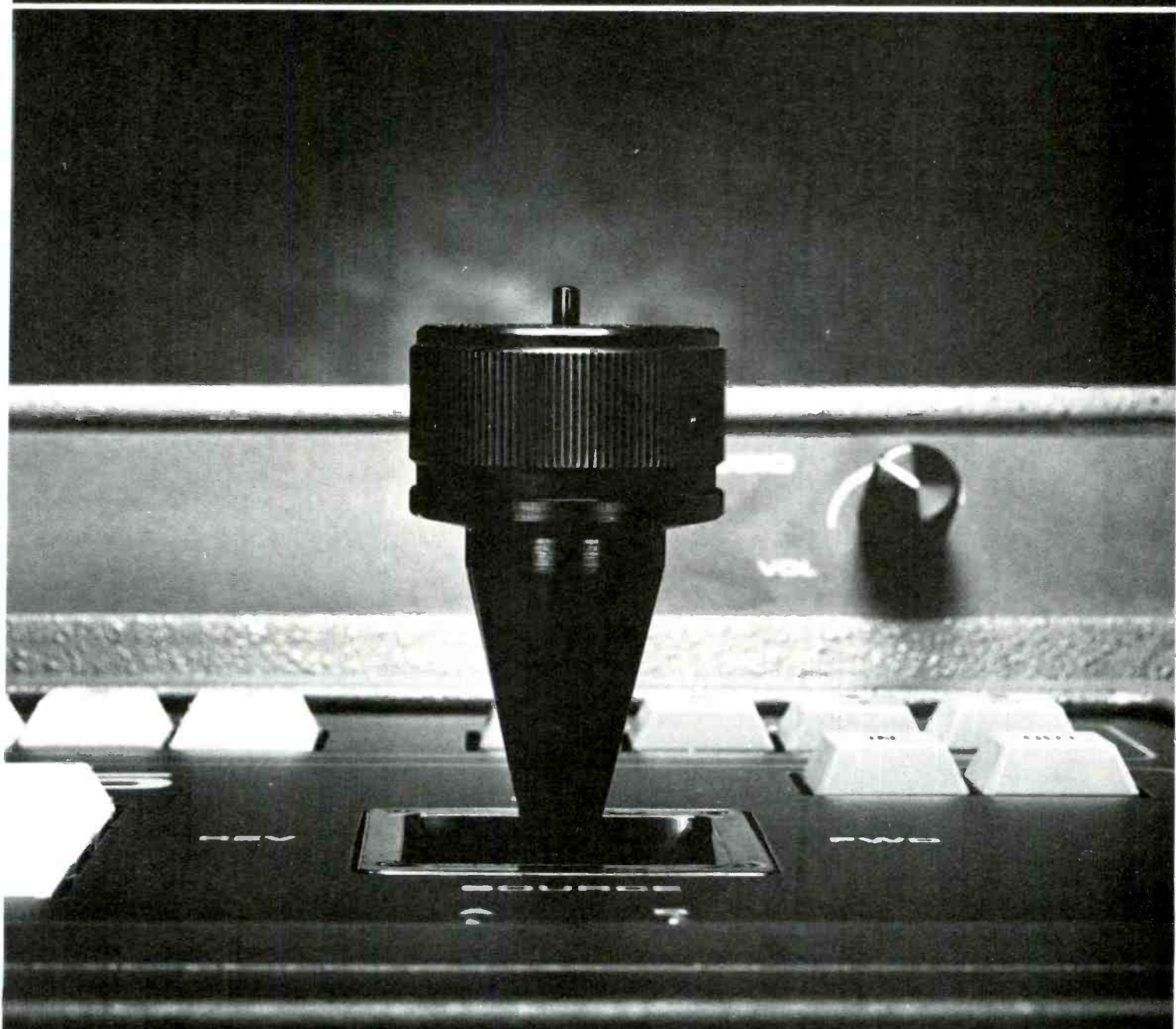
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		Patch Bay Designation	
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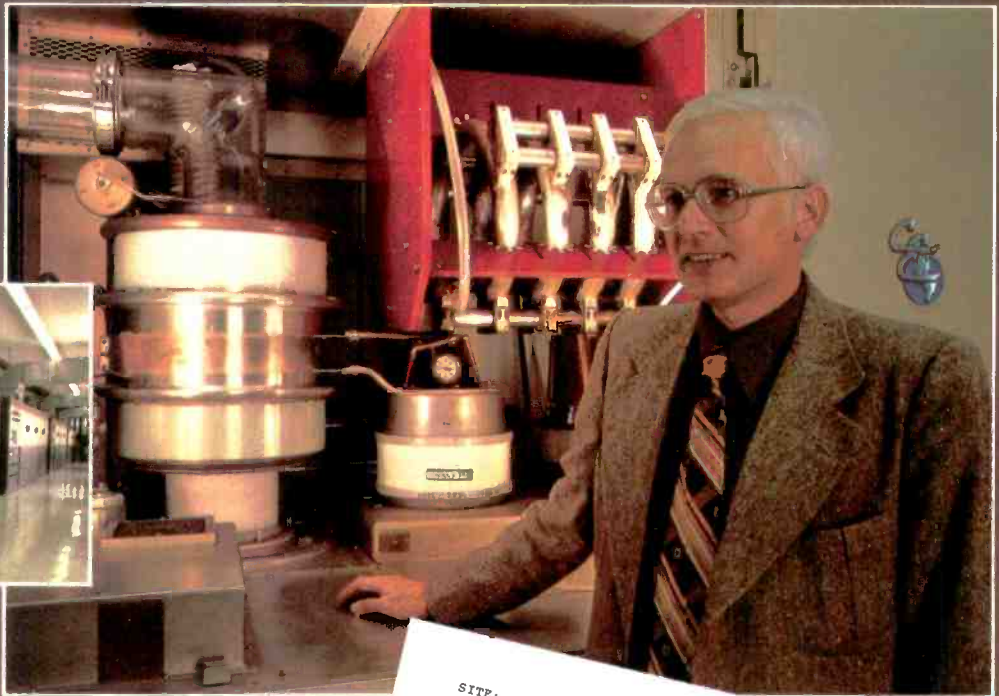
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SITE: Biblis MONTH: Up to December, 1984

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	A6N-415	68879			
	E6G-265	61829			
	E6G-270	59636			
	E5M-597	62456			
	G6B-896	59246			
	H6E-283	55892			
	H6J-368	64300			
	H6T-890	59472			
	P6Q-624	64066			
	G5D-155	62554			
	H6J-367	55907			
	H6J-371	59991			
	J6A-2	57805			
	D6V-817	42279			
F3Q-730	59386				
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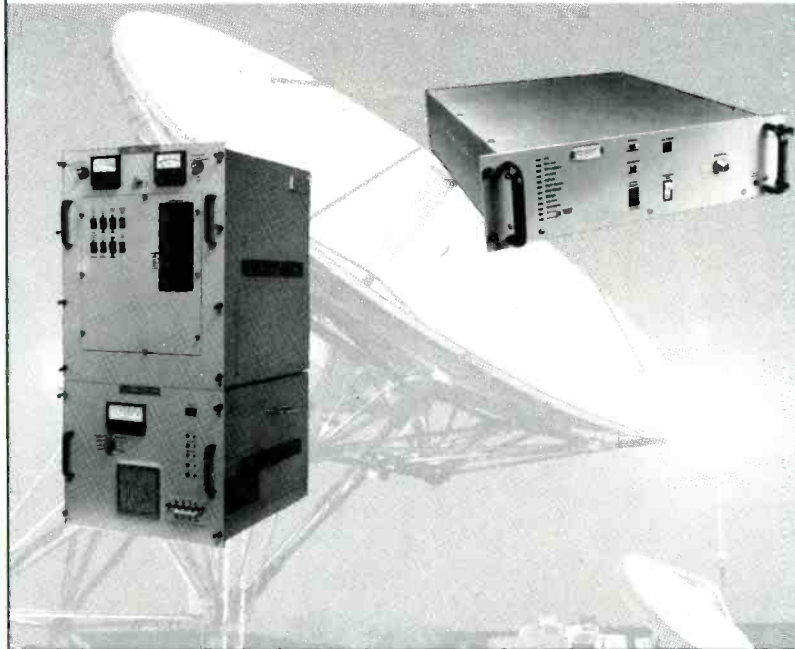
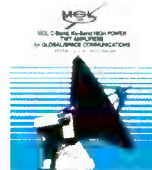
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Raven Screen Corp.  
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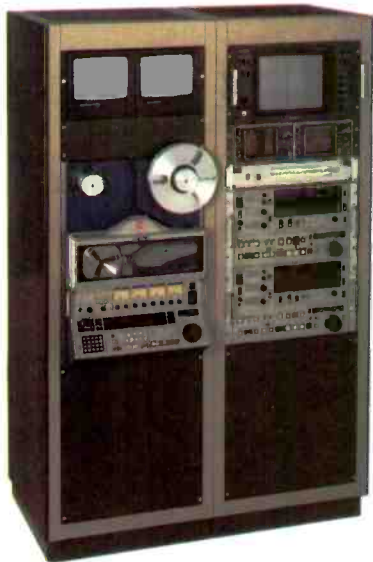
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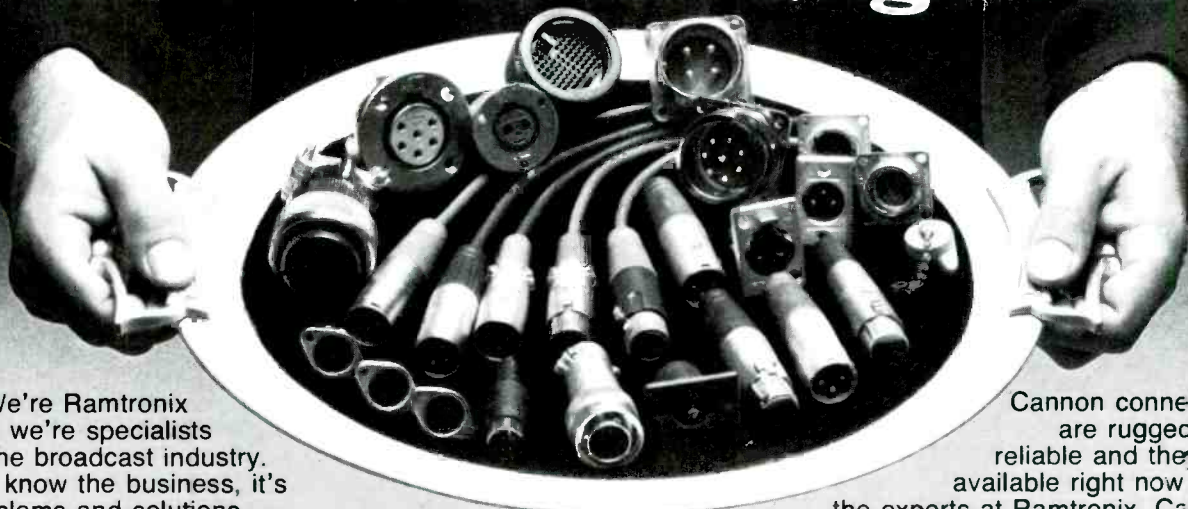
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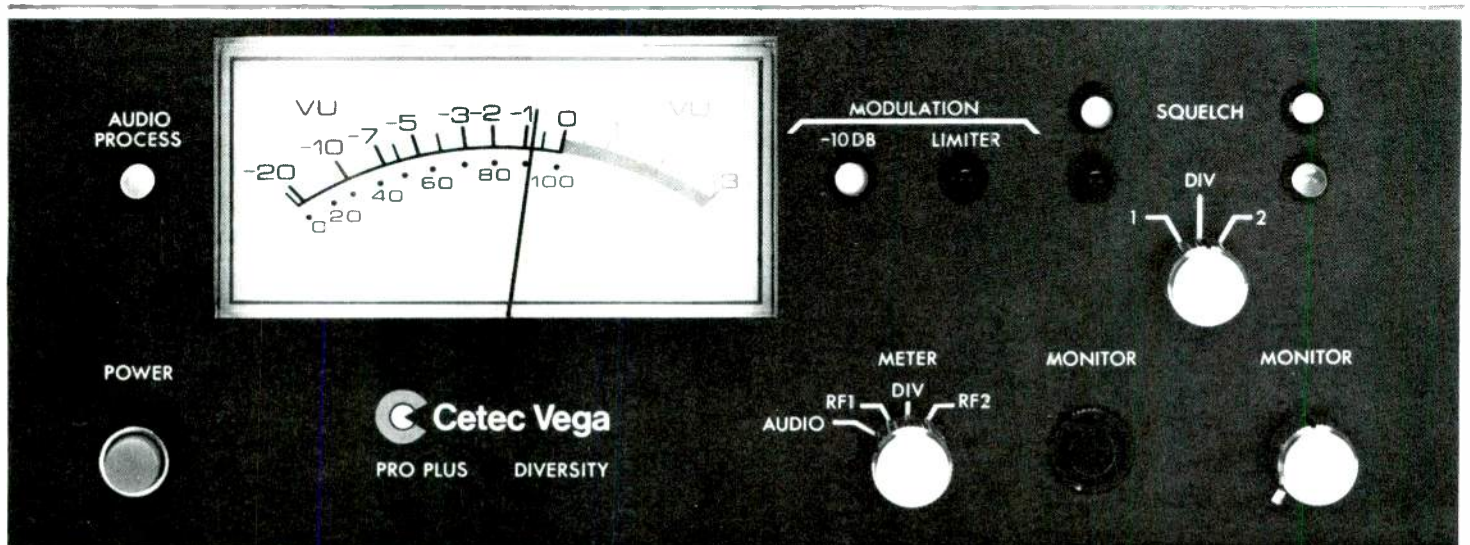
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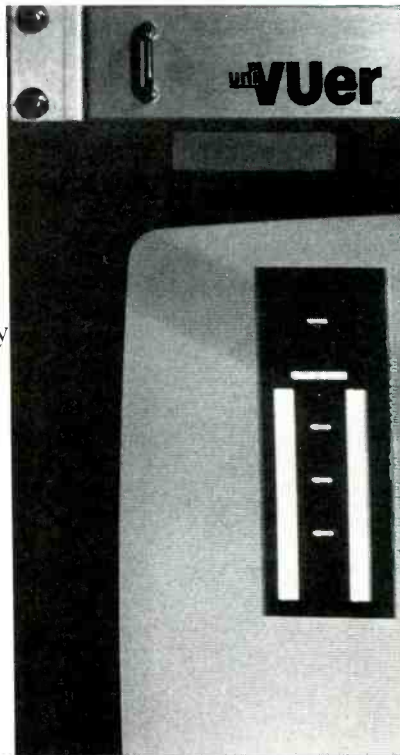
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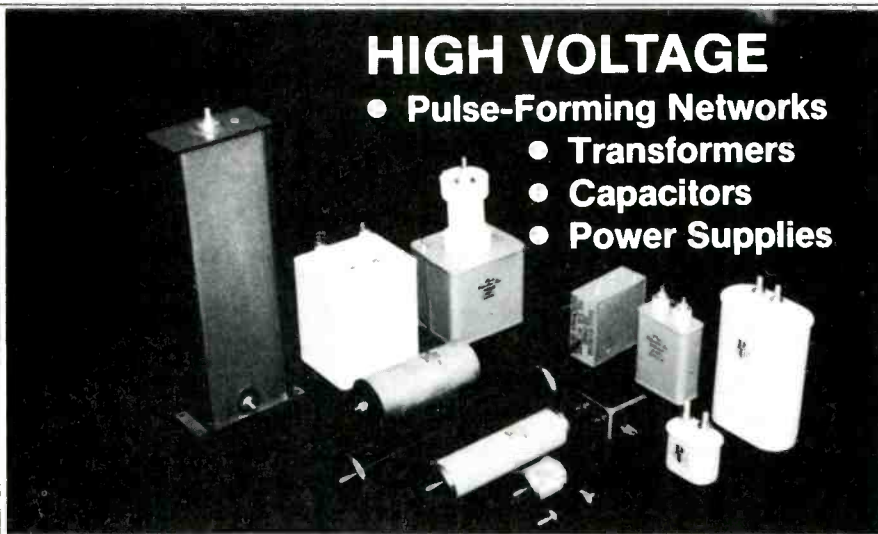
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Denrad Technical Group, Inc.  
Jasmin Electronics Ltd.  
Kavouras Inc.  
Norpak Corp.  
Precision Echo  
Sea-Tex Div. Si-Tex Marine Electronics  
Inc.

## RF PRODUCTS

### AIRBORNE COMMUNICATIONS EQUIPMENT

Broadcast Microwave Services, Inc.

**RF PRODUCTS**

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Communitronics Ltd.  
Curtis & Green Ltd.  
M/A-Com Mac, Inc.  
M/A-Com Microwave Power Devices  
**MCL, Inc.** ..... 34  
Marti Electronics  
Nurad Inc.  
RF Technology, Inc.  
SFENA Corp.

**ALARMS, FAULT/CARRIER**

Bayly Engineering Ltd. Member of  
AEG-Telefunken Group  
**Bird Electronic Corp.** ..... 66  
Communitronics Ltd.  
**Potomac Instruments, Inc.** .....230

**AM ANTENNA SYSTEMS**

Audiolab Electronics, Inc.  
Elektroimpex  
Harris Corp. Broadcast Group  
L&R Communications, Ltd.  
LeBlanc & Dick Communications Inc.  
Magnum Towers, Inc.  
Marconi Communication Systems Ltd.  
Pinzone Communications Products Inc.  
**Potomac Instruments, Inc.** .....230  
ROHN  
Sharb Electronics  
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**AM DIRECTIONAL ANTENNA SYSTEMS**

Audiolab Electronics, Inc.  
**Continental Electronics A Div.**  
of **Varian Associates, Inc.** .....233  
Elcom-Bauer  
**Gorman-Redlich Mfg. Co.** .....145  
Harris Corp. Broadcast Group  
L&R Communications, Ltd.  
LeBlanc & Dick Communications Inc.  
Magnum Towers, Inc.  
Marconi Communication Systems Ltd.  
**Potomac Instruments, Inc.** .....230  
Sharb Electronics  
**TTC Companies** ..... 77, 207

**AM STEREO SYSTEMS**

Audiolab Electronics, Inc.  
**CRL Audio Circuit Research**  
Labs, Inc. .... 69  
**Continental Electronics A Div.**  
of **Varian Associates, Inc.** .....233  
Delta Electronics Inc.  
Harris Corp. Broadcast Group  
Kahn Communications, Inc.  
Marconi Communication Systems Ltd.  
Marti Electronics  
Motorola Inc. AM Stereo  
TFT Inc.  
**Utah Scientific, Inc.** ..... 63

**AMPLIFIERS, MICROWAVE**

Aiken Advanced Systems  
Audiolab Electronics, Inc.  
Aydin Microwave Div.  
Broadcast Microwave Services, Inc.  
Harris Corp. Broadcast Group  
International Microwave Corp.  
**MCL, Inc.** ..... 34  
Microwave Semiconductor Corp.  
North Hills Electronics, Inc.  
Nurad Inc.  
RF Technology, Inc.  
Thomson-CSF Electron Tube Div.

**AMPLIFIERS, RF GENERAL PURPOSE**

Aiken Advanced Systems  
Audiolab Electronics, Inc.  
Blonder-Tongue Labs, Inc.  
Broadcast Microwave Services, Inc.  
Comark Communications, Inc.  
Communitronics Ltd.  
Comtech Data Corp.  
**Continental Electronics A Div.**  
of **Varian Associates, Inc.** .....233  
Curtis & Green Ltd.  
Harris Corp. Broadcast Group  
International Microwave Corp.

# Real World's RG-341

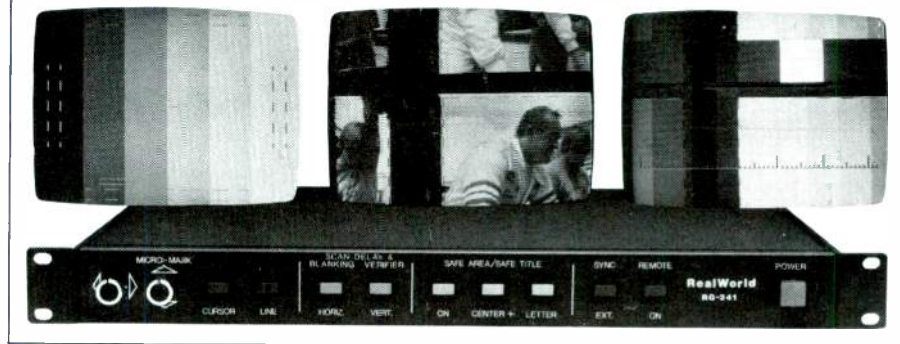
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  - Pulse cross/blanking verifier
  - Micro-mark cursor
- Give us a call to find out what a value we have for you.

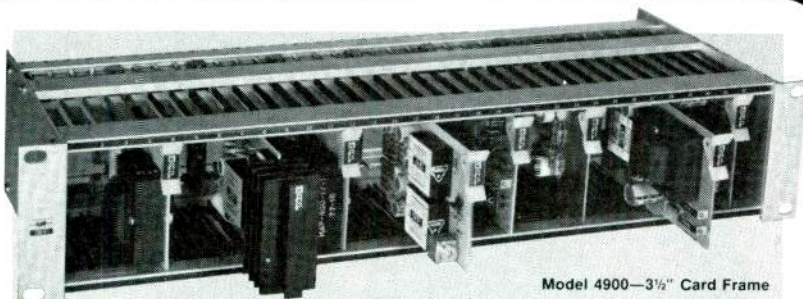


**THE REAL WORLD  
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GROUP, INC.**

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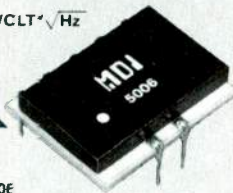


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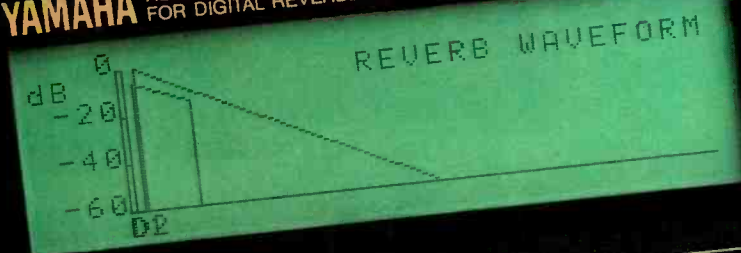
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Bohemia, New York 11716 ■ 516-567-9620



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# Create a room

**YAMAHA** REMOTE CONTROL UNIT RCR-1  
FOR DIGITAL REVERBERATOR REV-1



DISPLAY  
W/F F/C R/T RATIO  
E/R REV P/S M



HPF LPF  
400 10K  
200 8K  
100 6K  
50 4K

REV. TIME (R/T)  
**2.6** sec  
MID-LOW

DIRECT  
ON  
-30  
-40  
-60  
-∞  
0 dB

E/R MODE  
1 2 3 4  
5 6 7 8

ROOM SIZE  
1/2 1 2 4 8  
1/4 1/8

E/R NUMBER  
1 2 3 4 5 6 7 8

LIVENESS  
E/R DELAY 1 (D1)  
**40** ms  
AUTO

EARLY REFLECTION  
ON  
-30  
-40  
-60  
-∞  
0 dB

REV. MODE  
1 2 3 4  
5 6 7 8

HIGH  
-2 -1 0 1 2 3 4 5

MID-HI  
4K 2K 1K  
0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2

LOW  
REV. DELAY 2 (D2)  
**58** ms  
AUTO

REVERBERATION  
ON  
-30  
-40  
-60  
-∞  
0 dB

PRESET  
1 2 3 4  
5 6 7 8

PANEL  
P EDIT AUTO

MEMORY  
**67**  
M STR RCL

FUNCTION  
R/T D1 D2 M

7 8 9  
4 5 6  
1 2 3  
0 . CLR  
UP DWN ENT

MASTER  
ON  
-30  
-40  
-60  
-∞  
0 dB

# with a view.

We'd like to open your eyes to the incredible REV-1 digital reverb. Because it gives you unheard-of control over virtually all reverb parameters. And something that has never been seen in any type of reverb: the capability to "look" at the sound as well as hear it.

The remote unit that controls the nineteen-inch rack-mountable unit has a lighted high-resolution LCD display that graphically depicts the results of the adjustments you make.

So getting just the right reverb sound is no longer a question of trial and error.

The logical grouping of the parameter controls on the remote also makes it easy to create any effect you like. Then store it in any of 60 memories for instant recall.

The remote also contains 9 additional RAMs so you can store programs and carry them with you to use anywhere there's an REV-1.

And there are 30 additional ROMs with factory preset sounds. Many of which can be completely edited (as can the user-programmed sounds) by using the LEDs to tell you the set value or indicate in which direction to move the control so you can easily and precisely match the value of the originally programmed sound.

And the sound itself is far superior to any other digital reverb. The REV-1 uses specially developed Yamaha LSIs to create up to 40 early reflections and up to 99.9 seconds of subsequent reverberation. So the effect can be as natural (or unnatural) as you want it to be.

We could go on about the REV-1. Tell you about its 44.1 kHz sampling rate that provides a full 18 kHz bandwidth to prevent the natural frequency content of the input signal from being degraded.

How it has a dynamic range of more than 90 dB for the delay circuitry and more than 85 dB for

the reverb circuitry.

But why not take a closer look at the REV-1 at your authorized Yamaha Professional Audio Products dealer. Or for a complete brochure, write: Yamaha International Corporation, Professional Products Division, P.O. Box 6600, Buena Park, CA 90622. In Canada, Yamaha Canada Music Ltd., 135 Milner Ave., Scarborough, Ont. M1S 3R1.



"EARLY REFLECTION" display mode showing room size and relative level and time of discrete reflections.



"REVERB DENSITY" display mode showing level and relative time of subsequent reverberation.



"REVERB TIME" display mode showing difference in reverb time in each of four frequency bands.



"MEMORY TITLE" display showing the titles of internal ROM memories.



## YAMAHA



# do you know!

INFORMATION ABOUT SAVING YOUR ELECTRONIC EQUIPMENT

## Your Broadcast Operations are in Danger!



**The danger is serious and ever-present. In a split second you could be off the air...or operating with a scrambled program-control system...or totally shut down with equipment catastrophically damaged. It's a threat you live with day after day and one that merits your closest attention.**

**The Threat** Abnormal voltage surges that occur on AC power lines, communications lines and data lines are a major cause of misinformation and equipment failure for the broadcaster. Broadcasting equipment is especially vulnerable, with tall antennas reaching up into the skies and with electronic units of unusual sensitivity.

Difficulties manifest themselves in two ways: (1) as physical *damage*...this is obvious damage that occurs directly as the result of an electrical storm, or less obvious failures that seem to occur almost at random; (2) as *misinformation*... where the power surge is coupled into the equipment causing improper events to occur or incorrect data to be presented.

These problems are familiar ones to broadcasters. And now, with the ever-expanding dependence on computer control and the corresponding increase in the susceptibility of these sensitive devices to damage from voltage surges, overvoltages must be controlled and eliminated.

\*Allen & Segall/IBM, 1974

# MCG

ELECTRONICS INC.

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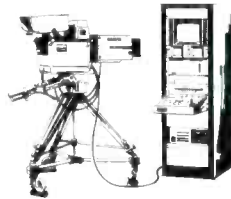
Specialists in Circuit Protectors, Transients, Lightning & Surges.

**The Causes** Transient power problems originate outside buildings from lightning, ground faults, and public utility switching, and inside buildings from inductive loads, transmitters, air conditioners, fluorescent lights, etc. A study at IBM\* identified transients as the cause of 88.5% of all line disturbances. Transients, sudden and extreme "spikes" in voltage, can be as short as a few nanoseconds or as long as several milliseconds. Their effect can range from total failure to the gradual degradation and breakdown of electronic components or systems.

**The Solution** MCG Electronics provides total protection against these transients for your broadcasting operation. AC power lines and data lines that serve your internal communications network are guarded day and night.

### AC Power Line Protection

MCG's Surge-Master™ provides high speed (5ns), heavy-duty protection that limits AC overvoltage spikes to safe levels. Surge-Master protectors are your first line of defense, and are available in configurations designed to meet your needs, from complete building protection to individual equipment protection.



**Data Line Protection** Interfaced between network equipment and data lines, MCG's Data Line Protectors provide a sophisticated blend of high speed (less than 5ns) and brute force protection against induced transient voltage surges. Available in multiple configurations, they are designed to meet your every need, and will keep your data network out of danger.

**MCG Protectors** Your most cost effective insurance against downtime and data loss caused by voltage surges and transients.

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## RF PRODUCTS

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ITAME, S.A.  
M/A-Com Microwave Power Devices  
MCL, Inc. .... 34  
Marcom  
Mu-Del Electronics, Inc.  
PESA Electronica  
TRW RF Devices Div.  
TTC Companies ..... 77, 207  
Tepco Corp.  
Texscan  
Toko America Inc.

### AMPLIFIERS, RF PEAK LIMITING

CRL Audio Circuit Research  
Labs, Inc. .... 69  
Harris Corp. Broadcast Group  
ITAME, S.A.  
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Aydin Microwave Div.  
Broadcast Microwave Services, Inc.  
Comark Communications, Inc.  
Communitronics Ltd.  
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Elcom-Bauer  
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PESA Electronica  
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Pye TVT Ltd. Broadcast Co. of Philips  
RCA New Products Div. Tube  
Operations  
TFT Inc.  
TRW RF Devices Div.  
TTC Companies ..... 77, 207  
TEKO Telecom SRL  
Townsend Associates, Inc.

### ANTENNA ALIGNMENT SYSTEMS

Broadcast Microwave Services, Inc.  
DyNETic Systems  
Johnson Electronics Inc.  
Magnatech-The DSD Co.  
Fred A. Nudd Corp.  
Scientific-Atlanta, Inc.

### ANTENNA DE-ICER SYSTEMS

Broadcast Microwave Services, Inc.  
Cetec Antennas ..... 54  
Environmental Technology, Inc.  
GEC McMichael Ltd.  
Micro-Trak Corp.  
Fred A. Nudd Corp.  
Shively Laboratories Div. of  
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### ANTENNA REMOTE INDICATORS

Antenna Products Inc.  
Broadcast Microwave Services, Inc.  
Delta Electronics Inc.  
Harris Corp. Broadcast Group  
Nurad Inc.  
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Scientific-Atlanta, Inc.  
Shively Laboratories Div. of  
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Continental Electronics A Div.  
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Dielectric Communications A  
Unit of General Signal ..... 236  
Electro Impulse Lab. Inc.

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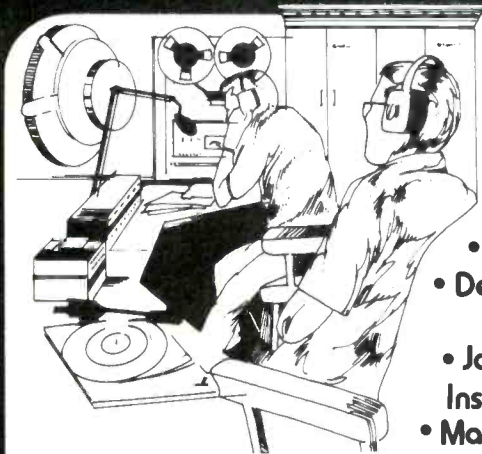
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## RF PRODUCTS

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- Harris Corp. Broadcast Group
- LeBlanc & Dick Communications Inc.
- Marconi Communication Systems Ltd.
- North Hills Electronics, Inc.
- PESA Electronica
- Potomac Instruments, Inc. ....230
- Shively Laboratories Div. of  
Howell Labs, Inc. ....54

### ANTENNA SAMPLING SYSTEMS

- Aluma Tower Co. Inc. ....68
- Delta Electronics Inc.
- Harris Corp. Broadcast Group
- LeBlanc & Dick Communications Inc.
- Shively Laboratories Div. of  
Howell Labs, Inc. ....54

### ANTENNA TOWER GUYS AND HARDWARE

- Allied Tower Co., Inc.
- Aluma Tower Co. Inc. ....68
- Antenna Products Inc.
- Cetec Antennas ....54
- Cortland Cable Co.
- Elektroimpex
- L&R Communications, Ltd.
- LeBlanc & Dick Communications Inc.
- Magnatech-The DSD Co.
- Magnum Towers, Inc.
- Marconi Communication Systems Ltd.
- Microflect Co., Inc.
- Fred A. Nudd Corp.
- Polar Research, Inc.
- ROHN
- Trylon Mfg. Co. Ltd.
- United Ropeworks (USA) Inc.  
Phillystran Div. ....30
- The Will-Burt Co. TMD Div.

### ANTENNA TUNING UNITS

- AEG-Telefunken Transmitter Div.
- Audiolab Electronics, Inc.
- CSI Electronics, Inc.
- Continental Electronics A Div.  
of Varian Associates, Inc. ....233
- Elcom-Bauer
- Harris Corp. Broadcast Group
- ITELCO USA
- Marconi Communication Systems Ltd.
- Radio Systems Inc.
- TTC Companies ....77, 207
- Tennaplex Systems Ltd.

### ANTENNAS, C/KU BAND

- Antenna Development & Mfg., Inc.
- Antenna Technology Corp.
- Antennas For Communications, Inc.
- Broadcast Microwave Services, Inc.
- Comtech Antenna Corp.
- Comtech Data Corp.
- Encom Telecommunications & Tech., Inc.
- GEC McMichael Ltd.
- Gabriel Electronics, Inc.
- Harris Corp. Broadcast Group
- Magnatech-The DSD Co.
- Mark Antenna Products, Inc.
- McCullough Satellite Equip., Inc.
- Microdyne Corp.
- Nurad Inc.
- PESA Electronica
- Pinzone Communications Products Inc.
- SatCom Technologies, Inc. An RSi Co.
- VideoStar Connections, Inc.
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### ANTENNAS, ITFS/MDS

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- Harris Corp. Broadcast Group
- Mark Antenna Products, Inc.
- Micro Communications, Inc.
- Nurad Inc.
- Townsend Associates, Inc.

### ANTENNAS, RECEIVING AM/SW

- Antenna Products Inc.
- Pinzone Communications Products Inc.
- Potomac Instruments, Inc. ....230

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**Roger Morley Video Copy**

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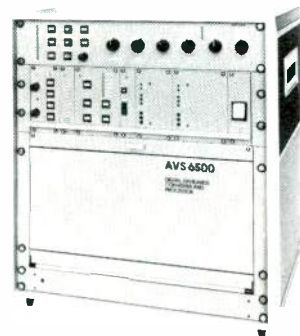
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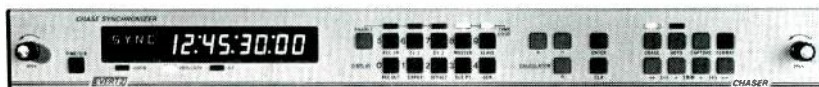
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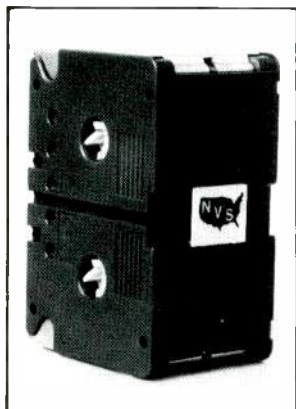


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## RF PRODUCTS

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### ANTENNAS, RECEIVING FM

Antiference Ltd.  
ITAME, S.A.  
Johnson Electronics Inc.  
Pinzone Communications Products Inc.  
**Potomac Instruments, Inc.** .....230  
Scala Electronic Corp.  
Scientific-Atlanta, Inc.  
Tennaplex Systems Ltd.  
Thomson-LGT  
Wold Communications

### ANTENNAS, RECEIVING UHF/VHF TV

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Ecor Product Assurance Corp.  
ITAME, S.A.  
Mark Antenna Products, Inc.  
PESA America Inc.  
PESA Electronica  
Pinzone Communications Products Inc.  
**Potomac Instruments, Inc.** .....230  
Scala Electronic Corp.  
Scientific-Atlanta, Inc.  
Tennaplex Systems Ltd.  
Thomson-LGT  
Wold Communications

### ANTENNAS, REMOTE PICKUP

Broadcast Microwave Services, Inc.  
**Gorman-Redlich Mfg. Co.** .....145  
Marti Electronics  
Micro Controls, Inc.  
Motorola Communications and Electronics Inc.  
North Hills Electronics, Inc.  
Nurad Inc.  
Scala Electronic Corp.  
Scientific-Atlanta, Inc.  
TFT Inc.  
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Gabriel Electronics, Inc.  
ITAME, S.A.  
M/A-Com Cable Home Group  
Magnum Towers, Inc.  
Mark Antenna Products, Inc.  
Marti Electronics  
Micro Controls, Inc.  
North Hills Electronics, Inc.  
Fred A. Nudd Corp.  
Nurad Inc.  
RF Technology, Inc.  
Scala Electronic Corp.  
Scientific-Atlanta, Inc.  
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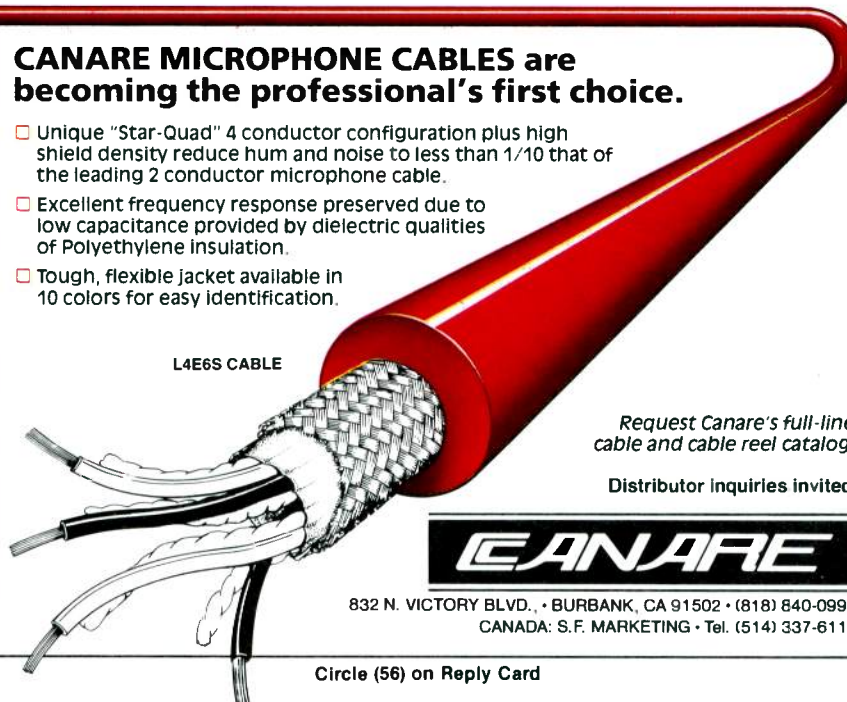
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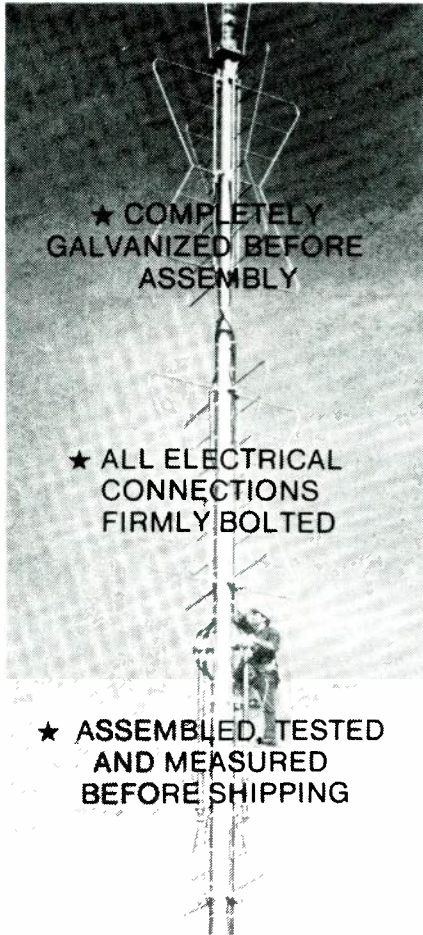
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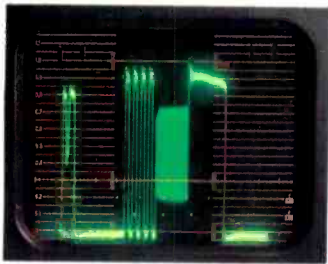
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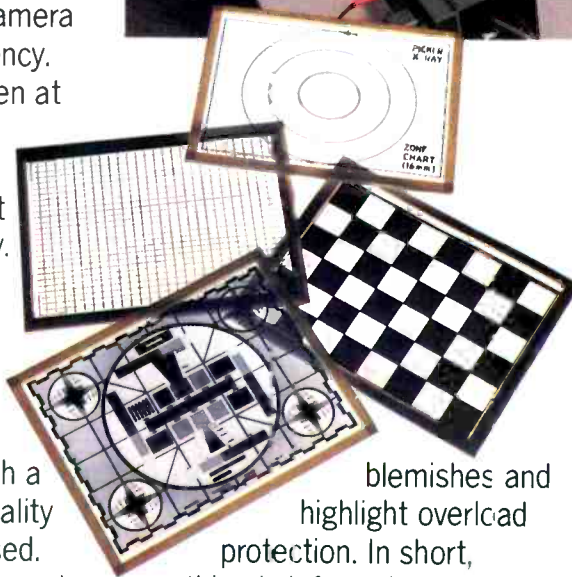
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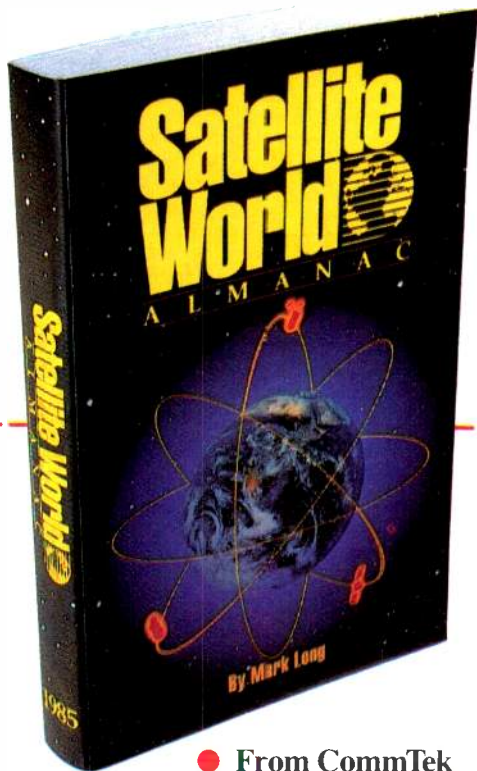
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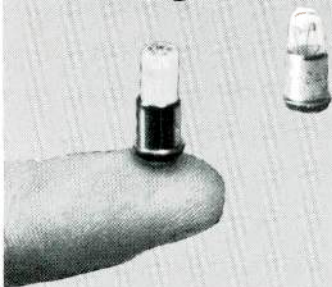
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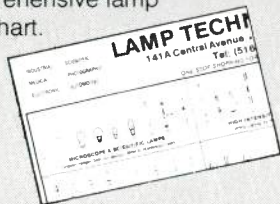
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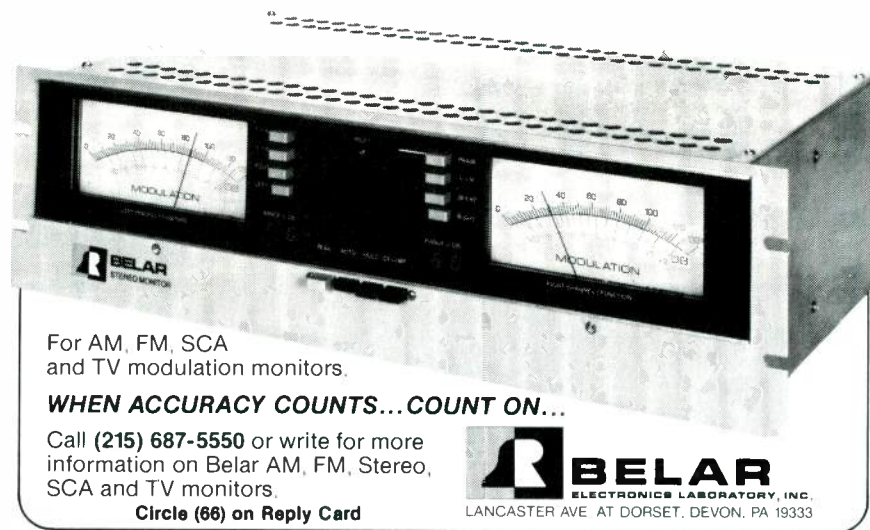
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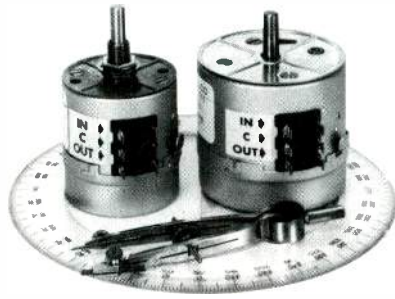
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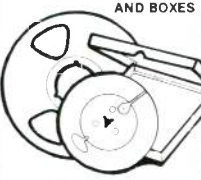
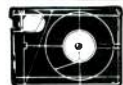

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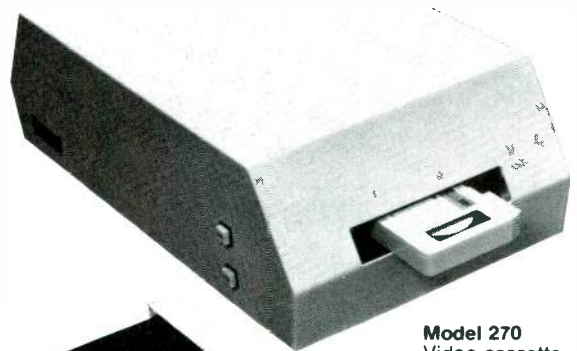
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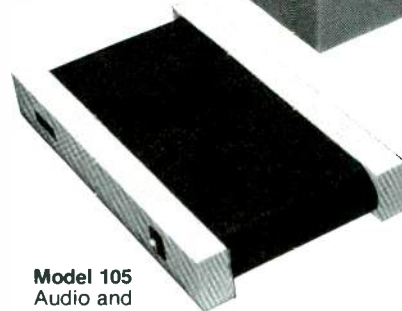


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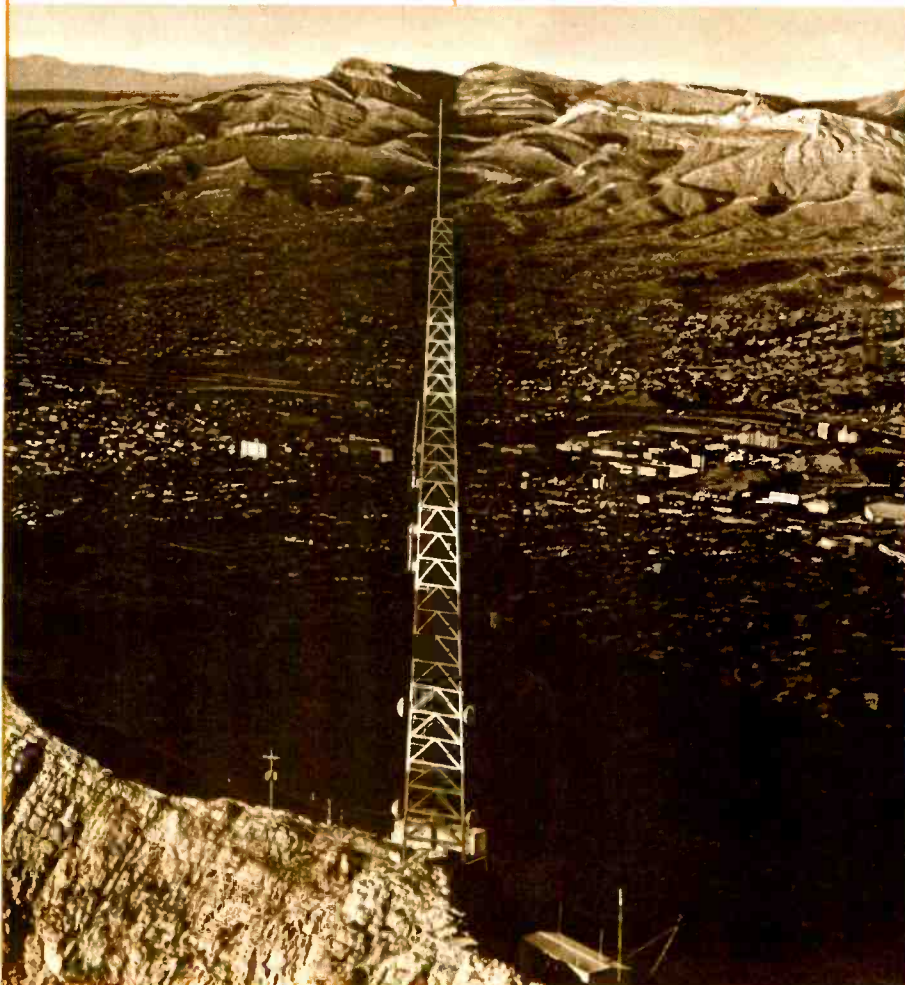
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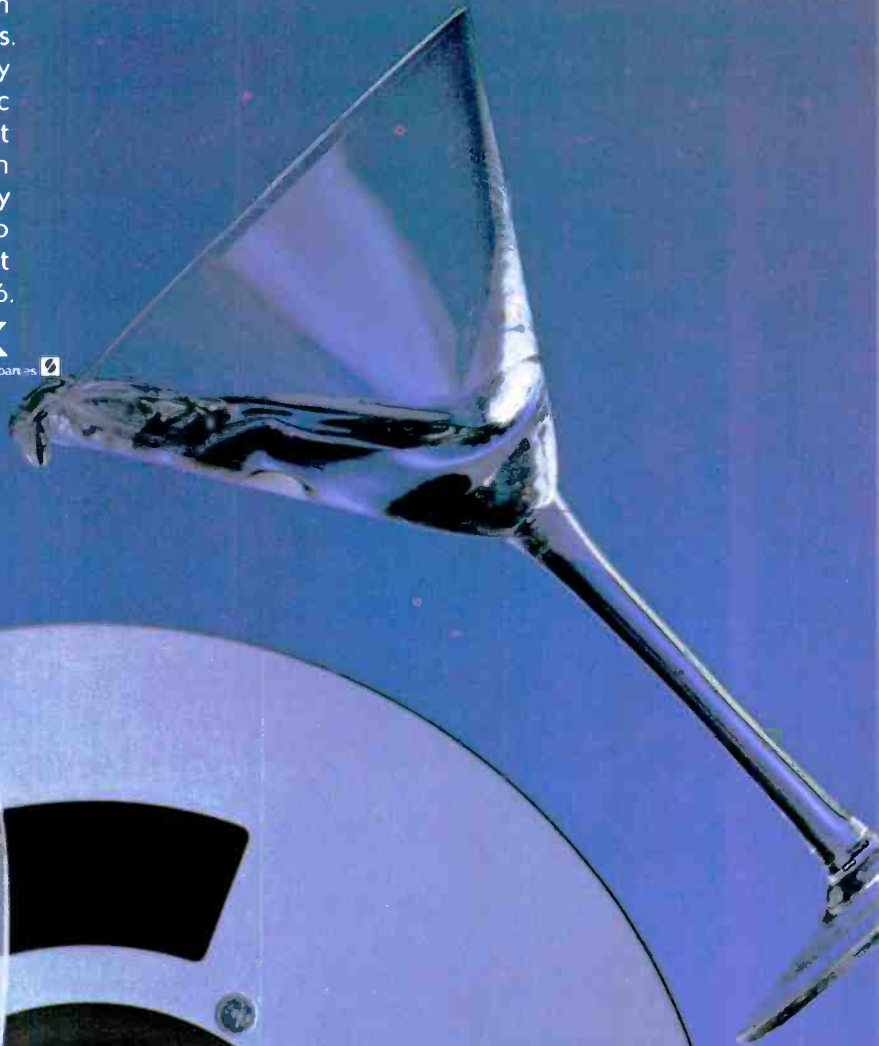
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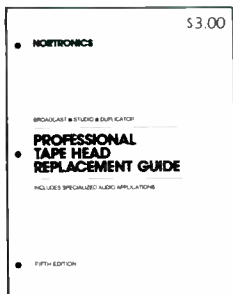
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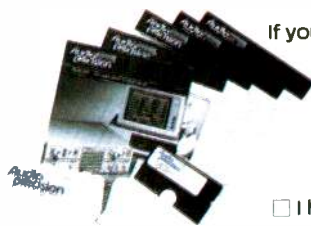
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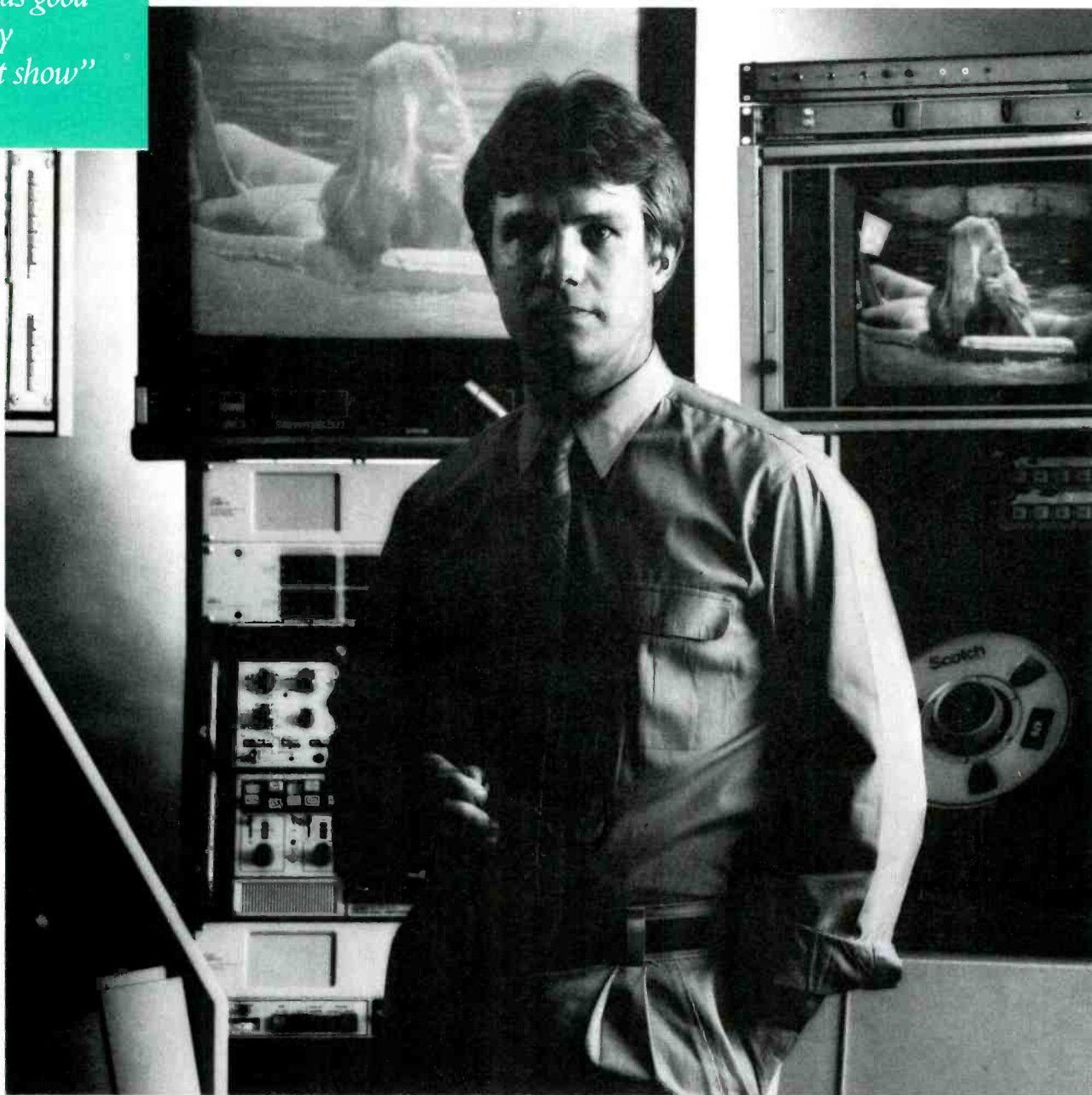
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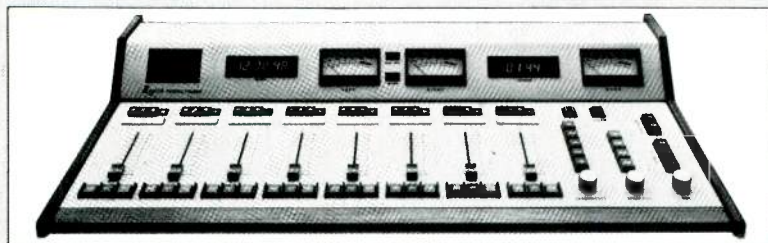
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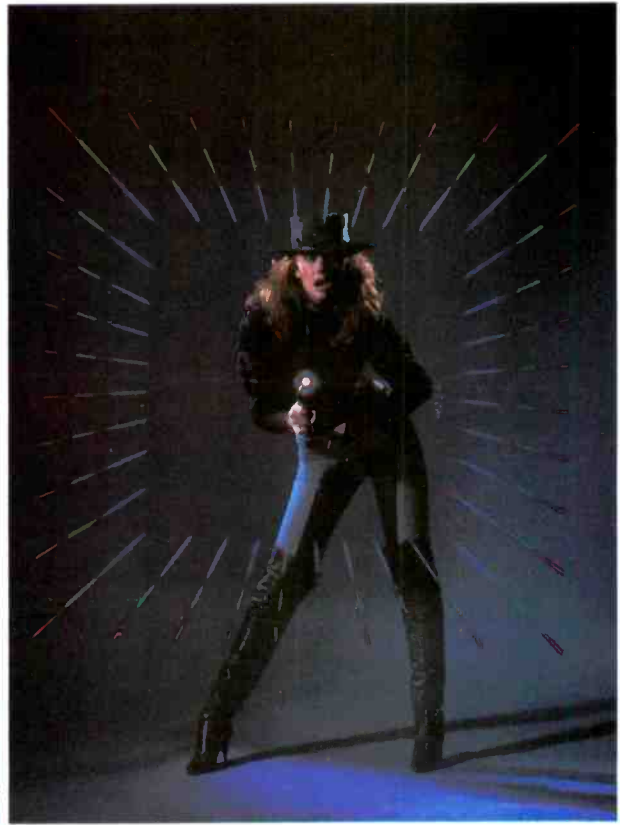
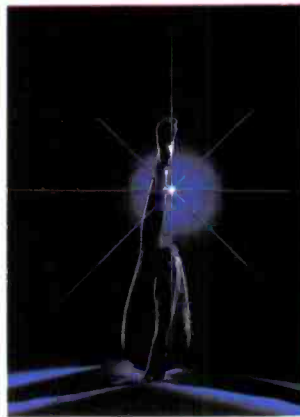
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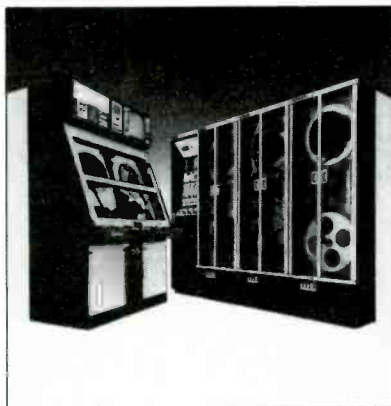
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*Barco Industries, Inc. has main offices in Kortrijk, Belgium. The company's principal activities are in the design and manufacture of Broadcast and Professional equipment, CATV, Computer Graphic Displays, Office Communication, Textile Electronics and Printed Circuit Boards.*

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# At Last, a 200 Watt Coax!

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The new Gauss 3588 is the first computer designed coaxial. But, we know computers can't hear, so we used a panel of "golden ears" at the fall AES to help determine the final sound of the loudspeaker. This combination of computer design and great ears gives you a coax with the sound *and* the power you want!

With a conservative power rating of 200 watts RMS, this new Gauss coaxial has been tested to 750 watts delivering clean sound... and can "coast" along at control room levels still delivering great sound. Metric sensitivity is 95dB for the low frequency and 109dB HF.

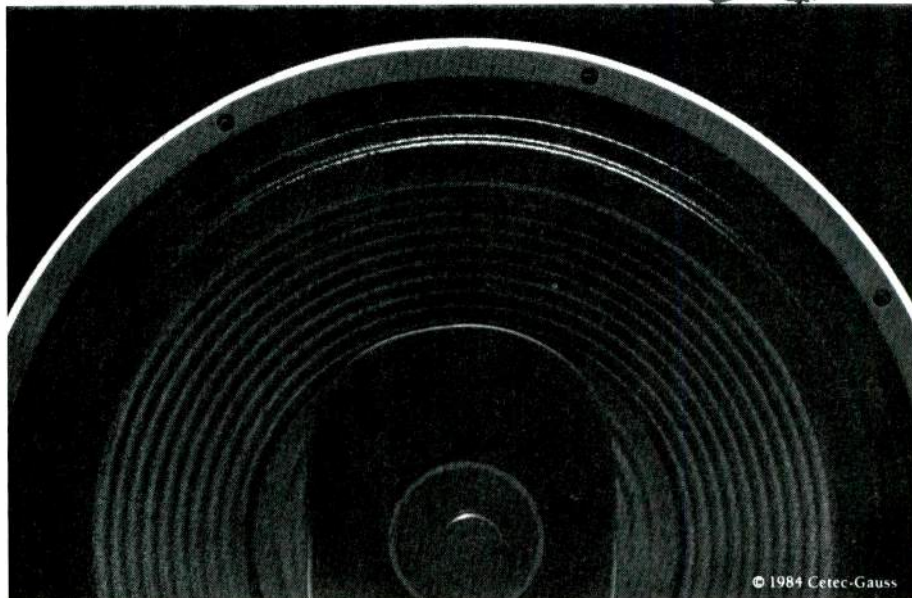
Because of our proprietary design parameters, both drivers are virtually in the same acoustic plane, eliminating the

need for costly time compensation networks. For bi-amp operation, you can use any standard professional quality crossover.

The unique *cosh* horn was designed using Gauss's exclusive Computer Aided Time Spectrometry (CATS™) program. This design provides an extremely stable image... reduced second harmonic distortion... and virtually no midrange shadowing.

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# Audio Transformers

Choose from a wide variety of types and packages

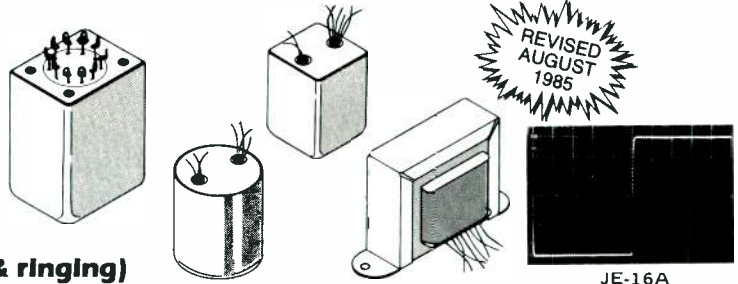
**Computer optimized design**

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**Wide bandwidth**

**Minimum transient distortion (overshoot & ringing)**



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JE-16A  
2 kHz Square Wave

## INPUT TRANSFORMERS AND SPECIAL TYPES

Model	Application	Impedance Ratio Pri-Sec	Turns Ratio Pri:Sec	20Hz Max Input Level <sup>1</sup>	Typical THD Below Saturation (%) 20 Hz / 1 kHz	Frequency Response (dB ref. 1 kHz) 20 Hz / 20 kHz	Band-Width <sup>2</sup> -3 dB @ (kHz)	20 kHz Phase Response (degrees)	Over-Shoot (%)	Noise Figure (dB)	Magnetic Shield <sup>4</sup> (dB)	Number of Faraday <sup>5</sup> Shields	PRICES		
													Package <sup>6</sup>	1-19	100-249

### MICROPHONE INPUT

JE-16-A JE-16-B	Mic in for 990 opamp	150-600	1:2	+8	0.036/0.003	-0.08/ -0.05	230	-8	<1	1.7	-30	1	A=1 B=2	65.25 71.73	43.59 47.92	30.07 33.06
JE-13K7-A JE-13K7-B	Mic in for 990 or I.C.	150-3750	1:5	+8	0.036/0.003	-0.09/ -0.21	85	-19	<2	2.3	-30	1	A=1 B=2	65.25 71.73	43.59 47.92	30.07 33.06
JE-115K-E	Mic in for I.C. opamp	150-15 K	1:10	-6	0.170/0.010	-0.50/ +0.10	115	-5	<7	1.5	-30	1	3	44.84	29.95	23.39

### LINE INPUT

JE-11P-9	Line in	15 K-15 K	1:1	+26	0.025/0.003	-0.03/ -0.30	52	-28	<3		-30	1	1	105.75	70.65	48.74
JE-11P-1	Line in	15 K-15 K	1:1	+17	0.045/0.003	-0.03/ -0.25	85	-23	<1		-30	1	3	42.69	28.53	22.27
JE-6110K-B JE-6110K-BB	Line in bridging	36 K-2200 (10 K-600)	4:1	+24	0.005/0.002	-0.02/ -0.09	125	-12	<1		-30	1	B=1 BB=2	63.98 74.05	42.75 49.47	31.37 34.13
JE-10KB-C	Line in bridging	30 K-1800 (10 K-600)	4:1	+19	0.033/0.003	-0.11/ -0.08	160	-9	<2		-30	1	3	43.45	29.03	20.03
JE-11SSP-8M	Line in / repeat coil	600/150-600/150	1:1 split	+22	0.035/0.003	-0.03/ -0.00	120	-9	<3.5		-30	1	4	168.39	112.50	77.61
JE-11SSP-6M	Line in / repeat coil	600/150-600/150	1:1 split	+17	0.035/0.003	-0.25/ -0.00	160	-5	<3		-30	1	5	85.11	56.86	39.23

### SPECIAL TYPES

JE-MB-C	2-way <sup>3</sup> mic split	150-150	1:1	+1	0.050/0.003	-0.16/ -0.13	100	-12	<1		-30	2	3	36.22	24.21	18.89
JE-MB-D	3-way <sup>3</sup> mic split	150-150-150	1:1:1	+2	0.044/0.003	-0.14/ -0.16	100	-12	<1		-30	3	3	63.35	42.32	33.04
JE-MB-E	4-way <sup>3</sup> mic split	150-150-150-150	1:1:1:1	+10	0.050/0.002	-0.10/ -1.00	40	-18	<1		-30	4	1	98.99	66.13	45.62
JE-DB-E	Direct box for guitar	20K-150	12:1	+19	0.096/0.005	-0.20/ -0.20	80	-18	<1		-30	2	6	45.46	30.38	23.71

1. (dBu) Max input level = 1% THD; dBu = dBv ref. 0.775 V

2. With recommended secondary termination

3. Specifications shown are for max. number of secondaries terminated in 1000 ohm (typical mic preamp)

4. Separate lead supplied for case and for each faraday shield

5. Except as noted, above transformers are cased in 80% nickel mu-metal cans with wire leads.

#### PACKAGE DIMENSIONS:

W	L	H
1 = 1 1/16" Diam.		1 1/16"
2 = 1 3/16" x 1 3/16"		1 5/8"
3 = 1 1/8" Diam.		1 1/16"
4 = 1 1/2" x 1 3/4"		2 1/2" w/ solder terminals
5 = 1 5/8" Diam.		1 3/4"
6 = 1 1/8" Diam.		1 5/16"

## NICKEL CORE OUTPUT TRANSFORMERS<sup>6</sup>

Model	Construction	Nominal Impedance Ratio Pri-Sec	Turns Ratio Pri:Sec	20 Hz Max Output Level <sup>7</sup> across (n) windings (dBu)	600 Ω Load Loss (dB)	DC Resistance per Winding Ω	Typical THD Below Saturation (%) 20 Hz / 1 kHz	Frequency Response (dB ref. 1 kHz) 20 Hz / 20 kHz	Band-Width -3 dB @ (kHz)	20 kHz Phase Response (degrees)	Over-Shoot (%)	Package	PRICES			
													1-19	100-249	1000	
* JE-11-BMCF	Bifilar 80% nickel	600-600	1:1	+26	1	-1.1	40 Ω	0.002/0.002	-0.02/ -0.00	>10MHz	-0.0	<1 <sup>9</sup>	7	65.36	43.66	30.12
* JE-11-DMCF	Bifilar 80% nickel	600-600	1:1	+21	1	-1.0	38 Ω	0.004/0.002	-0.02/ -0.00	>10MHz	-0.0	<1 <sup>9</sup>	8	48.74	32.56	22.46
JE-123-BLCF	Quadfilair	600-600 150-600	1:1 1:2	+32	2	-1.1	20 Ω	0.041/0.003	-0.02/ -0.01	>450 170	-1.9 -4.0	<1 <sup>8</sup>	7	64.57	37.71	26.02
* JE-11SS-DLCF	Bifilar split/split	600-600 150-600	1:1 1:2	+27	2	-1.0	19 Ω	0.065/0.003	-0.02/ -0.01	>10MHz 245	-0.0 -2.5	<1 <sup>8</sup>	8	46.38	30.98	21.37
* JE-11-ELCF	Bifilar	600-600	1:1	+23.5	1	-1.1	40 Ω	0.088/0.003	-0.03/ -0.00	>10MHz	-0.0	<1 <sup>9</sup>	9	30.21	20.18	13.93
* JE-11-FLCF	Bifilar	600-600	1:1	+20.4	1	-1.6	58 Ω	0.114/0.003	-0.03/ -0.00	>10MHz	-0.0	<1 <sup>9</sup>	10	23.66	15.81	10.91
JE-112-LCF	Quadfilair	600-600 150-600	1:1 1:2	+20.4	2	-1.6	29 Ω	0.114/0.003	-0.03/ -0.01	>450 205	-1.2 -3.2	<1 <sup>8</sup>	10	26.68	17.82	13.08
JE-123-ALCF	Quadfilair	66.7-600	1:3	+26.5	3	-1.3	8 Ω	0.125/0.003	-0.04/ +0.06	190	-4.6	<6 <sup>8</sup>	8	44.09	29.45	20.32
JE-11S-LCF	Bifilar w/ split pri.	600-600 150-600	1:1 1:2	+30	1 (sec)	-1.7	63 Ω	0.058/0.002	-0.02/ +0.01 -0.02/ -0.05	>10MHz 155	+1.1 -4.1	<1 <sup>8</sup>	8	44.09	29.45	20.32

6. Multifilar construction has no faraday shield; cannot be used as input transformer. All specifications are for 0 Ω source, 600 Ω load.

7. Max output level = 1% THD; dBu = dBv ref. 0.775 V

8. Source amplifier -3 dB @ 100 kHz

9. Source amplifier -3 dB @ 200 kHz

10. Output transformers are horizontal channel frame type with wire leads, vertical channel frames available. PC types available.

#### PACKAGE DIMENSIONS:

W	L	H	Mounting Centers
7 = 1 1/2" x 2 5/16"		1 15/16"	2 13/16"
8 = 1 5/16" x 1 15/16"		1 5/8"	2 3/8"
9 = 1 1/8" x 1 1/16"		1 1/8"	2"
10 = 1 1/8" x 1 1/16"		1 3/16"	1 3/4"

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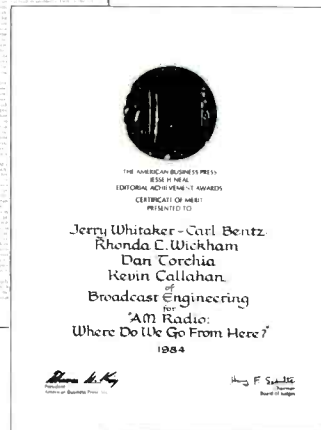
These charts include the most popular types which are usually available from stock. Many other types are available from stock or custom designs for OEM orders of 100 pieces or more can be made to order. Certified computer testing is available for OEM orders. Call or write for applications assistance and/or detailed data sheets on individual models.

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**ABP Systems Inc.**, 92 E. Merrick Road, Freeport, NY 11520

**ADC Telecommunications, Inc.**, 4900 West 78th St., Minneapolis, MN 55435 612-893-3037

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

**AEG-Telefunken, Transmitter Div.**, Sickingenstrasse 20-28, D-1000 Berlin, West Germany

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

**AFP Imaging Corp.**, 250 Clearbrook Ave., Elmsford, NY 10523 914-592-6100

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

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

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

**ANT Nachrichtentechnik GmbH**, Box 1680, D-3340 Wolfenbuettel, West Germany 5331-83-397

**ANT Telecommunications, Solway, Inc.**, P.O. Box 7647, Hollywood, FL 33081 305-962-8650

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

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

*Ed Mullin*

**REGIONAL SALES CONTACTS:**

*Please contact factory for the name of your nearest dealer.*

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

*Mike Ransome*

**REGIONAL SALES CONTACTS:**

*NY: AVS, 7 Tallman St., Spring Valley, NY 10977 (914) 352-4004*

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

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

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

**Accu-Weather, Inc.**, 619 W. College Ave., State College, PA 16801 814-234-4015

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

**Acquis Ltd.**, 18952 MacArthur Blvd., Irvine, CA 92715 714-752-6003

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

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

**Adams-Russell Co., Inc., Video Info. Systems Div.**, 1370 Main St., Waltham, MA 02154

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

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*CA: New West Audio, 3620 Fredonia Drive, Suite 2, Hollywood, CA 90068 (213) 876-9164 Tim Schaeffer*

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*IL: Roscor Corp., 1061 Feehanville Drive, Mt. Prospect, IL 60056 (312) 539-7700 Steve Detch*

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*IN: Soundsmith Audio, 5210 East 65th St., Indianapolis, IN 46220 (317) 842-4905 Mark Dodd*

*MD: Peirce-Phelps, Inc., 12288 Wilkens Ave., Rockville, MD 20852 (301) 984-7979 Fred Bergstrasser*

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*TX: MZB & Associates, 4203 Beltway Drive, Dallas, TX 75234 (214) 233-5535 Dick Bock*

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

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# There's more to than meets

Producing effective multichannel sound isn't easy. Though the procedures borrow heavily from recording studio and film sound techniques, audio for video is a specialist art with a unique set of requirements.

As its early practitioners have discovered, the inherently complex process of stereo teleproduction and post-production can be made even more difficult by cobbling together a collection of modified equipment in the hope of serving these advanced needs.

While makeshift arrangements may satisfy the technical minimums of the task, they introduce tradeoffs in operational flexibility and efficiency which can ultimately affect both production quality and costs.

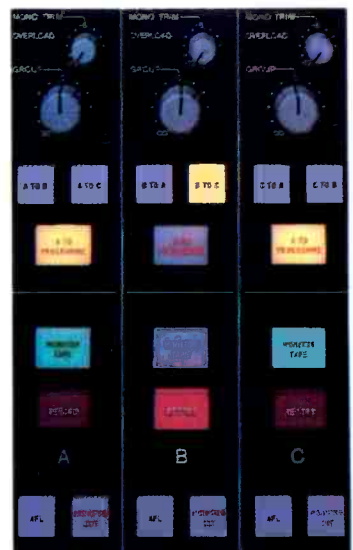
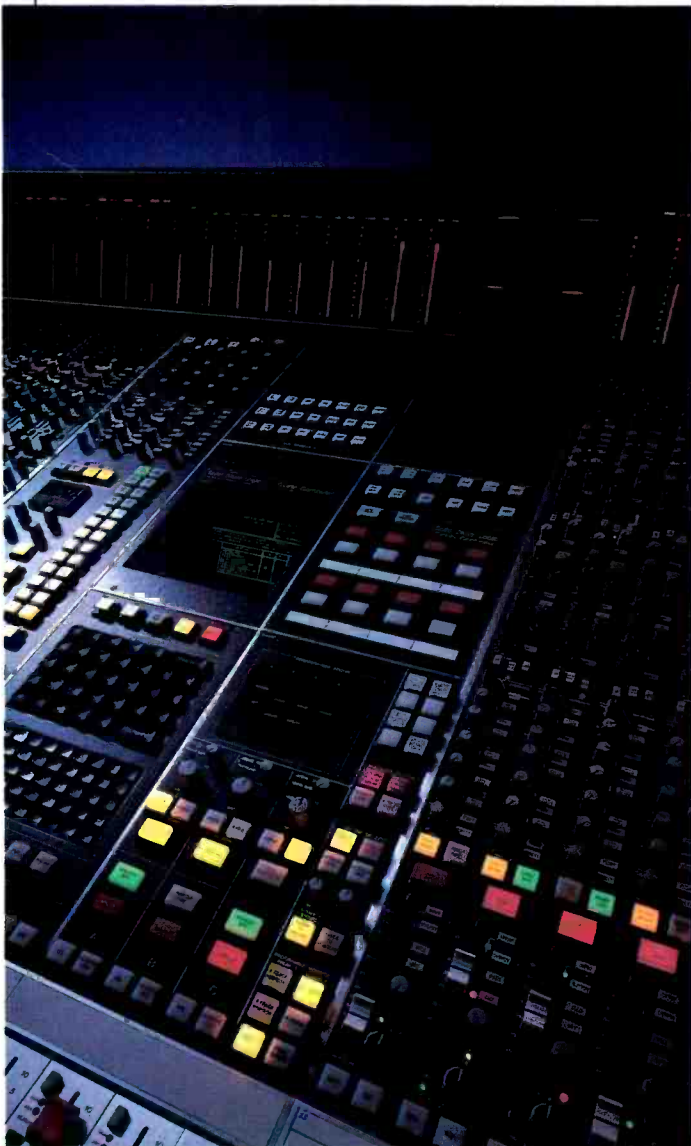
Fortunately there is an alternative, developed for the leading post-production houses and refined in collaboration with major broadcast organizations throughout the world: The SL 6000 E Series Stereo Video System from Solid State Logic.

## SSL Puts it all Together

The SL 6000 E Series is a thoroughly integrated system designed specifically for the stereo video environment. Combining the most advanced aspects of multitrack, motion picture and broadcast audio technology, it provides extensive signal processing, routing and mixing capabilities as well as comprehensive machine control and communications—all commanded by a single operator at a logical, unified control panel.

SSL's multichannel mix matrix allows separate stereo music, effects and dialogue mixes to be created at the same time as the stereo program mix. In live production, multiple stereo splits or mix-minuses can be structured at the touch of a button. Mono composites of each mix are always available, and a mono programme feed is provided. Advanced formats such as stereo plus a secondary audio programme or centre-channel dialogue are also supported.

Changeover between live and post-production modes and different output configurations is instantaneous. The rigid architecture of ordinary consoles is replaced with patchfree audio subgrouping and pushbutton signal processor routing, allowing the engineer to customise the signal flow for each project.





# Stereo Television the eye.

Meticulous electronic design creates the shortest signal path for each requested function, allowing SSL to maintain a dynamic range and bandwidth that far exceeds the performance of even the best 16-bit digital recorders, converters and routing switchers.

## Complete Machine Control



The SSL Stereo Video System also provides the operator with central control of up to five synchronised audio, video and film transports. Cue points are stored and called by timecode, foot/frames or key words.

The SSL Studio Computer provides complete list management with floppy disk storage, video display and hardcopy printouts. Distributed processors ensure rapid search and lock-up. There's even a Sync Preset function which automatically calculates offset values between reels and stores these for subsequent setups.

## Dynamic Mixing Automation

The machine control functions are integrated with SSL's audio mixing software to provide powerful, versatile and efficient assistance. Engineers can retain their existing mixing methods, or supplement them with simple yet powerful new routines that allow unlimited frame-accurate mix revisions to be performed with outstanding results and uncanny speed.

SSL's computer assisted rollback and pickup recording enables mixes to be assembled within the automation itself, using traditional techniques. Video layback can then take place in a single first-generation pass, directly from the multitrack!

Beyond fader automation, the SSL System optionally provides programmable parametric equalisation, dynamic stereo panning, and multiple Events Control of up to 32 external devices — each with its own pre-roll memory.



## Total Recall™

SSL's Total Recall computer records the settings of every control on each I/O module. A high resolution display of the stored values interacts with the console, allowing fully detailed setups to be restored to a control accuracy of a quarter dB. Total Recall greatly reduces setup time, maximising productivity and creative continuity.



## Stereo Perspectives

Not all stereo channels were designed to serve video requirements. Only SSL provides parametric stereo EQ, filters, compressors, gates and expanders on stereo inputs as standard, along with image width and stereo reverse controls. There is no easier or more effective way to match music, ambience and effects perspectives with television images.



## Get the Full Picture

As you can see, there is a lot more to producing stereo television than meets the eye. To help you get the full picture, Solid State Logic has published a forty-page colour booklet which thoroughly explains the functions, applications and operation of the SL 6000 E. If you are involved in television production, outside broadcast, video post-production or music video, we'd like to send you a copy. Just drop us a line or give us a call.

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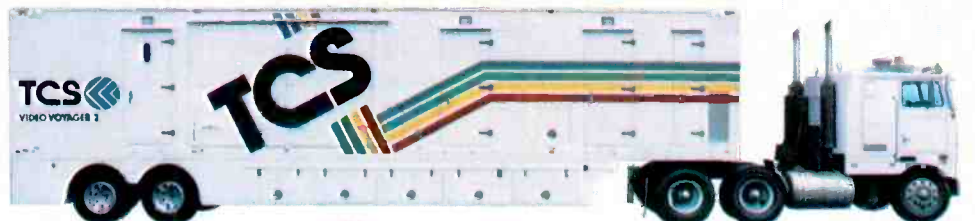
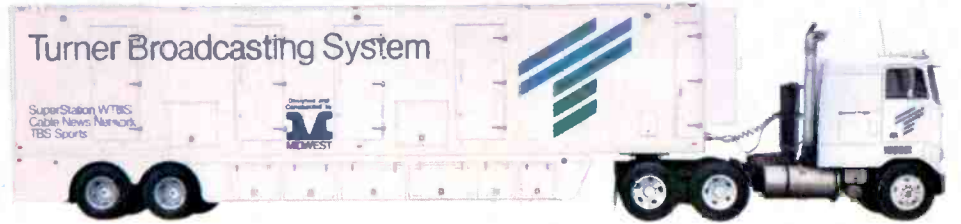
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**Beaveronics, Inc.**, 8 Haven Ave., Port Washington, NY 11050 516-883-4414

**Beckman Industrial Corp.**, 630 Puente St., Brea, CA 92621 714-773-8111

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**Bell & Howell, Audio Visual Div.**, 7100 McCormick Road, Chicago, IL 60645

**Bellard Electronics Ltd.**, Video House, 115 Long Land, Upton Chester, England CH2 1JF 0244-380123

**Benchmark Media Systems, Inc.**, 3817 Brewerton Road, No. Syracuse, NY 13212 315-452-0400

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*IL: Ram Broadcast Systems, Inc., 346 W. Colfax St., Palatine, IL 60067 (312) 358-3330 Steve Gordoni, Ron Mitchell*  
*IN: Allied Broadcast Equipment, 635 South 'E' St., Richmond, IN 47374 (317) 962-8596 Dave Burns, Joseph Ziemer*  
*IA: Audio Midwest, Route 2, P.O. Box 246, Hampton, IA 50441 (515) 456-3075*  
*NM: Dyma Engineering, Inc., P.O. Box 1535, Los Lunas, NM 87031 (505) 865-6700 Thom Johnson, Sales Eng.*  
*TX: Electrotex, 9151 Forest Lane, Dallas, TX 75243 (214) 234-0433 Jay Wallace*  
*TX: Media Technology, 3102 Jenness, Dallas, TX 75224 Wayne Kirkwood*  
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*IL: NEC America, Inc., 130 Martin Lane, Elk Grove Village, IL 60007 (312) 640-3792 T. Fujiyasu*  
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*MD: David Green Broadcast, P.O. Box 8782, BWI Airport, MD 21240 (301) 796-1500 Ashley Scarborough*  
*MA: Comark Industries, P.O. Box 229, Southwick, MA 01077 (413) 569-0116 Dick Fiore, Jr.*  
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*NY: Singer Broadcast Products, Inc., 875 Merrick Ave., Westbury, NY 11590 (516) 333-2000 Don Richardson*  
*PA: Acrodyne Industries, 516 Township Line Road, Blue Bell, PA 19422 (215) 542-7000 Bob Bean*

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**Bi-Tronics, Inc.**, 76 Main St., Tuckahoe, NY 10707 212-585-1645

**BITTREE**, 1337 Greenbriar Road, Glendale, CA 91207 213-507-0418

**Blonder-Tongue Labs, Inc.**, 1 Jake Brown Road, Old Bridge, NJ 08857 201-679-4000

**Bogen Div., Lear Siegler, Inc.**, P.O. Box 500, Paramus, NJ 07653 201-343-5700

**Bogen Photo Corp.**, P.O. Box 712, Fair Lawn, NJ 07410 201-794-6500

**Bogner Broadcast Equipment Corp.**, 401 Railroad Ave., Westbury, NY 11590 516-997-7800

**Bonneville Media Communications**, 130 Social Hall Ave., Salt Lake City, UT 84111 801-237-2400

**Boonton Electronics Corp.**, 791 State Highway 10, Randolph, NJ 07869 201-584-1077

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**Brabury Ltd.**, 5 Bone Lane, Newbury Berkshire, England RG14 5PG 0635-33433

**Brand-Rex Co., Elec. & Industrial Cable Div.**, P.O. Box 498, Willimantic, CT 06226 203-456-8000

**Bretford/Knox**, 9715 Soreng Ave., Schiller Park, IL 60176 312-678-2545

**Walter S. Brewer Co., Inc.**, 4717-F S. Mingo Road, Tulsa, OK 74146 918-665-6820

**Broadcast Aids, Inc.**, 20 Red Rose Drive, Levittown, PA 19056 215-547-7133

**Broadcast Audio Corp.**, 11306 Sunco Drive, Rancho Cordova, CA 95670 916-635-1048

**Broadcast Cart Clinic**, P.O. Box 6216, Ocala, FL 32678 904-622-5100

**Broadcast Cartridge Service**, 15131 Triton Lane, Suite 108, Huntington Beach, CA 92649 714-898-7224

**Broadcast Computer Systems Inc.**, 57 Elm Ave., Hackensack, NJ 07601

**Broadcast Developments Ltd., Auto-crypt**, 16 Cannon Drive, Limehouse, London, England E14 9SU 01-987-5135

**Broadcast Electronics, Inc.**, P.O. Box 3606, Quincy, IL 62305 217-224-9600

**Broadcast Microwave Services, Inc.**, 7322 Convo Court, San Diego, CA 92111 619-560-8601

**Broadcast Programming**, 2211 Fifth Ave., Seattle, WA 98121 800-426-9082

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**Bruel & Kjaer Instruments, Inc.**, 185  
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**Bryston Ltd.**, 57 Westmore Drive, Rex-  
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**Brystonvermont Ltd.**, RFD #4, Box  
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**Bud Industries, Inc.**, 4605 East 355th  
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**Buhl Optical Co.**, 1009 Beech Ave.,  
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321-0076

**Richard W. Burden Associates**,  
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CA 91303 818-340-4590

**Burlington Audio Tapes, Inc.**, 106  
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**CBS Special Products**, 51 West 52nd  
St., Room 861, New York, NY  
10019 212-975-5073

**CBSI-Custom Business Systems, Inc.**,  
P.O. Box 67, Reedsport, OR 97467  
503-271-3684

**CBX Inc.**, 147 E. Olive Ave., Monrovia,  
CA 91016 818-357-8878

**CCI**, 7353 Lee Highway, Chattanooga,  
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Shire Hill, Saffron Walden, Essex,  
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**CMC Technology Corp.**, 2650 La-  
Fayette St., Santa Clara, CA  
95050-2604 408-980-9800

**CMX Corp.**, 2230 Martin Ave., Santa  
Clara, CA 95050 408-988-2000

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415-592-6149

**CRL Audio, Circuit Research Labs**,  
Inc., 2522 W. Geneva Drive, Tempe,  
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**Caig Labs, Inc.**, P.O. Box J, Escondido,  
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**Calaway Engineering**, 49 S. Baldwin  
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**California Microwave**, 990 Almanor  
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**Calrec Audio, (Audio Design Calrec,**  
**Inc.)**, P.O. Box 786, Bremerton, WA  
98310 206-275-5009

**Calzone Case Co.**, 225 Black Rock  
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203-367-5766

**The Camera Mart, Inc.**, 456 West  
55th St., New York, NY 10019  
212-757-6977

**Canare Cable, Inc.**, 832 N. Victory  
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732-9775 Bill Bencsik

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Drive, Northbrook, IL 60062 (312)  
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nee Mission, KS 66203 (913) 631-7607  
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White Bear Lake, MN 55110 (612)  
770-9760 Fred Yore

NH: Allen Cohen Sales Associates, Old  
Hinsdale Road, Ashuelot, NH 03441 (603)  
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ard Terrace, Wayne, NJ 07470 (201)  
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77036 (713) 772-6765 Dan Speegle

WA: Northmar, Inc., 1011 N.E. 69th St.,  
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TX: Canon USA, Inc., 2035 Royal Lane,  
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620-2641 Ernest Magnotti

CANADA: Canon Canada, Inc., 3245  
American Dr., Mississauga, Ont., Canada  
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**Capitol Magnetic Products**, 6902  
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213-461-2701

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**CATEL Telecommunications**, 4800  
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**Dwight Cavendish Co. Ltd.**, 2117  
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**CaVox Stereo Productions**, 13633  
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**Celwave**, Route 79, Marlboro, NJ  
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**Century 21 Programming Inc.**, 4340  
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**Cetec Antennas**, 6939 Power Inn  
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**Comrex Corp., 60 Union Ave., Sud-bury, MA 01776 617-443-8811**

**Comsearch, Inc., 11503 Sunrise Val-ley Drive, Reston, VA 22091**

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**Control Concepts Corp., P.O. Box 1380, Binghamton, NY 13902 1380 607-724-2484**

**Control Video Corp., Subs. of ADDA Corp., 1640 Dell Ave., Campbell, CA 95008**

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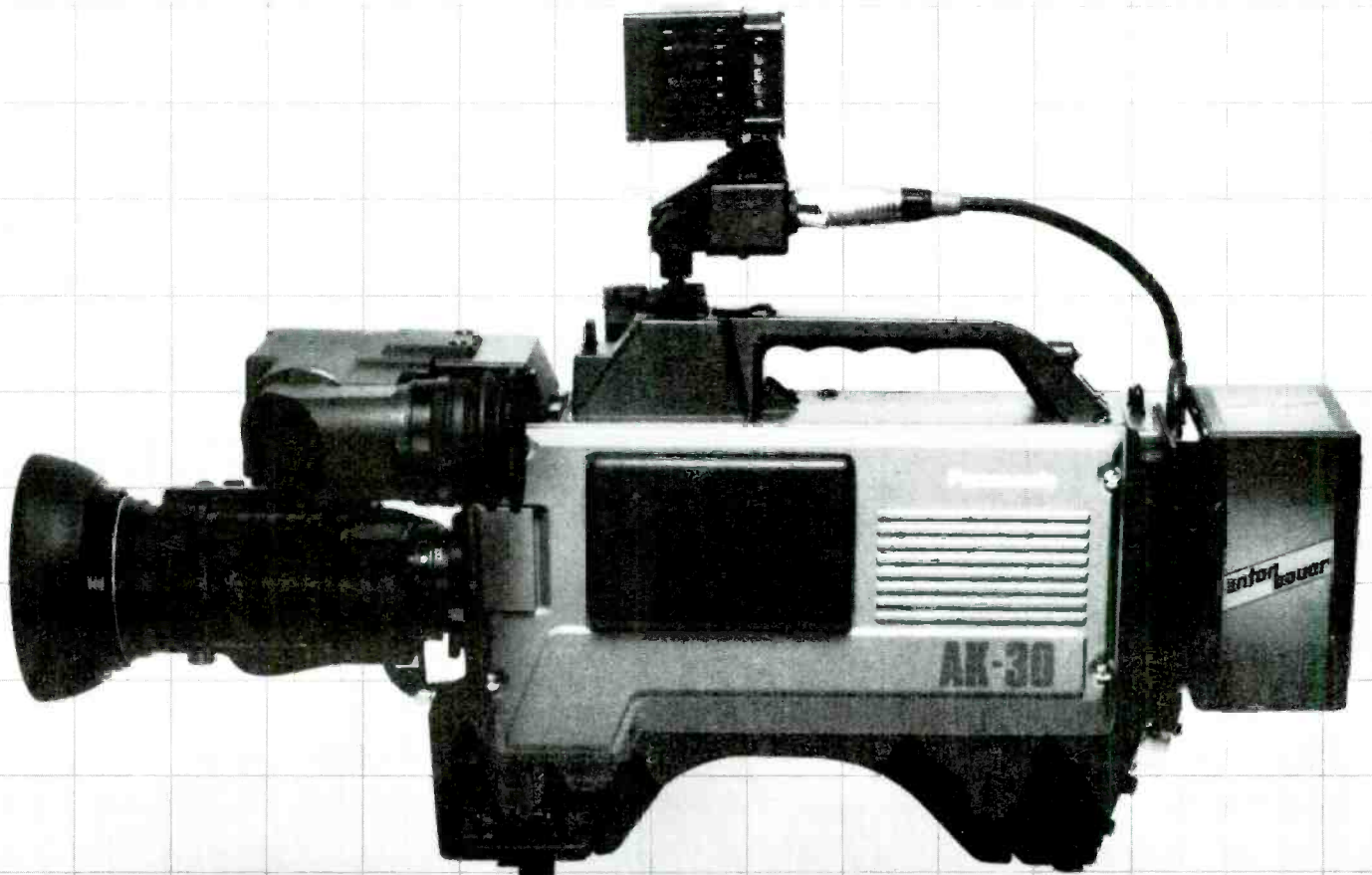
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**Flash Technology**, 55 Lake St., Nashua, NH 03060 603-883-6500  
**John Fluke Mfg. Co., Inc.**, P.O. Box C9090, Everett, WA 98206  
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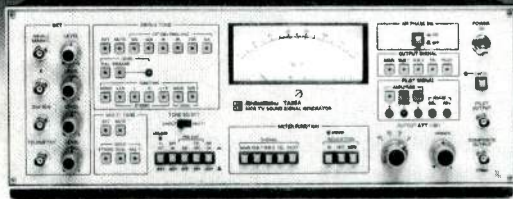
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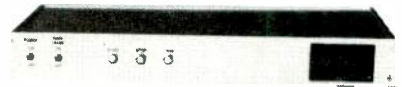
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Burbank Blvd., No. Hollywood, CA  
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**Jeron Electronic System, Inc.**, 3554  
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**Johnson Electronics Inc.**, 4301 Metric  
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**Johrson Measurement Service**, 3497  
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**Johnson-Nyquist Production Inc.**,  
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**K B Systems**, 10407 62nd Place W.,  
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**K&H Products-Porta-Brace**, P.O. Box  
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**Kahn Communications, Inc.**, 425 Mer-  
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**Kangaroo Video Products**, 10845  
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**KAVCO, Div. of Daycom Corp.**, 3931  
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**Kavouras Inc.**, 6301 34th Ave. S.,  
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**Kay Elemetrics Corp.**, 12 Maple Ave.,  
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**Kay Industries, Inc.**, 604 N. Hill St.,  
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**Kelly Broadcasting Co.**, 310 Tenth St.,  
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**Keystone Metal Products, Inc.**, 2711  
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**Kinotone Inc.**, P.O. Box 508, Paterson,  
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**Kluge Communications, Inc.**, 5350 W.  
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**Knox Video Products**, 8547 Grove-  
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**Knudson-Benson Associates Inc.**, P.O.  
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**Kulka-Smith, Inc.**, 1913 Atlantic Ave.,  
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TX: Giesler Broadcasting Supply, 5914 Maple, Houston, TX 77074 (713) 774-3314 Bernie Giesler

VA: Bob Dix, Inc., Highway 16 South, Marion, VA 24354 (703) 783-2001 Bob Dix

CANADA: Oakwood Audio, 652 King Edward St., Winnipeg, Man., Canada R3H 0P2 (204) 786-6715 Ron Paley

Lowel-Light Mfg., Inc., 475 Tenth Ave., New York, NY 10018 212-947-0950

Lumitrol, Ltd., 253 Merton St., Toronto, Ont., Canada M4S 1A7 416-485-4817

Lyon-Lamb Video Animation Systems, 4531 Empire Ave., Burbank, CA 91505 818-843-4831

Lyrec Mfg. A/S, Hollandsvej 12, Box 199, DK-2800 Lyngby, Denmark 02-876322

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M/A-Com Cable Home Group, P.O. Box 1729, Hickory, NC 28603 800-438-3331

M/A-Com Mac, Inc., 63 Third Ave., Burlington, MA 01803 617-272-3100

M/A-Com Microwave Power Devices, 330 Oser Ave., Hauppauge, NY 11788

MBB Helicopter Corp., P.O. Box 2349, West Chester, PA 19380 215-431-4150

MBI Broadcast Systems, 69 Ship St., Brighton, England BN1 1AE 0273-24928

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Magnasync/Moviola Corp., 5539 Riverton Ave., No. Hollywood, CA 91603

Magnatech-The DSD Co., Bradley Park, East Granby, CT 06026

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NY: Northeast Broadcast Lab, 15 Charles St., South Glens Falls, NY 12801 (800) 227-2093 William Bingham

NC: Southern Coastal Marketing Services, 800 N. Polk St., Pineville, NC 28134 (800) 438-9040 Bob Cauthen  
TX: National TV Systems Co., 2419 Rutland, Austin, TX 78758 (512) 837-1769 Cary Fitch  
WA: RF Specialties of Washington, 1718 N.E. 98th St., Seattle, WA 98115 (206) 525-6974 John Schneider  
WA: Broadcast Supply West, 7012 27th St. West, Tacoma, WA 98466 (206) 565-2301 Irv Law

**Motorola Communications, and Electronics Inc.,** 1301 E. Algonquin Road, Schaumburg, IL 60196

**Motorola Inc., AM Stereo,** 1216 Remington, Schaumburg, IL 60195 312-576-0554

**Mu-Del Electronics, Inc.,** 2426 Linden Lane, Silver Spring, MD 20910 301-587-6087

**Multiplex Technology,** 251 Imperial Highway, Fullerton, CA 92635 714-680-5848

**Multi-Track Magnetics, Inc.,** #3 Industrial Ave., Upper Saddle River, NJ 07458 201-327-9400

**Multi-Video Productions, Inc.,** 341 Broad St., Clifton, NJ 07013 201-742-2999

**The Music Director Programming Service,** P.O. Box 103, Indian Orchard, MA 01151 413-783-4626

**Mycro-Tek,** 303 N. West St., Wichita, KS 67203 316-945-5087

## N

**NEC America, Inc., Broadcast Equipment Div.,** 130 Martin Lane, Elk Grove Village, IL 60007 312-640-3792

Robert Curwin

### REGIONAL SALES CONTACTS:

EASTERN Sales Office: NEC America, Inc., 21 Brandywine Terrace, Morristown, NJ 07690 (201) 540-0819 Larry Litchfield  
WESTERN Sales Office: NEC America, Inc., 110 Rio Robles, San Jose, CA 95134 (408) 433-1259

**NTI America, Inc.,** 1680 N. Vine St., Los Angeles, CA 90028 213-462-8945

**NTP Elektronik A/S,** Theklavej 44, DK-2400 Copenhagen NV, Denmark 45-1-101222

**Nady Systems Inc.,** 1145 65th St., Oakland, CA 94608 415-652-2411

**Nagra Magnetic Recorders, Inc.,** 19 West 44th St., Room 715, New York, NY 10036 212-840-0999

**Nakamichi USA Corp.,** 19701 S. Vermont Ave., Torrance, CA 90502 213-538-8150

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FL: Crescendo Associates, Inc., 3597 S.W. 69th Terrace, Miramar, FL 33023 (305) 961-0886 Randy Fuchs

HI: Prorep Hawaii Corp., P.O. Box 10151, Honolulu, HI 96821 (808) 847-4038 Gary Nakanishi  
IL: Audio Resources, Inc., 778 Burr Oak Drive, Westmont, IL 60559 (312) 658-1180 Jim Starrin

MA: Professional Audio Associates, Inc., 33 'B' St., Burlington, MA 01803 (617) 229-6050 Dave Henderson  
MI: CM Sales, 31700 W. 12 Mile Road, Suite 206, Farmington Hills, MI 48018 (313) 553-8070 Casey McWilliams

MO: Rancilio Associates, P.O. Box 28869, St. Louis, MO 63123 (314) 631-3326 Chuck Rancilio  
NY: Audio Associates Corp., 114 East 32nd St., Suite 405, New York, NY 10016 (212) 689-5942 Frank Donnola

NC: Applied Audio, 26 Audubon Drive, Asheville, NC 28804 (704) 658-2291 Bob Edsall  
OH: J.B. Parent Co., 4701 Olentangy River Road, Columbus, OH 43214 (614) 459-5947 John Essig

PA: Signal Marketing, Inc., 237 Lancaster Ave., Suite 170, Devon, PA 19333 (215) 964-0606 Greg McMahon  
TX: Tenick & Associates, 2600 S.W. Freeway, Corporate Square 1, Suite 814, Houston, TX 77098 (713) 528-2005 Randy Tenick

WA: Northshore Marketing, Inc., 11000 Lake City Way N.E., Suite 310, Seattle, WA 98125 (206) 364-5444 Lewis Barrett

**Nalpak Video Sales Inc.,** 1937-C Friendship Drive, El Cajon, CA 92020 619-258-1200

**The Narda Microwave Corp.,** 435 Moreland Road, Hauppauge, NY 11788 516-231-1700

**National Teleconsultants,** 1651 Gardena Ave., Glendale, CA 91204 213-245-8000

**National Video Service,** 2150 Rheem Drive, Building G, Pleasanton, CA 94566 415-846-1500

**NAUTEL, Nautical Elec. Labs Ltd.,** RR #1 Tantallon, Halifax County, NS, Canada B0J 3J0 902-823-2233

**Neilson-Hordell Ltd.,** Unit 11 Central Trading Estate, Staines, Middlesex England TW18 4UU 0784-56456

**L. E. Nelson Corp., Studio Design Consultants,** 5451 Ukiah Circle, Las Vegas, NV 89118 702-368-0661

**Nemal Electronics Int'l.,** 1224 NE 14th Ave., No. Miami, FL 33161 305-893-3924

**NEOTEK Corp.,** 1154 W. Belmont Chicago, IL 60657 312-929-6699

**NETCOM,** 1702 Union St., San Francisco, CA 94123 415-921-1441

**Network Production Music, Inc.,** 4429 Morena Blvd., San Diego, CA 92117 619-272-2011

**Neumade Products Corp.,** 720 White Plains Road, Scarsdale, NY 10583 914-725-4900

**Neutrik Products,** 1913 Atlantic Ave., Manasquan, NJ 08736 201-223-9400

**Rupert Neve Inc.,** Berkshire Industrial Park, Bethel, CT 06801 203-744-6230

Barry Roche, President

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CA: Rupert Neve Inc., 7533 Sunset Blvd., Hollywood, CA 90046 (213) 874-8124 B Morgan Martin, Reg. Mgr.  
CANADA: Sonotechnique, 2585 Bates, Suite 304, Montreal, Que., Canada H3S 1A9 (514) 739-3368

ENGLAND: Neve Electronics Int'l., Cambridge House, Melbourn, Royston, Hertfordshire England SG8 6AU 44763-60776 Laci Nester-Smith, Mgr. Director  
WEST GERMANY: Rupert Neve GmbH, 6100 Darmstadt, Bismarckstrasse 114, 06151-81764

**Newman-Kees Measurements, Engineering & Installations,** Route 4 Box 326, Slate Road, Evansville, IN 47712 812-963-3294

**Nexus Engineering Corp.,** 4181 McConnell Drive, Burnaby, BC, Canada V5A 3J7 604-420-5322

**Nisus Video Inc.,** 6329 Lomas Blvd. N.E., Albuquerque, NM 87110 505-268-4587

**Nitty Gritty, Record Care Products, Inc.,** 4650 Arrow Highway F4, Montclair, CA 91763

**Norpak Corp.,** 10 Hearst Way, Kanata, Ont., Canada K2L 2P4 613-792-4164

**North American Soar Corp.,** 1126 Cornell Ave., Cherry Hill, NJ 08002 609-488-1060

**North Hills Electronics, Inc.,** Alexander Place, Glen Cove, NY 11542

**North Wind Power Co., Inc.,** P.O. Box 556, Moretown, VT 05660 802-496-2955

**Northwest Monitoring Service,** P.O. Box 1042, Pendleton, OR 97801 503-276-2281

**Nortronic Co., Inc., Consumer Products Div.,** 8101 Tenth Ave. N., Minneapolis, MN 55427 612-545-0401

**Noumenon Corp.,** 512 Westline Drive, Alameda, CA 94501 415-521-2145

**Nova Electric Mfg. Co., Inc.,** 263 Hillside Ave., Nutley, NJ 07110 201-661-3434

**Nova Systems, Inc.,** 20 Tower Lane, Avon, CT 06001 203-677-5252



Fred A. Nudd Corp., P.O. Box 475,  
Ontario, NY 14519 315-524-  
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Nurad Inc., 2165 Druid Park Drive,  
Baltimore, MD 21211 301-  
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OKI Telecom, Cellular Telephone Div.,  
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Esprillo, Rancho Bernardo, CA  
92127 619-485-9300

Oktel Corp., 1220 Page Ave., Fre-  
mont, CA 94538 415-490-3100

Old Dominion Broadcast Eng. Service,  
1101 Front St., Richmond, VA  
23222 804-321-4506

Olesen, 1535 Ivar Ave., Hollywood, CA  
90028 213-461-4631

Omicron Video, 9700 Owensmouth  
Ave., Chatsworth, CA 91311  
818-700-0742

Omni Craft, Inc., P.O. Box 1069, Pala-  
tine, IL 60078 312-359-9240

Omni Q Inc., 925 Boblett, Blaine, WA  
98230 206-384-1750

Omnimount Systems, 10850 Vanowen  
St., No. Hollywood, CA 91605  
818-766-9000

Omnimusic, 52 Main St., Port Washing-  
ton, NY 11050 516-883-0121

One Pass Film & Video, One China  
Basin Building, San Francisco, CA  
94107 415-777-5777

Opamp Labs, Inc., 1033 N. Sycamore  
Ave., Los Angeles, CA 90038  
213-934-3566

Optel Communications, Inc., 322  
Eighth Ave., New York, NY 10001  
212-741-9000

Optical Recording Div./3M, 223-  
5S-01 3M Center, St. Paul, MN  
55144-1000 612-733-2142

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San Francisco, CA 94107  
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Lois Osborne

Osram Sales Corp., P.O. Box 7062,  
Newburgh, NY 12550

Otari Corp., 2 Davis Drive, Belmont, CA  
94002 415-592-8311

## P

PMG Diversified, P.O. Box 1069, Pala-  
tine, IL 60078 312-359-9240

Pace, Inc., 9893 Brewers Court, Lau-  
rel, MD 20707 301-490-9860

Pacific Recorders & Eng. Corp., 2070  
Las Palmas Drive, Carlsbad, CA  
92008 619-438-3911

Packaged Lighting Systems, Inc., P.O.  
Box 285, Walden, NY 12586  
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PAG Ltd., Power Div., 565 Kingston  
Rd., London, England SW20 8SA  
07-543-3131

Paladin Corp., 3543 Old Conejo Road,  
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91320 805-499-0318

Palomar Engineers, 1924F W. Mission  
Road, Escondido, CA 92025  
619-747-3343

Paltex Ltd., 2752 Walnut Ave., Tustin,  
CA 92680 714-838-8833

Panasonic Industrial Co., Audio-Video  
Systems Group, One Panasonic Way,  
Secaucus, NJ 07094 201-  
348-7397

Panasonic Industrial Co., Broadcast  
Systems, One Panasonic Way,  
Secaucus, NJ 07094 201-  
348-7109

Parsons Mfg. Corp., 1055 O'Brien  
Drive, Menlo Park, CA 94025  
415-324-4226

Patch Bay Designation, P.O. Box 6278,  
Glendale, CA 91205 818-  
241-5585

Penny & Giles, 1640 Fifth St., Suite  
224, Santa Monica, CA 90401  
213-292-0014

Pep Inc., 25 West 54th St., New York,  
NY 10019

Perma Power Electronics, Inc., 5615  
Howard Ave., Chicago, IL 60648  
312-647-9414

Perrott Eng. Labs, Inc., 7201 Lee  
Highway, Falls Church, VA 22046  
703-532-0700

PESA America Inc., 6073 N.W. 167th  
St., Miami, FL 33015 305-  
556-9638

PESA Electronica, Albala, 12, 28037  
Madrid, Spain 7540078

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Suite C-4, Miami, FL 33015 (305)  
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AUSTRALIA: ADT Electronics, 26 Hotham  
Parade, Artamon 2064, Sydney  
439-74-39 Keith Ramsay

CANADA: M.S.C. Electronics, 147 W.  
Beaver Creek Road, Richmond Hill, Ont.,  
Canada 14B 1C6 731-9500 David La-  
Frenais

CHINA: Chinacom Consulting & Trading,  
Witty Ciaf. Building 1A-1J, Tung Choi St.,  
Kowloon, Hong Kong 31 99.86 Teddie  
Law

COLOMBIA: Seel, Crta. 9 no 74-08 Oficina  
402, Bogota 128723 Ing Carlos Fer-  
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COSTA RICA: Sonesco, Apto. 946, Central  
Colon, San Jose, 282343 Pierre Balde

ENGLAND: Circuitree, 21 Cunningham St.,  
London W4 5ER, 3816688 Michael Mon-  
tag

FRANCE: S.A.V., 22, Rue Rene Boulanger,  
75010 Paris 2405522 Ismael Sales

HOLLAND: Holland Video Research, Her-  
lige Geestlaan, 6, 2465 AX Rijsater-  
oude 01713-4640 Hans Baker

ISRAEL: Effram Office Machines, 3 Ahu-  
zart-Bayit St., Tel Aviv 61291 661456 Mr.  
E. Jaegermann

ITALY: Tecom Video System, Via V.  
Veneto, 31, 20024 Garbanete, Milan  
9957846 Helmut Lechner

JORDAN: Middle East Electronics, P.O. Box  
1991, Amman 661534 Youssef Abu Zan-  
nad

PERU: Inunsa, Av. Arenales, 1080 Of.  
603 Lima 718990 D. Oswaldo Siles

SOUTH AFRICA: Radiokom, Pinegwe  
2123, P.O. Box 56310, Johannesburg  
7891400 Angus Anderson

VENEZUELA: Eprotel, Av. Circunvalacion  
del Sol T-840, Caracas 9874590 D. Ar-  
naldo Gonzalez

WEST GERMANY: F S G Vertrieb, Obers-  
chleibheim Sonnestr 5, 8042 Munchen  
315.25.05 Norbert Riesener

Philatron Int'l., 15315 Cornet Ave.,  
Santa Fe Springs, CA 90670

Philips Television Systems, Inc., 900  
Corporate Drive, Mahwah, NJ  
07430 201-529-1550

Philips Test & Measuring Instruments,  
85 McKee Drive, Mahwah, NJ  
07430 201-529-3800

Phoebus Mfg., 2800 Third St., San  
Francisco, CA 94107

Phoenix Audio Lab, Inc., 91 Elm St.,  
Manchester, CT 06040

Photo Research, Div. of Kollmorgen  
Corp., 3000 N. Hollywood Way,  
Burbank, CA 91505 818-843-  
6100

Piclear, Inc., 180 E. Prospect Ave.,  
Mamaroneck, NY 10543 914-  
698-0258

Pinzone Communications Products  
Inc., P.O. Box 540, Newbury, OH  
44065 304-296-4493

Pioneer Technology Corp., 1021 N.  
Lake St., Burbank, CA 91502  
818-842-7165

Plastic Capacitors, Inc., 2623 N. Pul-  
saki Road, Chicago, IL 60639  
312-489-2229

Plastic Reel Corp. of America, Brisbin  
Ave., Lyndhurst, NJ 07071  
201-933-5100

PLISCH-Nachrichtentechnik, Großer  
Stellweg 13, Postfach 1168,  
D-6806 Viernheim, West Germany  
06204-7070

Polar Research, Inc., P.O. Box 781,  
Thief River Falls, MN 56701

Polar Video Ltd., 2-5 Powis Mews,  
London, England W11 01-727-  
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Polyline Corp., 1233 Rand Road, Des  
Plaines, IL 60016 312-298-5300

Ray Kaiser

Porta-Pattern Inc., P.O. Box 38945,  
Los Angeles, CA 90038 213-  
461-3561

Portable Energy Products, Inc., 1875  
S. Pearl St., Denver, CO 80210

Potomac Instruments, Inc., 932 Phila-  
delphia Ave., Silver Spring, MD  
20910

David G. Harry, V.P.

Power Pak Systems, A Haltom Int'l.  
Co., 1200 Everman Parkway, Ft.  
Worth, TX 76140 817-293-1761

Bob Richards

Precision Echo, 3105 Patrick Henry  
Drive, Santa Clara, CA 95054  
408-988-0516

Pro-Bel Ltd., Danehill, Lower Earley,  
Reading, Berks, England RG6 4PB  
0734-866123

Procart, 7012 27th St. West, Tacoma,  
WA 98466 206-565-4546

Programming Plus, P.O. Box 90486,  
Pacific Beach, CA 92109-0860  
619-272-PLUS

ProTech Audio Corp., Flowerfield  
Building 1, St. James, NY 11780  
516-584-5855

Provisional Battery Co. Inc., 3941  
Oakcliff Industrial Court, Atlanta, GA  
30340 404-449-5900

Pye TVT Ltd., Broadcast Co. of Philips,  
Box 41, Coldhams Lane, Cambridge,  
England CB1 3JU

Pye TVT Ltd. Inquiries for U.S.A.,  
Contact Philips TV Systems, Inc.,  
900 Corporate Drive, Mahwah, NJ  
07430 201-529-1550

## Q

QEI Corp., 1 Airport Drive, Williams-  
town, NJ 08094 609-728-2020

John Tiedeck

### REGIONAL SALES CONTACTS:

AR: Radcom, Inc., P.O. Box 191, Eureka  
Springs, AR 72632 (501) 253-8556 Tom  
Butler

LA: Audiomedica Associates, P.O. Box  
29264, New Orleans, LA 70189 (504)  
586-0140 Corey Meyer

MI: Audio Broadcast Group, Inc., 2342 S.  
Division Ave., Grand Rapids, MI 49507  
(616) 452-1596 Dave Veldsma

NM: Dyma Engineering, P.O. Box 1535,  
Los Lunas, NM 87031 (505) 865-6700  
Wiley Cunningham

NY: Northeast Broadcast Labs, P.O. Box  
1176, So. Glens Falls, NY 12801 (518)  
793-2181 Bill Bingham

NC: SCMS, Inc., 800 N. Polk St., Pineville,  
NC 28134 (704) 889-4508 Bob Cauthen

WA: RF Specialties of Wash., Inc., 1718  
N.E. 98th St., Seattle, WA 98115 (206)  
525-6974 John Schneider

QSC Audio Products Inc., 1926 Pla-  
centia Ave., Costa Mesa, CA 92627

QSI Systems Inc., 12 Linscott Road,  
Woburn, MA 01801 617-938-  
1403

Q-TV, 104 East 25th St., New York,  
NY 10010 212-460-9050

Quanta Corp., 2440 S. Progress Drive,  
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801-974-0992

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FL: Quanta Corp., 3628 Lannie Road, Jack-  
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30340 (404) 493-3913 Roy Thomas

OH: Quanta Corp., 16006 Waterloo Road,  
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OK: Quanta Corp., 1535 S. Memorial  
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627-4151 Mel Williams

WA: Quanta Corp., 6627 158th Place,  
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745-3993 Christie Mueller

HOLLAND: Quanta Int'l., Postbox 289,  
1430 AG Aalsmeer, The Netherlands (31)  
2977-23473 David Hughes

Quante Corp., 3350 Scott Blvd., Build-  
ing 15, Santa Clara, CA 95051  
408-727-2077

Quantum Audio Labs, Inc., 1909 Riv-  
erside Drive, Glendale, CA 91201  
818-841-0970

Questech Ltd., Eastheath Ave., Wok-  
ingham Berks, England RG11 2PP  
0734-787209

Quick-Set Inc., 3650 Woodhead Drive,  
Northbrook, IL 60062

## R

R-Columbia Products Co., Inc., 2008  
St. Johns Ave., Highland Park, IL  
60035 617-994-4213

## Manufacturers' Addresses

- R.A.C. Corp.**, 31W037 North Ave., West Chicago, IL 60185 312-293-0661
- RCA American Communications**, 4 Research Way, Princeton, NJ 08540 609-987-4200
- RCA Broadcast Systems**, P.O. Box 900, Gibbsboro, NJ 08026 609-435-2924
- RCA Distributor & Special Products Div.**, 200 Clements Bridge Road, Deptford, NJ 08096
- RCA New Products Div., Tube Operations**, New Holland Ave., Lancaster, PA 17604-3140 717-295-6028
- RCI (Recording Consultants Inc.)**, 8550 Second Ave., Silver Spring, MD 20910 301-587-1800
- R & D Station Service**, 64 Richdale Ave., Cambridge, MA 02140-2629 617-864-4298
- RE Instruments Corp.**, 31029 Center Ridge Road, Westlake, OH 44145 216-871-7617
- RF Technology, Inc.**, 145 Woodward Ave., So. Norwalk, CT 06854 203-866-4283
- RKO Tape Corp.**, 3 Fairfield Crescent, West Caldwell, NJ 07006 201-575-8484
- RMS Electronics, Inc.**, 50 Antin Place, Bronx, NY 10462 212-892-1000
- R/SCAN Corp.**, 511 11th Ave. South, Minneapolis, MN 55415 612-333-1424
- RTI-Research Tech. Int'l.**, 4700 Chase Ave., Lincolnwood, IL 60646 312-677-3000
- RTS Systems, Inc.**, 1100 W. Chestnut St., Burbank, CA 91506 818-840-7119  
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- Radical Electronics**, 2872 Hartland Road, Falls Church, VA 22043 703-573-6948
- Radio Arts Inc.**, 210 N. Pass Ave., Suite 104, Burbank, CA 91505
- Radio Engineering Co., Consultants**, P.O. Box 420, Santa Ynez, CA 93460
- Radio Programming/Management**, 25140 Lahser Suite 232, Southfield, MI 48034 313-358-1040
- Radio Systems Inc.**, 5113 W. Chester Pike, Edgemont, PA 19028 215-356-4700
- Radiotechniques, Consulting Engineers**, 402 Tenth Ave., Haddon Heights, NJ 08035-1838 609-546-0472
- Radmar, Inc.**, 1263-B Rand Road, Des Plaines, IL 60016
- Raines Engineering**, 13420 Cleveland Drive, Potomac, MD 20850 301-279-2972
- Ram Broadcast Systems**, 346 W. Colfax St., Palatine, IL 60067 312-358-3330
- Ramko Research Inc.**, 11355-A Folsom Blvd., Rancho Cordova, CA 95670 916-635-3600
- Rank Cintel**, Watton Road, Ware Herts, England SG12 OAE 920-3939  
*David Fenton*
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- Rank Precision Industries Inc.**, 13340 Saticoy St., No. Hollywood, CA 91605 818-765-7265
- Rank Precision Industries Inc.**, 260 N. Route 303, West Nyack, NY 10094 914-353-1914
- Raven Screen Corp.**, 124 East 124th St., New York, NY 10035
- Re: DB Co., A Div. of Pierce Industries Inc.**, 3120 E. Pico, Los Angeles, CA 90023 213-264-7855
- Re-Play Video Cartridge Service**, 328 Merritt Ave., Pittsburgh, PA 15227 412-885-0959
- The Real World Tech. Group, Inc.**, 130 McCormick Ave., Suite 109, Costa Mesa, CA 92626 714-957-1061  
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- REGIONAL SALES CONTACTS:**  
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NJ: Joseph Nigro & Associates, Inc., 25 Patton Court, Wayne, NJ 07470 (201) 790-1415 Joe Nigro  
AUSTRALIA: Syntec Int'l. Pty. Ltd., P.O. Box 165, North Sydney Australia 2060 011-61-2-406-4700 Bob Sloss  
CANADA: Corvis Communications, Inc., 420 Esna Park Drive, Unit 8, Markham, Ont., Canada L3R 3K2 (416) 475-7575 Jim Shaw  
GREAT BRITAIN: Technical Projects Ltd., Unit 2, Samuel Whites Industrial Estate, Medina Rd., Cowes, Isle of Wight Great Britain PO31 7LP 011-44-983-291-553 Sam Wise*
- Rebis Audio Ltd.**, Kinver St., Stourbridge, West Midlands, England DY8 5AB 0384-71865
- Recortec, Inc.**, 275 Santa Ana Court, Sunnyvale, CA 94086 408-737-8441  
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- Rees Associates, Inc.**, 4200 Perimeter Center Drive, Oklahoma City, OK 73112 405-946-9800
- REGIS**, P.O. Box 244, Biella, Italy 13051 39-15-22457
- Register Data Systems**, P.O. Box 1246, Perry, GA 31069 912-987-2501
- Reliance Comm/Tec Group**, P.O. Box 99502, Cleveland, OH 44199 800-245-4501
- Reliance Electric Co.**, P.O. Box 99502, Cleveland, OH 44199 800-245-4501
- Reliance Plastics & Packaging Div.**, 225 Belleville Ave., Bloomfield, NJ 07003 201-748-2222
- Richmond Sound Design, Ltd.**, 1234 West 6th Ave., Vancouver B.C., Canada V6H 1A5 604-734-1217
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- Rohde & Schwarz-Polarad, Inc.**, 5 Delaware Drive, Lake Success, NY 11042 516-328-1100
- ROHN**, P.O. Box 2000, Peoria, IL 61656 309-697-4400
- Roll-A-Reel Co. Inc.**, 7881 Reading Road, Cincinnati, OH 45237 513-761-8500
- C.N. Rood B.V., Broadcasting Div.**, P.O. Box 42, 2280 AA Rijswijk ZH, Holland 70-99 63 60
- Rosco Labs Inc.**, 36 Bush Ave., Port Chester, NY 10573 914-937-1300
- Roscor Corp.**, 1061 Feehanville Drive, Mt. Prospect, IL 60056 312-539-7700
- Rosner TV Systems, Inc.**, 250 West 57th St., New York, NY 10107 212-246-2850
- Ross-American Logic Systems Inc.**, 20540-D Superior St., Chatsworth, CA 91311 818-709-4195
- Ross Video Ltd.**, P.O. Box 220, Iroquois, Ont., Canada KOE 1K0 613-652-4886
- Ruslang Corp.**, 320 Dewey St., Bridgeport, CT 06605 203-378-3233
- Russco Electronics Mfg. Inc.**, 5690 E. Shields, Fresno, CA 93727
- Ryley Communications**, 39 Haviland Road, Wimborne Dorset, England BH21 7SA 0202-871313

## S

- S.C.V. Audio**, Box 50056, Paris Nord 11 95947 Roissy Ch. de Gaulle, Cedex, France 863-2211
- SCV Inc.**, 414 N. Sparks St., Burbank, CA 91506 818-843-7567
- SL Waber, Div. of SL Industries, Inc.**, 300 Harvard Ave., Westville, NJ 08093 609-456-5400
- SSAC Inc.**, P.O. Box 395, Liverpool, NY 13088-0395 315-622-1000
- SWR, Inc.**, P.O. Box 215, Goffstown, NH 03045 603-668-0404
- Sachtler Corp. of America**, 400 Oser Ave., Hauppauge, NY 11788 516-231-0033
- Sachtler GmbH**, Dieselstrasse 16, D-8046 Garching, West Germany 89-3204041
- Safety & Security Systems Div./3M**, 223-3N-01 3M Center, St. Paul, MN 55144-1000 612-733-5050
- Saki Magnetics, Inc.**, 8650 Hayden Place, Culver City, CA 90230 213-559-6704
- Howard W. Sams & Co., Inc.**, 4300 West 62nd St., Indianapolis, IN 46268
- Samson Music Products**, 124 Fulton Ave., Hempstead, NY 11550 516-489-2203
- SatCom Technologies, Inc., An RSI Co.**, 2912 Pacific Drive, Norcross, GA 30071 404-448-2116
- SATT Communications AB**, P.O. Box 32701, S-12611 Stockholm, Sweden 468-81-0100
- Sauppe Media, Inc.**, 1625 Pegfair Drive, Pasadena, CA 91103 818-792-9840
- Savannah Luggage Works**, P.O. Box 447, Vidalia, GA 30474
- Scala Electronic Corp.**, P.O. Box 4580, Medford, OR 97501 503-779-6500
- Scantex Labs Inc.**, P.O. Box 338, Pierrefonds, Que., Canada H9H 4L1 514-626-8943
- Schafer World Communications Corp.**, P.O. Box 31, Marion, VA 24354 703-783-2001
- Schmid Fernmeldetechnik Zuerich**, Rietterstrasse 6, CH-8002 Zuerich, Switzerland 411-201-2353
- Schneider Corp. of America**, 400 Crossways Park Drive, Woodbury, NY 11797 516-496-8500
- Jos. Schneider Optische Werke, Kreuznach GmbH & Co. KG**, Ringstrasse 132, Postfach 947, D-6550 Bad Kreuznach, West Germany 0671-6010
- Edward A. Schober, P.E., Radio Consulting Engineer**, 402 Tenth Ave., Haddon Heights, NJ 08035-1838 609-546-0472
- Schoeps/Posthorn Recordings**, 142 West 26th St., 10th Floor, New York, NY 10001 212-242-3737
- Schuessler Case Co., Inc.**, P.O. Box 39066, Chicago, IL 60639 312-227-0027
- Schwem Technology, Inc.**, 3305 Vincent Road, Pleasant Hill, CA 94523 415-935-1226
- Scientific-Atlanta, Inc.**, P.O. Box 105600, Atlanta, GA 30348
- Scientific-Atlanta, Optima Div.**, 2166 Mtn. Industrial Blvd., Tucker, GA 30084 404-939-6340
- Scientific Systems, Inc.**, 92 Westwood Drive, Toms River, NJ 08753 201-255-2230  
*Douglas Fink*
- The Screen Works, Ltd.**, 3925 N. Pulsaki Road, Chicago, IL 60641 312-588-8380
- Scribe Recorders, Inc.**, 835 Forest Ave., Wilmette, IL 60091 312-256-8710
- The L.J. Scully Mfg. Corp.**, 138 Hurd Ave., Bridgeport, CT 06604 203-368-2332
- Search & Compare**, 600-C E. Montana, Las Cruces, NM 88001 505-525-2956
- SECOA**, 2731 Nevada Ave. N., Minneapolis, MN 55427 612-546-6313
- SED Systems Inc.**, P.O. Box 1464, Saskatoon, Sask., Canada S7K 3P7 306-664-1808
- See Hear Industries**, 419 W. Walnut, Gardena, CA 90248 213-516-0315
- Sea-Tex Div., Si-Tex Marine Electronics Inc.**, P.O. Box 6700, Clearwater, FL 33518 813-535-4681
- Seiko/KMD Sound Electronics**, P.O. Box 507, Bloomfield, CT 06002-0507 203-243-7853

**Selco Products Co.**, 7580 Stage Road, Buena Park, CA 90621 213-921-0681

**Sencore Inc.**, 3200 Sencore Drive, Sioux Falls, SD 57107 605-339-0100

**Sennheiser Electronic Corp.**, 48 West 38th St., New York, NY 10018 212-944-9440

Tony Tudisco, VP Sales

**Sescom, Inc.**, 1111 Las Vegas Blvd. N., Las Vegas, NV 89101 702-384-0993

**Setcom Corp.**, 1400 Stierlin Road, Dept. BE, Mountain View, CA 94043 415-965-8020

**SFENA Corp.**, 2617 Aviation Parkway, Grand Prairie, TX 75051 214-988-8000

**Shallico, Inc.**, P.O. Box 1089, Smithfield, NC 27577 919-934-3135

Mike Sutton

**REGIONAL SALES CONTACTS:**

CA: WCV/Raltech, 9324 Eton Ave., Chatsworth, CA 91311 (818) 700-0933 Larry Garcy

CA: Fischer Associates, 3089 Lawrence Expressway, Santa Clara, CA 95051 (408) 733-7350 Bud Fischer

FL: Southeast Electronics, 1125 Rosselle St., Jacksonville, FL 32203 (904) 356-3007 H. Clark Overton

IA: S & O Sales, 3744 Tanager Drive N.E., Cedar Rapids, IA 52402 (319) 393-1845 Joseph Swanson

MD: Holden Engineering Sales, 1133 Gypsy Lane W., Towson, MD 21204 (301) 823-3763 Al Holden

MA: MPS Electronics, Inc., 1410 Providence Highway, Norwood, MA 02062 (617) 769-8700 Nick Patsos

MI: Audio Distributors, Inc., 2342 Division Ave. S., Grand Rapids, MI 49507 (616) 452-1596

MN: R-J Inc., 7514 Oliver Ave. S., Minneapolis, MN 55423 (612) 866-3661 Robert Johnson

NY: Dan Hurley Sales, P.O. Box 26, New York, NY 14534 (716) 586-6159 Dan Hurley

NY: HLJ Associates, 484 Merrick Road, Lynbrook, NY 11563 (516) 599-2999 Herb Johnson

NY: Lothar Sanford Corp., 1633 Broadway, Room 1607, New York, NY 10019 (212) 757-3881 Renee Landau

OH: Allen Nace Co., 14 Tate St., Englewood, OH 45322 (513) 836-0931 George Zaebst

OH: Allen Nace Co., P.O. Box 174, Richfield, OH 44286 (216) 659-7178 Allen Nace

OH: United Radio, Inc., Summit Road & Reinhold Drive, Cincinnati, OH 45237 (513) 761-4030 Ed Moore

PA: Philadelphia Electronics, 112 North 12th St., Philadelphia, PA 19107 (215) 568-7400 David Shaw

CANADA: Braydon Electro Ltd., 2925 de Minciac, St. Laurent, Montreal, Que., Canada H4S 1L8 (514) 332-5650 Don MacKenzie

**Sharb Electronics**, 192-08 90th Ave., Hollis, NY 11423 718-479-3011

**Sharp Electronics Corp.**, Broadcast Group, 10 Sharp Plaza, Paramus, NJ 07652 201-265-5548

**Shintron Co. Inc.**, 144 Rogers St., Cambridge, MA 02142 617-491-8700

**Shively Laboratories, Div. of Howell Labs, Inc.**, 36 Harrison Road, Bridgton, ME 04009 207-647-3327

C. Peabody

**REGIONAL SALES CONTACTS:**

AR: Radcom Inc., P.O. Box 191, Eureka Springs, AR 72632 (501) 253-8556 Tom Butler

CA: Macrom Inc., P.O. Box 66507, Scotts Valley, CA 95066 (408) 438-4273 Martin Jackson

FL: Beattie & Associates, 3317 Barrow Hill Trail, Tallahassee, FL 32308 (904) 893-1382 Bob Beattie

ID: Hall Electronics, P.O. Box 5031, Boise, ID 83705 (208) 343-3088 Larry Hall

KY: Electronics Labs, Inc., 800 S. Fourth St., Suite 206, Louisville, KY 40203 (502) 583-1312 Clarence Henson

LA: Audio Media Associates, P.O. Box 29264, New Orleans, LA 70189 (504) 242-8014 Corey Meyer

MI: H.M. Dyer Electronics, Inc., 48647 Twelve Mile Rd., Novi, MI 48050 (313) 349-7910 Leo Rymarz

NM: Dyma Engineering, P.O. Box 1535, Los Lunas, NM 87031 (505) 865-6700 Carroll Cunningham

NY: Northeast Broadcast Lab, Inc., P.O. Box 1176, South Glen Falls, NY 12801 (518) 793-2181 Bill Bingham

NC: Southern Coastal Marketing Services, 800 N. Polk St., Pineville, NC 28134 (704) 889-4508 Bob Cauthen

PA: Radio Systems, Inc., 5113 W. Chester Pike, Edgemont, PA 19028 (215) 356-4700 Pete Koenig

WI: Enterprises, Inc., 155 Executive Drive, Brookfield, WI 53005 (414) 782-7996 Robert Gorjance

BRAZIL: Savana Comunicacoes Ltd., Rua Visconde de Pirajá, 547-Gr. 1120, Rio de Janeiro, Brazil CEP 22410 011-55-21-274-5009 Claus Eppenstein

CANADA: MSC Electronics, Ltd., 147 W. Beaver Creek Road, Richmond Hill, Ont., Canada L4B 1C6 (416) 731-9500 David LaFrenais

ITALY: SIRA s.r.l. Sistemi Radio, 20040 Burago di Molgora (Milan), Via Primo Villa 9, Italy 011-39-39-66-2223 Aldo Laus

SOUTH AUSTRALIA: Hills Industries, Ltd., 944-956 South Road, Edwardstown, South Australia 5039 (08) 297-3888 Chris Jaeger

**Shook Electronic Enterprises, Inc.**, 6630 Topper Parkway, San Antonio, TX 78233 512-653-6761

**Shure Brothers Inc.**, 222 Hartrey Ave., Evanston, IL 60202-3696 312-866-2523

**Siecor Corp.**, 489 Siecor Park, Hickory, NC 28603-0489 704-327-5964

**Sigma Electronics, Inc.**, 1830 State St., East Petersburg, PA 17520

**SignLine, P.O. Box 1270**, Cedar Rapids, IA 52406 800-553-7901

**Sims Vibration Dynamics**, 17724 15th Ave. N.E., Seattle, WA 98155 206-362-0700

**Skotel Corp.**, 1445 Provencher, Brossard, Que., Canada J4W 1Z3 514-465-8990

**Robert Slye Electronics**, 3415 N. Washington Blvd., Arlington, VA 22201 703-525-7272

**Smith Electronics, Inc.**, 8200 Snowville Road, Cleveland, OH 44141

**Snell & Wilcox, Electronic Consultants Ltd.**, 57 Jubilee Road, Waterloo, Ont., Canada N2L 7R7 705-262060

**Softpedal Inc., Automated Systems Consultants**, 2690 Cumberland Parkway, Suite 350, Atlanta, GA 30339 404-435-4880

**Solid Electronics Labs**, 220 Brookthorpe Circle, Broomall, PA 19008 215-353-9449

**Solid State Logic**, Churchfields, Stonesfield, Oxford, England OX7 2PQ 099-389-8282

Antony David

**REGIONAL SALES CONTACTS:**

CA: Solid State Logic Inc., 6255 Sunset Blvd., Los Angeles, CA 90028 (213) 463-4444 Andy Wild

NY: Solid State Logic Inc., 200 West 57th St., New York, NY 10019 (212) 315-1111 Piers Plaskitt

AUSTRALIA: Syntec Int'l. Pty. Ltd., 53 Victoria Ave., Chatswood, Sydney, Australia 2067 N.S.W. 61-2-406-4700 Bob Sloss

FRANCE: Simsen Audio Services, 73 Rue De L'Evangile, 75886 Paris, France Cedex 18 33-1-245-1840 Frederic Coeffin

HONG KONG: Solid State Logic (Far East) Ltd., 22 Austin Ave., Austin Tower Room 301, Tsimshatsui, Kowloon Hong Kong 3-7212162 Bingo Tso

ITALY: Audio Int'l. S.R.L., Viale Campania 39, 20133 Milano, Italy 39-2/738-4751 Roberto Beppato

JAPAN: Studer Revox Japan Ltd., 1-22-2 Yoyogi, Shibuya-Ku, Tokyo 151 Japan 81-37320-1101 Takeo Asano

SWITZERLAND: Solid State Logic Ltd., Avenue Druey 12, 1018 Lausanne Switzerland 41-21/36-4661 Arnaldo Fedrigo

**Soll, Inc.**, 401 East 74th St., New York, NY 10021 212-988-0290

**H. A. Solutec Ltd.**, 4360 Iberville St., Montreal, Que., Canada H2H 2L8 514-524-6893

**Sonar Radio Corp.**, 3000 Stirling Road, Hollywood, FL 33021 305-981-8800

**Sonifex Ltd.**, 15 College St., Irthingborough, Northamptonshire, England NN9 5TU 0933-650700

**Sono-Mag Corp.**, 1833 W. Hovey Ave., Normal, IL 61761 309-452-5313

**Sonosax SA**, Rte Cantonale 116, CH-1025 St-Sulpice, Switzerland 021-35.35.01

**Sony Broadcast Products Co.**, 1600 Queen Anne Road, Teaneck, NJ 07666 201-833-5200

Wm. Powers, V.P. Sales

**REGIONAL SALES CONTACTS:**

EASTERN Region: 15 Essex Road, Paramus, NJ 07652 (201) 368-5111 Lenny Staskiewicz, Reg. Mgr.

MIDWEST Region: 500 Park Blvd., Hamilton Lakes, Itasca, IL 60143 (312) 773-6047 David Doherty, Reg. Mgr.

SOUTHERN Region: 2300 Peachford Road, Suite 3000, Atlanta, GA 30338 (404) 451-7671 Andy Kryworuchenko

SOUTHWEST Region: 1320 Walnut Hill Road, Irving, TX 75038 (214) 659-3600 Charlie Taylor, Reg. Mgr.

WESTERN Region: 2820 W. Olive Ave., Burbank, CA 91505 (818) 841-8711 Bob Manahan, Reg. Mgr.

Hl: 1020 Auahi St., Honolulu, HI 96814 (808) 531-5981 T. Katoh

**Sony Professional Audio Products**, One Sony Drive, Park Ridge, NJ 07656 201-930-1000

Phil DeSantis

**REGIONAL SALES CONTACTS:**

CA: Sony-Western Region, 700 W. Artesia Blvd., Compton, CA 90220 (213) 537-4300 Jim Lucas

IL: Sony-Central Region, 500 Park Blvd., Itasca, IL 60143 (312) 773-6000 Ernie DeLos Santos

NJ: Sony-Northern Region, 15 Essex Road, Paramus, NJ 07652 (201) 368-5000 Mike Faulkner

TN: Sony-Southern Region, 2603 Elm Hill Pike, Suite N, Nashville, TN 37214 (615) 883-8140 Graeme Goodall

**Sony Tape Sales Co.**, One Sony Drive, Park Ridge, NJ 07656 201-930-1000

**Sony Video Communications**, One Sony Drive, Park Ridge, NJ 07656

**Soper Sound Music Library**, Soper Sound Media Music, P.O. Box 498, Palo Alto, CA 94301 415-321-4022

**Sorensen Co.**, A Unit of Raytheon Co., 676 Island Pond Road, Manchester, NH 03103

**Sound Ideas, Sound Effects Library**, 86 McGill St., Toronto, Ont., Canada M5B 1H2 416-977-0512

**Sound Technology**, 1400 Dell Ave., Campbell, CA 95008 408-378-6540

Kent McGuire

**REGIONAL SALES CONTACTS:**

CA: Dave Daniels Sales, 11371 Harkers Court, Cypress, CA 90630 (714) 891-5048 Dave Daniels

CA: Funke & Associates, 908 Marilyn Drive, Campbell, CA 95008 (408) 866-0648 Sonny Funke

IL: Steffy Marketing Associates, 1955 Raymond Drive, Suite 103, Northbrook, IL 60062 (312) 480-3575 Bill Steffy

KS: William Menezes & Associates, Inc., 9100 Cody, Overland Park, KS 66214 (913) 541-9699 Bill Menezes

MA: Hartmann Sales (New England), 1612 Worcester Road, Suite 625A, Framingham, MA 01701 (617) 875-4199 Steve Hartmann

MI: Raymond O. Wright & Associates, Inc., 17348 W. 12 Mile Rd., Suite 104, Southfield, MI 48076 (313) 569-1090 Ray Wright

MN: Resource Marketing Associates, 6301 Cecilia Circle, Minneapolis, MN 55435 (612) 829-0431 Pat Kiise

NJ: Hartman Sales (New York), 970 Rahway Ave., Union, NJ 07083 (201) 688-7079 Dave Hartmann

NC: Sound Technology, East Coast Sales Office, P.O. Box 221972, Charlotte, NC 28222 (704) 542-3380 Bob Millice

TX: Charles Lucas Sales, 4424 Mint Way, Dallas, TX 75237 (214) 330-8181 Steve Lucas

UT: Keiser & Associates, 331 South 1350 East, Bountiful, UT 84010 (801) 298-8902 Sam Keiser

WA: Henry Jones Co., 12058 Lake City Way N.E., Seattle, WA 98125 (206) 363-9200 Henry Jones

**Sound Workshop, Pro. Audio Products**, 1324 Motor Parkway, Hauppauge, NY 11788 516-582-6210

**Soundcraft Inc.**, 1517 20th St., Santa Monica, CA 90404 213-453-4591

**Souder Electronics Inc.**, 21 Madrona St., Mill Valley, CA 94941 415-383-5811

**Soundolier**, 9380 Watson Industrial Park, St. Louis, MO 63126 314-962-9870

**South Wind Media Services, Inc.**, P.O. Box 1711, Topeka, KS 66601 913-233-1030

**Southlake Technologies, Inc.**, 2100 Reston Ave., Reston, VA 22091 703-620-5300

**SPANTA, Inc.**, P.O. Box 193, Franklin Lakes, NJ 07417 201-337-0044

**Spectra Sonics**, 3750 Airport Road, Ogden, UT 84405 801-392-7531

**Spectrum Planning Inc.**, 8251 Greensboro Drive, Suite 330, McLean, VA 22102 703-734-4994

**Spectrum Planning Inc.**, P.O. Box 831360, Richardson, TX 75083 703-734-4994

**Sphere Electronics, Inc.**, 20211B Prairie St., Chatsworth, CA 91311 818-349-4747

**Spin Physics, Eastman Kodak Co.**, 3099 Science Park Road, San Diego, CA 92121 619-453-5410

**Stainless, Inc.**, Third & Montgomery Sts., North Wales, PA 19454 215-699-4871

Jess C. Rodriguez

**Stancil Corp.**, 921 N. Highland, Hollywood, CA 90038 213-464-7461

**Standard Frequency Measuring Service**, 2092 Arrowood Place, Cincinnati, OH 45231 513-851-4964

**Standard Tape Lab, Inc.**, 26120 Eden Landing Road, Suite 5, Hayward, CA 94545 415-786-3546

## Manufacturers' Addresses

**Stanton Magnetics Inc.**, Terminal Drive, Plainview, NY 11803  
516-349-0235

Pete Bidwell

### REGIONAL SALES CONTACTS:

FL: **Lauderdale Electronic Labs**, 16 S.W. 13th St., Ft. Lauderdale, FL 33315 (306) 764-7755 Roger Underwood  
HI: **Broadcast Resources Co.**, 3709 Mahina Ave., Honolulu, HI 96816 (808) 737-8441 Ernie Nearman  
IL: **Harris Corp.**, Broadcast Div., 2700 Ellington Road, Quincy, IL 62301 (217) 222-8200 Ed Gagnon  
IN: **Allied Broadcast Equipment**, 635 South E St., Richmond, IN 47374 (317) 962-8596 Roy M. Ridge  
MD: **David Green Broadcast Consultants**, P.O. Box 8782, BWI Airport, MD 21240 (301) 796-1500 Walt Lowery  
MD: **Recording Consultants, Inc.**, 8550 Second Ave., Silver Spring, MD 20910 (301) 587-1800 Jay Kingery  
MA: **Industrial Components Corp.**, 2551 Boston Road, No. Wilbraham, MA 01067 (413) 596-3854 Steve Welch  
NY: **Boynton Studio**, Melody Pines Farm, Morris, NY 13808 (607) 263-5695 Roger Boynton  
NY: **Martin Audio/Video**, 423 West 55th St., 6th Floor, New York, NY 10019 (212) 541-5900 Mike Bogen  
NY: **David Bain Associates, P.O. Box 1014**, Port Washington, NY 11050 (516) 883-4818 Mrs. Rosemary Bain  
NC: **Southern Coastal Mktg. Services, Inc.**, 10201 Rodney Blvd., Pineville, NC 28134 (704) 889-4508 Bob Cauthen  
OK: **Hill Radio Equipment Co.**, 203 Alawhe Road, Route 3, Claremore, OK 74017 (918) 341-5240 Mary Fleck  
PA: **Radio Systems**, 5113 W. Chester Pike, Ridley Creek Plaza, Edgemont, PA 19028 (215) 356-4700 Dan Braverman  
TN: **Broadcast Equipment & Supply Co.**, Route 1, Weaver Pike, Bluff City, TN 37618 (615) 878-2531 Clifton Droke  
TX: **Crouse-Kimzey Co.**, 3507 W. Vickery, P.O. Box 9830, Fort Worth, TX 76107 (817) 737-9911 Mark Bradford  
WA: **Broadcast Supply West**, 7012 27th St. W., Tacoma, WA 98466 (206) 565-2301 Irving Law, Jr.

**Stantron, Unit of Zero Corp.**, 6900 Beck Ave., No. Hollywood, CA 91605 213-875-0800

Guy Tessier

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CA: **Marketing Specialist**, 9410 De Soto Ave., Suite J, Chatsworth, CA 91311 (818) 341-1471 Len Pinkowski  
CA: **Pro Rep Co.**, 1169 Chess Drive, Suite G, Foster City, CA 94404 (415) 570-5055 Dick Meis  
CO: **Systems Marketing Services**, 2922 State Highway 74, Suite 316, Evergreen, CO 80439 (303) 674-3390 Jeff Gouch  
GA: **Vica Associates**, 4296 Memorial Drive, Decatur, GA 30032 (404) 292-7506 Dave Comstock  
IN: **George Constantine**, 9928 Culpepper Drive, Carmel, IN 46032 (317) 844-2001 George Constantine  
KS: **R.L. Graham**, P.O. Box 6464, Leawood, KS 66206 (913) 383-3475 Dick Graham  
NH: **Associated Systems**, P.O. Box 5211, Manchester, NH 03108 (603) 472-2297 Churchill Miller  
NY: **Video Components**, 601 S. Main St., Spring Valley, NY 10977 (914) 356-3700 Dick Turchen  
TX: **Crockett Sales Co.**, 4303 Loverslane, Dallas, TX 75209 (214) 350-3377 John Crockett  
WA: **Evergreen Marketing Group**, 711 N. Northlake Way, Seattle, WA 98103 (206) 633-3160 David Solhwa

**Star Case**, 648 Superior, Munster, IN 46321 219-922-4440

**Steenbeck, Inc.**, 9554 Vassar Ave., Chatsworth, CA 91311 818-998-4033

**Steiger, Hurray & Associates Inc.**, Broadcast Tech. Consultants, 6816 Westview Drive, Cleveland, OH 44141 216-526-7187

**Stellavox**, Jardillets 18, CH-2068 Hauterive, Switzerland 038-33.42.33

**Storeel Corp.**, 2050-C Carroll Ave., Suite 2, Atlanta, GA 30341  
404-458-3280

**Strand Century, Inc.**, 18111 S. Santa Fe Ave., Rancho Dominguez, CA 90221 213-637-7500

**Strata Marketing Inc.**, 403 North Ave., Chicago, IL 60610 312-943-1522

**Studer Revox America**, 1425 Elm Hill Pike, Nashville, TN 37210  
615-254-5651

Tom Mintner

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CA: **Studer Revox America, Inc.**, 14046 Burbank Blvd., Van Nuys, CA 91401 (213) 780-4243 Thomas Jenny  
CA: **Studer Revox America, Inc.**, 954 Hawthorne Blvd., Walnut Creek, CA 94596 (415) 930-9866 Fred Layn  
IL: **Pro Audio Ltd.**, 111 S. Drive, Tower Lake, Barrington, IL 60010 (312) 526-1660 Brian Tucker  
NY: **Studer Revox America, Inc.**, 155 Avenue of the Americas, New York, NY 10013 (212) 255-4462 Nick Balsamo  
TX: **Studer Revox America, Inc.**, 831 Woodlawn Ave., Dallas, TX 75208 (214) 943-2239 Chris Ware

**Studio Systems Inc.**, 513 Greer Ave., Sikeston, MO 63801

**Studio Technologies, Inc.**, 7250 N. Cicero Ave., Lincolnwood, IL 60646  
312-676-9177

**Summit Software Systems Inc.**, 2111-M 30th Suite 1126, Boulder, CO 80301 303-494-1761

**The Superior Electric Co.**, 383 Middle St., Bristol, CT 06010 203-582-9561

**Surcom Associates, Inc.**, 305 Wisconsin Ave., Oceanside, CA 92054  
619-722-6162

**Swintek Enterprises, Inc.**, 587 Division St., Campbell, CA 95008  
408-378-8091

**Switchcraft Inc.**, 5555 N. Elston Ave., Chicago, IL 60630 312-792-2700

**Symetrix Inc.**, 109 Bell St., Seattle, WA 98121 206-624-5012

Roy Blankenship

**Symtec Inc.**, 15933 W. 8-Mile Road, Detroit, MI 48235 313-272-2950

**Synchronous Communications, Inc.**, 1701 Fortune Drive, Suite O, San Jose, CA 95131 408-262-0541

**System Associates**, 5801 Uplander Way, Culver City, CA 90230  
213-641-2042

**System Wireless Ltd.**, 11250-14 Roger Bacon Drive, Reston, VA 22090  
703-471-7887

**TBA Technology**, P.O. Box 302, Walnut Creek, CA 94596 415-932-8134

**TFI (Tape-Film Industries)**, 941 N. Highland Ave., Los Angeles, CA 90038 213-461-3361

**TFI (Tape-Film Industries)**, 640 N. LaSalle St., Chicago, IL 60610  
312-951-6700

**TFI (Tape-Film Industries)**, 619 West 54th St., New York, NY 10019  
212-708-0510

**TFT Inc.**, 3090 Oakmead Village Drive, Santa Clara, CA 95051 408-727-7272

Jesse Maxenchs, Mktg. Director

**T & G Optics**, 71-01 Ingram St., Forest Hills, NY 11375 718-544-8156

**TOA Electronics, Inc.**, 480 Carlton Court, So. San Francisco, CA 94080  
415-621-2949

**TRW LSI Products Div.**, P.O. Box 2472, La Jolla, CA 92038  
619-457-1000

**TRW RF Devices Div.**, 14520 Aviation Blvd., Lawndale, CA 90260

**T & T Radio Measurements Co.**, P.O. Box 1575, Thousand Oaks, CA 91360

**TTC Companies**, P.O. Box 1385, Broomfield, CO 80020-8385  
303-465-4141

Kin Jones

### REGIONAL SALES CONTACTS:

Ampro Div. of T.T.C. (303) 465-4141 Mark Hutchins  
Scully Div. of T.T.C. (303) 465-4141 Mark Hutchins  
Television Technology Corp. (303) 465-4141 Bo Pearce  
Wilkinson Div. of T.T.C. (303) 465-4141 Mark Hutchins

**T T E, Inc.**, 11650 W. Olympic Blvd., Los Angeles, CA 90064 213-478-8224

**Taber Mfg. & Eng. Co.**, 2468 Embarcadero Way, Palo Alto, CA 94303  
415-493-3811

**Tamron Industries, Inc.**, 24 Valley Road, Port Washington, NY 11050  
516-883-8800

**Tandberg of America, Inc.**, 1 Labriola Court, Armonk, NY 10504  
914-273-9150

**Tape-Athon Corp., Cavox Stereo Productions**, 13633 Crenshaw Blvd., Hawthorn, CA 90250 213-676-6752

**Tape Video Services**, 3374 Given, Memphis, TN 38122 901-324-4490

**TASCAM**, 7733 Telegraph Road, Montebello, CA 90640 213-726-0303

Bill Mohrhoff

**Teatronics Inc.**, 3100 McMillan Road, San Luis Obispo, CA 93401  
805-544-3555

**Tech Laboratories Inc.**, 500 Tenth St., Palisades Park, NJ 07650  
201-944-2221

**Technical Projects, Inc.**, P.O. Box 1069, Palatine, IL 60078  
312-359-9240

Glenn Mullis

**Technical Projects Ltd.**, Unit 2, Samuel Whites Estate Medena Road, Cowes, Isle of Wight, England PO31 7LP 0983-291553

**Tectan, Inc.**, P.O. Box 271872, Concord, CA 94527 415-458-5500

**TEKO Telecom SRL**, Via dell'Industria, 5, 40068 San Lazzaro di Savena, BO, Italy 051-456148

**Tektronix Inc.**, P.O. Box 500 D/S 58-699, Beaverton, OR 97077  
503-627-2230

Steven Kerman (503) 627-1844

### REGIONAL SALES CONTACTS:

AL: **Tektronix, Inc.**, 3322 S. Memorial Parkway, Suite 203, Huntsville, AL 35801 (205) 881-2912 Jim Edwards  
CA: **Tektronix, Inc.**, P.O. Box 19523, Irvine, CA 92713 (714) 660-8080 Chris Davies  
CA: **Tektronix, Inc.**, P.O. Box 8500, Woodlands Hills, CA 91365 (818) 999-1711  
CA: **Tektronix, Inc.**, 3003 Bunker Hill Lane, Santa Clara, CA 95050 (408) 496-0800 John Nielsen, Stuart Fox  
CO: **Tektronix, Inc.**, 393 Inverness Drive S., Englewood, CO 80112 (303) 799-1000 John Kelley, Tom Moore  
FL: **Tektronix, Inc.**, 3657 Maguire Blvd., Suite 100, Orlando, FL 32803 (305) 894-3911 Dave Walters  
GA: **Tektronix, Inc.**, P.O. Box 6500, Norcross, GA 30091 (404) 449-4770 Paul Hogan, Dick Walters  
IL: **Tektronix, Inc.**, 5350 Keystone Court, Rolling Meadows, IL 60008 (312) 259-7580 Mel Infanzon  
IN: **Tektronix, Inc.**, 8751 Wesleyan Road Indianapolis, IN 46268 (317) 545-2351 Steve Brant  
MD: **Tektronix, Inc.**, P.O. Box 6026, Garthburg, MD 20877 (301) 948-7151 Jim Capps  
MA: **Tektronix, Inc.**, 482 Bedford St., Lexington, MA 02173 (617) 861-6800 Tom Christenson  
NJ: **Tektronix, Inc.**, 40 Gill Lane, Woodbridge, NJ 07095 (201) 636-8616 Jim Quinn, Tom Jordan  
NY: **Tektronix, Inc.**, 100 Crossways Park W., Woodbury, LI, NY 11797 (516) 364-9060 Bhaskar Pant  
OR: **Tektronix, Inc.**, 10220 S.W. Nimbus Drive, Portland, OR 97223 (503) 620-9100 Warren Beals  
PA: **Tektronix, Inc.**, 450 Sentry Parkway, Blue Bell, PA 19422 (215) 825-6400 David Hackney  
PA: **Tektronix, Inc.**, 1051 Brinton Road, Suite 300, Pittsburgh, PA 15221 (412) 244-9800 Ken Kinman  
TX: **Tektronix, Inc.**, P.O. Box 165027, Irving, TX 75016 (214) 258-0525 Russ Tackler, Austin Basso  
EUROPE: **Tektronix, Europe B.V.**, 1180 AV Amstelveen, The Netherlands (20) 471146

**Telcom Research**, 1163 King Road, Burlington, Ont., Canada L7R 3X5  
416-681-2450

**Telectro Systems Corp.**, 96-18 43rd Ave., Corona, NY 11368 718-651-8900

**Teledac Inc.**, 661 Pine, St. Lambert, Que., Canada J4P 2P4 514-671-7762

**Teledyne Energy Systems**, 110 W. Timonium Road, Timonium, MD 21093 301-252-8220

**Telemet Div., A Geotel, Co.**, 185 Dixon Ave., Amityville, NY 11701  
516-842-2300

**Telemetry Inc.**, 300 Route 17 N., Upper Saddle River, NJ 07458  
201-825-3386

**Telepak San Diego**, 8360 Clairemont Mesa Blvd., Suite 102, San Diego, CA 92111 619-268-8559

**Telescript, Inc.**, 445 Livingston St., Norwood, NJ 07648 201-767-6733

**Telescript Industries Corp.**, 66 Pearl St., Suite 504, New York, NY 10004 212-514-6464

**Telesource Communication Services**, P.O. Box 7132, Phoenix, AZ 85011

**Television Equipment Associates**, P.O. Box 393, South Salem, NY 10590  
914-763-8893

**Television Technology Corp.**, --See TTC Companies  
**Telex Communications, Inc.**, 9600 Aldrich Ave. S., Minneapolis, MN 55420 612-884-4051

**Telfax Communications**, P.O. Box 31,  
Webster City, IA 50595 515-  
832-1263

**Tennaplex Systems Ltd.**, 21 Con-  
course Gate, Nepean, Ont., Canada  
K2E 7S4 613-226-5870

**Tentel**, 1506 Dell Ave., Campbell, CA  
95008 408-379-1881

**Tepco Corp.**, P.O. Box 680, Rapid City,  
SD 57709 605-343-7200

**Test & Measurement Systems/3M**,  
P.O. Box 2963, Austin, TX  
78769-2963 512-834-3272

**Texas Electronics, Inc.**, P.O. Box 7225,  
Dallas, TX 75209 214-631-2490

**Texscan**, 3102 North 29th Ave., Phoen-  
ix, AZ 85017

**Texscan Instruments**, 3169 N. Shade-  
land Ave., Indianapolis, IN 46226  
317-545-4196

**Theatre Service & Supply Corp.**,  
1792 Union Ave., Baltimore, MD  
21211 301-467-1225

**Thomson-CSF Broadcast, Inc.**, 37  
Brownhouse Road, Stamford, CT  
06902 203-965-7000

**Thomson-CSF, Electron Tube Div.**,  
301 Route 17 N., Rutherford, NJ  
07070 201-438-2300

**Thomson-CSF, Div. Tubes Elec-  
troniques**, 38, rue Vauthier, Box  
305, Boulogne-Ballancourt, Cedex,  
France 92102 33-1-604-8175

**Thomson-LGT**, 51, Bld de la Republi-  
que, B.P. 51, 78400 Chatou,  
France 13071.92.60

**Thomson Video Equipment**, 94, rue du  
Fosse Blanc, 92231 Gennevilliers,  
France 1790-65-49

**Thorn-EMI Studio & Theatre Lamps**,  
L. E. Nelson Sales Corp., 5451  
Ukiah Circle, Las Vegas, NV 89118  
702-367-3656

**Tiffen Mfg. Corp.**, 90 Oser Ave.,  
Hauppauge, NY 11788 516-  
273-2500

**TimeLine, Inc.**, 270 Lafayette, Suite  
1300, New York, NY 10012  
212-431-0330

**Times Fiber Communications**, 358  
Hall Ave., Wallingford, CT 06492  
203-265-8729

**Toko America Inc.**, 1250 Feenanville  
Drive, Mt. Prospect, IL 60056  
312-297-0070

**Topaz Electronics**, 9192 Topaz Way,  
San Diego, CA 92123 619-  
279-0831

**Torpey Controls & Eng. Ltd.**, 2220  
Midland Ave. Unit 98, Scarborough,  
Ont., Canada M1P 3E6 416-  
298-7788

**Toshiba Corp.**, 1-1, Shibaura 1-  
Chome, Minato-Ku, Tokyo 105, Ja-  
pan 03-457-3246

**Total Spectrum Mfg. Inc.**, 20 Virginia  
Ave., West Nyack, NY 10994  
914-358-8820

Gary Rotondelli

**REGIONAL SALES CONTACTS:**

CA: Video Communications, 2514 Ontario  
St., Burbank, CA 91504 (818) 954-0150  
Tom Beal

CA: Broadcast Marketing Associates,  
2211-C Fortune Drive, San Jose, CA  
95131 (408) 946-2236 Dick Reilly

CO: Burst Communications, 7310 S. Alton  
Way, Englewood, CO 80112 (303)  
773-9499 John Burrell

FL: Florida Video Systems, 14422 N.W.  
Seventh Ave., Miami, FL 33168 (305)  
688-6618 Phil Dubbs

KY: Midwest Communications Corp., One  
Spert Drive, Edgewood, KY 41017 (606)  
331-8990 Jay Adrick

MD: Professional Products, 4962-4964  
Fairmont Ave., Bethesda, MD 20814  
(301) 657-2141 Phil Bolten

MA: Crimson Camera Technical Sales, 325  
Vassar St., Cambridge, MA 02139 (617)  
868-5150 Helene Andersen

MA: Lake Systems, 55 Chapel St., Newton,  
MA 02160 (617) 244-6881 Walt Kelley

NM: KLR, 2929 Monte Vista N.E., Al-  
buquerque, NM 87106 (505) 265-3562  
Terry Jassman

NY: The Camera Mart, Inc., 456 West 55th  
St., New York, NY 10019 (212) 757-  
6977 Joff Wohl

OR: Custom Video Systems of Oregon,  
1963 N.W. Kearney St., Portland, OR  
97209 (503) 295-6963 Brad Richfield

PA: Peirce-Phelps, Inc., 2000 North 59th  
St., Philadelphia, PA 19131 (215)  
879-7176 Frank Brady

TX: MZB & Associates, 4203 Beltway  
Drive, Dallas, TX 75234 (214) 233-5535

Tom Hooper

UT: Visual Technology, 2141 S. Main St.,  
Salt Lake City, UT 84115 (801) 466-  
7481 Erland Reber

WA: Bennett Engineering, 5005 91st Ave.  
S.E., Mercer Island, WA 98040 (206)  
232-3555 Stan Bennett

CANADA: Adcom Electronics, 310 Judson  
St., Unit 1, Toronto, Ont., Canada M6Z 5T6  
(416) 251-3355 Gary McKeon

**Townsend Associates, Inc.**, 79 Main-  
line Drive, Westfield, MA 01085  
413-568-9581

**Tracor Inc., Industrial Instruments  
Div.**, 6500 Tracor Lane, Building  
27-4, Austin, TX 78725-2100  
512-929-2208

**Transimage Int'l. Ltd.**, Transimage  
House, 245 Hanworth Road, Houns-

low, Middlesex, England TW3 3UA  
01-572-0100

**Transmission Structures, Inc.**, P.O. Box  
972, Vinita, OK 74301 918-  
256-7883

**Transtector Systems Inc.**, P.O. Box  
1299, Post Falls, ID 83854

**Tri-Tronics Professional Elec., Inc.**,  
Highway 210 N. Box 1055, Lillin-  
gton, NC 27546 919-893-4183

**Trident U.S.A. Inc.**, 280 Mill St. Exten-  
sion, Lancaster, MA 01523

**Trompeter Electronics, Inc.**, 8936  
Comanche Ave., Chatsworth, CA  
91311

**Trylon Mfg. Co. Ltd.**, P.O. Box 186,  
Elmira, Ont., Canada N3B 2C9

*Product Directory begins on page 14*



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## Manufacturers' Addresses

519-669-5421  
**Tungstone Batteries Inc.**, 18 Billings St., Sharon, MA 02067 617-784-2000  
**Turner Engineering**, 14 Morris Ave., Mountain Lakes, NJ 07046  
**Tyler Camera Systems**, 14218 Aetna St., Van Nuys, CA 91401 818-989-4420

## U

**UMC Electronics Co., Broadcast Products Div.**, 460 Sackett Point Road, No. Haven, CT 06473  
**UTE Microwave, Inc.**, 3500 Sunset Ave., Asbury Park, NJ 07712 201-922-1009  
**Ultimate Support Systems**, 2506 Zurich Drive, Fort Collins, CO 80524 303-493-4488  
**ULTIMATE Corp.**, 18607 Topham St., Reseda, CA 91335 818-345-5525  
**Ultra Audio Pixtec**, P.O. Box 921, Beverly Hills, CA 90213  
**Unicord**, 89 Frost St., Westbury, NY 11590  
**Union Connector Co., Inc.**, P.O. Box H, Roosevelt, NY 11575 516-623-7461  
**United Media, Inc.**, 4075 Leaverton Court, Anaheim, CA 92807 714-630-8020  
**United Repoworks (USA) Inc., Phillistran Div.**, P.O. Box 306, Montgomeryville, PA 18936 215-368-6611  
*Kenneth A. Knight (215) 855-8450*

**Unitel**, 80 Rue d'Arcueil, Gently Cedex, France 94257  
**Universal Elecon Inc.**, 903 S. Lake St., Suite 102, Burbank, CA 91502 818-846-6220  
*Kimio Zaimoto*

**Universal Fluid Heads (Aust.) Pty. Ltd.**, 2A Clement St., Rushcutters Bay, Sydney, N.S.W., Australia 2011 02-331-5789

**URSA MAJOR, Inc.**, P.O. Box 28, New Town Branch, Boston, MA 02258 617-924-7697

**Utah Scientific, Inc.**, 1685 West 2200 South, Salt Lake City, UT 84119 801-973-6840

**Utility Tower Co.**, P.O. Box 12369, Oklahoma City, OK 73157 405-946-5551

## V

**VDO-PAK Products**, P.O. Box 67, Port Orange, FL 32029

**VMI-Visual Methods Inc.**, P.O. Box 644, Westwood, NJ 07675 201-666-3950

**VSC Corp.**, Box 9340, Int'l. Airport, Albuquerque, NM 87119

**Thomas Valentino Inc.**, 151 West 46th St., New York, NY 10036 212-869-5210

**Valley People, Inc.**, P.O. Box 40306, Nashville, TN 37204 615-383-4737

**Van Nostrand Radio Eng. Service**, 3931 Lehigh Blvd., Decatur, GA 30034

**Vanner, Inc.**, 745 Harrison Drive, Columbus, OH 43204 614-272-6263

**Varian Associates, Inc., Electron Device Group**, 611 Hansen Way, Palo Alto, CA 94303 415-424-6285  
*D. Ruggieri (415) 424-5754*

### REGIONAL SALES CONTACTS:

*AL: Varian Associates, 500 Wynn Drive N.W., Suite 302, Huntsville, AL 35805 (205) 837-9225*

*AZ: Varian Associates, 2750 S. Hardy Drive, Suite 1, Tempe, AZ 85282 (602) 966-4440*

*CA: Varian Associates, 818 Oak Park Road, Covina, CA 91724 (818) 967-3834*

*FL: Varian Associates, 314 S. Missouri, Suite 311, Clearwater, FL 33516 (813) 446-8513*

*GA: Varian Associates, 106 Olympia Drive, Suite D, Warner Robins, GA 31093 (912) 922-2202*

*IL: Varian Associates, 205 W. Touhy Ave., Park Ridge, IL 60068 (312) 825-6686*

*IN: Varian Associates, Graham Plaza, 205 N. College Ave., Suite 315, Bloomington, IN 47401 (812) 334-9900*

*MD: Varian Associates, Airport Square IV Building, 939 Elkridge Landing Road, Suite 195, Linthicum, MD 21090 (301) 850-5010*

*MA: Varian Associates, 83 Second Ave., Burlington, MA 01803 (617) 272-8532*

*NJ: Varian Associates, 25 Commerce Drive, Cranford, NJ 07016 (201) 276-9050*

*NJ: Varian Associates, 304 Harper Drive, Morristown, NJ 08057 (609) 236-6800*

*OH: Varian Associates, 4130 Linden Ave., Suite 255, Dayton, OH 45432 (513) 258-3930*

*TX: Varian Associates, 13531 N. Central Expressway, Suite 2343, Dallas, TX 75243 (214) 235-2385*

*VA: Varian Associates, Government Marketing, 1655 N. Ft. Myer Drive, Suite 1120, Arlington, VA 22209 (703) 522-8002*

**Veam/Litton Systems, Inc.**, 100 New Wood Road, Watertown, CT 06795 203-274-9681

**Vector Electronic Co., Inc.**, 12460 Gladstone Ave., Symar, CA 91342

**Vectrix Corp.**, 2606 Branchwood Drive, Greensboro, NC 27408 919-288-0520

**Velborn Int'l Corp.**, 2433 Moreton St., Torrance, CA 90505

**Via Video, Inc.**, 1800 Ave. of The Stars, Suite 410, Century City, CA 90026

**Vica Associates**, 4296-A Memorial Drive, Decatur, GA 30032 404-292-7506

**Vicon Industries Inc.**, 525 Broad Hollow Road, Melville, NY 11747 516-293-2200

**Vidaire Electronics Mfg. Corp.**, P.O. Box 788, Freeport, NY 11520 516-623-6696

**Video Aids of Colorado**, 2450 Central Ave., Boulder, CO 80301 303-443-4950

**Video Data Systems**, 205 Oser Ave., Hauppauge, NY 11787 516-231-4400

**Video Int'l.**, 1280 Sunrise Highway, Copiague, NY 11726 516-842-1815

**Video Magnetics Inc.**, 3515 Edison Way, Menlo Park, CA 94025

**Video Masters, Inc.**, P.O. Box 1963, Kansas City, MO 64141 816-474-8530

**Videoyte Advisory Svcs. Int'l., Inc.**,

238 Mt. Blue St., Norwell, MA 02061

**VideoLab**, 309 Broadway, Santa Monica, CA 904011 213-458-4153

**Videomagnetics, Inc.**, 3515 Edison Way, Menlo Park, CA 94025 415-365-0125

**Videomedia, Inc.**, 211 Weddell Drive, Sunnyvale, CA 94089 408-745-1700

**VideoStar Connections, Inc.**, 3390 Peachtree Road N.E., Atlanta, GA 30326

**Videotek, Inc.**, 243 Shoemaker Road, Pottstown, PA 19464 215-327-2292

*Peter Choi*

### REGIONAL SALES CONTACTS:

*AZ: Videotek, Inc., 9625 North 21st Drive, Phoenix, AZ 85021 (602) 997-7523 Emery Grady*

**VideoTeleCom**, 12229 Montague St., Arleta, CA 91331 818-890-0947

**VideoTeleCom**, 1305 Pratt Court, Raligh, NC 27606

**Vidicraft Inc., H&V Video Image Enhancer**, 0704 S.W. Bancroft St., Portland, OR 97201 503-223-4884

**Viking Cases**, 10480 Oak St. N.E., St. Petersburg, FL 33702 813-577-1216

**W. Vinten Ltd.**, Western Way, Bury St. Edmunds, Suffolk, England IP33 3TB 0284-2121

**Vir James, Consulting Engineers**, 3137 W. Kentucky Ave., Denver, CO 80219 303-937-1900

**Visual Departures, Ltd.**, 1641 Third Ave., Suite 202, New York, NY 10128 212-534-1718

**Visual Information Institute**, P.O. Box 33, Xenia, OH 45385-0033 513-376-4361

**Vital Industries Inc.**, 3700 NE 53rd Ave., Gainesville, FL 32601 904-378-1581

**VIZ Test Equipment, Div. of VIZ Mfg. Co.**, 335 E. Price St., Philadelphia, PA 19144 215-844-2626

## W

**WSI Corp.**, 41 North Road, Bedford, MA 01730 617-275-5300

**Wallach & Associates Inc.**, P.O. Box 18167, Cleveland, OH 44118 216-575-0765

**Ward-Beck Systems Ltd.**, 841 Progress Ave., Scarborough, Ont., Canada M1H 2X4 416-438-6550

**Waters Mfg. Inc.**, Longfellow Center, Wayland, MA 01778 617-358-2777

**Weaver/Steadman, Camera Support Systems**, 1646 20th St., Santa Monica, CA 90404

**Wegener Communications Inc.**, 150 Technology Park, Norcross, GA 30092 404-448-7288

**Weinschel Engineering**, One Weinschel Lane, Gaithersburg, MD 20877 301-948-3434

**Weisel Technologies**, P.O. Box 126, Youngstown, OH 44501 216-783-2509

**West Coast Audio, Inc.**, 65 W. Easy St., Suite 102, Simi Valley, CA 93065 805-583-3800

**Western Union, Video Services**, One Lake St., Upper Saddle River, NJ 07458 201-825-6154

**Western Wireless Works**, P.O. Box 2203, Apache Junction, AZ 85220

**Westinghouse Electric Corp., Ind'l. & Gov't. Tube Div.**, Westinghouse Circle, Horseheads, NY 14845

**Westinghouse Electric Corp., Semiconductor Div.**, Youngwood, PA 15697

**Westlake Audio, Professional Products Mfg. Group**, 2696 Lavery Court, Unit 18, Newbury Park, CA 91320 805-499-3686

**Wheatstone Broadcast Group**, 5 Collins Road, Bethany, CT 06525 203-393-0887

**Wheelit, Inc.**, P.O. Box 7350, Toledo, OH 43615 419-531-4900

**White Instruments, Inc.**, P.O. Box 698, Austin, TX 78767 512-892-0752

**Whitehouse Audio Visual**, 2037 Granville Ave., Suite B, Los Angeles, CA 90025 213-395-5826

**Whitmor Waveguides**, 13161 Sherman Way, No. Hollywood, CA 91605 818-764-6296

**Wide Band Engineering Co., Inc.**, P.O. Box 21652, Phoenix, AZ 85036 602-254-1570

**Wide Range Electronics**, 2119 Schuetz Road, St. Louis, MO 63146

**Wilkinson Radio Div.**, --See TTC Companies,

**The Will-Burt Co., TMD Div.**, P.O. Box 900, Orrville, OH 44667-0900 216-682-7015

**D.E. Winget, Inc.**, 12205 S.E. 67th Place, Suite 100, Bellevue, WA 98006 206-641-0297

**Winsted Corp.**, 9801 James Circle, Minneapolis, MN 55431 612-888-1957

**Wireworks Corp.**, 380 Hillside Ave., Hillside, NJ 07205 201-686-7400

**World Communications**, 10880 Wilshire Blvd., Suite 2204, Los Angeles, CA 90024 213-474-3500

**Wolf Coach Inc.**, 7 B St., Auburn, MA 01501 617-791-1950

**Frank Woolley & Co.**, 529 Franklin St., Reading, PA 19602 215-374-8335

**World Video Inc.**, P.O. Box 117, Boyertown, PA 19512 215-367-6055

## XYZ

**Yamaha International Corp., Pro Products Div.**, P.O. Box 6600, Buena Park, CA 90622 714-522-9011  
*Bob Shomaker*

**Yardney Battery Div.**, 82 Mechanic St., Pawcatuck, CT 06379 203-599-1100

**Z-Comm**, P.O. Box 1301, Solana Beach, CA 92075 619-481-5999

**The Zei-Mark Corp.**, P.O. Box 182, Brookfield Center, CT 06805

**Ziehl Electronic Service**, 8611 Dale Road, Gasport, NY 14067 716-772-7800

# Broadcast product dealers/distributors

For your reference, **Broadcast Engineering** has designed this *Broadcast Product Dealers/Distributors* section to provide close-to-home purchasing assistance. Use it, with other sections in the *Buyers' Guide*, to plan new facilities and equipment expansion or upgrading. This directory identifies addresses and telephone numbers, products handled, and territory served for broadcast product dealers/distributors. Listings are arranged alphabetically by company/state. Companies listed do not comprise

all dealers/distributors serving an area, but only those that returned **BE's** listing form.

An example of a typical dealer/distributor listing, the geographic area and product classification code keys, are included on this page to assist you. We think you will find that this section, along with the updated *Product Directory* and *Broadcast Product Manufacturers' Addresses* sections, make this issue the most useful and comprehensive purchasing aid for the broadcast industry.

## Typical listing

- (1) **Jones Broadcast Sales,**  
2912 W. 10 St.,
- (2) Kansas City, Mo. 64105  
(816-842-1234)
- (3) IA, KS, MO, OK, 1, 2, 5, 7, 9

- (1) firm name, street address
- (2) city, state, zip code, telephone
- (3) geographic area served and products handled (see code keys)

**This firm covers Iowa, Kansas, Missouri and Oklahoma, and sells audio equipment, video equipment, tape, film equipment, and does service and repair work.**

## Key to product numerical code

- 1 AUDIO EQUIPMENT** (including recorders, microphones, mixers, consoles, cart machines, turntables, processing devices, etc.)
- 2 VIDEO EQUIPMENT** (including cameras, videotape recorders, production switchers, monitors, lights, etc.)
- 3 TEST AND MEASUREMENT EQUIPMENT** (audio and video)
- 4 TRANSMITTERS, ANTENNAS AND TRANSMISSION SYSTEMS** (including towers ATS, STL, MDS, etc.)
- 5 TAPE** (including video and audio recording tape, etc.)
- 6 VACUUM TUBES** (including video camera, transmitter, TWT, etc.)
- 7 FILM EQUIPMENT** (including cine cameras, processing equipment, film projectors, etc.)
- 8 VANS AND ACCESSORIES**
- 9 SERVICE AND REPAIR**
- 10 SYSTEM DESIGN** (including studio installation, etc.)
- 11 USED EQUIPMENT** (including leasing, rent, etc.)

## Key to geographical area code

AK	Alaska	MS	Mississippi	<b>(Abbreviations for Canadian provinces)</b>	
AL	Alabama	MT	Montana		
AR	Arkansas	NC	North Carolina	ALTA	Alberta
AZ	Arizona	ND	North Dakota	BC	British Columbia
CA	California	NE	Nebraska	MAN	Manitoba
CO	Colorado	NH	New Hampshire	NB	New Brunswick
CT	Connecticut	NM	New Mexico	NF	Newfoundland
DC	District of Columbia	NV	Nevada	NS	Nova Scotia
DE	Delaware	NY	New York	ONT	Ontario
FL	Florida	OH	Ohio	PEI	Prince Edward Island
GA	Georgia	OK	Oklahoma	QUE	Quebec
GU	Guam	PA	Pennsylvania	SASK	Saskatchewan
HI	Hawaii	PR	Puerto Rico	YUK	Yukon Territory
IA	Iowa	RI	Rhode Island		
ID	Idaho	SC	South Carolina		
IL	Illinois	SD	South Dakota		
IN	Indiana	TN	Tennessee		
KS	Kansas	TX	Texas		
KY	Kentucky	UT	Utah		
LA	Louisiana	VA	Virginia		
MA	Massachusetts	VI	Virgin Islands		
MD	Maryland	VT	Vermont		
ME	Maine	WA	Washington		
MI	Michigan	WI	Wisconsin		
MN	Minnesota	WV	West Virginia		
MO	Missouri	WY	Wyoming		

## ALABAMA

**Gray Communications Consultants, Inc.**, 102 Oxmoor Road, Suite 122, Birmingham, AL 35209 (205-942-2824) AL Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems, Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

**Gray Communications Consultants, Inc.**, 2866 Dauphin St., Suite A, Mobile, AL 36606 (205-476-2051) Entire Southeast Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design

## ALASKA

**Alaska Electronics Supply, Inc.**, 2020 E. Dowling Road Units 1 & 2, Anchorage, AK 99507 (907-563-3774) AK Audio Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes

**NVS Systems, Inc.**, 8300 King St., Anchorage, AK 99502 (907-349-3523) AK Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design

## ARIZONA

**E.A.R. Professional Audio**, 2641 E. McDowell, Phoenix, AZ 85008 (602-267-0600) AZ, CA, CO, MT, NV, NM Audio & Video Equip.; Tape; Systems Design; Used Equip.

**Jensen Tools Inc.**, 7815 South 46th St., Phoenix, AZ 85044 (602-968-6241) Worldwide Tools; Tool Kits; Tool Cases; Test Equip.; Shipping Containers

**ROH'S Inc.**, 4553 E. Broadway, Tucson, AZ 85711 (602-795-8573) AZ, NM Audio & Video Equip.; Tape; System Design

**Spencer Broadcast, Inc.**, 316 E. El Camino Drive, Phoenix, AZ 85020 (602-242-2211; 800-221-6941) 50 State '800' Service, Worldwide Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; System Design; Used Equip.

## ARKANSAS

**Gray Communications Consultants, Inc.**, 5105 McClanahan Drive, Suite J-1, North Little Rock, AR 72116 (501-758-3234) AR, TN Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design

sign; Used Equip.; Tape

**Radcom, Inc.**, P.O. Box 191, Eureka Springs, AR 72632 (501-253-8556) Worldwide Audio Equip.; Transmitters, Antennas & Transmission Systems; System Design

## CALIFORNIA

**Accurate Sound Corp.**, 3515 Edison Way, Menlo Park, CA 94025 (415-365-2843) U.S.A., Canada, GU, PR, VI Audio Equip.; Tape; System Design; Used Equip.

**Advanced Marketing**, P.O. Box 97, Redwood City, CA 94064 (415-365-3944) CA, NV, OR, WA Audio & Video Equip.; Test & Measurement Equip.; Vans & Accessories

**Audio Engineering Associates**, 1029 N. Allen Ave., Pasadena, CA 91104 (213-798-9127) Southern-CA Audio Equip.

**Audio Video Consultants**, 15751 Roxford, Suite A, Sylmar, CA 91342 (818-362-0393) U.S.A. and Canada System design all audio & video cassette duplication labs; O.E.M. remote control interface for duplication VCR's.

**A-VIDD Electronics Co.**, 3920 Gilman St., Long Beach, CA 90815 (213-4978-7776; 714-527-0965) Southern-CA Audio & Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.; Complete Sales & Service, Installation, Rentals, Editing; Personal Computers & Accessories

**A-VIDD Electronics Co.**, 1126 W. Foothill Blvd., Upland, CA 91786 (714-981-8884; 818-966-4586) Southern-CA, Las Vegas NV Audio & Video Equip.; Test & Measurement Equip.; Tape System Design; Used Equip.; Complete Sales, Service, Installation, Rentals, Editing; Personal Computers & Accessories

**Barrett Associates Inc.**, 3205 Production Ave., Oceanside, CA 92054 (619-433-5600) U.S.A. Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Used Equip.

**Birns & Sawyer, Inc.**, 1026 N. Highland Ave., Hollywood, CA 90038 (213-466-8211) Worldwide Film Equip.; 16mm & 35mm; Service & Repair; Used Equip.

**Broadcast Cartridge Service**, 15131 Triton Lane, Suite 108, Huntington Beach, CA 92649 (714-898-7224) U.S.A. Tape; Broadcast Cartridges Reel-to-Reel; Alignment Tools, Storage Systems; Reloading Service; Fone Box

**Richard W. Burden Associates**, 20944 Sherman Way, Canoga Park, CA 91303 (818-340-4590) AK, AZ, CA, CO, HI, ID, NV, NY, OR, UT,

WA, WY Audio Equip.; Transmitters, Antennas & Transmission Systems; Cable FM Modulators

**CeCo Communications Inc. of CA**, 2750 Bell Flower Blvd., Suite 118, Long Beach, CA 90815 (213-425-6481; 800-772-2461; CA-800-368-0682) Worldwide Audio & Video Equip.; Broadcast Tubes; Electron Tubes, Broadcast Types, High Power, Transmitting Tubes; Receiving Tubes; Industrial Tubes; Vacuum Tubes

**Communications West, Inc. (dba COMM-WEST)**, P.O. Box 255321, Sacramento, CA 95865 (916-332-8700) AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes

**Computer Broadcasting Inc.**, 6085 Dawn Drive, Rohnert Park, CA 94928 (707-585-0266) U.S.A. Computers; Printers & Other Support Supplies

**ECD Industries, Inc.**, 2034 Armacost Ave., Los Angeles, CA 90025 (213-820-3009; 800-421-7152) U.S.A. and Canada Electronic Tubes; Semiconductors

**Film Processing Corp.**, 3602 Crenshaw Blvd., Los Angeles, CA 90016 (213-737-8273) Worldwide Audio Magnetic Recording Film; Audio Tape; Video Tape; Editorial Supplies-Leaders, Cans, Reels, etc.

**Alan Gordon Enterprises Inc.**, 1430 Cahuenga Blvd., Hollywood, CA 90078 (213-466-3561; 818-985-5500) U.S.A., AK, HI, Canada, Central & So. America, Far East, India, Europe Audio Equip.; Video Lighting & Camera Supports; Film Equip.; Service & Repair; Used Equip.

**J.N.D. Inc.**, 131 Bolinas, Fairfax, CA 94930 (415-459-3186) AZ, CA, NV Audio Equip.; Video Equip.

**MARCOM**, P.O. Box 66507, Scotts Valley, CA 95066 (408-438-4273) AK, AZ, CA, HI, NV, OR, WA Audio & Video Equip.; Transmitters, Antennas & Transmission Systems; Tape; Film Equip.; System Design

**Martel Electronics, Inc.**, 920 E. Orangetherpe, Suite D, Anaheim, CA 92801 (714-871-7102) U.S.A. Audio Equip. including all types of Recorders, Microphones, Mixers, & Audio Tape

**Meyer, Ross & Fleming, Inc.**, 1485 Rollins Road, Burlingame, CA 94010 (415-348-6800) CA, HI, NV, CA, HI, NV Audio & Video Equip.; Test & Measurement Equip.

**Pacific Coast Marketing**, 14125 Capri Drive, Los Gatos, CA 95030 (408-370-3505) CA, NV Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems

**Pacific Recorders & Eng. Corp.**, 2070 Las Palmas Drive, Carlsbad, CA 92008 (619-438-3911) U.S.A. and Canada Audio Equip.; System Design

**Programming Plus**, P.O. Box 90486, Pacific Beach, CA 92109-0860 (619-272-PLUS) Nationwide OEM Distributor for Zenith Data Systems, Computer Hardware Products

**RF Specialties of Washington, Inc.**, 1810 Cliff Drive, Suite 163, Santa Barbara, CA 93109 (805-682-9429) AZ, CA, NV Transmitters, Antennas & Transmission Systems

**Sound Genesis**, 2001 Bryant St., San Francisco, CA 94110 (415-285-8900) AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA Audio for Video; Tape; Service & Repair; System Design; Used Equip.

**Sound Investment Enterprises**, P.O. Box 4139, Thousand Oaks, CA 91359 (818-991-3400) AL, AZ, AR, CA, CC, FL, HI, IL, IN, IA, KS, LA, MI, MS, MO, NV, NM, NC, OK, OR, SC, TN, TX, UT, WY Audio Equip.; Systems Design

**Sprague Magnetics, Inc.**, 15759 Strathern St., Van Nuys, CA 91406 (213-994-6602) AZ, CA, FL, GU, HI, IL, MI, MN, NE, NJ, NY, NC, PA, PR, TN, TX, VI, WA, Alta., B.C., Ont., Que. Replacement Tape Heads; Recorder Care Products

**Stage Lighting Distributors**, 1653 N. Argyle Ave., Hollywood, CA 90028 (213-466-8324) U.S.A. and Canada Video Equip.; Lighting & Controls; System Design

**Studio Film & Tape (LA) Inc.**, 6674 Santa Monica Blvd., Hollywood, CA 90038 (213-466-8101) U.S.A. and Canada Audio & Video Tape, All Formats, Blank 2" 1' 3/4" 1/2"

**Studiobuilders**, 919 N. Victory Blvd., Burbank, CA 91502 (213-842-9526) CA Audio & Video Equip.; Studio Installation; Design

**System Associates**, 5801 Uplander Way, Culver City, CA 90230 (213-641-2042) North America Brokers of Used Broadcast TV Equip.; Video Equip.; Test & Measurement Equip.; Film Equip.; Vans & Accessories

**Taber Mfg. & Eng. Co.**, 2468 Embarcadero Way, Palo Alto, CA 94303 (415-493-3811) U.S.A. and Canada, Australia, Hong Kong, Japan Audio Equip.

**Television Associates, Inc.**, 2410 Charleston Road, Mountain View, CA 94040 (415-967-6040) Northern-CA Broadcast Professional & Industrial Products; Video Equip.; Video Production & Duplication Facilities

**Universal Elecon Inc.**, 903 S. Lake St., Suite 102, Burbank, CA 91502 (818-846-6220) U.S.A. and Canada with emphasis on CA Audio & Video Equip.; MTS Stereo Modulator & Demodulators; ENG Battery



**Video Communications Corp.**, 2514 Ontario St., Burbank, CA 91504 (714-594-2442) AZ, CA, NV Audio & Video Equip.; Test & Measurement Equip.; Service & Repair; System Design

**Videomedia, Inc.**, 211 Weddell Drive, Sunnyvale, CA 94089 (408-745-1700) AZ, CA, CO, ID, MT, NV, NM, OR, UT, WY Editing Systems; Color Cameras; Monitors; Time Base Correctors; Video Tape Recorders, Projectors & Tape; Sync & Character Generators; Lighting; System Design, Fabrication & Training

**Videotape Products, Inc.**, 320 N. Madison Ave., Los Angeles, CA 90004 (213-664-1144) Worldwide Video Equip.; Tape; Test & Measurement Equip.

**West Coast Audio, Inc.**, 65 W. Easy St., Suite 102, Simi Valley, CA 93065 (805-583-3800) U.S.A. Audio & Film Equip.

**Western Broadcast Systems Inc.**, 1010 W. Fremont Ave., Sunnyvale, CA 94087 (408-730-1600) AK, CA, HI, NV, OR, WA Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Service & Repair; System Design

## COLORADO

**Audities/2001**, 180 Cook St., Suite 209, Denver, CO 80206 (303-333-4477) AZ, CO, ID, MT, NM, EL Paso-TX, UT, WY Audio & Video Equip.; Test & Measurement Equip.; Tape

**Colorado Magnetics**, P.O. Box 713, Colorado Springs, CO 80901 (303-635-3660) AZ, CA, CO, FL, ID, KS, MO, MT, NE, NV, NM, ND, OH, OK, OR, SD, TX, UT, WA, WY Tape Cartridges; Broadcast Supplies

**Didier/Denver, Inc.**, P.O. Box 1599, Evergreen, CO 80439 (303-674-6000) CO, ID, KS, MT, NE, NM, UT, WY Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Equip.

**Film/Video Equipment Service Co.**, 1875 S. Pearl St., Denver, CO 80210 (303-778-8616) AK, AZ, CA, CO, DC, FL, KS, LA, MN, MS, MO, MT, NE, NV, NM, ND, SD, TN, TX, UT, WY Audio & Video & Film Equip.; Service & Accessories

## CONNECTICUT

**Audiotechniques Inc.**, 652 Glenbrook Road, Stamford, CT 06906 (203-359-2312; Sales: 800-243-2598) CT, DE, DC, ME, MD, MA, NJ, NY, PA, RI, VT, VA Audio Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.

**National Video Services**, Commerce Park, Finance Drive, Danbury, CT 06810 (203-792-3862) CT, DC, ME, MA, NH, NJ, NY, PA, RI, VT Video Equip.; Vacuum Tubes; Service & Repair; System Design; Remanufacture a Wide Band Video Recorder For Medical Use.

**Radio Research Instrument Co., Inc.**, 2 Lake Ave. Extension, Danbury, CT 06811 (203-792-6666) U.S.A. Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Used Equip.

## DISTRICT OF COLUMBIA

**Instrucom, Inc.**, 655 15th St. N.W., Suite 310, Washington, DC 20005 (202-223-1759) DE, DC, MD, NC, VA, WV Customized Control; Telemetering & Alarm Systems; Telecommunications Systems & Test Equip.; Telephone Radio Surge Protection Systems

## FLORIDA

**Barbizon Delta Corp.**, 1125 N. 53rd Court, Australian Industrial Park, West Palm Beach, FL 33407 (305-844-5973) AL, FL, GA, LA, PR, MS, SC, VI Lighting Equip. for Motion Pictures, TV & Theatre; Lamps; Color Media; Sockets; Lighting Heads & Accessories

**Beattie & Associates, Inc.**, 3317 Barrow Hill Trail, Tallahassee, FL 32312 (904-893-1382) AL, FL, GA Audio & Video Equip.; Transmitters, Antennas & Transmission Systems; Sales, Service & Installation. Turnkey LPTV Systems; All Solid State FM Transmitters up to 5 KW.

**Bencsik Associates Inc.**, 3730 N.E. 42nd Ave., Ocala, FL 32670 (904-732-9775) FL, PR Audio Equip.

**Comad Inc.**, P.O. Box 10667, Pensacola, FL 32504 (904-434-9782) U.S.A. Audio & Video Equip.

**Comex Corp.**, 1645 N.W. 79th Ave., Miami, FL 33126 (305-594-0850) Central & South America, Caribbean MMDS/ITFS Systems; Satellite Earth Stations & Associated Origination Equip.; Engineer, Furnish & Install

**Control Technology, Inc.**, 2950 S.W. 2nd Ave., Fort Lauderdale, FL 33315 (305-761-1106; Outside FL 800-327-4121) U.S.A. Audio Tape Recorders; Consoles, Mixers; Turntables, Preamps; Mics & Accessories; Power Amps; Speakers, Audio Processing & Loggers; Tape. Cartridges, Heads & Accessories. Studio Furniture; STL Systems; Transmitters, Transmission & Antennas

**Design Line Inc.**, 6204 Benjamin Road, Suite 209, Tampa, FL 33614 (813-884-1461) U.S.A. Audio Equip.; System Design

**Electrex Co.**, 18620 N.E. 2nd Ave., Miami, FL 33179 (305-651-5752) U.S.A. and Latin America Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape, Vacuum Tubes; System Design

*See advertisement on page 48 and on this page*

**Ellis Tower Co., Inc.**, P.O. Box 23217, Ft. Lauderdale, FL 33307 (305-566-6432) AL, AR, CT, DE, DC, FL, GA, IL, IN, IA, KY, LA, ME, MD, MA, MI, MN, MS, MO, NH, NJ, NY, NC, OH, PA, PR, RI, SC, TN, VT, VA, VI, WV, WI Transmitters, Antennas & Transmission Systems

**Gray Communications Consultants, Inc.**, 1031 N.W. 91st Terrace, Gainesville, FL 32601 (904-378-2986) FL Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

**Gray Communications Consultants, Inc.**, 1657 N.W. 79th Ave., Miami, FL 33126 (305-591-3637) FL,

PR, VI, Caribbean, Central & South America, West Indies Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

**Gray Communications Consultants, Inc.**, 1605 S. Bumby Ave., Orlando, FL 32806 (305-896-7414) FL Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

**Gray Communications Consultants, Inc.**, 5401 Southern Comfort Blvd., Tampa, FL 33614 (813-885-1411) FL, PR, VI, Caribbean, Central & South America, West Indies Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

**International Wholesalers of Miami, Inc.**, 17866 Ipcos Road, No. Miami, FL 33162 (800-327-0596) U.S.A., PR Audio & Video Equip.

**Lauderdale Electronic Labs**, 16 S.W. 13th St., Fort Lauderdale, FL 33315 (305-764-7755) U.S.A. and Canada Audio, Test & Measurement Equip.; Tape

**Lita Broadcasting Distributors**, 7154 N.W. 72nd Ave., Miami, FL 33166 (305-887-1223) FL, Central & South America, Caribbean Audio Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes

**Media Concepts, Inc.**, 559 49th St. S., St. Petersburg, FL 33707 (813-321-2122) Worldwide Audio & Video Equip.; Tape; Service & Repair; System Design

**Midwest Communications Corp.**, 8875 N.W. 23rd St., Miami, FL 33172 (305-592-5355) AL, FL,

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**Dealers/distributors...continued** (see page 117 for key to listings)

GA, PR, VI, Central & South America, Caribbean Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vans & Accessories; Service & Repair; System Design

**Midwest Communications Corp.**, 6302 Benjamin Road, Suite 403, Tampa, FL 33614 (813-885-9308) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design; Rental & Leasing Equip.

**Nemal Electronics Int'l. Inc.**, 12240 N.E. 14th Ave., No. Miami, FL 33161 (305-893-3924) Worldwide Audio & Video Wire, Cables, Connectors; Transmitters, Antennas Wire, Cables, Connectors and Accessories

**Pro Audio General Store, Inc.**, 2480 S.E. 52nd St., Ocala, FL 32671 (904-622-9058; FL only 800-342-0186) U.S.A. Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape

**Recording Studio Equip. Co.**, 229 Sunny Isles Blvd., No. Miami, FL 33160 (305-945-9774) U.S.A.; Export to So. America, Europe, Caribbean Professional Audio Equip.; Studio Design & Interface

**RF Specialties of Florida**, P.O. Box 397, Niceville, FL 32580 (904-678-8943) AL, FL, GA, SC Transmitters, Antennas & Transmission Systems

**Southeast Electronics, Inc.**, 1125 Roselle St.; P.O. Box 41308, Jacksonville, FL 32203 (904-356-3007) AL, FL, GA Audio & Video Equip.; Transmitters; Tape; Service & Repair; System Design; Used Equip.

**Stage Equipment & Lighting, Inc.**, 124 Candace Drive, Maitland, FL 32751 (305-339-1772) AL, FL, GA, Caribbean, Central & South America Video Equip.; Service & Repair; Used Equip.; Film Equip.; Lamps

**Stage Equipment & Lighting, Inc.**, 12231 N.E. 13th Court; P.O. Box 61000F, Miami, FL 33161 (305-891-2010) AL, FL, GA, Caribbean, Central & South America Video Equip.; Lamps; Service & Repair; Used Equip.; Film Equip.

MS, NC, SC, TN, WV Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Transmission, Antennas Systems

**Wm. J. Ray & Associates, Inc.**, 125 Simpson St. N.W., Atlanta, GA 30313 (404-223-0108) AL, GA, MS, NC, SC, TN Audio & Video Equip.

**Technical Industries Inc. of Georgia**, 6000 Peachtree Road, N.E., Atlanta, GA 30341 (404-455-7610; 800-554-5440) GA, SC Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; System Design

**Vica Associates**, 4296-A Memorial Drive, Decatur, GA 30032 (404-292-7506) AL, FL, GA, MS, NC, SC, TN Audio & Video Equip.; Test & Measurement Equip.

*See advertisement on this page*

## GEORGIA

**Allied Broadcast Equipment**, 4405 Mall Blvd., Suite 314, Union City, GA 30291 (404-964-1464) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas, Transmission Systems; Tape; Vacuum Tubes; Service & Repair; System Design

**Gray Communications Consultants, Inc. (Corporate Office)**, 404 Sands Drive, Albany, GA 31705 (912-883-2121) Entire Southeast Audio & Video Equip.; Tape; Film Equip.; System Design; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes

**Gray Communications Consultants, Inc.**, 2254 N.W. Parkway, Suite C, Marietta, GA 30067 (404-956-7725) Entire Southeast Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; Systems Design; Film Equip.

**Midwest Communications Corp.**, 522 Armour Circle, N.E., Atlanta, GA 30324 (404-875-3753) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Pro Audio General Store, Inc.**, 1805 Kimberly Drive, Marietta, GA 30060 (404-425-0630) U.S.A. Audio & Test & Measurement Equip.; Antennas & Transmission Systems; Tape

**Radford Associates**, 3203 Lanier Drive, Atlanta, GA 30319 (404-237-6097) AL, FL, GA, KY,

## HAWAII

**Broadcast Services Inc.**, 2877 Kala-kaua Ave., Honolulu, HI 96815 (808-521-6311) HI Towers; Microwave Links 1-12 GHz; All steel work & erections & installations

**John J. Harding Co., Ltd.**, 2825 Ualena St., Honolulu, HI 96819 (808-836-0941) HI and Pacific area Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; System Design

**Omega Pacific**, 222 Kaelepulu Drive, Kailua, HI 96734 (808-263-4212) HI Video Equip.; Transmitters, Antennas & Transmission Systems

## IDAHO

**Hall Electronics**, P.O. Box 5031, Boise, ID 83705 (208-343-3088) CO, ID, MT, UT, WY Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; System Design; Used Equip.

## ILLINOIS

**Allied Broadcast Equipment**, 5097 N. Elston Ave., Suite 303, Chicago, IL 60630 (312-794-0224) IL, MI, MN, WI Audio Equip.; Test & Measurement Equip.; Transmitters & Antennas; Tape; Vacuum Tubes; Service & Repair; System Design

**Center Video Center**, 5565 N. Elston Ave., Chicago, IL 60630 (312-637-1600; Outside IL-800-621-4354) U.S.A. Audio & Video Equip.; Test & Measurement Equip.; Tape; Service Repair; Used Equip.

**Columbia Audio/Video**, The Columbia Building 1741 Second St., Highland Park, IL 60035-3599 (312-433-6010) IL, IN, IA, MI, WI Video Equip.; Tape

**J. Deerwester Communications, Broadcast Supply Div.**, Rt. 3 Cabintown Road, Bloomington, IL 61701 (309-828-9143) AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY Audio Equip.; Video (Limited Supply) Equip.; Test Equip.; Transmitters, Antennas & Transmission Lines; Audiocarts; Film Equip.; System Design; Some Used Equip.

**Victor Duncan, Inc.**, 661 N. LaSalle, Chicago, IL 60610 (312-943-7300) U.S.A. and Canada Audio, Film & Video Production Equip.; Test Equip.; Transmitters, Antennas & Transmission; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip. Over 300 Lines of Pro Equip.

*See advertisement on page 137*

**GO Video Sales, Inc.**, 1195 S. Wilson Drive, Lake Forest, IL 60045 (312-295-6726) IL, Davenport-IA, MN, ND, SD, WI Video Equip.

**Joseph Electronics**, 8830 N. Milwaukee Ave., Niles, IL 60648 (312-297-4200; 800-323-5925) IL, IN, WI, National by Mail Order Test Equip.; Tools; Cases; Wire; Connectors; Batteries; Camera Tubes; Hardware; Components; Chemicals; Cabinets; Solder & Equip.; Audio & Video Products

**Ottawa Equipment Co.**, 6838 N. Ottawa Ave., Chicago, IL 60631 (312-774-5115) IL, IN, WI, Export Audio Equip.; Tape; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; System Design

**Pro Audio General Store, Inc.**, 746 Cypress Lane, Carol Stream, IL 60188 (312-231-7120) AL, AZ, AR, CO, DC, FL, GA, IL, IN, IA, KS,

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**Ram Broadcast Systems**, 346 W. Colfax St., Palatine, IL 60067 (312-358-3330) U.S.A. Audio Equip.; Tape; Systems Design; Audio Consoles; Switchers; Intercoms; Turn-key Installations

**Richardson Electronics, Ltd.**, 3030 N. River Road, Franklin Park, IL 60131 (800-323-1770) Worldwide Vacuum Tubes

**Roscor Corp.**, 1061 Feehanville Drive, Mt. Prospect, IL 60056 (312-539-7700) IL, IN, IA, KY, MI, OH, WI Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Film Equip.; Service & Repair; System Design; Used Equip.

**Swiderski Electronics, Inc.**, 1200 Greenleaf Ave., Elk Grove Village, IL 60007 (312-364-1900) IL, IN, IA, MI, MO, WI Complete line of Audio & Video Equip.; Service & Repair; System Design; Rent & Leasing; Computerized Editing Systems; Vans & Accessories

**Video Images**, 890 Cambridge Drive, Elk Grove Village, IL 60007 (312-640-7111) IL, IN, MO Audio, Video, Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Vans & Accessories; System Design; Used Equip.

## INDIANA

**Allied Broadcast Equipment, #One**, 635 South E St., Richmond, IN 47374 (317-962-8596; Int'l. calls 317-935-1704) Worldwide Worlds largest independent distributor of Audio & RF Broadcast & Professional Equipment

**American Horizon, Div. Keltron, Inc.**, 1491 N. Fruitridge Ave., Terre Haute, IN 47804 (812-466-7227) Continental U.S.A. Satellite Receiving Equip.

**Midwest Communications Corp.**, 4105 Vincennes Road, Indianapolis, IN 46268 (317-872-2327) IN All Major Audio & Video Equip.; Vans, Trucks, Mobile Units; System Design

**PRO Marketing Systems, Inc.**, 9628 Day Drive, Indianapolis, IN 46280 (317-846-9591) IL, IN, KY, West-OH, East-WI Audio: Amps, Mics, Mixing Consoles, Multi-Track Tape Recorders; Control Room Monitors; Loudspeakers; Voice Warning Projectors; Test Equip.: Noise Floor, Cross-Talk, Eraser Depth, THD, IMD, DFD etc.; Film Audio Delay Equip.; System Design; Used Equip.

## IOWA

**Sitler's Supplies, Inc.**, 702 E. Washington, Washington, IA 52353 (IA 800-272-6459; Outside IA 800-426-3938) U.S.A. Film Equip.; Lamps

## KANSAS

**Professional Studio Distributors**, 1056 Porter, Wichita, KS 67203 (316-267-1573) AR, CO, IA, KS, MO, NE, OK Audio Equip.; Video & Audio Tape; Floppy Discs; Wind Audio Cassettes

**RSC Electronics, Inc.**, 131 Laura, P.O. Box 1220, Wichita, KS 67201 (316-267-5213) KS, OK Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes

**Smith Audio-Visual, Inc.**, 623 Kansas Ave., P.O. Box 1216, Topeka, KS 66601 (913-235-3481) KS, Western-MO including St. Joseph and K.C. Audio & Video Equip.; Transmitters, Antennas & Transmission Systems; Tape; Service & Repair; System Design; Used Equip.

## KENTUCKY

**Bruce L. Dawson & Associates**, Central American Terminal-Bowman Field, Louisville, KY 40205 (502-456-6666, 6693) IN, KY, OH, West-PA, WV Audio & Video Equip.; Transmitters, Antennas & Transmission Systems

**Midwest Communications Corp., Headquarters**, One Sperti Drive, Edgewood, KY 41017 (606-331-8990) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Midwest Communications Corp.**, 2039 Regency Road, Lexington, KY 40503 (606-277-4994) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

## LOUISIANA

**Wm. B. Allen Supply Co., Inc.**, Allen Square, 300 Block N. Rampart St., New Orleans, LA 70112 (504-525-8222; 800-535-9593; 800-462-9520) Nationwide Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes

**Audiomedia Associates**, P.O. Box 29264, New Orleans, LA 70189 (504-586-0140) AL, AR, FL, LA, MS, TX Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Service & Repair; System Design

**Gray Communications Consultants, Inc.**, 550 Wholesalers, Suite G, New Orleans, LA 70123 (504-733-7265) AL, FL-Panhandle, LA, MS Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.; Tape

## MARYLAND

**Associated Sales Reps, Inc.**, 8969 Yellow Brick Road, Baltimore, MD 21237-2303 (301-574-0550) DE, DC, MD, NJ, PA, VA Audio & Video Equip.; Test & Measurement Equip.; Tape

**Bradley Broadcast Sales**, 15555-L Frederick Road, Rockville, MD 20855 (301-762-9222; 800-732-7665) U.S.A. and possessions Audio Equip.; Transmitters, Antennas, Transmission Systems; Tape; Service & Repair; System Design

**David H. Brothers Co., Inc.**, 19 Old Court Road, Baltimore, MD 21208 (301-764-7189) DC, MD, VA Audio & Video Equip.; Tape; Vacuum Tubes

**David Green Broadcast Consultants Corp.**, P.O. Box 8782, BWI Airport, MD 21240 (800-54-RADIO; 301-796-1500) U.S.A., Canada, GU, PR, VI Audio Equip.; Radio Test; Transmitters, STL, RPU; Supply Items

**Midwest Communications Corp.**, 4720-B Boston Way, Lanham, MD 20706 (301-577-4903) North America Audio & Video Equip.; Test & Measurement Equip.; Tape; Transmitters & Antennas; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Nurad**, 2165 Druid Park Drive, Baltimore, MD 21211 (301-462-1700) U.S.A., Canada handled by Tennaplex, Ont. Battery Packs/Chargers; Tripods; Cables; Mast-mounted Pedestals; Equip. Racks & Cases; Connectors

**Peirce-Phelps, Inc.**, 12288 Wilkins Ave., Rockville, MD 20852 (301-984-7979) U.S.A. Audio & Video Equip.; Tape; Vans & Accessories; Service & Repair; System Design

**Products International**, 8931 Brookville Road, Silver Spring, MD 20910 (301-587-7824; 800-638-2020) U.S.A. and Canada Equip., Tools, Supplies, Training for Electronic PC Boards Maintenance & Repair

**RCI (Recording Consultants Inc.)**, 8550 Second Ave., Silver Spring, MD 20910 (301-587-1800) DE, DC, MD, PA, VA, WV Audio Equip.; Tape; Service & Repair; System Design; Used & Rental Equip.

**Sel-Tronics, Inc.**, 717 Ellsworth Drive, Silver Spring, MD 20910 (301-589-3391) DC, MD, VA Audio & Video Equip.; Test & Measurement Equip.

**Theatre Service & Supply Corp.**, 1792 Union Ave., Baltimore, MD 21211 (301-467-1225) U.S.A. Lighting Equip. for Studio & Location; Scenic Hardware & Paints; Gaffers Tape; Rigging Equip. for Lighting & Scenery; Rear & Front Projection Screens; Portable Platforms; Bulbs for Studio Lighting; Studio Cyclorama Curtains; Lighting Grids

**Wiltronix, Inc.**, 16850 Oakmont Ave., Washington Grove, MD 20880 (301-258-7676) DE, DC, FL, GA, KY, MD, NC, PA, SC, VA, WV Audio & Video Equip.; Test & Measurement Equip.; Transmission Systems

## MASSACHUSETTS

**Barbizon Light**, 3 Draper St., Woburn, MA 01801 (617-935-3920) FL, GA, ME, MA, NH, NY, RI, VT Video & Film Lighting Equip. & Supplies

**Contact East, Inc.**, 335 Willow St., S., North Andover, MA 01845 (617-882-2000) U.S.A., Precision hand tools, test instruments, tool kits, soldering supplies

**Lake Systems Corp.**, 55 Chapel St., Newton, MA 02160 (617-244-6881) Worldwide Turnkey Communications Systems; TV Station Automation Featuring La-Kart

**Landy Associates, Inc.**, 1605 Trapelo Road, Waltham, MA 02154 (617-890-6325) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Tape; Vacuum Tubes; Service & Repair; System Design

*See advertisement on page 122*

**QSI Systems, Inc.**, 12 Linscott Road, Woburn, MA 01801 (617-938-1403) CT, ME, MA, NH, RI, VT Video Equip.

## MICHIGAN

**Audio Broadcast Group, Inc.**, 2342 S. Division Ave., Grand Rapids, MI 49507 (616-452-1596) U.S.A. Audio Equip.; Transmitters, Antennas & Transmission Systems; System Design

**CM Sales**, 31700 W. 12 Mile Road, Suite 206, Farmington Hills, MI 48018 (313-553-8070) MI Audio & Video Equip.; Test & Measurement Equip.

## Dealers/distributors...continued (see page 117 for key to listings)

**Victor Duncan, Inc.**, 32380 Howard St., Detroit, MI 48071 (313-589-1900) U.S.A. and Canada Audio, Film & Video Production Equip.; Test Equip.; Transmitters, Antennas & Transmission; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip. Over 300 Lines of Pro Equip.  
*See advertisement on page 137*

**H. M. Dyer Electronics, Inc.**, 48647 Twelve Mile Road, Novi, MI 48050 (313-349-7910) IL, IN, IA, MI, MN, MO, OH, WI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vans & Accessories; Used Equip.

**General TV Network**, 13201 Capital Ave., Oak Park, MI 48237 (313-399-2000) MI, Northwest-OH Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Midwest Communications Corp.**, 1328 Wheaton Ave., Troy, MI 48083 (313-689-9730) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**T. R. Pitts Co.**, 905-8 Washington St., Iron Mountain, MI 49801 (906-774-4242; 800-772-9431) U.S.A. Complete equip. & supplies for the cable TV industry including satellite equip.

**Sound Solutions Inc.**, 5701 Canton Center Road, Canton, MI 48187 (313-455-5557) IL, IN, MI, OH Audio Equip.; Tape; System Design

**Thalner Electronic Labs, Inc.**, 7235 Jackson Road, Ann Arbor, MI 48103 (313-761-4506; Area 313 Only 800-552-5275) MI, OH Audio & Video Equip.; Tape; Test & Measurement Equip.; Service & Repair; System Design; Used Equip.

## MINNESOTA

**AVC Systems, Inc.**, 2709 East 25th St., Minneapolis, MN 55406 (612-729-8305) IL, IN, IA, KS, KY, MI, MN, MO, NE, ND, SD, WI Audio Equip.; Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Used Equip.

**Emmons Associates, Inc.**, 1121 Riverwood Drive, Burnsville, MN 55337 (612-890-8920) IA, MN, ND, SD, WI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Service & Repair

**T. R. Pitts Co.**, 501 W. Fifth St., P.O. Box 57, Winona, MN 55987 (507-452-2629; Outside MN: 800-533-8092; MN Only: 800-642-2384) U.S.A. Complete equip. & supplies for the cable TV industry including some services.

**Video Images**, 9916 West 74th St., Eden Prairie, MN 55344 (612-941-9267) MI, MN, ND, SD Audio, Video, Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Video Midwest, Inc.**, 5050 West 78th St., Minneapolis, MN 55435 (612-831-2248) IA, MN, ND, SD, WI Video Equip.; Test & Measurement Equip.; Video & Audio Tape; Vacuum Tubes; Service & Repair; System Design; Used & Rental Equip.; Duplications

## MISSOURI

**Centurian Marketing Associates**, 124 Manchester Road; P.O. Box 1011, Ballwin, MO 63011 (314-227-7229) Southern-IL, IA, KS, MO, NE Audio Professional Products

**Delcom Corp. of St. Louis**, 2349 Gris-som, St. Louis, MO 63146 (314-432-1164; 800-331-5461) Continental U.S. Total Video Systems, Featuring Custom System

Design; Installation; Computerized Wiring & Tracing Documentation; Custom & Standardized Cabinetry

**Electronic Video Supply**, 1856 S. Stewart, Springfield, MO 65804 (417-881-4677) AR, KS, MO, OK Audio, Video & Test Equip.; Tape; Transmitters including towers ATS, STL, MDS etc; Vacuum Tubes; Film Equip.; Service & Repair; Used Equip.; System Design, including Studio Installation

**Television Engineering Corp.**, 580 Goddard Ave., Chesterfield, MO 63017 (314-532-4700) U.S.A. and Canada Audio & Video Equip.; Test & Measurement Equip.; Tape; System Design; Used Equip.; Vans & Accessories

**Video Masters, Inc.**, P.O. Box 1963; 1616 Broadway, Kansas City, MO 64141 (816-474-8530) AR, IL, IA, KS, MO, NE Audio & Video Equip.; Test Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Service & Repair; System Design

## MONTANA

**The Source Inc.**, 320 Sixth St. S.; P.O. Box 2487, Great Falls, MT 59403 (406/761-2420) MT, Northern-WY Audio & Video Equip.; Test & Measurement Equip.; Tape; Antennas

**Video Int'l. Publishers, Inc.**, 118 Sixth St., Great Falls, MT 59403 (406-727-7133) ID, MT, ND, SD, WA, WY Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; System Design; Used Equip.

## NEBRASKA

**RF Specialties of Nebraska**, 2003 Brewster Road, Bellevue, NE 68005 (402-734-5521) IA, KS, MO, NE Transmitters, Antennas & Transmis-

sion Systems

**Triangle Audio Visual**, 8025 Maple St., Omaha, NE 68134 (402-393-9911) IA, MN, NE, ND, SD Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes; Film Equip.; Service & Repair; System Design; Used Equip.

## NEVADA

**Cinema Services**, 4445 S. Valley View Blvd., Suite 7, Las Vegas, NV 89103 (702-876-4667) AZ, NV, NM, UT Video Equip.; Film Equip.; Used Equip.

## NEW HAMPSHIRE

**Associated Systems**, P.O. Box 5211, Manchester, NH 03108 (603-472-2297) CT, ME, MA, NH, RI, VT Video & Test Equip.

## NEW JERSEY

**A.F. Associates**, 100 Stonehurst Court, Northvale, NJ 07647 (201-767-1000) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Vans & Accessories; System Design

**Avtec Industries, Inc.**, 5 Audrey Place, Fairfield, NJ 07006 (201-882-9460) USA, Egypt, Nigeria, Saudi Arabia Audio & Video Equip.; Test Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Service & Repair; Used Equip.

**Broadcast Video Marketing Corp.**, 275 Route 18, East Brunswick, NJ 08816 (201-390-0770) CT, DE, DC, MD, NJ, NY, PA, VA Video Equip.; Cases; Standards Converters; Test & Measurement Equip.; Audio Time Compression; Audio Delay Synchronizer

**Calvert Electronics Inc., A Richardson Co.**, 1 Branca Road, East Rutherford, NJ 07073 (Outside NJ 800-526-6362; In NJ 201-460-8800) Worldwide Camera Pickup Tubes & CCDs; Capacitors, Transmitting, Mica & Vacuum; Microwave Components; Semiconductors; Vacuum Tubes

*See advertisement on page 237*

**Comprehensive Video Supply Corp.**, 148 Veterans Drive, Northvale, NJ 07647 (201-767-7990) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Tape; Custom Cases & Accessories; Computer Software for Video & Film

**Holzberg Inc.**, P.O. Box 323, Sea Bright, NJ 07760 (201-530-8555) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT Audio & Video Equip.; Test & Measuring Equip.; Transmitters, Antennas &

## Landy Associates, Inc.

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**Landy Associates, Inc.**, 1890 E. Marlton Pike, Cherry Hill, NJ 08003 (609-424-4660) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA Cameras; Promoters; Mounting Equip.; Audio & Video Equip.; Test & Measuring Equip.; Film Equip.; Tape; Tubes; Vans & Accessories; Service & Repair; System Design Transmitters, Antennas & Transmission Systems

See advertisement on page 122

**Tele-Measurements, Inc.**, 145 Main Ave., Clifton, NJ 07014 (201-473-8822) CT, DE, DC, NJ, NY, PA, VA Audio & Video Equip.; Test & Measurement Equip.; Satellite Communications; Tele-Conferencing; Service & Repair; System Design

**Thor Electronics Corp.**, 321 Pennsylvania Ave.; P.O. Box 707, Linden, NJ 07036 (201-486-3300) Worldwide Vacuum Tubes

**Turner Engineering**, 14 Morris Ave., Mountain Lakes, NJ 07046 (201-263-0023) CT, DE, NJ, NY, PA Audio & Video Equip.; Test & Measuring Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Service & Repair; System Design; Used Equip.

## NEW MEXICO

**ComNet**, 600-D E. Montana, Las Cruces, NM 88001 (505-524-9681; 915-522-6922) CO, NM, TX Audio Equip.; Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; Systems Design; Used Equip.

**DYMA Engineering, Inc.**, P.O. Box 1535, Los Lunas, NM 87031 (505-865-6700) AZ, CA, CO, KS, NV, NM, OK, TX, UT Audio & Video Equip.; Test Equip.; Transmitters, Antennas & Transmission Systems; Tape; Film Equip.; Vans & Accessories; System Design; Some Used Equip.

## NEW YORK

**Acoustilog, Inc.**, 19 Mercer St., New York, NY 10013 (212-925-1365) CT, NJ, NY Audio Equip.; Test & Measurement Equip.; Service & Repair; Used Equip.; System Design

**Adcom Communications Inc.**, 555 West 57th St., New York, NY 10019 (212-265-1760) CT, NJ, NY Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.; Rental Equip.

**Alpha Electronics, Inc.**, 1365 39th St., Brooklyn, NY 11218 (718-633-2800; 800-221-5802) U.S.A. Vacuum Tubes

**Audio-Video Corp.**, 213 Broadway, Menands (Albany), NY 12204 (518-449-7213) CT, MA, NY, North-PA, VT Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Audiotechniques Inc.**, 1619 Broadway, 4th Floor, New York, NY 10019 (212-586-5989; Sales: 800-223-2486) CT, DE, DC, ME, MD, MA, NJ, NY, PA, RI, VT, VA Audio & Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.

**Auteri Associates, Inc.**, 9 Heneary Drive, Miller Place, NY 11764 (516-331-5022) Worldwide Audio & Film Equip.; Service & Repair

**Avtech Electronics Inc. (Formerly Team Electronics)**, 24-16 Queens Plaza S., Long Island City, NY 11101 (718-937-9200; 800-221-1300) U.S.A. and Canada Audio & Video Tape; Vacuum Tubes

**Barbizon Electric Co., Inc.**, 426 West 55th St., New York, NY 10019 (212-586-1620) AL, CT, DE, DC, FL, GA, IL, IN, KY, ME, MD, MA, MI,

MS NH, NJ, NY, NC, OH, PA, RI, SC, TN, VT, VA, WV, WI All Types of Lamps and Sockets; Gaffer's Tape; Hot Mill Gloves; Light Control & Diffusion Media; Color Media; Dimming Equip.

**Bi-Tronics, Inc.**, 76 Main St., Tuckahoe, NY 10707 (212-585-1645; Outside NY: 800-522-7377) U.S.A. and Canada Cable and Assemblies; Audio & Video Connectors For Japanese Equip.

**The Camera Mart, Inc.**, 456 West 55th St., New York, NY 10019 (212-757-6977) CT, DE, DC, MA,



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## Dealers/distributors...continued (see page 117 for key to listings)

NH, NJ, NY, PA, VT Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; System Design; Used Equip.

**CeCo Communications Inc.**, 2115 Avenue X, Brooklyn, NY 11235 (718-646-6300; 800-221-0860) Worldwide Broadcast Tubes; Electron Tubes-Semiconductors; Broadcast Types, High Power Transmitting Tubes; Receiving Tubes; Industrial Tubes; Vacuum Tubes; Video Equip.

**Electronic Applications, Inc.**, 25 West 54th St., New York, NY 10019 (212-246-2490) CT, DE, DC, ME, MD, MA, NJ, NY, PA, RI, VT, VA Video Equip.

**R F Gain, Ltd.**, 116 S. Long Beach Road, Rockville Centre, NY 11570 (516-536-8868; 800-645-2322) Worldwide Vacuum Tubes; RF Amplifiers; Vacuum Capacitors

**Henry Grossman Associates**, 519 S. Fifth Ave., Mount Vernon, NY 10550 (914-664-5393) CT, DE, DC, FL, ME, MD, MA, NH, NJ, NY, PA, VT, VA Audio & Video Equip.; Film Equip.; Tape Equip.; Optics; TV Equip.; Transmitters (AM-FM-TV-STL), Antennas (AM-FM-TV); System Design

**Laumic Co., Inc.**, 306 East 39th St., New York, NY 10016 (212-889-3300) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Lee Dan Communications, Inc.**, 155 Adams Ave., Hauppauge, NY 11788-3699 (516-231-1414; 718-886-3000) U.S.A. Intercom Systems; Speakers & Enclosures; Wire & Cable, Annunciators

**Levit Electronics, Inc.**, 200 Park Ave. S., New York, NY 10003 (212-777-5517; 800-221-2945) Worldwide Vacuum Tubes

**MPCS Video Industries, Inc.**, 514 West 57th St., New York, NY 10019 (212-586-3690) U.S.A. Full service distributor of industrial & broadcast video equip.; complete

rental, service, production, post-production & duplication facilities on premises, as well as systems design and installation. Specializes in network, call letter & cable stations.

**Martin Audio/Video Corp.**, 423 W. 55th St., New York, NY 10019 (212-541-5900) CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT Audio & Video Equip.; Test & Measurement; Tape; System Design; Rentals

**Microphonics**, P.O. Box 37, Brooklyn, NY 11204 (212-438-6400; 800-431-3232) U.S.A. Nationwide Audio & Video Equip.; Tape; Vacuum Tubes

**L. Matthew Miller Associates Ltd.**, 48 West 21st St., 11th Floor, New York, NY 10010 (212-741-8011; 800-221-9328) U.S.A., PR Audio & Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Rental

**Northeast Broadcast Lab, Inc.**, 15 Charles St., South Glens Falls, NY 12801 (518-793-2181) CT, DE, DC, ME, MD, MA, NH, NY, OH, PA, RI, VT All Audio & Radio RF Products; System Design

**Richardson Electronics-East**, 116 S. Long Beach Road, Rockville Center, NY 11570 (800-645-2322) Worldwide Vacuum Tubes & Capacitors; Camera Tubes; Semiconductors

**RMS Electronics, Inc.**, 50 Antin Place, Bronx, NY 10462 (212-892-1000) U.S.A. Audio & Video Equip.

**Singer Products Co., Inc.**, 875 Merrick Ave., Westbury, NY 11590 (516-683-3000) Worldwide except U.S.A. and Canada Audio & Video Equip.; Test & Measurement Equip.; Transmitters & Antennas; Vacuum Tubes; System Design

**Stage Lighting Distributors**, 346 West 44th St., New York, NY 10036 (212-489-1370) U.S.A. and Canada Video Equip.; Lighting & Controls; System Design

**Studio Film & Tape (NYC) Inc.**, 630 Ninth Ave., New York, NY 10036 (212-977-9330) U.S.A. and Canada Audio & Video Tape, All Formats, Blank 2' 1' 3/4' 1/2'

**Tape City Int'l. Inc.**, 404 Park Ave. S., New York, NY 10016 (212-

679-1606; 800-223-1586) CT, NJ, NY, Mail Order in U.S.A. Audio & Video Equip.; Tape; Service & Repair; Used Equip.

**Temtron Electronics Ltd.**, 15 Main St., East Rockaway, NY 11518 (516-599-6400; 800-645-2300) U.S.A. Audio & Video Equip.; Test & Measurement Equip.; Vacuum Tubes

**United Research Lab Corp.**, 16 East 52nd St., New York, NY 10022 (212-751-4663) Worldwide Audio Equip.; Test & Measurement Equip.; Tape; Service & Repair

## NORTH CAROLINA

**Broadcast Services Co.**, Route 3 Box 45-E, Four Oaks, NC 27524 (919-934-6869) DC, MD, NC, PA, SC, VA, WV Full Line of Broadcast Audio & Radio RF Equip.

*See advertisement on this page*

**Electronic Merchandising Enterprises, Inc.**, 112 Buena Vista, High Point, NC 27260 (919-869-3335) East-KY, NC, SC, East-TN, VA, WV Mixers, Mics, Amps; Video Production Switchers, Monitors, Cameras, DA's; Analyzers; Frequency Counters; Power Meters, Voltmeters; Test & Measurement Equip.; Distortion Analyzers; Transmitters & Antennas; STL

**Midwest Communications Corp.**, 2848 Interstate 85 S., Suite E, Charlotte, NC 28208 (704-399-6336) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters & Antennas; Tape; Vans & Accessories; Service & Repair; System Design

**S.C.M.S., Inc.**, 10201 Rodney Blvd., Pineville, NC 28134 (704-889-4508) NC, SC, VA Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Service & Repair; System Design; Used Equip.

**Technical Video Systems, Inc.**, 215 N. Broad St., Winston-Salem, NC 27101 (919-748-0916) NC, SC, TN Video Equip.

## NORTH DAKOTA

**Audiovisual Inc. Formerly Known As OMF Audiovisual, Inc.**, 1818 E. Broadway, Bismarck, ND 58501 (701-258-6360) CO, ID, IA, KS, MN, MT, NE, ND, SD, WY Audio & Video Equip.; Test & Measuring Equip.; Transmitters; Tape; Vacuum Tubes; Film Equip.; Service & Repair; System Design; Used Equip.

## OHIO

Audio Marketing Association, 9470

Whitewood Road, Brecksville, OH 44141 (216-526-2426) IN, KY, OH, PA, WV Audio Equip.; Test & Measurement Equip.

**Cartwright Communications Co.**, 7812 Red Sky Dr., Cincinnati, OH 45249 (513-489-1755; Outside OH-800-543-8614; OH-800-582-2641) U.S.A., AK, HI Antennas; Batteries; Duplexers; Power Supplies; Remotes; RF Amps; Sirens & Lights; Test Equip.; Tone Equip.; Transmission Line; Two-Way Radios & Accessories; Wattmeters

**Cercone Vincent Associates, Inc.**, 5325 Naiman Parkway, Suite G, Solon, OH 44139 (216)/292-2550 IN, KY, OH, PA, WV Install, Design & Service Lighting Systems & Related Equip.; Rentals are available through our Subsidiary, Performance Lighting & Production Services, Inc.

**KAVCO, Div. of Daycom Corp.**, 3931 Image Drive, Dayton, OH 45414 (513-898-2003) IL, IN, KY, MI, OH, WV Audio & Video Equip.; Test & Measurement Equip.; Vans & Accessories; Service & Repair; System Design

**Midwest Communications Corp.**, 7500 Wall St., Cleveland, OH 44125 (216-447-9745) NY, OH, PA Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antenna Systems; Tape; Turnkey Mobile Units; System Design & Installation; Service Dept.; Rentals

**Midwest Communications Corp.**, 6630 Busch Blvd., Columbus, OH 43229 (614-846-5552) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas; Tape; Vans & Accessories; Service & Repair; System Design

## OKLAHOMA

**Walter S. Brewer Co., Inc.**, 4717-F S. Mingo Road, Tulsa, OK 74146 (918-665-6820) Worldwide Lighting for Video; System Design

**Delcom Corp.**, 6019 S. 66th E. Ave., Tulsa, OK 74145 (918-494-9500; Outside OK 800-331-5461) Continental U.S. Total Video Equip. Featuring Custom System Design; Professional & Broadcast Equip. Installation; Computerized Wiring & Tracing Documentation; Custom & Standard Cabinetry

**Hill Radio Equipment Co.**, 203 Alawhe Road, Claremore, OK 74017 (918-341-5240) U.S.A. Audio Equip.; Audio Test Equip.; Audio Recording Tapes; Towers-STL-TSL-Remote

## OREGON

**Custom Video Systems of Oregon, Inc.**, 1963 N.W. Kearney St., Portland, OR 97209 (503-295-6963) OR Audio & Video Equip.; Test Equip.;

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**Frontier Communications Corp.**, P.O. Box 750, Portland, OR 97207 (503-246-8080) AK, AZ, CA, CO, HI, ID, MT, NV, OR, UT, VI, WA, WY Audio Equip.; Transmitters, Antennas & Transmission Systems; Service & Repair; Systems Design

**URS Electronics, Formerly United Radio Supply Inc.**, P.O. Box 14040, Portland, OR 97214 (503-233-5341) AK, CA, GU, ID, MT, OR, WA, Alta., Sask., Yuk. Test & Measurement Equip.; Vacuum Tubes

## PENNSYLVANIA

**Alpha Video & Electronics Co.**, 28 E. Mall Plaza, Carnegie, PA 15106 (412-923-2070) MD, NY, OH, PA, WV Audio & Video Equip.; Test & Measurement Equip.; Transmitters; Tape; Vans & Accessories; Service & Repair; System Design

**Audio Associates**, 814 W. Broad St., Bethlehem, PA 18018 (215-865-6013) U.S.A. Audio Equip.; Test & Measuring Equip.; Transmitters, Antennas & Transmission Lines; Tone Arms & Cartridges; Processing Equip.; Power Distribution & Preamps; Studio Furniture & Accessories; Used Equip. & Trade-ins

**Cercone Vincent Associates, Inc.**, 2741 Noblistown Road, Pittsburgh, PA 15205 (412-922-0900) IN, KY, OH, PA, WV Install, Design & Service Lighting Systems & Related Equip.

**Comark Communications, Inc.**, P.O. Box 506, Colmar, PA 18915 (215-822-0777) Worldwide Transmitters, Antennas and Transmission Systems

**Jerry Conn Associates, Inc.**, P.O. Box 444, Chambersburg, PA 17201 (717-263-8258) U.S.A. Regional sales rep for top quality products and national distributor for all your distribution needs from drop materials to standby 63 channel tuneable modulators.

**EMCEE Broadcast Products**, P.O. Box 68, White Haven, PA 18661 (717-443-9575) Worldwide Transmitters, Antennas & Transmission Systems

*See advertisement on this page*

**Lerro Electrical Corp.**, 3125 N. Broad St., Philadelphia, PA 19132 (215-223-8200) DE, DC, MD, NJ, PA, VA Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Maxima Magnetics, Inc.**, 300 Bonair Ave., Hatboro, PA 19040 (215-443-0700) AL, AR, CT, DE, DC, FL, GA, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, NE, NH, NJ, NY, NC, ND, OH, OK, PA, PR, RI, SC, SD, TN, TX, VT, VA, WV, WI Tape

**Midwest Communications Corp.**, 535 Rochester Road, Pittsburgh, PA 15237 (412-781-7707) PA Audio & Video Equip.; Test & Measuring Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design

**Richard S. Pass Associates, Inc.**, 27 Oxford Drive, Langhorne, PA 19047 (215-757-6100) DE, DC, MD, Southern-NJ, Eastern-PA, VA Audio Equip.; Test & Measurement Equip. (Spectrum Analyzers) ENG Mixers & Associated Equip.

**Peirce-Phelps, Inc.**, 490 S. St. Johns Road, Camp Hill, PA 17011 (717-761-0240) U.S.A. Audio & Video Equip.; Tape; Vans & Accessories; Service & Repair; System Design

**Peirce-Phelps, Inc.**, 2000 North 59th St., Philadelphia, PA 19131 (215-879-7171) U.S.A., GU, PR, VI Audio & Video Equip.; Tape; Vans & Accessories; Service & Repair; System Design

**Radio Systems Inc.**, 5113 W. Chester Pike, Edgemont, PA 19028 (215-356-4700) U.S.A. Audio Equip.; Tape; Transmitters, Antennas & Transmission Systems; System Design; Service & Repair

**Steinberg Electronics Inc.**, 2520-22 N. Broad St., Philadelphia, PA 19132 (215-223-9400; 800-523-0894) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Tape; Vacuum Tubes

**Val-Tronics, Inc.**, Penn Park Building, Pittston, PA 18640 (717-655-5937) U.S.A. Cart Machines; Consoles; Transmitters; Audio Carts; Tape Recorders & Turntables; Microphones; Optimods; Antennas; Transmission Lines; Cabinets; Phono Cartridges; Replacement Heads; Amplifiers; Dummy Loads

## TENNESSEE

**Broadcast Equipment & Supply Co., Inc.**, P.O. Box 3141, Bristol, TN 37625 (615-878-2531) U.S.A. Audio Equip.; Tape

**Gray Communications Consultants, Inc.**, 100 Greenbriar Drive, Knoxville, TN 37919 (615-523-3107) NC, TN Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design

**Gray Communications Consultants, Inc.**, 1838 Elm Hill Pike, Apcom Place Suite 101, Nashville, TN 37210 (615-883-9175) Entire Southeast Audio & Video Equip.; Test & Measurement Equip.; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design

**Midwest Communications Corp.**, A7-156 Space Park S., Antioch Pike, Nashville, TN 37211 (615-331-5791) U.S.A., GU, PR, VI Audio & Video Equip.; Test & Measurement Equip.; Tape; Transmitters, Antennas & Transmission Systems; Film Equip.; Service & Repair; Vans & Accessories; System Design; Used Equip.

**Wilson Audio Sales**, 6602 Highway 100, Suite 205, Nashville, TN 37205 (615-356-0372) AL, GA, MS, NC, SC, TN Audio Equip.

## TEXAS

**Allied Broadcast Equipment**, 1101 E. Plano Parkway, Suite B, Plano, TX

75074 (214-423-8667) Worldwide Audio Equip.; Test & Measurement Equip.; Transmitters & Antennas; Tape; Vacuum Tubes; Service & Repair; System Design  
**Broadcast Systems Inc.**, 8222 James-town Drive, Austin, TX 78758 (800-531-5232) U.S.A. All major Video Equip.

**Crouse-Kimzey Co.**, 3507 W. Vickery, Ft. Worth, TX 76107 (817-737-9911) U.S.A. Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape

**Victor Duncan, Inc.**, 6305 N. O'Connor #100, Irving, TX 75039-3510 (214-869-0200) U.S.A. and Canada Audio, Film & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip. Over 300 Lines of Pro Equip.

*See advertisement on page 137*

**G.P. Enterprises, Inc.**, P.O. Box 912, Arlington, TX 76010 (817-572-0132; 478-0050) AL, AZ, AR, CO, IA, KS, LA, MN, MS, MO, MT, NE, NM, ND, OK, SD, TN, TX, WI, WY Audio & Video Equip.; Test & Measurement Equip.; Film Equip.; Vans & Accessories; Used Equipment; Color Monitors; Audio Lip Sync & Time Compression/Expansion

**MZB & Associates**, 4203 Beltway, Dallas, TX 75234 (214-233-5535) AR, KS, LA, MO, NE, NM, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Film Equip.; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Magnetic Media**, 3440 Sojourn Drive, Suite 200, Carrollton, TX 75006 (214-931-0404; TX: 800-772-0103; Outside TX: 800-527-0969) AR, CO, LA, NM, OK, TX Video Equip.; System Design; Mobile Production Vehicles; Low Power TV Systems; Production/Post Production; Equipment Sales

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**Professional Audio Services**, 5700 East Loop 820 South, Fort Worth, TX 76119-7050 (817-483-7474; 800-433-7668; TX Only 800-233-8273) Worldwide Complete Line of Audio Equip. & Supplies

**RF Specialties of Texas**, P.O. Box 8316, Amarillo, TX 79114 (806-372-4518) CO, NM, OK, TX Transmitters, Antennas & Transmission Systems

**SAVCO Broadcast Equipment, Inc.**, P.O. Box 850427, Richardson, TX 75085 (214-783-1438) AL, AR, KS, LA, MI, MO, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; System Design

**The Gene Sudduth Co., Inc.**, P.O. Box 293, Flint, TX 75762 (214-894-6303) AR, LA, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems

**The Gene Sudduth Co., Inc.**, P.O. Box 1116, Paris, TX 75460 (214-785-5764) AR, LA, OK, TX Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems

**Tenicki & Associates**, 2600 S.W. Freeway, Suite 814, Houston, TX 77098 (713-528-2005) AR, LA, OK, TX Audio Equip.

**UAR Professional Systems**, 8535 Fairhaven, One studio Center, San Antonio, TX 78229 (512-690-8888) U.S.A. Audio Equip.

## UTAH

**LIBRA Programming Inc.**, 1954 East 7000 South, Salt Lake City, UT 84121 (800-453-3827) U.S.A. Computer Software-Radio Broadcast System & Related Accounting Software Packages; Computer Hardware

**RIA Corp.**, 50 E. Malvern, Salt Lake City, UT 84115 (801-486-8822 or 484-1701) AZ, CA, CO, ID, LA, MS, MO, MT, NV, OK, TX, UT, WY Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Film Equip.; Tape; Service & Repair; System Design

## VIRGINIA

**Midwest Communications Corp.**, 4129-Q Townhouse Road, Richmond, VA 23228 (804-262-5788) U.S.A. Audio & Video Equip.; Test & Measurement Equip.; Transmitters & Antennas; Tape; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Old Dominion Broadcast Eng. Service**, 1101 Front St., Richmond, VA 23222 (804-321-4506) Worldwide Audio Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Service & Repair; System Design; Used Equip.

**Robert Slye Electronics**, 3415 N. Washington Blvd., Arlington, VA 22201 (703-525-7272) DC, MD, VA Audio & Video Equip.; Test & Measurement Equip.; System Design

## WASHINGTON

**Allied Broadcast Equipment**, 33430 13th Place S. Suite 120, Federal Way, WA 98003 (206-838-2705) Worldwide Audio Equip.; Test & Measurement Equip.; Transmitters & Antennas; Tape; Service & Repair; System Design

**Bennett Engineering Associates, Inc.**, P.O. Box 76, Mercer Island, WA 98040 (206-232-3550) AK, WA Engineering Consultants-Electronic & Communication Systems

**Bennett Engineering Sales Corp.**, P.O. Box 76, Mercer Island, WA 98040 (206-232-3555) ID, MT, OR Engineering Consultants-Electronic & Communication Systems

**Broadcast Supply West**, 7012 27th St. W., Tacoma, WA 98466 (206-565-2301; 800-426-8434) Worldwide Audio Equip.; Test & Measurement Equip.; Tape

**Custom Video Systems, Inc.**, 17521 15th Ave. N.E., Seattle, WA 98155 (206-365-5400) AK, WA Audio & Video Equip.; Test & Measurement Equip.; Tape; Vans & Accessories; Service & Repair; System Design; Rentals

**Northshore Marketing**, 11000 Lake City Way N.E., Seattle, WA 98125 (206-364-5444) AK, ID, MT, OR, WA Audio & Test & Measurement Equip.

**RF Specialties of Washington, Inc.**, 11721 15th Ave. N.E., Seattle, WA 98125 (206-363-7730) AK, ID, MT, OR, WA Transmitters, Antennas & Transmission Systems

## WISCONSIN

**Full Compass Systems, Ltd.**, 6729 Seybold Road, Madison, WI 53719 (608-271-1100; Outside WI: 800-356-5844; WI: 800-362-5445) Worldwide Audio & Video Equip.; Test & Measurement Equip.; Tape; Service & Repair; System Design; Used Equip.

**Video Images**, 811 Mayfair Ave., Madison, WI 53714 (608-241-5281) IL, IA, NE, WI Audio, Video, Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip.

**Video Images**, 12200 W. Adler Lane, West Allis, WI 53214 (414-475-0111) IL, IA, MI, MN, NE, ND, SD, WI Audio & Video Equip.; Test & Measurement; Transmitters, Antennas & Transmission Systems; Tape; Vacuum Tubes; Vans & Accessories; Service & Repair; System Design; Used Equip.

## WYOMING

**Hall Electronics**, 637 Wilderness Drive, Gillette, WY 82716 (307-682-9486) Eastern-CO, Eastern-MT, All-WY Audio Equip.; Test & Measurement Equip.; Transmitters; Antennas; Transmission Line; System Design; Used Equip.

## CANADA

**BCB Electronic Sales**, 12295 Highway 50; P.O. Box 315, Bolton, Ont., Canada LOP 1A0 (416-857-0790) Canada Video Equip., Broadcast Equip.

**Black & McDonald Ltd.**, 101 Parliament St., Toronto, Ont., Canada M5A 2Y7 (416-366-2541) Canada

Transmitters, Antennas & Transmission Systems; Strobe Lighting

**Caveco Equipment Ltd.**, 1121 Bellamy Rd. N., Unit 10, Scarborough, Ont., Canada M1H 3B9 (416-438-6230; 800-268-4081) Canada Audio Equip.; Tape; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Used Equip.

**Comad Communications**, 1535 Meyerside Drive, Unit 1, Mississauga, Ont., Canada L5T 1M9 (416-676-9171) Canada Audio & Video Equip.; Test & Measurement Equip.; Transmitters, Antennas & Transmission Systems; Vacuum Tubes

**Glenetronix (1977) Ltd.**, 160 Duncan Mill Road, Don Mills, Ont., Canada M3B 1Z5 (416-444-8497) U.S.A. and Canada Audio & Video Equip.; Test & Measurement Equip.; Video Head Re-Working; Cable Strippers; Clock Drivers & Clocks

**Incospec Electronics, Inc.**, 4651 Boul des Grandes Prairies, St. Leonard, Que., Canada H1R 1A5 (514-322-5540) Canada LPTV & TVRO Equip. including satellite subcarrier low level demodulators

**Lumitrol, Ltd.**, 253 Merton St., Toronto, Ont., Canada M4S 1A7 (416-485-4817 or 4826) Canada Video Studio; Lights, Dimmers, Drapes; Studio Grids, Power Distribution

**Nortec West Ltd.**, 7056-B Farrell Road S.E., Calgary, Alta., Canada T2H 0T2 (403-252-8141) Alta, B.C., Man., Sask. Audio & Video Equip.; Film Equip.; Service & Repair

**Pineway Electronics Ltd.**, 1875 Leslie St., Unit 7, Don Mills, Ont., Canada M3B 2M5 (416-449-1343; Canada 800-269-7839) ME, NY, VT, Canada Audio Equip.; Test & Measurement Equip.; AM-FM-TV Transmitters; Tape; Service & Repair

**SonoTechnique**, 2585 Bates Road, Room 304, Montreal, Que., Canada H3S 1A9 (514-739-3368) Canada Audio & Video Equip.; Test & Measurement Equip.; Antennas; System Design

**Tele-Tech Electronics Ltd.**, 920 Denison St., Unit 11, Markham, Ont., Canada L3R 3K5 (416-499-3242) Canada Audio & Video Equip.; Test & Measurement Equip.; Tape; Used Equip.

# MOVING?

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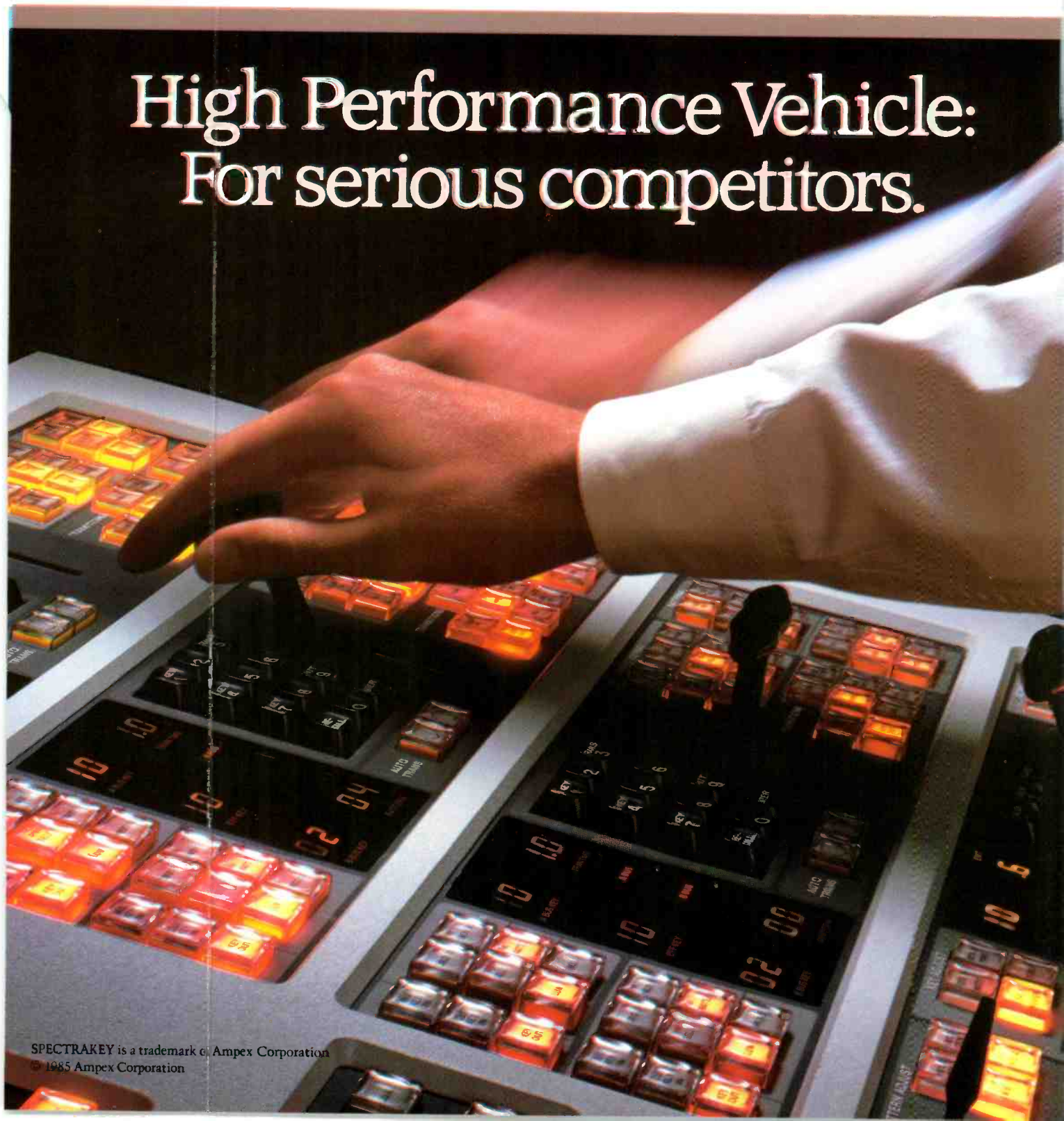
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# Color TV Cameras

These TV cameras are applicable to all types of production, including studio, sports, EFP, ENG and slow motion. TV standards are abbreviated to N (NTSC), P (PAL) and S (SECAM)

Manufacturer	Robert Bosch		GEC/McMichael	Harris Broadcast	
Model Number	KCM-125	KCF1/KBF1	Marconi Mk10	TC-90	TC-85
Suggested use	Studio	ENG, EFP	Studio, EFP	ENG, EFP	Studio, EFP
# of types of pickups	3 PbO or SAT	3 PbO	3 XQ3427 or P8462	3 PbO	3 PbO
Optical format	1", prism f/1.5	½"	¾", prism f/1.4	½", prism f/1.4	1", prism f/1.4
Lens mount type	Bosch mount	Bayonet or fixed	Bayonet & wedgelock	Bayonet	Bayonet
Sensitivity	550 lux, f/2.8, 89.9%R	900 lux, f/2.8, 60%R	56fc, f/2, 60%R	56fc, f/1.4, 89.9%R	80fc, f/2.8
Minimum illumination	25 lux, f/1.7, +18dB	110 lux, f/1.4, +12dB	5fc, f/1.6, +18dB	5fc, +18dB	6fc, f/1.8
Resolution	700 TVL >60%M 5MHz	>40%M 4MHz	400 TVL	600 TVL	600 TVL
Registration error	0.05, 0.1, 0.1%	0.1, 0.2, 0.5%	0.1%, 0.4%, 0.4%	0.1, 0.2, 0.3%	0.05, 0.1, 0.2%
S/N ratio	58dB NTSC/56dB PAL	54dB NTSC/52dB PAL	50dB luma/45dB color	60dB NTSC/58dB PAL	52dB NTSC/49dB PAL
Noise control	Coring	Coring	Level dep comb filter	.....	Coring
Contours from	RGB	RG	Green	RG	RG
Enhancement in	RGB	Luminance	Green	.....	.....
ND filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical or electronic	Optical	Optical	.....	Electronic
Output signal format	N, P, S, RGB, Y/Pr/Pb	N, P, S, Y/R-Y/B-Y	N, P, RGB	N, P, RGB	N, P, S
Sync generator	Integral	Integral	Integral gen-lock	Integral gen-lock	Drives (gen-lock opt)
CCU required	Yes	.....	Yes	RCU optional	Yes
Shutter design	No	No	No	No	No
Setup memories for	Balance, lens file	.....	No	.....	Color balance
Automatic functions—					
Beam optimizing	Yes	Yes	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	No	Yes	Yes	Yes
Centering	Yes	No	Yes	No	Yes
Registration	Yes	No	No	No	Yes
Cable compensation	Yes	No	No	No	Yes
Dynamic gain	Yes	No	.....	Yes	Yes
Microprocessor	Distributed system	No	Yes	Multiple	One per camera setup
Computer setup eqpt.	In CCU	None	No	Smart option	In CCU
Diagnostics	VF, CCU, hard copy	No	No	In viewfinder	At CCU & printer
Cable types	Multicore, triax	Multicore	Triax, multicore	Coax	TV81, mini-TV81, triax
Portable camera	No	Yes	No	Yes	No
Camera head weight	75 lb	8 lb	31 lb w/o lens & vf	8.2 lb	85 lb
Detachable VCR	No	BCFYK9A	No	No	No
VCR format	.....	.....	.....	.....	.....
Reader Service Number	396	397	398	399	400

Manufacturer	Hitachi Denshi				Ikegami Electronics
Model Number	SK-97	FP-Z-31	SK-970	SK-110D	HL-79E
Suggested use	ENG, EFP	ENG, EFP	Studio, EFP	Studio	ENG, EFP, slow motion
# of types of pickups	3 PbO	3 SAT	3 PbO	3 PbO	3PbO or SAT
Optical format	¾", prism f/1.4	¾", prism f/1.4	¾", prism f/1.4	1¼", prism f/1.8	¾", prism f/1.4
Lens mount type	Bayonet	Bayonet	RCA	RCA	Bayonet
Sensitivity	200fc, f/4, 90%R	200fc, f/4, 90%R	200fc, f/4, 90%R	200fc, f/5.6, 90%R	200fc, f/4, 60%R
Minimum illumination	2fc, f/1.4, +21dB	4fc, f/1.6, +18dB	2fc, f/1.4, +21dB	4fc, f/2.1, +12dB	2fc, f/1.4, +18dB
Resolution	700 TVL	700 TVL	700 TVL	750 TVL	650 TVL
Registration error	0.1, 0.2, 0.5%	0.1, 0.2, 0.5%	0.1%, 0.2, 0.5%	0.1, 0.2, 0.5%	0.1, 0.2, 0.5%
S/N ratio	59dB NTSC/56dB PAL	59dB NTSC/52dB PAL	59dB NTSC/56dB PAL	59dB NTSC/56dB PAL	59dB NTSC/56dB PAL
Noise control	.....	.....	.....	.....	.....
Contours from	Green	Green	Green	Green	Green
Enhancement in	.....	.....	.....	.....	.....
ND filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical	Optical	Optical	Optical	Optical
Output signal format	N, YIQ (YUV)	N, YIQ (YUV)	N, YIQ (YUV)	N, YIQ (YLV)	N, YIQ (YUV)
Sync generator	Gen-lock w/ adapter	Gen-lock w/ adapter	Gen-lock w/ adapter	Gen-lock w/ adapter	Gen-lock w/adapter
CCU required	RCU optional	RCU optional	RCU optional	RCU optional	RCU optional
Shutter design	No	No	No	No	Yes
Setup memories for	Color balance, lens	Color balance	Lens, color balance	Lens, color balance	Lens, color balance
Automatic functions—					
Beam optimizing	No	Yes	No	No	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes
Centering	Yes	Yes	Yes	Yes	Option
Registration	Yes	Yes	Yes	Yes	Option
Cable compensation	.....	.....	No	Yes	Option
Dynamic gain	Yes	Yes	Yes	Yes	Yes
Microprocessor	Multiple	In camera head	Multiple	Multiple	Single in head
Computer setup eqpt.	In CCU	In CCU	In CCU	In CCU	External package
Diagnostics	Viewfinder & CCU	Viewfinder	Viewfinder & CCU	VF CCU printer	Hard copy printout
Cable types	Multicore, coax, triax	Multicore, coax, triax	Multicore, coax, triax	Multicore, coax, triax	Multicore, coax, triax
Portable camera	Yes	Yes	No	No	Yes
Camera head weight	15 lb	10.8 lb	55 lb	88 lb	13.2 lb
Detachable VCR	No	No	No	No	No
VCR format	SMPTE M portables	Any portable system	.....	.....	.....
Reader Service Number	401	402	403	404	405

Manufacturer	Ikegami Electronics			JVC Company	
Model Number	SC-500	HK-322	KY-210U	KY-320U	KY-950U
Suggested use	Studio	Studio	ENG, EFP, studio	ENG, EFP, studio	ENG, EFP, studio
# of types of pickups	3 SAT	3 PbO	3 SAT	3 PbO	3 PbO
Optical format	3/8", prism f/1.4	1/4" or 1"	3/8", prism f/1.4	3/8", prism f/1.4	3/8", prism f/1.4
Lens mount type	Bayonet	Wedge	Bayonet	Bayonet	Bayonet
Sensitivity	200fc, f/4, 60%R	200fc, f/4, 60%R	200fc, f/4, 89.9%R	200fc, f/4.5, 89.9%R	200fc, f/4.5, 89.9%R
Minimum illumination	6fc, f/1.4, +12dB	6fc, f/1.6, +12dB	3.8fc, f/1.6, +18dB	3.6fc, f/1.7, +18dB	3.6fc, f/1.7, +18dB
Resolution	700 TVL	800 TVL	650 TVL	600 TVL	600 TVL
Registration error	0.1, 0.2, 0.5%	0.05, 0.05, 0.05%	0.1, 0.2, 0.5%	0.1, 0.2, 0.5%	0.1, 0.2, 0.4%
S/N ratio	59dB NTSC/56dB PAL	58dB NTSC/56dB PAL	59dB NTSC/56dB PAL	59dB NTSC/56dB PAL	58dB NTSC
Noise control	.....	Coring, slicing	.....	.....	Coring, level dep
Contours from	Green	RGB	Green	Green	Green
Enhancement in	.....	RGB	.....	.....	RGB
ND filters	.....	Internal	Internal	Internal	Internal
Color correction	Optical	Optical, electronic	Optical	Optical	Optical, electronic
Output signal format	N, YIQ (YUV)	N, P, RGB	N, YIQ (YUV)	N, YIQ (YUV)	N
Sync generator	Gen-lock w/ adapter	Integral	Gen-lock w/ adapter	Gen-lock w/ adapter	Integral
CCU required	RCU optional	Yes	RCU optional	RCU optional	Optional
Shutter design	No	No	No	No	No
Setup memories for	Color balance	Lens, color, scene	.....	.....	.....
Automatic functions—	.....	.....	.....	.....	.....
Beam optimizing	Yes	Yes	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes
Centering	Yes	Yes	Yes	Yes	Yes
Registration	Option	Yes	No	No	No
Cable compensation	No	Yes	No	No	No
Dynamic gain	Yes	Yes	No	No	No
Microprocessor	Single, in head	Distributed system	.....	.....	.....
Computer setup eqpt.	None	In CCU	None	None	None
Diagnostics	Viewfinder & CCU	At CCU	Viewfinder	Viewfinder	Viewfinder
Cable types	Multicore	TV24, TV81, triax	Multicore, triax	Multicore, triax	Multicore, triax
Portable camera	No	No	Yes	Yes	Yes
Camera head weight	28.6 lb	94 lb	7.8 lb	9.2 lb	10 lb
Detachable VCR	No	No	No	No	No
VCR format	.....	.....	.....	.....	.....
Reader Service Number	406	407	408	409	410

Manufacturer	Link Electronics	NEC America	Nisus Video	Panasonic	
Model Number	#130	SP-3A	N-79E	AK-30	AK-100PL
Suggested use	Studio, EFP	ENG	ENG, EFP, slow motion	ENG, EFP, studio	ENG, EFP, studio
# of types of pickups	3 PbO	3 CCO	3 PbO LOC DG	3 PbO	3 LOC DG PbO
Optical format	3/8"	3/8", prism f/1.4	3/8", prism f/1.4	3/8", prism f/1.4	3/8", prism f/1.4
Lens mount type	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet
Sensitivity	800 lux, f/2, 60%R	130fc, f/4, 89.9%R	187fc, f/5, 89.9%R	200fc, f/4.5, 89.9%R	200fc, f/4, 60%R
Minimum illumination	.....	<5fc, f/1.4, +12dB	1.87fc, f/1.4, +18dB	2.4fc, f/1.4, +18dB	4fc, f/2.8, +18dB
Resolution	>600 TVL green	>450 TVL	650 TVL	650 TVL	600 TVL
Registration error	0.1, 0.2, 0.5%	0.05% overall	0.05%, 0.1%, 0.3%	0.05%, 0.1%, <0.25%	0.1, 0.2, 0.5%
S/N ratio	59dB NTSC/56dB PAL	58dB NTSC	59dB NTSC, 0dB gain	62dB NTSC	59dB NTSC
Noise control	Comb filter	Coring, level dep	Slicing	Slicing	Slicing
Contours from	Green	Green	Green	Green	Green
Enhancement in	.....	RGB	Green	RGB	Green
ND filters	.....	Internal	Internal	Internal	Internal
Color correction	Optical	Optical	Optical	Optical, electronic	Optical
Output signal format	N, YIQ (YUV)	N, YIQ, YC, RGB	N RGB	N, YIQ, RGB	N, YIQ, RGB
Sync generator	Gen-lock w/ adapter	Integral	External drives only	Integral gen-lock	Integral
CCU required	RCU optional	Optional	Optional	Option	Option
Shutter design	No	No	Yes	No	No
Setup memories for	Lens, color balance	Color balance	Color balance	Color, black, register	Color balance
Automatic functions—	.....	.....	.....	.....	.....
Beam optimizing	Yes	Not applicable	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes
Centering	Yes	Not applicable	No	Yes	No
Registration	Yes	Not applicable	Option	Yes	No
Cable compensation	.....	Optional	Yes	No	No
Dynamic gain	.....	No	No	Yes	No
Microprocessor	Yes	.....	.....	Single	.....
Computer setup eqpt.	Yes	None	External package	None	None
Diagnostics	Viewfinder	No	In viewfinder	No	No
Cable types	Triax, coax	Multicore	Multicore, triax	Multicore, coax, triax	Multicore, triax
Portable camera	No	Yes	Yes	Yes	Yes
Camera head weight	44 lb w/o lens	6.7 lb	15.8 lb w/ vf	10.8 lb	8.66 lb
Detachable VCR	No	Applicable	No	No	Yes
VCR format	.....	Any format	.....	.....	1/2" M
Reader Service Number	411	412	413	414	415



### Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.



## SP-3A by NEC

# IMAGINE WHAT YOU'LL FIND INSIDE

We've opened up the SP-3A to let you have a look inside this remarkable camera. Then maybe you'll understand why we can aim this camera directly at the sun... and still get the shot without burn or comet tail. It's because of what's inside: CCD chips instead of tubes.

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- 3 exclusive interline frame transfer CCD's
- > 450 TVL Resolution
- Sensitivity 130 fc @f/4
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- S/N 58 dB
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- Size, head only 3.5w x 6.1d x 7.0h
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- Price: \$17,900 head only w/VF

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Circle (123) on Reply Card

Manufacturer	Panasonic	Philips TV Systems			RCA
	Model Number	AK-100S	LDK-6	LDK-26	LDK-54
Suggested use	ENG, EFP, studio	Studio, field	Studio, field	ENG, EFP	Studio
# of types of pickups	3 SAT	3 PbO	3 PbO	3 PbO	3 PbO or SAT
Optical format	3/8", prism f/1.4	1" or 1 1/4", prism f/1.4	3/8", prism f/1.4	3/8", prism f/1.4	1 1/4", prism f/1.4
Lens mount type	Bayonet	Bayonet	Bayonet	Bayonet	Wedge
Sensitivity	200fc, f/2.8, 60%R	53fc, f/2.8, 90%R	85fc, f/2.8, 90%R	85fc, f/3, 90%R	125fc, f/4, 14%R
Minimum illumination	5.2fc, f/2.8, +18dB	4.6fc, f/1.6, +12dB	4.7fc, f/1.4, +12dB	2fc, f/1.4, +18dB	10fc, f/2, +12dB
Resolution	550 TVL	>650 TVL	>650 TVL	>650 TVL	800 TVL
Registration error	0.1, 0.2, 0.5%	25ns, 40ns, 40ns	25ns, 40ns, 40ns	30ns, 60ns, 100ns	0.05, 0.1, 0.15%
S/N ratio	58dB NTSC	58dB NTSC/56dB PAL	58dB NTSC/56dB PAL	59dB NTSC/57dB PAL	55dB NTSC/52dB PAL
Noise control	Slicing	Coring, slicing	Coring, slicing	Coring, slicing	Coring
Contours from	Green	Green (red optional)	Green (red optional)	Green	Green
Enhancement in	Green	RGB	RGB	RGB	RGB
ND filters	Internal	Integral	Internal	Internal	Internal
Color correction	Optical	Optical, electronic	Optical, electronic	Optical	Optical, electronic
Output signal format	N, YIQ, RGB	N, P, S, RGB	N, P, S, RGB	N, P, S, RGB	N, P, S, RGB
Sync generator	Integral	Integral	Integral	Integral	Internal
CCU required	Optional	Yes	Yes	Option	Yes
Shutter design	No	No	No	No	No
Setup memories for	Color balance	Total setup/lens	Total setup, lens file	Color balance	Lens, color balance
Automatic functions—					
Beam optimizing	Yes	Yes	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes
Centering	No	Yes	Yes	Yes	Yes
Registration	No	Yes	Yes	No	Yes
Cable compensation	No	Yes	Yes	Yes	Yes
Dynamic gain	No	Yes	Yes	No	Yes
Microprocessor	No	Distributed	Distributed	No	Multiple
Computer setup eqpt.	None	In CCU	In CCU	No	Yes
Diagnostics	No	At CCU	At CCU	No	At CCU
Cable types	Multicore, coax	Triax	Triax	Multicore, triax	Multicore, triax
Portable camera	Yes	No	No	No	No
Camera head weight	8.25 lb	90 lb	75 lb	9.35 lb	88 lb
Detachable VCR	Yes	No	No	No	No
VCR format	1/2" M	.....	.....	1/4" Lineplex	.....
Reader Service Number	416	417	418	419	420

Manufacturer	RCA	Sharp Electronics			
	Model Number	TKP-47	CCD-1/CCD-1S*	XC-A1	XC-800II
Suggested use	EFP, studio	ENG, EFP, slow motion	ENG, EFP, studio	ENG, EFP, studio	ENG, EFP, studio
# of types of pickups	3 SAT	3 CCD	3 SAT/LOC DG MF SAT	3 SAT-II	3 DG PbO
Optical format	3/8"	1/2", prism f/1.4	3/8"	3/8"	3/8"
Lens mount type	Bayonet	Conventional	Bayonet	Bayonet	Bayonet
Sensitivity	125fc, f/2.8, 60%R	178fc, f/2.8, 89.9%R	186fc, f/4, 89%R	186fc, f/4, 89%R	186fc, f/4, 89%R
Minimum illumination	.....	<3fc, f/1.4, +24dB	2.8fc, f/1.4, +18dB	3fc, f/1.4, +18dB	3fc, f/1.4, +18dB
Resolution	.....	G>60% at 300 TVL	750 TVL	750 TVL	750 TVL
Registration error	0.05, 0.1, 0.15%	0.05% overall	0.1, 0.2, 0.5%	0.1, 0.2, 0.4%	0.1, 0.2, 0.4%
S/N ratio	57dB NTSC/54dB PAL	62dB NTSC	57dB NTSC	57dB NTSC	57dB NTSC
Noise control	Coring	Coring	Coring, slicing	Coring, slicing	Coring, slicing
Contours from	Green	Green	Green	Green	Green
Enhancement in	RGB	Luminance	RGB	RGB	RGB
ND filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical, electronic	Optical, electronic	Optical, electronic	Optical, electronic	Optical, electronic
Output signal format	N, P, S, RGB	N, YIQ, RGB, Y/R-Y/B-Y	N, RGB	N, RGB, YIQ, Y/R-Y/B-Y	N, YIQ, RGB, Y/R-Y/B-Y
Sync generator	Integral	Integral	Integral	Integral	Integral
CCU required	Yes	Option	Option	Option	Option
Shutter design	No	Yes	No	No	No
Setup memories for	Lens, color balance	Color balance	Color, centering	Color balance	Color balance
Automatic functions—					
Beam optimizing	Yes	No	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes
Centering	Yes	No	Yes	No	No
Registration	Yes	No	No	No	No
Cable compensation	Yes	No	Option	Option	Option
Dynamic gain	Yes	No	No	No	No
Microprocessor	Multiple	.....	Single	Single	Single
Computer setup eqpt.	Yes	None	None	None	None
Diagnostics	At CCU	No	At CCU	No	No
Cable types	Multicore, triax	Multicore, triax	Multicore, coax	Multicore, coax, triax	Multicore, triax, coax
Portable camera	Yes	Yes	Yes	Yes	Yes
Camera head weight	18 lb	13.5 lb	8.6 lb	11.4 lb	12.2 lb
Detachable VCR	No	Yes	No	Adapter optional for component outputs to various VCRs	Adapter available to use with component VCR systems.
VCR format	.....	1/2" M	.....	.....	.....
.....	.....	*222fc, f/1.4, 89.9%	.....	.....	.....
.....	.....	*141c, f/1.4, +24dB	.....	.....	.....
Reader Service Number	421	422	423	424	425



### Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

# 320.

The ProCam™ Video Camera  
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JVC's experience — and success — in designing the highest quality and reliability into compact video production cameras is unmatched. Now, continuing this tradition of high performance at an affordable price, JVC has brought a "high-end" teleproduction camera within the financial reach of production people often victimized by modest budgets. This time, it's ProCam 320.

What a package!

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

A video S/N ratio of 57 dB. Color framing output signal (RS-170A). A split field color bar generator for consistent color reference. A genlock circuit for maintaining a stable picture while switching or mixing with other signals locked on the same source.

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Several 8-bit data memory chips offer operator conveniences for quick set-up and consistent performance. These include: Auto centering, auto-black balance and auto-white balance, auto black level stabilization and auto beam control circuits. Matrix masking for true color reproduction and automatic protection for the pick-up tubes are a few of the many features standard on this new camera.

**VERSATILITY.** Easy portability. Outstanding performance in low-level



lighting. High degree of automation. An extensive selection of options and accessories combine to make the ProCam 320 suitable for both studio production, EFP, or ENG; or, indeed, to any application, anywhere, that calls for top quality video production while staying within a tight budget.

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Professional Video Division  
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**JVC**  
JVC COMPANY OF AMERICA  
Professional Video Division

Manufacturer	Sony Broadcast				
Model Number	HDC-100	BVP3000 SuperMotion	BVP-3A (BVP-30)	BVP-150/-150P	BVP-330A
Suggested use	HDTV 1125/60 only	EFP, slow motion	ENG, EFP	ENG	ENG, EFP, studio
# of types of pickups	3 SAT/mixed field	3 PbO (XQ3457)	3 MF SAT (or XQ3457)	3 MF SAT	3 XQ2427
Optical format	1", prism f/1.4	3/8"	3/8" prism f/1.4	3/8", prism f/1.4	3/8", prism f/1.4
Lens mount type	Special bayonet	Bayonet	Bayonet	Bayonet	Bayonet
Sensitivity	200fc, f/3, 90%R	200fc, f/4.5, 90%R	200fc, f/4.5, 90%(70%)	200fc, f/4, 70%R	200fc, f/4.5, 70%R
Minimum illumination	25fc, f/1.6, +6dB	10fc, f/1.4, +6dB	2.5(2)fc, f/1.4, +18dB	4fc, f/1.6, +18dB	2.5fc, f/1.4, +18dB
Resolution	1200 TVL	500 TVL	650 TVL	650 TVL	600 TVL
Registration error	0.025, 0.05, 0.1%	0.1, 0.2, 0.4%	0.1, 0.15, 0.3%	0.1, f/1.6, 0.4%	0.1, 0.2, 0.4%
S/N ratio	Not available	51dB for system	59dB NTSC	57dB NTSC/55dB PAL	58dB NTSC
Noise control	Digital core & slice	Coring, slicing	Coring, slicing	Coring, slicing	Coring, slicing
Contours from	Green	Green	Green	Green	Green
Enhancement in	Digital into RGB	RGB	RGE	RGB	RGB
ND filters	Internal	Internal	Internal	Internal	Internal
Color correction	Optical	Optical	Optical, electronic	Optical	Optical, electronic
Output signal format	RGB, Y/Cw/Cn	NTSC 90 frame/sec	N, Y/R-Y/B-Y	N, Y/R-Y/B-Y	N, Y/R-Y/B-Y
Sync generator	Integral	Integral	Integral	Integral	Integral
CCU required	Yes	Yes	Option	Option	Option
Shutter design	No	No	No	No	No
Setup memories for	Color, black, gamma	Color, black, center	Color, black, center	Color, black, center	Color, black, center
Automatic functions —					
Beam optimizing	Yes	Yes	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes
Centering	Yes	Yes	Yes	Yes	Yes
Registration	Yes	No	No	No	No
Cable compensation	Yes	No	No	No	No
Dynamic gain	Yes	No	No	No	No
Microprocessor	Distributed	Single	Single	Single	Single
Computer setup eqpt.	In CCU	In CCU	None	None	None
Diagnostics	No	No	No	In viewfinder	No
Cable types	Multicore, fiber-optic	Multicore, fiber-optic	Multicore, coax, triax	Multicore	Multicore, coax, triax
Portable camera	No	Yes	Yes	Yes	Yes
Camera head weight	22 lb w/o lens or vf	12 lb	10.1 lb	9.2 lb	11.9 lb
Detachable VCR	No	No	BVW-3A (BVW-30)	No	No
VCR format	Requires special 1" VTR, TBC and processor.	Special 1" VTR, processor and TBC required.	1/2" Betacam	.....	.....
Reader Service Number	426	427	428	429	430

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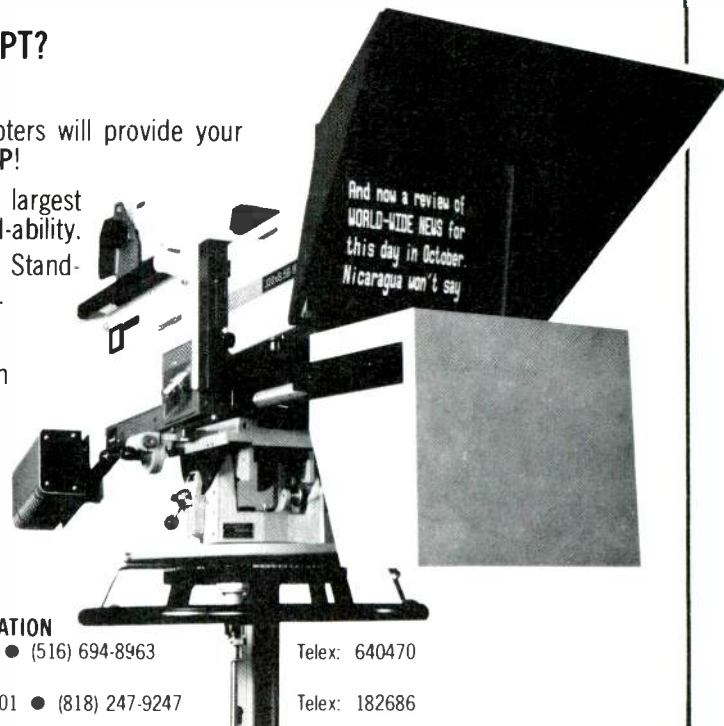
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Circle (125) on Reply Card

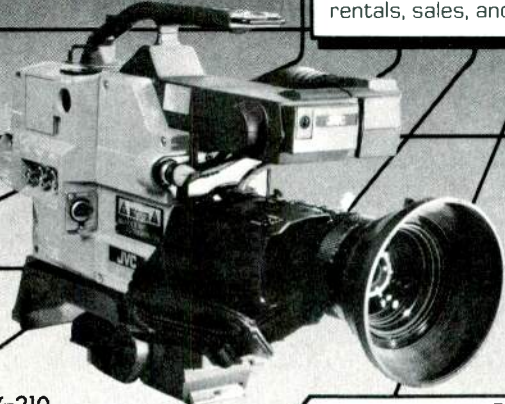


Manufacturer	Sony	Thomson-CSF Broadcast	TTV-1525C	BC-613 Betacam	TTV-1623	TTV-1624
Model Number	BVP-360					
Suggested use	EFP, studio, sports		Studio, EFP	ENG, EFP	ENG, EFP	ENG, EFP
# of types of pickups	3 X03457		3 LOC DG PbO	3 MF SAT	3 SAT or PbO	3 PbO or LOC SAT
Optical format	3/8", prism f/1.2		1"	3/8"	3/8"	3/8"
Lens mount type	Cam lock plate		Bayonet	Minicam	Minicam	Minicam
Sensitivity	200fc, f/4.5, 70%R		87fc, f/4, 89.9%R	200fc, f/4, 89.9%R	200fc, f/1.4, 89.9%R	1400 lux, f/4, 89.9%R
Minimum illumination	1fc, f/1.2, +24dB		2.75fc, f/1.5, +12dB	2fc, f/4, +18dB	3fc, f/1.4, +18dB	3fc, f/4, +18dB
	+24dB		+12dB	+18dB	+18dB	+18dB
Resolution	700 TVL		400 TVL	650 TVL	650 TVL	650 TVL
Registration error	0.05, 0.1, 0.15%		20ms, 20ns, 40ns	0.1, 0.15, 0.3%	0.1, 0.2, 0.4%	0.1, 0.2, 0.4%
S/N ratio	60dB NTSC		58dB NTSC	58dB NTSC/56dB PAL	57dB NTSC	58dB NTSC
Noise control	Coring, slicing		Coring, -dB gain	Coring	Coring	Coring
Contours from	Green		Green	Green	Green	Green
Enhancement in	RGB		RGB	RGB	RGB	RGB
ND filters	Internal		Internal w/ effects	Internal	Internal	Internal
Color correction	Optical, electronic		Electronic	Electronic	Optical	Optical
Output signal format	N, RGB, Y/R-Y/B-Y		N, P, S, RGB	N, P, S, Y/R-Y/B-Y	N*, RGB, Y/R-Y/B-Y	N*, RGB, Y/R-Y/B-Y
Sync generator	Integral		Integral	Integral	Integral	Integral
CCU required	Yes		Yes	Option	Option	Option
Shutter design	No		No	No	No	No
Setup memories for	Color, lens file/etc		Lens, color, register	Centering, color	Color, centering	Color, centering
Automatic functions --						
Beam optimizing	Yes	Yes	Yes	Yes	Yes	Yes
White balance	Yes	Yes	Yes	Yes	Yes	Yes
Black balance	Yes	Yes	Yes	Yes	Yes	Yes
Centering	Yes	Yes	Yes	Yes	Yes	Yes
Registration	Yes	Yes	Yes	Yes	Option	Option
Cable compensation	Yes	Yes	Yes	No	No	No
Dynamic gain	Yes	Yes	Yes	No	No	No
Microprocessor	Distributed	Multiple	Multiple	Multiple	Single & distributed	Single & distributed
Computer setup eqpt.	In CCU and head	In CCU	In CCU	External package	In CCU or external	In CCU & external
Diagnostics	CCU & viewfinder	In viewfinder	In viewfinder	In viewfinder	In viewfinder	In viewfinder
Cable types	Coax, triax, (options)	Multicore, coax, triax	Multicore, coax, triax	Multicore, coax, triax	Multicore, coax, triax	Multicore, coax, triax
Portable camera	No	No	No	Yes	Yes	Yes
Camera head weight	50 lb w/ viewfinder	87 lb	87 lb	9.5 lb	9.4 lb	9.4 lb
Detachable VCR	No	No	No	Yes	Yes	Yes
VCR format				1/2" Betacam	1/2" Betacam	1/2" Betacam
				*PAL & SECAM options	*PAL & SECAM options	*PAL & SECAM options
Reader Service Number	431	432	433	434	435	435

# GET YOUR HANDS ON TOMORROW



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KY-210



BY-110

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Circle (126) on Reply Card

This section is devoted to zoom lens systems for TV cameras. These systems are grouped by sizes of 1/2", 2/3", 1", and 1 1/4". Values in the view angle category are listed in degrees and are listed for wide angle and tele in the horizontal dimension. Aperture values are given for widest angle and for tele, when appropriate.

## Camera Lenses, 1/2"

Manufacturer	Angenieux	Canon	Fujinon	
<b>Model Number</b>	15x7	25x8.5	PH13x6.6B-IE PH15x7B	S16x7RM
Suggested use	ENG	Field/sports	Portable/ENG	ENG
Zoom range	7-105mm	8.5-212mm	6.6-86mm	7-112mm
Widest aperture	f/1.4-f/1.8	f/1.4-f/2.4	f/1.4	f/1.4
MOD distance	31 inches	36 inches	31.5 inches	37.4 inches
MOD area (H/V mm)	44Hx34V	23Hx17V	56Hx42V	51Hx38V
View angle (W/T H)	48°/3.5°	41°/1.75°	51.7°/4.3°	49°42'/3°19'
Back focus distance	.....	.....	33mm in air	.....
Clear aperture front	.....	.....	.....	.....
Clear aperture rear	.....	.....	.....	.....
Integral extenders	2x option	2x	2x	No
Macro settings	Yes	.....	.....	Yes
Iris servo	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes
Focus servo	.....	No	No	No
Integral diascope	Option	Option	No	With macro
Weatherized housing	Yes	Yes	.....	Yes
Adjustment access	.....	.....	.....	.....
Lens assembly weight	3.7 lb	13.7 lb	3.3 lb	3 lb
<b>Reader Service Number</b>	<b>1151</b>	<b>1152</b>	<b>1154</b>	<b>1155</b>

Manufacturer	Fujinon	Schneider	Tamron
<b>Model Number</b>	S12x6.6ERM	S14x6.6ERM	TV54 14x 70H
Suggested use	ENG	ENG	ENG (CCD)
Zoom range	6.6-80mm	6.6-92mm	6.5-91mm
Widest aperture	f/1.4	f/1.4	f/1.4
MOD distance	37.4 inches	31.5 inches	31.5 inches
MOD area (H/V mm)	72Hx54V	52Hx39V	53Hx40V
View angle (W/T H)	51°44'/4°35'	51°44'/3°59'	52°/4°
Back focus distance	.....	.....	35.7mm
Clear aperture front	.....	.....	72mm
Clear aperture rear	.....	.....	30mm
Integral extenders	2x	2x	2x
Macro settings	Yes	Yes	.....
Iris servo	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes
Focus servo	No	No	No
Integral diascope	No	No	No
Weatherized housing	Yes	Yes	.....
Adjustment access	.....	.....	.....
Lens assembly weight	3.2 lb	3.26 lb	3.3 lb
<b>Reader Service Number</b>	<b>1156</b>	<b>1157</b>	<b>1158</b>

## Camera Lenses, 2/3"

Manufacturer	Angenieux	Canon			
<b>Model Number</b>	14x8	15x9	25x10	J45x9.5B-IE	J15x9.5B
Suggested use	ENG	ENG/field	Field/studio	Field	ENG/portable
Zoom range	8-112mm	9-135mm	10-250mm	9.5-430mm	9.5-143mm
Widest aperture	f/1.6-f/2	F/1.5-f/1.9	f/1.4-f/2.8	f/1.7-f/3	f/1.8-f/2.3
MOD distance	31 inches	31 inches	36 inches	<72 inches	39.4 inches
MOD area (H/V mm)	61Hx46V	48Hx36V	27Hx20V	.....	56Hx42V
View angle (W/T H)	58°/4.5°	51°/3.75°	46°/2°	.....	49.7°/3.5°
Back focus distance	.....	.....	.....	.....	41.9mm type B4
Clear aperture front	.....	.....	.....	.....	.....
Clear aperture rear	.....	.....	.....	.....	.....
Integral extenders	2x option	2x option	2x	2x	No
Macro settings	Yes	Yes	No	.....	.....
Iris servo	Yes	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes
Focus servo	No	No	No	No	No
Integral diascope	Option	Option	Option	.....	No
Weatherized housing	Yes	Yes	Yes	Yes	.....
Adjustment access	.....	.....	.....	.....	.....
Lens assembly weight	4 lb	4.7 lb	13.7 lb	35 lb	3.3 lb
<b>Reader Service Number</b>	<b>1161</b>	<b>1162</b>	<b>1163</b>	<b>1164</b>	<b>1165</b>

Manufacturer	Canon	Fujinon			
<b>Model Number</b>	J20x8.5B-IE	A16x9.5RM	A12x9ERM	A30x11ESM	A17x8.5ESM
Suggested use	Studio/EPF	ENG	ENG/field	Studio/field	Studio/field
Zoom range	8.5-170mm	9.5-152mm	9-108mm	11-330mm	8.5-145mm
Widest aperture	f/1.6-f/2.1	F/1.8	f/1.7	f/1.6	f/1.5
MOD distance	24 inches	37.4 inches	37.4 inches	67 inches	27.5 inches
MDD area (H/V mm)	39Hx30V	51Hx38V	73Hx55V	41Hx31V	39Hx31V
View angle (W/T H)	54.7°/3°	49°42'/3°19'	52°06'/4°40'	43°36'/1°32'	54°44'/3°28'
Back focus distance	47.9mm	.....	.....	.....	.....
Clear aperture front	.....	.....	.....	.....	.....
Clear aperture rear	.....	.....	.....	.....	.....
Integral extenders	2x	No	2x	2x	2x
Macro settings	Yes	Yes	Yes	.....	No
Iris servo	Yes	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes
Focus servo	No	No	No	No	Yes
Integral diascope	.....	No	.....	Available	Available
Weatherized housing	Yes	Yes	Yes	Yes	Yes
Adjustment access	.....	.....	.....	.....	Remove housing
Lens assembly weight	17.6 lb	3 lb	3.2 lb	20.3 lb	23.8 lb
<b>Reader Service Number</b>	<b>1166</b>	<b>1167</b>	<b>1168</b>	<b>1169</b>	<b>1170</b>

# Fujinon makes 44X EFP lenses two ways:

## The Lightest.



## The Fastest.



When you need ultra length in an EFP lens, get ultra performance, too. Only Fujinon gives you this choice:

### **The New F1.4—lighter, more compact.**

At 14.5kg, the F1.4 version of the new A44 x 9.5ESM weighs less than half as much as competing lenses. At the full tele position, it's *faster than any comparable EFP lens*. To be specific, it maintains its F1.4 from 9.5mm to 240mm (F2.5 at 420mm). Moreover, you can see that for yourself. It has a unique LED display panel that reports your focal length and iris.

The new A44 x 9.5ESM (F1.4) is faster and flatter than any other long lens built for 2/3-inch cameras... with one exception.

### **The New F1.2—the fastest, the flattest.**

Here is the kind of performance you would expect only from large format lenses. It can zoom from 9.5mm

to 247mm and maintain its F1.2 maximum aperture. At 420mm, it delivers F2.1 speed. For brightness, edge-to-edge resolution, contrast, MTF and freedom from flare, ghosting and distortion, the new A44 x 9.5ESM (F1.2) leaves the competition—yours and ours—in the dust.

### **Common characteristics, uncommon quality.**

Both 44's come with a built-in 2X range extender that lets you switch from 9.5mm-420mm to 19mm-840mm. MOD for the F1.4 is 2.2m; 2.5m for the F1.2. Auto iris and manual zoom and focus are standard. Options let you have full servo operation, a built-in pattern projector, and the widest choice in pan bar controls of any lens manufacturer—including the most advanced shot boxes on the market.

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Circle (127) on Reply Card

Manufacturer	Schneider				Tamron
Model Number	TV44 14x	TV80 17x	TV66 14.5x	976H (H123x9.5CEII)	466H & H14x9B1)
Suggested use	ENG/EFP	Studio/OB	EFP	ENG	ENG
Zoom range	9-126mm	8.5-150mm	8.5-130mm	9.5-114mm	9-126mm
Widest aperture	f/1.7	f/1.4	f/1.4	f/1.6-1/2	f/1.6-1/1.9
MOD distance	30 inches	27.5 inches	17.7 inches	39.4 inches	39.37 inches
MOD area (H/V mm)	54Hx41V	53Hx40V	43Hx32V	.....	.....
View angle (W/T H)	70°/2.2°	55.5°/1.7°	56°/4°	49.7°/4.4°	52°6'/4°
Back focus distance	42.5mm-47.6mm	42.4mm	43.6mm in air	46.65mm in air	38.98mm
Clear aperture front	72mm	133mm	134mm	65.5mm	76.5mm
Clear aperture rear	29.5mm	33mm	35.8mm	29mm	24.8mm
Integral extenders	2x	.....	.....	2x	No
Macro settings	Yes	No	.....	Yes	Yes
Iris servo	Yes	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	No	No	No
Integral diascope	Option	Yes	.....	No	No
Weatherized housing	Yes	Yes	.....	Yes	.....
Adjustment access	.....	Remove housing	Remove housing	.....	.....
Lens assembly weight	3.3 lb	33 lb	41.8 lb	3.53 lb	3.33 lb
Reader Service Number	1171	1172	1173	1174	1175

## Camera Lenses, 1"

Manufacturer	Angenieux				Canon
Model Number	15x13hp	12x12.5	18x12.5	42x12.5	PV12x14B-IE
Suggested use	Studio	Studio	Studio	Studio/sports	Studio
Zoom range	13-195mm	12.5-150mm	12.5-225mm	12.5-525mm	13.5-162mm
Widest aperture	f/1.5	f/1.5	f/1.5-1/2.4	f/1.5-1/5.3	f/1.6
MOD distance	31 inches	36 inches	25 inches	25 inches	35.4 inches
MOD area (H/V mm)	69Hx52V	109Hx82V	50Hx37V	22Hx17V	65Hx49V
View angle (W/T H)	53°/3.75°	56°/5°	54.5°/3.25°	56°/1.5°	50.8°/4.5°
Back focus distance	.....	.....	.....	.....	63.22mm in air
Clear aperture front	.....	.....	.....	.....	.....
Clear aperture rear	.....	.....	.....	.....	.....
Integral extenders	1.7x	2x	1.6x & 2.5x	2x	1.5x & 2x
Macro settings	No	No	No	No	No
Iris servo	Yes	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	Yes	Yes	Yes
Integral diascope	Option	Option	Option	Option	.....
Weatherized housing	Yes	Yes	Yes	Yes	Yes
Adjustment access	Remove housing	Remove housing	Remove housing	Remove housing	Remove housing
Lens assembly weight	55 lb	59 lb	60 lb	58 lb	44 lb
Reader Service Number	1176	1177	1178	1179	1180

Manufacturer	Canon	Fujinon			Schneider	
Model Number	PV18x11B-IE	PV40x13.5B-IE	R15x12.5ESM	R17x12.5ESM	R44x13.5ESM	TV64 14.5x
Suggested use	Studio/field	Field	Studio	Studio	Field	Studio
Zoom range	11-200mm	13.5-270mm	12.5-190mm	12.5-215mm	13.5-600mm	13-190mm
Widest aperture	f/1.6-1/2	f/1.7-1/2.8	f/1.6	f/1.6	f/1.8	f/1.7-1/2.5
MOD distance	23.6 inches	98.4 inches	29.5 inches	29.5 inches	98.4 inches	15.7 inches
MOD area (H/V mm)	49Hx37V	53Hx40V	66Hx49V	58Hx44V	50Hx37V	43.3Hx32.5V
View angle (W/T H)	60.4°/3.7°	50.7°/1.4°	54°13'/3°52'	54°13'/3°25'	50°44'/1°13'	54°/4°
Back focus distance	62.79mm in air	62.8mm in air	.....	.....	.....	71.6mm
Clear aperture front	.....	.....	.....	.....	.....	134mm
Clear aperture rear	.....	.....	.....	.....	.....	43mm
Integral extenders	1.5x & 2x	2x	1.5x & 2x	1.5x & 2x	2x	2x
Macro settings	No	No	No	No	No	No
Iris servo	Yes	Yes	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	Yes	Yes	Yes	No
Integral diascope	.....	.....	Available	Available	Available	.....
Weatherized housing	.....	.....	.....	Yes	Yes	.....
Adjustment access	Remove housing	Remove cover	Side door	Side door	Side door	Remove housing
Lens assembly weight	61.6 lb	66 lb	43 lb	43 lb	55 lb	41.8 lb
Reader Service Number	1181	1182	1183	1184	1185	1186



### Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

# Camera Lenses, 1 1/4"

Manufacturer	Angenieux	Canon			
Model Number	42x16	12x16	P12x188-IE	P13x158-IE	P40x8-IE
Suggested use	Studio/OB	Studio	Studio	Studio/field	Field
Zoom range	16-675mm	16-192mm	18-216mm	15-270mm	18-720mm
Widest aperture	f/2.1-1/6.8	f/2	f/2.1	f/2.1-1/2.7	f/2.3-1/3.8
MOD distance	25 inches	36 inches	35.4 inches	23.6 inches	98.4 inches
MOD area (H/V mm)	22Hx17V	109Hx82V	65Hx49V	49Hx37V	53Hx40V
View angle (W/T H)	56°/1.5°	56°/5°	50.8°/4.5°	60.4°/3.7°	50.7°/1.4°
Back focus distance	.....	Adjustable	78.27mm	75.3mm	75mm in air
Clear aperture front	.....	.....	.....	.....	.....
Clear aperture rear	.....	.....	.....	.....	.....
Integral extenders	2x	No	1.5x & 2x	1.5x & 2x	2x
Macro settings	No	No	No	No	No
Iris servo	Yes	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes	Yes
Focus servo	Yes	.....	Yes	Yes	Yes
Integral diascopes	Option	.....	.....	.....	.....
Weatherized housing	Yes	Yes	Yes	Yes	Yes
Adjustment access	Remove housing	.....	Remove housing	Remove housing	Remove housing
Lens assembly weight	58 lb	59 lb	44 lb	61 lb	66 lb
Reader Service Number	1187	1188	1189	1190	1191

Manufacturer	Fujinon			Schneider
Model Number	P15x16.5ESM	P17x16.5ESM	P44x18ESM	TV65 14.5x
Suggested use	Studio	Studio	Field	Studio
Zoom range	16.5-250mm	16.5-280mm	18-800mm	16.5-240mm
Widest aperture	f/2.1	f/2.1	f/2.4	f/2.2
MOD distance	29.5 inches	29.5 inches	98.4 inches	15.7 inches
MOD area (H/V mm)	67Hx50V	59Hx44V	50Hx37V	45.3Hx34V
View angle (W/T H)	54°56'/3°55'	54°50'/3°30'	50°44'/1°13'	54°/2.1°
Back focus distance	.....	.....	.....	71.5mm in air
Clear aperture front	.....	.....	.....	134mm
Clear aperture rear	.....	.....	.....	37.5mm
Integral extenders	1.5x & 2x	1.5x & 2x	2x	2x
Macro settings	No	No	No	No
Iris servo	Yes	Yes	Yes	Yes
Zoom servo	Yes	Yes	Yes	Yes
Focus servo	Yes	Yes	Yes	Yes
Integral diascopes	Available	Available	Available	Yes
Weatherized housing	Yes	Yes	Yes	Yes
Adjustment access	Side door access	Side door access	Side door access	Remove housing
Lens assembly weight	43 lb	43 lb	55 lb	41 lb
Reader Service Number	1192	1193	1194	1195

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# Character Generators/Titlets

TV graphics equipment provide the capability to type messages on the TV screen. These systems may or may not provide fine-art or painting modes. References to font types include; s.serif = sans serif; it = italic; and scr = script. C = chrominance; L = luminance. Readers are directed to look for additional suppliers and manufacturers of graphics equipment in the Video Productions portion of the Buyers' Guide in this issue. See "Character Generators/Titlets" and "Electronic Graphics Systems."

Manufacturer	Ampex		Aston Electronic		Robert Bosch	Chyron
	Model Number	AVA-3	Aston 3	Aston 4	FGS-4000	VP-1
Primary function	Electronic art	Character generator	Character generator	Character generator	Graphics generation	Character generator
Base computer	68000	68000 microprocessor	68000 microprocessor	68000 microprocessor	Proprietary	8088
Subtitle feature	Any location	Any screen area	Any screen area	Lower 1/3s	Any location	Any screen area
Subtitle control	Manual	Manual/timecode	Manual/timecode	Manual/timecode opt	Manual	.....
Text page format	Various	40 char x 21 line	40 char x 21 line	56 char x 14 line	Various	.....
Resolution	768x484-pixel	31.25ns	31.25ns	<10ns	10ns antialiased	35ns
Anti-aliasing type	Software	.....	.....	Software	Hardware	.....
On-line faces avail	Multiple	4	4	8	.....	6
Font types	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Various	Serif/s.serif/it/scr
Non-Arabic sets	.....	Cyrillic/hebraic	Cyrillic/hebraic	Cyrillic/hebraic	.....	.....
Type face storage	Disk	Disk	Disk	Disk	Disk	ROM
Compose feature	Yes	Option	Option	Option	Yes	No
Character flash	No flashes	Char/word/line/page	Char/word/line/page	Char/word/line/page	Char/word/line/page	Char/word/line/page
Edging control	Various	Surround/C/L/shadow	Surround/C/L/shadow	Surround/C/L/shadow	.....	Surround/C/L/shadow
Auto-centering	Center & justify	Horizontal	Horizontal	Horizontal	Horiz/vert/H-V page	Horiz/vert/page
Roll/crawl control	No	Variable speed	Variable	Variable	.....	Variable
Colorizer	Integral	Integral	Integral	Integral	Integral	Integral
Keyer	Key signal output	External	External	External	Integral	Integral
Color palette	16.7M total/screen	4096 with 8/screen	4096 with 8/screen	4096 with 32/screen	32768 total & screen	512 with 8/screen
Color memory type	Full color	Full color	Full color	Full color	Full color	Color mapped
Internal memory	.....	2 pages	.....	1 page	.....	1 page/4000 images
Architecture	24-bit	.....	.....	32-bit	16-bit	8-bit
Integral still store	Yes	No	No	No	Yes	No
Mass off-line store	Winchester	Floppy disk	Floppy disk	Floppy disk	.....	Floppy disk
Access time (worst)	<2s maximum	<1s/page	<1s/page	1.5s/page 2s/frame	.....	.....
Outputs	1 prvw/1 prgm	1 program	1 program	Prvw/prgm (dual opt)	1 prgm	1 prvw/2 prgm
Imaging planes	.....	1	1	3	.....	Infinite
Remote interface	RS-232/RS-422	RS-232	RS-232	RS-232/RS-422/SMPTE	.....	RS-232
Image sources	Camera/grfpad/library	Camera/library	Camera/library	Camera/library	Camera/graphics pad	.....
Frame manipulations	Various	No	No	.....	Various	.....
Artist tools	Various	No	No	.....	Various	.....
Menu CRT required	On preview output	No	No	Option	Yes	Yes
Multi-user system	No	5 keyboards	5 keyboards	2-station/6-keyboard	1 work station	No
Automation interface	No	Yes	Yes	Yes	.....	Yes
Functions embedded	No	No	No	No	No	No
Reader Service Number	901	902	903	904	904	905

Manufacturer	Chyron					Dubner Computer
	Model Number	VP-2	SCRIBE	RGU-2	Chyron IV EXB	20-K
Primary function	Character generator	Character generator	Character generator	Character generator	Character generator	Character generator
Base computer	8088 80186	68010	.....	68000	68000	68000
Subtitle feature	Any screen area	Any screen area	Any screen area	Any screen area	Any screen area	Lower & upper 1/3s
Subtitle control	.....	Manual/timecode	Manual/timecode	Timecode	Timecode	Manual
Text page format	.....	64 char x 24 line	64 char x 24 line	62 char x 24 line	62 char x 24 line	100 char x 16 line
Resolution	35ns	.....	.....	27ns	27ns	37ns/485x1384-pixel
Anti-aliasing type	.....	Hardware	.....	.....	.....	Software
On-line faces avail	6	8	8	4	12	255
Font types	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr	Serif/s.serif/it/scr
Non-Arabic sets	.....	Cyrillic/hebraic	Cyrillic	Cyrillic/hebraic	Cyrillic/hebraic	.....
Type face storage	ROM	Disk	Disk	Disk	Disk	Disk
Compose feature	No	No	Option	Option	Option	No
Character flash	Char/word/line/page	Character	Char/word/line/page	Char/word/line/page	Char/word/line/page	Character
Edging control	Surround/shadow	Surround/C/L/shadow	Surround/shadow	Surround/shadow	Surround/C/L/shadow	Surround/C/L/shadow
Auto-centering	Horiz/vert/page	Horiz/vert/page	Horizontal	Horizontal	Horizontal	Horiz/vert/page
Roll/crawl control	Variable	Variable	Variable	Variable	Variable	Variable
Colorizer	Integral	Integral	Integral	Integral	Integral	Integral
Keyer	Integral	Integral	Integral	Integral	Integral	Integral
Color palette	512 with 16/screen	16.7M-256/screen	64 with 8/screen	512 with 185/screen	512 with 185/screen	16M with 256/screen
Color memory type	Color mapped	Color mapped	Color mapped	Color mapped	Color mapped	Color mapped
Internal memory	1 page/4000 images	2 pages	2 pages	2 pages	2 pages	1000 pages
Architecture	8-bit	32-bit	16-bit	16-bit	16-bit	8-bit/frame buffer
Integral still store	No	No	No	No	No	No
Mass off-line store	Floppy disk	Floppy or Winchester	Floppy disk	Floppy or Winchester	Floppy or Winchester	Winchester disk
Access time (worst)	.....	0.5s	1s page or frame	1s	0.25s page or frame	0.25s page or frame
Outputs	1-prvw/2-prgm	1 prvw/1 prgm	1-prvw/1-prgm	1-prvw/1-prgm	1-prvw/1-prgm	1-prvw/1-prgm
Imaging planes	Infinite	2	2	3	3	1
Remote interface	RS-232/RS-422	RS-232/RS-422	RS-232	RS-232	RS-232	RS-232/RS-422
Image sources	.....	Camera	Camera	Gri-pad/camera/Wx	.....	Wx database
Frame manipulations	.....	.....	.....	.....	.....	.....
Artist tools	.....	.....	.....	.....	.....	.....
Menu CRT required	No	Yes	No	Option	Option	No
Multi-user system	No	2 stations	No	3 stations	3 stations	No
Automation interface	No	.....	.....	.....	.....	.....
Functions embedded	No	No	No	No	No	Yes
Reader Service Number	906	907	908	909	909	910

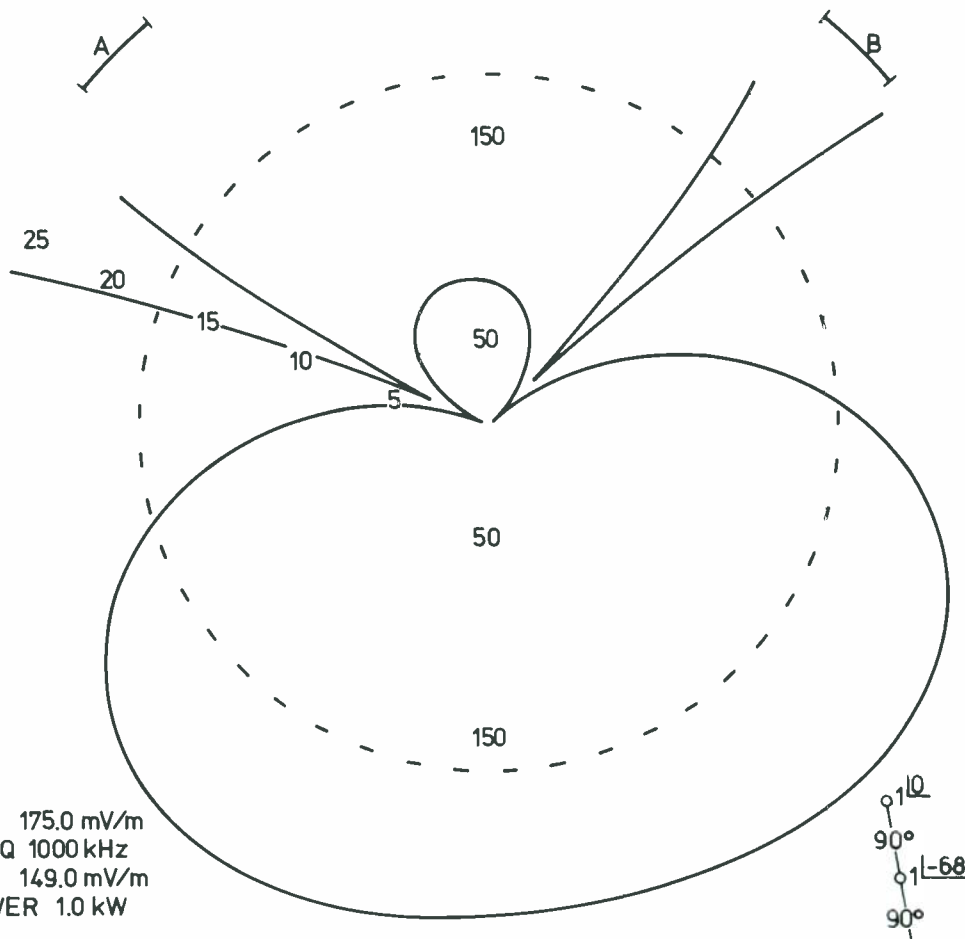
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Manufacturer	Dubner Computer Systems			For-A	Knox Video
Model Number	CBG-2	DPS-1	VTW-210	VTW-400	K100 Opt B1
Primary function	Titles/animation	Electronic art	Character generator	Character generator	Character generator
Base computer	8080/2901	68000	.....	.....	.....
Subtitle feature	Lower & upper 1/3s	Any location	Any screen location	Any screen location	Any location
Subtitle control	Manual	Manual	Manual	Manual	Manual
Text page format	100 char x 16 line	Various	32 char x 8 line	32 char x 8 line	.....
Resolution	1024x525-pixel	768x525-pixel	0.52ns	0.52ns	.....
Anti-aliasing type	Hardware/software	Software	.....	.....	.....
On-line faces avail	255	255	1	2	2
Font types	Serif/s_serif/it/scr	Serif/s_serif/it/scr	.....	.....	Serif/s_serif/it
Non-Arabic sets	.....	.....	.....	.....	No
Type face storage	Disk	Disk	ROM	ROM	ROM
Compose feature	Yes	No	No	Yes	No
Character flash	Character	.....	Character	Character	Character
Edging control	Surround/C/L/shadow	Surround/C/L/shadow	Surround/shadow	Surround/shadow	Right/left sides
Auto-centering	Horizontal	Horiz/vert/H-V page	Horizontal	Horizontal	Horizontal
Roll/crawl control	Variable	.....	Intermittent	Intermittent	Variable
Colorizer	Integral	Integral	External	Integral	Yes
Keyer	Integral	Integral	External	Integral	Yes
Color palette	4096 with 128/screen	16.8M total/screen	No color	64 with 64/screen	512
Color memory type	Color mapped	Full color	.....	.....	.....
Internal memory	2 pages	2 pages/2 images	4 pages	8 pages	64 pages
Architecture	Encoded frame buffer	8-bit	.....	.....	.....
Integral still store	Yes	Yes	No	No	No
Mass off-line store	Floppy/rigid/RAM	Winchester disk/RAM	RAM	Floppy disk	None
Access time (worst)	1/4s page/1/2s frame	4s/page 4s/frame	.....	.....	.....
Outputs	2-prvw/2-prgm	1 prgm	1-prvw/1-prgm	1-prvw/1-prgm	1-prvw/1-prgm
Imaging planes	3	2	.....	.....	1
Remote interface	RS-232/RS-422/IEEE	RS-232	.....	.....	Serial
Image sources	Grf-pad/camera/Wx	Camera/graphics pad	.....	.....	.....
Frame manipulations	.....	Various	.....	.....	.....
Artist tools	.....	Various	.....	.....	.....
Menu CRT required	Yes	No	No	No	No
Multi-user system	2 stations/keyboards	No	No	No	No
Automation interface	.....	.....	No	No	Serial
Functions embedded	Yes	Yes	No	No	No
	Related models-TEXTA	.....	.....	.....	.....
	CGB-1	.....	.....	.....	.....
Reader Service Number	911	912	913	914	915

Manufacturer	Laird Telemedia	MCI/Quantel	3M Company	Pesa Electronics	Quanta
Model Number	7200 Communicator	DCG 9000 Cypher	D-8800	CG-4721B	Quantafont Q8 D
Primary function	Character generator	Character generator	Character generator	Character generator	Character generator
Base computer	.....	68000	.....	.....	Quanta
Subtitle feature	Lower 1/3s	Any screen location	Yes	Lower 1/3s	Any screen location
Subtitle control	Manual	Manual	Manual/RS-232	Manual/timecode	Manual/clocked
Text page format	60x24 at 12 TVL	.....	32-char x 25-line max	32x16 font dependent	64 char x 13 line
Resolution	35ns	.....	35ns	50ns	26.1ns
Anti-aliasing type	.....	Hardware & software	Software	.....	.....
On-line faces avail	4	.....	1	.....	6
Font types	.....	Serif/s_serif/it/scr	Serif/s_serif/it	S_serif/it/scr	Serif/s_serif/it/scr
Non-Arabic sets	.....	.....	No	.....	.....
Type face storage	Disk	Disk	Disk	Disk	Disk
Compose feature	Yes	.....	Option	Yes	Option
Character flash	Character	Char/word/line/page	Char/word	Character	Char/word/line/page
Edging control	Surround/shadow/C/L	Surround/C/L/shadow	Shadow on sides	Surround/shadow/C/L	Surround/C/L/shadow
Auto-centering	Horizontal	Horiz/vert/page	Horiz/vert	Horizontal page	Horizontal
Roll/crawl control	Variable	.....	Variable	Variable	Variable
Colorizer	Doption	Integral	Integral	Integral	Integral
Keyer	Option	External	Integral	Integral	Integral
Color palette	32768 with 32/screen	.....	512	112	16M with 96/screen
Color memory type	Color mapped	Full color	Color mapped	Color mapped	Color mapped
Internal memory	100 lines	.....	.....	128 pages/256 lines	1 page
Architecture	.....	.....	8-bit	.....	8-bit
Integral still store	No	.....	No	No	No
Mass off-line store	Disk	Floppy disk	Floppy disk	Disk	Floppy disk
Access time (worst)	0.5s	.....	<0.4s	<1s	0.5s
Outputs	1-prvw/2-prgm	Prvw/prgm	Prvw/prgm (dual opt)	Prvw/prgm	2-prvw/4-prgm
Imaging planes	1	.....	1	1	2
Remote interface	Options	RS-422	RS-232	RS-232	RS-232
Image sources	.....	.....	Camera and options	Camera	Camera
Frame manipulations	.....	.....	.....	.....	.....
Artist tools	.....	.....	.....	.....	.....
Menu CRT required	.....	Yes	No	No	No
Multi-user system	4 keyboards	.....	4 keyboards total	Yes	5 keyboards
Automation interface	Options	Yes	RS-232	Yes	.....
Functions embedded	No	No	No	No	No
Reader Service Number	916	917	918	919	920



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

#### Character Generators

Ampex AVSD	129,130
Barco Industries	87
Robert Bosch	163
CompuPrompt	68
For-A	29
Listec	136
3M Company	47
Quanta	51
Thomson Video Equipment	BC



Manufacturer	Quanta	Quanta	Thomson-CSF
<b>Model Number</b>	<b>Quantafont QCG-500</b>	<b>Quantapaint EVP-850</b>	<b>Vidifont/Viditext H</b>
Primary function	Character generator	Electronic art	Character generator
Base computer	Quanta	Quanta proprietary	Microprocessor
Subtitle feature	Any screen location	Any location	Any screen location
Subtitle control	Manual	Manual	.....
Text page format	64 char x 13 line	Various	64 char x 31 line
Resolution	29ns	512x512 pixel	48ns
Anti-aliasing type	.....	Software	Software
On-line faces avail	2	6	8
Font types	Serif/s. serif/it/scr	Serif/s. serif/it/scr	Serif/s. serif/it/scr
Non-Arabic sets	No	.....	Cyrillic/hebraic
Type face storage	Disk	Disk	Disk
Compose feature	Option	Yes	No
Character flash	Char/word/line/page	Char/word/line/page	Char/word/line/page
Edging control	Surround/C/L/shadow	Surround/C/L/shadow	Surround/C/L/shadow
Auto-centering	Horizontal	Horizontal	Horizontal
Roll/crawl control	Variable	Variable	Variable
Colorizer	Integral	Integral	Integral
Keyer	Integral	Integral	Integral
Color palette	512 with 24/screen	16M total 256/screen	4096 with 64/screen
Color memory type	Color mapped	Color mapped	Color mapped
Internal memory	1-page	2 images	40 page
Architecture	8-bit	8-bit/16-bit	16-bit bit-slice
Integral still store	No	No	No
Mass off-line store	Floppy disk	Floppy/Winchester	Floppy/rigid/RAM
Access time (worst)	0.9s per page	0.9s full image	0.9s page/5s frame
Outputs	1-prvw/2-prgm	1 prgm	1-prvw/3-prgm
Imaging planes	1	1	32
Remote interface	.....	.....	RS-232/RS-422
Image sources	Camera	Camera/graphics pad	Grf-pad/camera/Wx
Frame manipulations	.....	Various	.....
Artist tools	.....	Various	.....
Menu CRT required	No	No	No
Multi-user system	No	No	.....
Automation interface	.....	.....	Yes
Functions embedded	No	No	No
<b>Reader Service Number</b>	<b>921</b>	<b>922</b>	<b>923</b>

## Digital Effects Systems

This digital equipment is designed to be used as adjuncts to video switching and production systems for various visual image manipulation, aspect alteration and/or dimensional distortions. Simpler key, border, wipe, etc., effects may be capabilities of the repertoire, but are not listed here.

Manufacturer	A52	Abekas Video Systems Gemini 3	ZENO	ADDA VIP series	Ampex ADD-2000
# of output channels	1 expandable to 2	2	2	Single	1 expandable to 4
# of image planes	Two	.....	.....	.....	1
Variable image size	Continuous	1/4 and continuous	Continuous	Continuous/stepped	Continuous
Compress/expand ratio	Infinite	1-1 1-4 compression	Infinite to 2x	Infinite	Infinite
Rotation around axes	X/Y	No	X/Y	No	X/Y/Z
Perspective effects	No	No	.....	No	Page turn/3D rotating cube
Image freeze	Field-frame/multiple	Interpolated	With strobe freeze	Frame-field	Field-frame
Picture splits	Horiz/vert/diagonal	Horiz/vert	Yes	Yes	No
Mirror effects	.....	Yes	Yes	.....	Horiz/vert
Push-on/off	Yes	Yes	Yes	Yes	Yes
Posterization	7 levels	Vary luma/chroma	Variable degree	No	32 w/o false color
Mosaic tiling	Infinite range	Variable per channel	Variable tiles	No	.....
Programmed sequences	Yes	Yes	Yes	Yes	Yes
Instruction memory	EEROM	Yes	Integral non-volatile	Internal non-volatile	Floppy disk/RAM
Control system	Soft/dedicated keys	Dedicated keys	Dedicated/soft keys	Dedicated/soft keys	Soft keys
Parameter display	On control panel	Per panel indicators	On control panel	On control panel	External CRT
VCR connection	.....	4-in/asynchronous	For referenced units	Yes	No
TBC functions	No	Dual synchronizer	Switchable processor	1 frame correction	No
Control interface to	Switchers/edit ctrs	Mixer/remote panels	Dedicated ctl panel	Editing/switching	Switcher/edit ctr
System S/N ratio	52dB	55dB PAL system only	55dB	56dB	.....
Effects sampled on	1 field	.....	.....	.....	.....
Sampling rate	14.2MHz/8-bit	Per EBU standards	Per EBU std/8-bit	14.3MHz/8-bit	13.5MHz/16-bit
Diff phase/gain	2°/2%	.....	2°/2%	<2°/ <2%	.....
<b>Reader Service Number</b>	<b>1041</b>	<b>1042</b>	<b>1043</b>	<b>1044</b>	<b>1045</b>

## WEATHER RADIO

### Model CRW

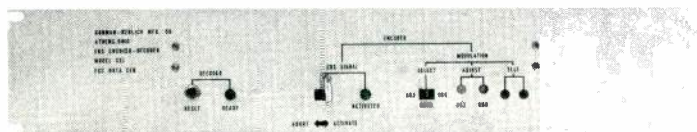


Price \$475.00

Sensitivity .28 microvolts for 12 dB quieting. All 3 frequencies. Alert tone demutes receiver, closes relay and gates audio to 600 ohm rear terminals. Another set of rear terminals has continuous 600 ohm audio output. Double conversion crystal controlled, crystal filter in first I.F., ceramic filter in second I.F. Dual gate MOSFET front end. 50 ohm coaxial input. Adjacent channel (j25 KHz) down 70 dB. 19" rack mount, 3 1/2" H, all metal enclosure. In stock—available for immediate delivery.

## EBS EQUIPMENT

### Required for L.P.T.V.



Price

Model CEB Encoder-Decoder	\$475.00
Model CE Encoder	\$30.00
Model CD Decoder	\$280.00
Encoder FCC Type Accepted Decoder FCC Certified	
Exceeds FCC Specifications	
Receiver can be supplied to drive Decoder.	\$100.00

All interconnections to the EBS equipment are made through a barrier terminal block. No special connectors necessary. In stock—available for immediate delivery.

**GORMAN REDLICH MFG. CO.**

**6 CURTIS STREET**

**ATHENS, OHIO 45701**

**(614) 593-3150**

Circle (130) on Reply Card

Manufacturer	Ampex	Chroma Digital Systems	DSC/Digital Services	Gunnerfield Marketing	Harris Video Systems
Model Number	A00-3000	Chromafax 766	ILN4000 Illusion	MERLIN	HOE-100 (HOE-150)
# of output channels	1 expandable to 4	1	1 expandable to 9	2	1 expandable to 2
# of image planes	1	1	.....	2	1
Variable image size	Continuous	Stepped	Continuous	Stepped	Continuous
Compress/expand ratio	Infinite	1/2 1/4 1/9 Fixed	Infinite	1/4	Infinite/continuous
Rotation around axes	X/Y/Z	No	Multiple axes	No	X/Y
Perspective effects	Page turn/3D rotating cube	No	3D	No	No
Image freeze	Field-frame/multiple	Multiple/trail	Field-frame	Field-frame/multiple	Field-frame/multiple
Picture splits	.....	Horiz/vert	Horiz/vert	Horiz/vert	Horiz/vert
Mirror effects	Horiz/vert	Invert	Horiz/vert	Horiz/vert	Horiz/vert
Push-on/off	Yes	Yes	Yes	Yes	Yes
Posterization	32 levels	7 level w/ false color	2 level w/o false color	10 levels	Yes
Mosaic tiling	.....	.....	Yes	12-96 tiles H/V	HDE-150 only
Programmed sequences	Yes	No	Yes	Yes	Yes
Instruction memory	Floppy disk	None	RAM/bubble memory	RAM	ROM (bubble memory)
Control system	Soft keys	Dedicated keys	Soft/dedicated keys	Dedicated keys	Dedicated keys
Parameter display	External CRT	No	No control panel	On control panel	On control panel
VCR connection	No	Possible	No	Multiple VTRs	No
TBC functions	No	Yes	No	Yes	No
Control interface to	Switcher/edit ctr	Switcher/edit ctr	Edit ctr	Edit ctr	Switcher/edit ctr
System S/N ratio	.....	52dB	55dB	55dB PAL only	50dB
Effects sampled on	.....	2-fields	2-fields	2-fields	.....
Sampling rate	13.5MHz/16-bit	14.3MHz/7-bit	14.3MHz/8-bit	7.125MHz/8-bit	14.3MHz
Diff phase/gain	.....	3°/3%	2°/	4°/4%	2°/
Reader Service Number	1046	1047	1048	1049	1050

Manufacturer	Harris Video Systems	MCI/Quantel	MCI/Quantel	Microtime
Model Number	HOE-200	OVM8000 Mirage	OPE5800 Encore	DPE5000/SP
# of output channels	1 expandable to 2	1 expandable	1 expands to 15	1
# of image planes	.....	.....	.....	.....
Variable image size	Continuous	Continuous	Continuous	Continuous
Compress/expand ratio	Continuous/infinite	Continuous/infinite	Continuous/infinite	Continuous/infinite
Rotation around axes	X/Y	X/Y/Z	X/Y/Z	X/Y
Perspective effects	Page turn/H/V/rotating cube	Page turn/3D/H&V geo/cylinder/cube	H&V	.....
Image freeze	Field-frame/multiple	Field-frame	Field-frame/multiple	Field-frame
Picture splits	Horiz/vert	Horiz/vert/diagonals	Horiz/vert	Horiz/vert
Mirror effects	Horiz/vert	No	Horiz/vert	.....
Push-on/off	Yes	Yes	Yes	Yes
Posterization	Yes	.....	256 w/ false colors	.....
Mosaic tiling	Yes	.....	Yes	.....
Programmed sequences	Yes	Yes	Yes	Yes
Instruction memory	Bubble memory	Floppy/hard disk/RAM	Floppy/hard disk/RAM	EEROM/RAM
Control system	Dedicated/soft keys	Dedicated/soft keys	Dedicated/soft keys	Dedicated keys
Parameter display	On control panel	External CRT	Dedicated/soft keys	On control panel
VCR connection	No	No	No	Yes
TBC functions	No	No	No	No
Control interface to	Switchers/edit ctrs	Switcher/edit ctr	Switcher/edit ctr	Switcher
System S/N ratio	50dB	.....	.....	.....
Effects sampled on	.....	.....	.....	.....
Sampling rate	14.3MHz	13.5MHz	13.5MHz	.....
Diff phase/gain	2°/	.....	.....	.....
Reader Service Number	1051	1052	1053	1054

Manufacturer	Microtime	Microtime	NEC America	Philips TV Systems
Model Number	E-120 A/B roll	Genesis 1/ACT1	DVE System 10	E-FLEX
# of output channels	1	1	2 expands to 4	1-4 input channels
# of image planes	1	.....	.....	.....
Variable image size	.....	Continuous	Continuous	Continuous
Compress/expand ratio	.....	Continuously varied	Infinite	Infinite
Rotation around axes	.....	X/Y	X/Y/Z/multiple	X/Y/Z option
Perspective effects	.....	No	Geo/3D/H&V-only/rotating cube	Geo/3D/rotating cube H- & V- only
Image freeze	Field-frame	Field-frame	Field-frame/multiple	Field-frame/multiple
Picture splits	Horiz/vert	.....	.....	Horiz/vert
Mirror effects	.....	Horiz/vert	.....	.....
Push-on/off	Yes	Yes	Yes	Yes
Posterization	No	7 w/o false colors	Infinite/false color	8 levels false color
Mosaic tiling	No	2 to >12,000/varied	16 to infinite tiles	16 to infinite tiles
Programmed sequences	No	Includes curvilinear	Yes	Yes
Instruction memory	RAM	EEROM/RAM/Datakey	Micro-floppy/RAM	RAM/bubble memory
Control system	Dedicated keys	Dedicated/soft keys	Dedicated/soft keys	Dedicated keys
Parameter display	On control panel	On control panel	Control panel or CRT	.....
VCR connection	Multiple VCRs	No	No	None
TBC functions	Yes	No	No	No
Control interface to	Edit ctr	Switcher/edit ctr	Switcher/edit ctr	Switcher/edit ctr
System S/N ratio	56dB	53dB	50dB	.....
Effects sampled on	2 fields	1 field	2 fields	2 fields
Sampling rate	14.3MHz/8-bit	...../8-bit	14.3MHz/8-bit	14.3MHz/8-bit
Diff phase/gain	2°/2%	3°/3%	2°/4%	2°/2%
Reader Service Number	1056	1057	1058	1059

Manufacturer	QuesTech	Regis-BLT	Thomson-CSF	Vital Industries
Model Number	6101P	Module UNO	TTV-5305	MAGIC
# of output channels	1 expands to 2	.....	2 composite/V-Cr-Cb	1 expands to 4
# of image planes	3	.....	.....	4
Variable image size	Continuous	Stepped	Continuous	Continuous
Compress/expand ratio	Continuous/infinite	1-4/-9/-16/-25/-64	Continuous variable	Continuous variable
Rotation around axes	Y/Z	None	Y/X/Z	Multiple axes
Perspective effects	Page turn/geo/3D V-only/rotating cube	None	Page turn/geo/3D	Page turn/cylinders 3D/rotating cube
Image freeze	Field-frame/multiple	Field-frame/multiple	Field-frame	Field-frame/trailing
Picture splits	Horiz/vert/diagonals	Horiz/vert	Horiz/vert/diagonals	Horiz/vert
Mirror effects	Horiz/vert	Horiz/vert	No	Horiz/vert
Push-on/off	Yes	Yes	Yes	Yes
Posterization	16 levels false color	4 preset levels	Yes	256 w/o false color
Mosaic tiling	42 to infinity	x4 to x16	Yes	1 to 65535 tiles
Programmed sequences	Yes	Limited	Yes	Yes
Instruction memory	Floppy disk/RAM	.....	EERO/floppy disk	Floppy/hard disk
Control system	Dedicated/soft keys	Dedicated/soft keys	Dedicated/soft keys	Dedicated/soft keys
Parameter display	External CRT	.....	On control panel	On control panel
VCR connection	Yes	Yes	Yes	No
TBC functions	Yes	Yes	No	No
Control interface to	Switcher/edit ctr	Switcher	Switcher	Switcher/edit ctr
System S/N ratio	51dB	52dB	55dB	54dB
Effects sampled on	2 fields	.....	2 fields	2 fields
Sampling rate	13.3MHz/8-bit	.....	13.5MHz/8-bit	14.3MHz/32-bit
Diff phase/gain	1.5°/2.5%	3°	3°	1°
Reader Service Number	1038	1039	1040	1037

## Still Store Systems

These systems are Winchester disk-based TV image storage equipment.

Manufacturer	Abekas Video Systems	ADDA	Ampex	Asaka/Shibasaku
Model Number	A42 Digital	A62 Digital Recorder*	ESP series	ESS-3
# of work stations	2/switched priority	1	Multiple stations	Variable
Output channels	2 prgm/1 prvw	1 prgm/1 prvw	A/B prgm w/ 1 prvw	5 typical
Output color std	NTSC	NTSC/RGB	NTSC	NTSC/PAL
Directory/catalog	Data list	Parameter display	Pack review mode	List of data*
Integral effects	Interface to A52	Key/matte/looping	No (external VIP)	Yes
Editor interfacing	RS-232/RS-422/GPI	RS-422/232/GPI/SMPT E	2 RS-232 ports	RS-422
Portable packaging	Yes	No	No	No
Video response	±0.25dB/to 4.2MHz	±0.5dB/to 4.2MHz	±0.5dB to 5MHz	±0.5dB to 5MHz
S/N ratio	52dB	52dB	56dB	.....
Diff. phase/gain	2°/2%	2°/2%	<2°/<2%	1°/1%
K-factor 2T pulse	1%	1%	1%	.....
Chroma/luma delay	5ns	.....	.....	.....
Moire rating	Not applicable	Not applicable	.....	Not applicable
Time base stability	Not applicable	Not applicable	±1ns	Not applicable
TBC/synchronizer	External required	.....	Integral systems	Integral
Color system	Not applicable	.....	.....	.....
Digital recording	Yes	NTSC, RGB, Y; R-Y/B-Y	Yes	Yes
Component system	.....	Yes	No	4x/5c/8 to 12-bit
Disc drive type	Winchester	Winchester	Winchester	Composite coding
# of drives max	3	1	4	Winchester
Streaming tape	Yes	No	No	To 16/basic system
Frames per disk	100 or 350*	.....	100 type C*	.....
Frames per system	1050 (2100 fields)	3000 or 100s	400 type C	400/drive
Access time (worst)	450ms/field	Instantaneous	<450mS	6400
Programmed sequences	Yes	Sequence editor	Yes	0.8s
	*Two types of drive available.	*Real time record and simultaneous play	*200 and 750 still disk drives are also available. ESP-II has 200-frame store per disk.	*16 images presented on screen also.
Reader Service Number	846	847	848	849

Manufacturer	Gunnerfield Marketing	Harris	MCI/Quantel	Rank Cintel Ltd.	Thomson-CSF Broadcast
Model Number	GML-8500	Iris C (Iris II)	DLS 6030 (-6010)	Slide File*	Graphic Store
# of work stations	4	2 (6)	2 (1)	5	1
Output channels	4 prgm/0 prvw	4 prgm/4 prvw (12/12)	2 prgm/1 prvw (1 prgm)	1 prgm/1 prvw	1 prgm/1 prvw
Output color std	PAL	NTSC/PAL/SECAM	NTSC/PAL/SECAM	NTSC/PAL/SECAM/RGB	NTSC/PAL
Directory/catalog	Data list	Data list	Data list/proof sheet	Proof sheet display	Data list/proof sheet
Integral effects	No	Yes	Yes (No)	Yes	No
Editor interfacing	RS-232	RS-232	RS-422	RS-232/RS-422/QIC02	RS-232/RS-422
Portable packaging	No	Yes (No)	Yes	Yes	No
Video response	5MHz RGB (3MHz coded)	±0.2dB to 4.2MHz	.....	±0.5dB to 5.5MHz	.....
S/N ratio	55dB	57dB (56dB)	.....	50dB typical	.....
Diff. phase/gain	4°/4%	1°/1%	.....	.....	.....
K-factor 2T pulse	4%	1%	.....	2%	.....
Chroma/luma delay	1000ns	17ns	.....	.....	.....
Moire rating	Not applicable	Not applicable	.....	.....	.....
Time base stability	±25ns	Not applicable	.....	.....	.....
TBC/synchronizer	Integral	Integral	.....	Integral	.....
Color system	Yes	Direct & heterodyne	Direct color	Direct color	.....
Digital recording	Yes	.....	Yes	Yes	.....
Component system	RGB	4-1-1 sampling	Y/R-Y/B-Y	Y/U/V 4-2-2 coding	.....
Disc drive type	Winchester	Winchester	Winchester	Winchester	Winchester & floppy
# of drives max	4	2 (8)	8 (2)	1	8
Streaming tape	No	No	No	Yes	No
Frames per disk	125	1066	800	400	70
Frames per system	4000	2132 (8528)	6400 (1600)	500,000*	560
Access time (worst)	0.75s	600ms	0.5s	1s	5s
Programmed sequences	Yes	.....	Yes	Yes	Yes
	.....	.....	CLL6000 library unit access 40 drives for 100 000 frames from 25 work stations.	*Slide File is the presentation unit of Gallery 2000 (Logics using optical disk mass storage.	.....
Reader Service Number	851	852	853	854	855

# Editing Controllers

Manufacturer	Adams-Smith
Model Number	Model 2600A/V
Suggested use	On-line & off-line
VTRs controlled	1 record/8 play
Microprocessor	Centralized
Architecture	.....
Internal storage	60 events
External store types	Per user's computer
Edit decision list	No
Auto EDL backup	.....
Edit data display	LEDs
Printer interface	Per user's computer
Edit modes	All modes
Animation mode	No
A/B roll system	Yes
Time code generator	Integral
Time code reader	Integral
Time code types	All types
Color framing use	No
Frame accuracy	±1 frame
VTR speed control by	Not applicable
Direction control by	Not applicable
Edit command control	.....
Equipment interfaces	No
Control bus type	No
Reader Service Number	621

P. Albrecht Elektronik	
ESP-M	TCS-E
On-line	On-line
1 record/4 play	1 record/3 play
Multiple 8-bit	Multiple
8-bit	8-bit
3 events	1 event
Paper tape	Paper tape
No	No
No	No
LED displays	LED displays
TTY	TTY
Assemble/insert/V-A	Assemble/insert/A-B
No	No
Yes	Yes
Option in interface	Option in interface
In interface	In interface
EBU LTC/VITC	EBU LTC/VITC
PAL	PAL
±0 frames	±0 frames
Fader	Fader
Keyboard	Keyboard
Keyboard	Keyboard
Switcher/mixer/effects	Switcher/mixer/effects
Coax serial bus	Coaxial RS-422
622	623

Ampeg Corporation	
ACE	ACE Micro
On-line	On-line or off-line
2+ record/16 play	2+ record/3 play
Distributed	Distributed
16-bit	16-bit
250 events	250 events
Floppy disk & tape	Floppy disk & tape
Yes	Yes
Yes	Yes
CRT	CRT
RS-232	RS-232
All modes	All modes
Yes	Yes
Yes	Yes
External option	External interface
External option	External interface
SMPTE & EBU LTC	SMPTE/EBU LTC Ctl trk
NTSC/PAL	NTSC/PAL
±0 frames	±0 frames
Joystick/keyboard	Joystick/keyboard
Joystick/keyboard	Joystick/keyboard
Keyboard/touchscreen	Keyboard/touchscreen
All production eqpt	All production eqpt
RS-422 & SMPTE bus	RS-422 & SMPTE bus
624	625

Manufacturer	Robert Bosch
Model Number	Mach One series II
Suggested use	Dn-line & off-line
VTRs controlled	1 record/ 5 play
Microprocessor	Yes
Architecture	.....
Internal storage	500 to 700
External store types	Disk & paper tape
Edit decision list	Yes
Auto EDL backup	No
Edit data display	CRT
Printer interface	Centronics
Edit modes	All types
Animation mode	Yes
A/B roll system	Yes
Time code generator	Optional
Time code reader	In interfaces
Time code types	SMPTE/EBU LTC
Color framing use	NTSC/PAL
Frame accuracy	±0 frames
VTR speed control by	Knob
Direction control by	Knob
Edit command control	Keyboard
Equipment interfaces	Various equipment
Control bus type	.....
.....	.....
.....	.....
.....	.....
Reader Service Number	626

CMX Systems	
330XL (340XL)	3400 (3400A)
On-line & off-line	On-line & off-line
1 rec/3 play (7)*	7 (24 accessed)
Distributed	Distributed
16-bit	16-bit
500 event (750 event)	999 events & data
Disk & paper tape	Disk & paper tape
Yes	To 6000 line of data
Yes	Yes
CRT	CRT
RS-232	RS-232
All modes	Any mode
No	No
Yes	Yes
Optional	Optional
Interface dependent	Interface dependent
All types	All types
NTSC/PAL	NTSC/PAL
±0 frames	±0 frames
Keyboard/Gizmo knob	Keyboard/Gizmo knob
Keyboard/Gizmo knob	Keyboard/Gizmo knob
Keyboard	Keyboard
Any production units	Any production units
RS-422	RS-422
*340XL can access up to 24 machines.	.....
627	628

Convergence	
The Edge	#205
On-line & off-line	On-line
1 record/2 play	28 total
Distributed	Multiple
8-bit	.....
50 events	>1000 events
Disk & tape	Disk
Yes	Yes
Yes	.....
CRT	CRT
.....	.....
Insert/split A-V	All modes
No	Yes
Yes	Yes
No	Option
In interface	Integral
All but VITC	SMPTE LTC & ctl trk
NTSC/PAL	NTSC/PAL
±0 frames	±0 frames
RMC knob	Joystick
RMC knob	Joystick
Software programmable	Keyboard
Switcher/mixer opts	Switcher/mixer
RS-422	.....
.....	.....
.....	.....
.....	.....
629	630

Manufacturer	Convergence
Model Number	#195
Suggested use	On-line
VTRs controlled	3 total
Microprocessor	Multiple
Architecture	.....
Internal storage	50 events
External store types	Disk paper tape
Edit decision list	Yes
Auto EDL backup	.....
Edit data display	.....
Printer interface	Option
Edit modes	All modes
Animation mode	Possible
A/B roll system	Yes
Time code generator	Optional TCRG pkg
Time code reader	Yes
Time code types	SMPTE (EBU opt)
Color framing use	NTSC/PAL
Frame accuracy	±0 frames
VTR speed control by	Joystick
Direction control by	Joystick
Edit command control	Keyboard
Equipment interfaces	Optional interface
Control bus type	.....
Reader Service Number	631

Convergence	
#90 series	IVES II
On-line	On-line & off-line
1 record/1 play	1 record/2 play
Yes	Central/distributed
.....	.....
.....	1 event
Floppy disk tape	Floppy disk & tape
On Super 90	Yes
.....	Yes
CRT	CRT
Optional RS-232C	RS-232 & Centronics
All modes	Insert
No	Yes
No	Yes
On Super 90	Integral
On Super 90	Integral
SMPTE LTC & ctl trk	SMPTE/EBU LTC ctl trk
NTSC/PAL	NTSC/PAL
±0 frame SMPTE	±0 frames time code
Joystick	Keyboard/knob
Joystick	Keyboard/knob
Keyboard	Keyboard
.....	Various equipment
.....	RS-232
632	633

ECCO	
EMME Work station	EMME Cine Work station
On-line & off-line	On-line & off-line
Multi record/9 play	1 record/3 play
Distributed	Distributed
16-bit	16-bit
1000 event	1000 event
Floppy disk & tape	Floppy disk & tape
Yes	Yes
Yes	Yes
CRT	CRT
Centronics compatible	Centronics
All modes	All modes
Yes	Yes
Yes	Yes
Optional integral	Optional integral
Integral	Integral
SMPTE/EBU LTC/VITC	All types
NTSC/EBU	NTSC/PAL
±0 frames (±2 ctl trk)	±0 frames (±2 ctl trk)
Keyboard/knob	Mouse
Keyboard/knob	Mouse
Keyboard	Mouse
All production eqpt	All production eqpt
RS-422	RS-422
634	635

Manufacturer	Grass Valley/ISC	Horizon International	JVC Company
Model Number	System 51	System 31/41	RM-G850U
Suggested use	On-line & off-line	On-line & off-line	On-line & off-line
VTRs controlled	6 record/7 play	6 record/7 play	1 record/2 play
Microprocessor	Central/distributed	Central/distributed	Centralized
Architecture	16-bit	16-bit	8-bit
Internal storage	1000 events	1000 events	850 events
External store types	Disk & paper tape	Disk & paper tape	Floppy disk & tape
Edit decision list	Standard	Standard	Yes
Auto EDL backup	Yes	Yes	Yes
Edit data display	CRT	CRT	CRT
Printer interface	Yes	Yes	Centronic parallel
Edit modes	All modes	All modes	Insert/split A-V A-A
Animation mode	Yes	Yes	No
A/B roll system	Yes	Yes	Yes
Time code generator	Per configuration	Per configuration	External
Time code reader	Per configuration	Per configuration	External
Time code types	All types	All types	SMPTE & cti trk
Color framing use	NTSC/PAL	NTSC/PAL	NTSC/PAL
Frame accuracy	±0 frames	±0 frames	±0 frames
VTR speed control by	Keyboard/knob/PEGS	Keyboard & knob	Keyboard/trackball
Direction control by	Keyboard/knob/PEGS	Keyboard & knob	Keyboard/trackball
Edit command control	Keyboard	Keyboard	Keyboard
Equipment interfaces	All production eqpt	Most production eqpt	Switcher
Control bus type	RS-422	RS-422	RS-232/RS-422
Reader Service Number	636	637	638

JVC Company	RM-G850U	VO-93
Suggested use	On-line & off-line	On-line & off-line
VTRs controlled	1 record/2 play	1 record/1 play
Microprocessor	Centralized	Centralized
Architecture	8-bit	8-bit
Internal storage	1 event	1 event
External store types	.....	.....
Edit decision list	No	Yes
Auto EDL backup	No	No
Edit data display	LED displays	CRT
Printer interface	No	RS-232
Edit modes	Assemble/insert/A-V	Assemble/insert/A-V
Animation mode	No	Yes
A/B roll system	No	No
Time code generator	No	Integral
Time code reader	No	Integral
Time code types	No	SMPTE
Color framing use	No	No
Frame accuracy	±2	±0 frames
VTR speed control by	Dial	Joystick
Direction control by	Dial	Joystick
Edit command control	Keyboard	Keyboard
Equipment interfaces	No	No
Control bus type	Not applicable	Not applicable
Reader Service Number	639	640



# Video Delay Lines

ALLEN AVIONICS Video & Pulse Delay Lines replace 75 ohm coaxial cable, provide a more suitable method of achieving precise short delays. The units reduce size, weight, installation costs, save time & effort in making delay changes.



**RACK MOUNTABLE VIDEO & PULSE DELAY LINES**  
A complete Rack Mountable series of Video & Pulse Delay Lines, with the capability of replacing up to 1450 feet of cable, is now being marketed by Allen Avionics. (See listing in table at left.)

Part No.	Delay Range (Nano-Sec.)	Delay Steps (Nano-Sec.)	Method of Variation	Maximum Insertion Loss @ 100 KHz (db)	Amplitude Flatness At Any Delay Setting 100 KHz to 5.5 MHz (db)	Max. Rise Time (Nano-Sec.)	Package Size (Inches)
VAR005	3-7	Continuous	Trimmer	.20	.2 Max.	N.A.	3 7/8 x 1 1/2 x 1 1/4
VAR011	0-11	Continuous	Trimmer & Toggle	.20	.25	N.A.	4 3/8 x 2 3/8 x 1 1/16
VAR256	0-256	Continuous	Trimmer & Toggle	.15	.4	18	4 3/8 x 2 3/8 x 1 1/16
VPO010	0-10.5	.5	Toggle	.15	.2	3	4 3/8 x 2 3/8 x 1 1/16
VPO127	0-127	1.0	Toggle	.15	.3	14	4 3/8 x 2 3/8 x 1 1/16
VPO255	0-255	1.0	Toggle	.15	.3	16	4 3/8 x 2 3/8 x 1 1/16
VPO317	0-317.5	2.5	Toggle	.15	.3	20	4 3/8 x 2 3/8 x 1 1/16
VPO635	0-635	5.0	Toggle	*.50	.4	25	4 1/16 x 3 1/16 x 2 1/16
VP1100	0-1100	10.0	Rotary	1.25	.4	30	4 1/16 x 3 1/16 x 2 1/16
VP1270	0-1270	10.0	Toggle	*3.00	.4	30	4 1/16 x 3 1/16 x 2 1/16
VP2075	0-2075	25.0	Toggle	*3.00	.5	40	7 3/8 x 4 1/16 x 2 3/16
VS0315	0-315	5.0	Strap	.25	.4	28	4 x 2 x 1 1/4
VS0635	0-635	5.0	Strap	.60	.5	33	5 x 2 x 1 1/4
VS1275	0-1275	5.0	Strap	1.25	.5	33	5 x 3 x 1 1/4
VS2075	0-2075	25.0	Strap	2.50	.5	40	6 1/2 x 3 1/2 x 2

## RACK MOUNTABLE UNITS

VRM0255	0-255	1.0	Slide Switch	.40	.4 Max.	20	1 1/4 x 4 1/8 x 4
VRM0637	0-637.5	2.5	Slide Switch	*1.00	.4	28	1 1/4 x 4 1/8 x 6
VRM1275	0-1275	5.0	Slide Switch	*3.00	.4	33	1 1/4 x 4 1/8 x 9
VRM2270	0-2270	10.0	Slide Switch	*3.00	.5	40	1 1/4 x 4 1/8 x 9
VRS0317	0-317.5	2.5	Strap	.40	.5	26	1 1/4 x 4 1/8 x 4
VRS0635	0-635	5.0	Strap	.75	.5	35	1 1/4 x 4 1/8 x 6
VRS1270	0-1270	10.0	Strap	1.50	.5	37	1 1/4 x 4 1/8 x 9
VRS2260	0-2260	20.0	Strap	3.00	.5	40	1 1/4 x 4 1/8 x 9

\*±.2db variation at any delay setting.

**Impedance: 75 ohms.**

**Pulse Distortion: Less than 4% with an input pulse rise time of 20 nanoseconds.**

**Working Voltage: 100 volts maximum. 50 volts maximum for Rack Mountable series.**

**Return Loss: 20db minimum. 15db minimum for VP2075, VS2075 and Rack Mountable series.**

**Delay Tolerance: 5% or 1 nanosecond, whichever is greater.**

We also specialize in Delay Equalized Lowpass Filters for the Video Industry

**CALL/WRITE** For Delay Lines & Filters Catalog

**ALLEN AVIONICS, INC.**

224 EAST SECOND ST., MINEOLA, NY 11501  
Phone: 516-248-8080

Manufacturer	JVC Company	Lucas Droidworks	Montage Computer	Omicron/Elecon	Paltex
Model Number	RM-86U	Editdroid	Picture Processor	EM7100 series	ABR-1A
Suggested use	On-line & off-line	On-line	On-line & off-line	On-line	On-line & off-line
VTRs controlled	1 record/1 play	Various disks & VTRs	7 Beta format	1 record/3 play	1 record/2 play
Microprocessor	Centralized	Multiple	MC68000	Z-80 distributed	Centralized
Architecture	8-bit	16-bit/32-bit	.....	.....	8-bit
Internal storage	1 event	>80000	Unlimited	192	20 events
External store types	.....	Yes	Disk	Disk & tape	Floppy disk & tape
Edit decision list	No	Yes	.....	Yes	Yes
Auto EDL backup	No	.....	.....	.....	Yes
Edit data display	LED displays	CRT	CRT	CRT	CRT
Printer interface	.....	.....	.....	Serial interface	RS-232
Edit modes	Assemble/insert/A-V	All types	Assemble & splits	All modes	Assemble/insert/A-V
Animation mode	No	Yes	Yes	Yes	Yes
A/B roll system	No	Yes	Yes	Yes	Yes
Time code generator	No	Required	Integral	Integral	External required
Time code reader	No	Required	Integral	Integral	External required
Time code types	None	SMPTE	Various	All types available	SMPTE/EBU LTC/ctl trk
Color framing use	No	.....	NTSC	NTSC	No
Frame accuracy	±2	±0 frames	±0 frames	±0 frames	±1 frame
VTR speed control by	Dial	Knob	Knobs	Knob & keyboard	Rotary dial
Direction control by	Dial	Knob	Knobs	Knob & keyboard	Rotary dial
Edit command control	Keyboard	Keyboard	Keyboard	Keyboard	Keyboard
Equipment interfaces	None	.....	Most production eqpt	Various switchers	Switcher/mixer/effects
Control bus type	None	.....	.....	.....	VTR dependent
Reader Service Number	641	642	643	644	645

Manufacturer	Paltex	Panasonic Broadcast	Sony Broadcast
Model Number	ESPRIT	Edit-Star	AU-A30
Suggested use	On-line & off-line	On-line & off-line	Off-line
VTRs controlled	1 record/4 play	1 record/3 play	1 record/1 play
Microprocessor	Multiple distributed	Multiple distributed	Centralized
Architecture	8-bit/16-bit	8-bit/16-bit	.....
Internal storage	700 events	318 events	1 event
External store types	Floppy disk & tape	Floppy disk & tape	None
Edit decision list	Yes	Yes	No
Auto EDL backup	Yes	Yes	No
Edit data display	CRT	CRT	LED displays
Printer interface	RS-232	RS-232	No
Edit modes	All modes	All modes	Assemble/insert
Animation mode	Yes	Yes	No
A/B roll system	Yes	Yes	No
Time code generator	External required	External required	No
Time code reader	Integral	External required	No
Time code types	All types	All types	No
Color framing use	NTSC/PAL	NTSC/PAL	No
Frame accuracy	±0 frames	±0 frames	±2 frames
VTR speed control by	Rotary dial	Rotary dial	Knob
Direction control by	Keyboard & dial	Keyboard & dial	Knob
Edit command control	Keyboard	Keyboard	Keyboard
Equipment interfaces	All production eqpt	All production eqpt	None
Control bus type	RS-422	RS-422	Not applicable
Reader Service Number	646	647	648

Manufacturer	Sony Broadcast	United Media	Videomedia
Model Number	BVE-3000A	BVE-5000	Mini-Comm/Commander
Suggested use	On-line & off-line	On-line & off-line	On-line & off-line
VTRs controlled	1 record/2 play	2 record/6 play	To 8 machines
Microprocessor	Centralized	Centralized	Centralized
Architecture	8-bit	8-bit	.....
Internal storage	200 events	512	To 500 events
External store types	Floppy disk & tape	Disk & tape	Disk or paper tape
Edit decision list	Yes	Yes	Yes
Auto EDL backup	No	.....	.....
Edit data display	LEDs & CRT	CRT	CRT
Printer interface	RS-232	RS-232	Yes
Edit modes	All modes	Assemble/insert/A-V	All modes
Animation mode	No	No	Yes
A/B roll system	Yes	Yes	Yes
Time code generator	Integral	Integral	Integral
Time code reader	Integral	Integral	Integral
Time code types	LTC/VITC & ctl trk	LTC/VITC	All types
Color framing use	NTSC/PAL	NTSC/PAL	NTSC/PAL
Frame accuracy	±0 frame (±2 ctl trk)	±0 frames	±0 frames
VTR speed control by	Bidirex	Bidirex	Knob
Direction control by	Bidirex	Bidirex	Knob
Edit command control	Keyboard	Keyboard	Keyboard
Equipment interfaces	Switcher/mixer/effects	Switcher/mixer/effects	Most switchers
Control bus type	RS-422	RS-422	.....
Reader Service Number	651	652	653



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

### Editing Controllers

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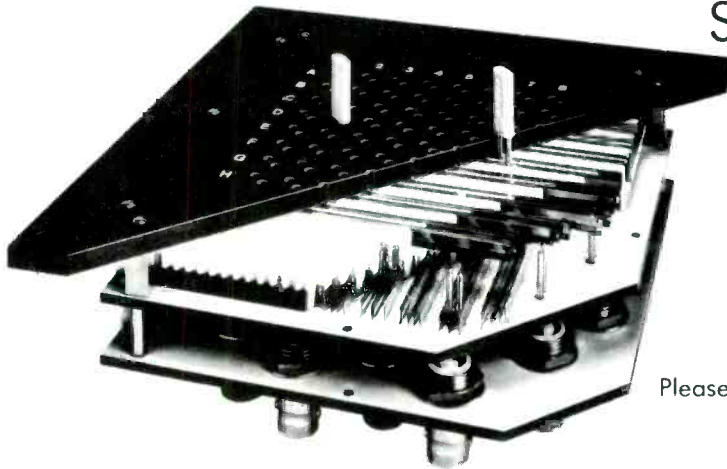
# Video Processors

These video signal processing systems provide image and color correction and enhancement, signal reconstruction and standards conversion.

Manufacturer	Applied Video/AVS	Asaca/Shibasoku	Michael Cox Electronics	Electrocraft	For-A
Model Number	AVS-6000 (-6500)	ASC-300	600 series corrector	CPS-84 (PAL)	CCS-4200 (-4300)
Prime function—					
Enhance image	H aperture	Aperture correction	No	H crispening	No
Reduce noise	Recursive averaging	Inherent	No	>6dB chroma	No
Correct color	Chroma retiming	No	Time code controlled	RGB gain/lift/gamma	RGB gain/lift/gamma
Correct contrast	Yes	Yes	Yes	Yes	Yes
Regenerate sync	TBC & freeze modes	TBC functions	Yes	Yes	Yes
Convert standards	N, P, (S) to N, P, RGB	N, P, S	No	For PAL only	No
Recommended use—					
Dubbing	Yes	Yes	Yes	Yes	Yes
Production	Yes	Yes	Yes	Yes	Yes
Tape playback	Yes	Yes	Yes	Yes	No
On-air	Yes	Yes	Yes	Yes	Yes
Format conversion	Yes	Yes	No	Y/C to Y'UV/RGB/PAL	No
Video response	To 3MHz, NTSC-4.43/PAL	±0.3dB to 6MHz luma	To 8MHz luminance	To 3.5MHz luminance	±0.1dB/60Hz-4MHz
S/N ratio		>50dB	65dB		65dB
Chroma/luma delay	Adjustable H and V	<50ns	±10ns	480ns adjust range	
Diff phase/gain		<1°/±2%			0.5°/0.5%
Adjustable controls—					
Video level range			±30%	±6dB	
Chroma level range	±6dB		+30, -90 IRE	±6dB	
Setup level range	±60mV		0-300mV pedestal	150mV range	
Subcarrier level	±60mV range		Varies per luminance		
Hue phase range	±500ns range		±45°		
Subcarrier phase	Automatic			0-180°	
Sync level range	Auto to preset level		Automatic	To preset	
RGB component adj.		No	RGB/M-format/Beicam	To 200mVp-p gamma	Gain/pedestal
Programmable system	No		600TC time code ctrl'd	No	No
Reader Service Number	561	562	563	564	565

# MATRIX BOARDS

Still one of the most reliable means of programming



- Easily programmed, no special training required
- No programming language to learn
- Reliable, even in harsh workshop conditions
- Scratchproof inscription on front panel
- For distribution of signals in digital, analog, audio and video applications

Please contact us for additional information and documentation

## GHIELMETTI

Ghielmetti Inc.  
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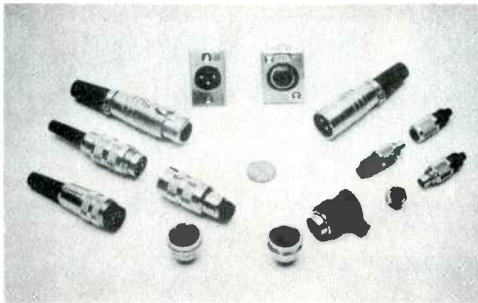
Switches and  
Data Devices

Tel. (213) 463-5111  
Twx. 910-321-2903

Circle (132) on Reply Card

Manufacturer	Fortel	GEC-McMichael	Grass Valley Group	ICM Video																																																																																																																																																	
Model Number	ColorEx	Y-688 <sup>22</sup> TEC	GM2020 ACE	3240 Processor	VC-2000P					Prime function—					Enhance image	No	H/V detail	No	H aperture & coring	Reduce noise	To 12dB chroma noise	10dB luma/20dB chroma	4dB luma/9dB chroma	6dB luminance	Correct color	No	No	No	RS-170A phasing	Correct contrast	No	No	No	Video AGC	Regenerate sync	No	No	Yes	Yes	Convert standards	No	No	Any conversion	For PAL or NTSC only	Recommended use—					Dubbing	Yes	Yes	Yes	Yes	Production	Yes	Yes	Yes	Yes	Tape playback	Yes	Yes	Yes	Yes	On-air	Yes	Yes	Yes	Yes	Format conversion	.....	.....	.....	.....	Video response	.....	.....	4.2MHz for NTSC	±0.2dB to 6MHz	S/N ratio	65dB	60dB dub/57dB encoded	>50dB wtd	70dB	Chroma/luma delay	280ns (100ns autw)	.....	<1%	±10ns to 5MHz	Diff phase/gain	1.5°/1.5% direct	.....	<5%/<3%	.....	Adjustable controls—					Video level range	.....	±3dB	+3, -6dB	±6dB	Chroma level range	.....	±3dB	+3dB relative	±6dB	Setup level range	.....	±20 IRE	.....	±15 IRE	Subcarrier level	.....	.....	.....	+3, -6dB	Hue phase range	.....	±30	.....	±30°	Subcarrier phase	.....	.....	.....	±13°	Sync level range	.....	.....	+3, -6dB	+3, -6dB	RGB component adj.	No	No	.....	No	Programmable system	No	No	Per panel controls	Preset operation	Reader Service Number	566	567	568	569
VC-2000P																																																																																																																																																					
Prime function—																																																																																																																																																					
Enhance image	No	H/V detail	No	H aperture & coring																																																																																																																																																	
Reduce noise	To 12dB chroma noise	10dB luma/20dB chroma	4dB luma/9dB chroma	6dB luminance																																																																																																																																																	
Correct color	No	No	No	RS-170A phasing																																																																																																																																																	
Correct contrast	No	No	No	Video AGC																																																																																																																																																	
Regenerate sync	No	No	Yes	Yes																																																																																																																																																	
Convert standards	No	No	Any conversion	For PAL or NTSC only																																																																																																																																																	
Recommended use—																																																																																																																																																					
Dubbing	Yes	Yes	Yes	Yes																																																																																																																																																	
Production	Yes	Yes	Yes	Yes																																																																																																																																																	
Tape playback	Yes	Yes	Yes	Yes																																																																																																																																																	
On-air	Yes	Yes	Yes	Yes																																																																																																																																																	
Format conversion	.....	.....	.....	.....																																																																																																																																																	
Video response	.....	.....	4.2MHz for NTSC	±0.2dB to 6MHz																																																																																																																																																	
S/N ratio	65dB	60dB dub/57dB encoded	>50dB wtd	70dB																																																																																																																																																	
Chroma/luma delay	280ns (100ns autw)	.....	<1%	±10ns to 5MHz																																																																																																																																																	
Diff phase/gain	1.5°/1.5% direct	.....	<5%/<3%	.....																																																																																																																																																	
Adjustable controls—																																																																																																																																																					
Video level range	.....	±3dB	+3, -6dB	±6dB																																																																																																																																																	
Chroma level range	.....	±3dB	+3dB relative	±6dB																																																																																																																																																	
Setup level range	.....	±20 IRE	.....	±15 IRE																																																																																																																																																	
Subcarrier level	.....	.....	.....	+3, -6dB																																																																																																																																																	
Hue phase range	.....	±30	.....	±30°																																																																																																																																																	
Subcarrier phase	.....	.....	.....	±13°																																																																																																																																																	
Sync level range	.....	.....	+3, -6dB	+3, -6dB																																																																																																																																																	
RGB component adj.	No	No	.....	No																																																																																																																																																	
Programmable system	No	No	Per panel controls	Preset operation																																																																																																																																																	
Reader Service Number	566	567	568	569																																																																																																																																																	

### MINI-CIRCULAR CONNECTORS



*These small multi-pin connectors come in various configurations and contact arrangements. Many styles meet the requirements of DIN specifications 41524-43321 45322. These connectors are ideal for: instrumentation, audio, medical, transducers and thermocouple applications. The miniature versions have a diameter of less than .45 inches.*



**ALPHA PRODUCTS, INC.**

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Westlake Village, CA 91362  
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Telex: 65-9210

Circle (133) on Reply Card



### Merlin ME-888 Standards Converter for ALL world video standards

- Automatic conversion between all world television standards — NTSC, PAL, SECAM, PAL-M, PAL-N and NTSC 4.43.
- Digital image processing — color correction, noise reduction, H & V detail enhancement.
- Multistandard TBC, color bars, frame synchronization and freeze frame.

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TOLL FREE (800) 227-1980



Circle (134) on Reply Card



Manufacturer	Knox Video	Leitch Video	MCI/Quantel	Microtime	OKI Electric
Model Number	K700 (K701)	VPA-330N (-331N)	DSC4000 (DSC4005)	2100 Image Processor	LT1210
<b>Prime function—</b>					
Enhance image	K700	No	Yes	H coring/H-V detail	H coring
Reduce noise	K700	No	Yes	6dB luma/6dB chroma	No
Correct color	K701	Chroma AGC	.....	No	No
Correct contrast	.....	Luminance AGC	.....	No	Auto and manual
Regenerate sync	Yes	To RS-170A	TBC functions	Yes	Yes
Convert standards	No	No	N, P, S	No	N, P, S, PAL-M
<b>Recommended use—</b>					
Dubbing	Yes	Yes	Yes	Yes	Yes
Production	Yes	Yes	Yes	Yes	Yes
Tape playback	Yes	Yes	Yes	Yes	Yes
On-air	Yes	Yes	Yes	No	Yes
Format conversion	.....	.....	RGB to encoded	No	.....
Video response	To 8MHz	±1dB to 5MHz	>4.2MHz NTSC	±1dB to 3MHz	.....
S/N ratio	.....	>60dB	.....	.....	50dB
Chroma/luma delay	.....	.....	.....	<25ns (+500/-300ns)	20ns
Diff phase/gain	.....	.....	.....	2°/2%	3°/3%
<b>Adjustable controls—</b>					
Video level range	±50 IRE (±10 IRE)	±2.5dB	.....	.....	±3 IRE
Chroma level range	±50 IRE (RBG on K701)	±2.5dB	.....	.....	±3 IRE
Setup level range	±20 IRE	±0 IRE	.....	.....	±3 IRE
Subcarrier level	±30 IRE	.....	.....	.....	±10°
Hue phase range	±180°	±20°	.....	.....	±180°
Subcarrier phase	±180°	±10 IRE	.....	.....	±3 IRE
Sync level range	±30 IRE	±10 IRE	.....	.....	±3 IRE
RGB component adj.	No	No	No	No	Gain pedestal
Programmable system	Manual	No	.....	No	No
<b>Reader Service Number</b>	<b>571</b>	<b>572</b>	<b>573</b>	<b>574</b>	<b>575</b>

Manufacturer	Snell & Wilcox	Sony Broadcast	Tektronix	Thomson-CSF	Video International
Model Number	DIP9700A Processor	BVX-30 System	1440	5700 ColorProcessor 8010 Image Enhancer	DTC-3500
<b>Prime function—</b>					
Enhance image	H and V	H/V detail	No	No	H/V detail
Reduce noise	9dB luma/12dB chroma	15dB luminance	No	No	Effective
Correct color	RG gain & pedestal	RGB gain/lift/gamma	Per VIRS reference	RGB gain/pedestal	No
Correct contrast	Yes	No	Per VIRS reference	No	Within detail
Regenerate sync	Yes	Yes	Yes	No	No
Convert standards	N, P, S, PAL-M, NTSC 4.43	No	No	No	No
<b>Recommended use—</b>					
Dubbing	Yes	Yes	No	Yes	Yes
Production	Yes	Yes	No	Yes	Yes
Tape playback	Yes	Yes	Possible	Yes	Yes
On-air	Yes	No	Yes	Yes	Yes
Format conversion	To YUV or RGB	No	.....	No	RGB Y/C YUV
Video response	±0.5dB/3.3MHz	±0.5dB to 5MHz	.....	±3dB/4.2MHz	-1dB to 5MHz
S/N ratio	52dB CCIR wtd	>50dB	>60dB to 5MHz unwtwd	65dB	>55dB
Chroma/luma delay	+600ns/-100ns adjust	.....	±3dB correction	840ns	180ns
Diff phase/gain	.....	2°/3%	0.5%/0.5%	0.25°/0.5%	<1°/0.5%
<b>Adjustable controls—</b>					
Video level range	Yes	±3dB	±5dB	±3dB	±1dB
Chroma level range	Yes	±3dB	±3dB	±3dB (±40 IRE)	.....
Setup level range	Yes	±20dB	±10 IRE	±15 IRE	.....
Subcarrier level	Preset	±90°	±25°	±15°	.....
Hue phase range	Yes	±360°	.....	±15°	.....
Subcarrier phase	.....	.....	.....	±20 IRE	.....
Sync level range	Preset	.....	±3dB	.....	.....
RGB component adj.	Red/blue	RGB per panel adjust	No	Gain/pedestal/phase	No
Programmable system	Per panel presets	Yes	Auto per VIRS ref	No	Per panel settings
<b>Reader Service Number</b>	<b>576</b>	<b>577</b>	<b>578</b>	<b>579</b>	<b>580</b>



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

#### Video Processors

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# Video Switchers

These are video switching systems for production and master control.

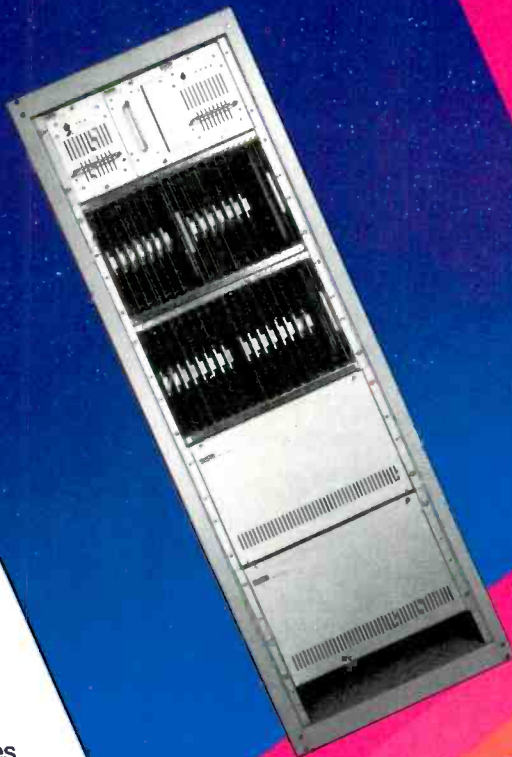
Manufacturer	Ampex Corporation			Beaveronics	Robert Bosch
Model/Series Number	4100 series	AVC series	MC4	BI-156	MCS-2000
Design application	Production	Production	Master control	Production	Master control
# of inputs	26V/16SA	32V/31SA	28V/26SA	15V	250V/250SA selectable
Video black source	Integral	Integral	Integral	Integral	No
Color backgrounds	Integral	Integral	Integral	Integral	Integral
Non-sync detector	Integral	Integral	Integral	Yes	Integral
Key sources	24 int/8 ext	30 int/12 ext	26 int/4 ext	Int & ext	Int & ext
Chroma keyer	Encoded or RGB opt	Encoded or RGB	Encoded or RGB opt	Optional	No
Downstream keyer	All sources opt	All sources	All sources	External option	No
Switching buses	8	8	2	6	2
Auxiliary buses	6	16	3	2 optional	Software selected
Mix/effects amps	3	3	0	2	2
Pattern generator	100 patterns	164 patterns	0	32 patterns	120 patterns
Wipe effects	Rotary/soft-edge	Rotary/soft-edge	No	Soft-edge	.....
Spotlight effects	No	Integral	No	Yes	No
Border effects	Optional	Integral	Optional	Yes	No
Shadow effects	Optional	Integral	Optional	Yes	No
Manipulations	Position/modulation	Position/modulation	No	Position/modulation	.....
Integral quad split	Optional	Optional	No	Option for M/E2	No
Re-entry system	To triple	Triple	No	Yes	Single
Automation interface	Parallel/edit opt	Serial optional	Parallel optional	No	RS-232
Programmable system	Yes	All transition types	.....	No	Yes
Failsafe memory	No	Yes	No	No	Yes
Diagnostics software	No	Yes	No	No	Yes
Digital effects port	Yes	Yes	No	No	No
Crosstalk 3.58MHz	50dB	55dB	55dB	56dB (3.58/4.43)	.....
Variable voice over	Option	Optional	Yes	No	Yes
Audio metering	No	Optional	Yes	No	Yes
Audio level controls	Yes	Yes	Yes	No	Yes
Audio mix interface	Yes	Yes	No	No	.....
Reader Service Number	1196	1197	1198	1199	1200

Manufacturer	Robert Bosch	Central Dynamics		Michael Cox Electronics
Model/Series Number	RME series (R102ME)	MC-990	MC4000 series (4328)	5C31 component
Design application	Production	Master control	Master control	Production/ENG
# of inputs	24	To 32V/32A + 6A	32V/32A + 8A	5 YUV (RGB Opt)
Video black source	Integral	Optional	Integral	Integral
Color backgrounds	Integral	Optional	Integral	Integral
Non-sync detector	Yes	Yes	.....	.....
Key sources	5 title and others	Various	Various	All sources & titles
Chroma keyer	RGB/encoded option	Optional RGB	.....	Encoded or RGB opt
Downstream keyer	Single/double opt	External	Yes	Yes
Switching buses	10	7	Pgrm/Prvw	10 primary
Auxiliary buses	Yes	.....	.....	Option
Mix/effects amps	2	.....	No	2SFX units
Pattern generator	60 patterns	.....	No	38 and 52 opt
Wipe effects	Rotating/soft-edge	Optional	No	Rotary/soft-edge
Spotlight effects	Yes	No	No	Yes
Border effects	Yes	Optional	Yes	Yes
Shadow effects	Yes	.....	Yes	Yes
Manipulations	Position/modulation	No	.....	Position/modulation
Integral quad split	.....	No	.....	Option
Re-entry system	Multiple	No	.....	Double
Automation interface	RS-422 & multicore	APC-990 system	Serial port	CAP and editors
Programmable system	Option to 100 takes	Auto transitions	Some features	Auto transitions
Failsafe memory	Yes	.....	Yes	.....
Diagnostics software	.....	No	.....	No
Digital effects port	Yes	.....	No	.....
Crosstalk 3.58MHz	.....	56dB	60dB	56dB
Variable voice over	No	Yes	No	35dB YU/YV 45dB YV
Audio metering	No	Yes	LED ladders	No
Audio level controls	No	Yes	Yes	No
Audio mix interface	No	.....	.....	No
Reader Service Number	1201	1202	1203	1204

Manufacturer	Michael Cox Electronics		Crosspoint Latch		
Model/Series Number	T24-PO presentation	T16 (T16C)	6109	6139C series	6150BK
Design application	Master control	Production	Production	Production	Master control
# of inputs	23V/23A with silence	15 (15 YUV)	8V	24V	16V/16SA
Video black source	Integral	Integral	Integral	Integral	Integral
Color backgrounds	Integral	Integral	Integral	Integral	Integral
Non-sync detector	Yes	On T16	No	No	No
Key sources	Int/ext/title	Int/3 ext/title	7 int/1 ext	23 int/2 ext keyers	0 int/4 ext
Chroma keyer	With T24-P1 MLE	Yes	RGB standard	Encoded or RGB opt	No
Downstream keyer	Yes	Optional	.....	Yes	No
Switching buses	3 on -PO (4 on -PI)	4	3	6	2
Auxiliary buses	1 with -P1	Chroma-key input bus	0	0	0
Mix/effects amps	Yes	1 MLE	1	3	1
Pattern generator	100 available -P1	100 patterns	32 patterns	12 patterns/ME	Optional patterns
Wipe effects	Optional soft-edged	Rotary/soft-edge	Soft-edge	Soft-edge	No
Spotlight effects	No	.....	Integral	Integral	No
Border effects	Yes	Yes	Integral	Integral	Optional
Shadow effects	Yes	Yes	Optional	Integral	No
Manipulations	.....	Position/modulation	Position/modulation	Position/modulation	No
Integral quad split	No	.....	No	Integral	No
Re-entry system	.....	Double	Double	Double	Single
Automation interface	Yes	Serial bus	Serial/parallel opt	Serial/parallel opt	Serial
Programmable system	Key setup/transition	Yes	Crossfade/fade-black	Crossfade/fade-black	Crossfade/fade-black
Failsafe memory	Standby power supply	Standby power supply	No	No	No
Diagnostics software	.....	.....	No	No	No
Digital effects port	3 ports w/ tracking	T16 has 3 ports	Yes	No	No
Crosstalk 3.58MHz	.....	.....	50dB	50dB	50dB
Variable voice over	Yes	No	No	No	Yes
Audio metering	VU/PPM optional	No	No	No	Yes
Audio level controls	Yes w/submixes	Optional	No	No	Yes
Audio mix interface	.....	Optional	No	No	Yes
Reader Service Number	1206	1207	1208	1209	1210

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Manufacturer	Echolab	Electrocraft	ERCA	For-A	
Model/Series Number	SE-1G (SE-2)	SE-3 (SE-6)	VM-8548	TM2/6C	PVM-500 (CVM-500)
Design application	Production	Production	Production	Production/ENG	Remote production
# of inputs	4 (5)	10V	8V RGB	6 component or PAL	6 NTSC (Y/R-Y/B-Y)
Video black source	No (Integral)	Integral	Yes	No	Yes
Color backgrounds	No (Integral)	3 backgrounds	Yes	External	Integral
Non-sync detector	None	Integral	.....	No	No
Key sources	0 int/1 ext	2 int/3 (5) ext	Int/1 ext title	Title	Any int/2 ext
Chroma keyer	No	Encoded or RGB opt	RGB	Yes	W/ optional CCK-500
Downstream keyer	No	2 sources	Yes	Possible	Integral
Switching buses	2 (3)	3 (5)	4	3	4
Auxiliary buses	0	1 (0)	.....	.....	.....
Mix/effects amps	1½	2½	Yes	2	One
Pattern generator	7 (9) patterns	40 patterns	23 programmable	Programmable	22 patterns
Wipe effects	Rotary/soft-edge	Soft-edged	Soft-edge	W/ limited geometrics	Yes
Spotlight effects	No	Integral	No	.....	No
Border effects	Integral SE-2	Integral	Yes	Luminance & chroma	No
Shadow effects	No	Optional	.....	.....	No
Manipulations	No	Position (modulation)	Position/modulation	Position/size	Position
Integral quad split	No	Integral	No	.....	No
Re-entry system	No	Double	Yes	Possible	No
Automation interface	No	SMPTE option	Yes	No	Optional XFM-500
Programmable system	No	Crossfade/fade-black	Yes	Limited	Transitions
Failsafe memory	No	Yes	Yes	No	.....
Diagnostics software	No	Yes	.....	No	No
Digital effects port	No	Yes	.....	No	No
Crosstalk 3.58MHz	46dB (48dB)	52dB	.....	.....	.....
Variable voice over	No	In AFS option	No	No	No
Audio metering	No	In AFS option	No	No	No
Audio level controls	No	In AFS option	No	No	No
Audio mix interface	No	In AFS option	No	No	No
Reader Service Number	1211	1212	1213	1214	1215

Manufacturer	Grass Valley Group			Image Video Ltd.	
Model/Series Number	Series 300 2A (3A)	Series 1680-24k (16k)	Model 100 (100CV)	1600-4S/M-200	8200 series/custom
Design application	Production	Production	Production	Master control	Master control
# of inputs	24V	24 (16)	10	24V/24SA + 6SA	30V/30SA + 12 A
Video black source	Integral	Integral	Integral	Integral	Integral
Color backgrounds	Integral	Integral	Integral	Integral	Integral
Non-sync detector	Yes	Integral	No	Integral	Yes
Key sources	6 int/6 ext/5 title	2 int/2 ext	Any int/1 ext	Int/ext	Int/5 ext
Chroma keyer	Encoded/RGB/linear	RGB std/encoded opt	RGB std	.....	RGB in PAL only
Downstream keyer	Yes	Yes	Yes	.....	5 input
Switching buses	12 (16)	8 primary	3	Pgrm/preset/aux	4
Auxiliary buses	5 (2) and options	.....	.....	.....	.....
Mix/effects amps	2 (3)	3	3-bus MLM/E	Effects through	.....
Pattern generator	40 std geometrics	32 patterns	10 patterns	Various external	12 patterns PAL only
Wipe effects	Rotary & soft-edges	Rotary & soft-edge	Soft-edges	Equipment	.....
Spotlight effects	Yes	Yes	No	No	.....
Border effects	Yes	Integral	Yes	No	Yes
Shadow effects	Yes	Integral	Yes	No	Yes
Manipulations	Position/modulation	Position/modulation	Reverse/position	No	Position
Integral quad split	Yes	Yes	No	No	.....
Re-entry system	Multiple	Triple	Via M/E amp	No	.....
Automation interface	E-MEM system	E-MEM option	RS-232/RS-422	M200 series controls	Option
Programmable system	Transitions/serial	Serial/transitions	Transitions	Transitions	Yes
Failsafe memory	Yes	Yes	.....	Yes	Yes
Diagnostics software	.....	.....	.....	Yes	Yes
Digital effects port	Yes	Yes	No	Yes	.....
Crosstalk 3.58MHz	54dB	52dB NTSC/50dB PAL	.....	60dB	56dB
Variable voice over	No	No	Optional AMX100	Yes	Yes
Audio metering	No	No	Optional AMX100	Yes	Yes
Audio level controls	No	No	Optional AMX100	Yes	Yes
Audio mix interface	No	No	Optional AMX100	.....	.....
Reader Service Number	1216	1217	1218	1219	1220

Manufacturer	Intergroup Video	JVC Company	Listec/Polar Video	Omicron Video	
Model/Series Number	899 Master Control	904-10S/904-10E	KM-2000U (1200U)	PVM-1	Model 506 (516)
Design application	Master control	Production	Production	Production	Master & production
# of inputs	10-30V/10-30A (SA opt)	10	8 (5)	4V	8(16-24)V/8(16-24)SA
Video black source	Integral	Integral	Integral	Integral	Integral
Color backgrounds	Integral	Integral	Integral	Integral	Integral
Non-sync detector	.....	.....	No	No	No
Key sources	4	Int/ext	1 int/1 ext	Int/ext	Int/ext
Chroma keyer	.....	Encoded or RGB opt	RGB	Luminance only	Optional
Downstream keyer	Yes	4 source	1 source	No	5 sources
Switching buses	2	6	2	3	2 (5)
Auxiliary buses	.....	.....	1 (0)	0	0 (1)
Mix/effects amps	No	2	2	1	1 (2)
Pattern generator	No	16 patterns	13 (6) patterns	22 patterns	8 (>100) patterns
Wipe effects	No	Soft-edge/rotary	Soft-edge on 2000U	.....	On 516
Spotlight effects	No	.....	No	No	On 516
Border effects	No	Yes	No	No	On 516
Shadow effects	No	.....	No	No	On 516
Manipulations	No	Position/modulation	Position/modulation	Position	Position/modulation
Integral quad split	No	.....	No	No	Option for 516
Re-entry system	No	Multiple	Single	No	Single
Automation interface	.....	W/ 907-A upgrade	No	No	Serial option
Programmable system	Transitions	Transitions	Fade-black 2000U	Crossfade/fade-black	Crossfade/fade-black
Failsafe memory	Yes	.....	No	No	No (Yes)
Diagnostics software	.....	.....	No	No	No (Yes)
Digital effects port	.....	.....	No	No	No (Yes)
Crosstalk 3.58MHz	55dB	53dB	50dB	>50dB	55dB
Variable voice over	Yes	W/ 908-4/4S	No	No	No
Audio metering	Yes	W/ 908-4/4S	No	No	Yes
Audio level controls	Yes	W/ 908-4/4S	No	No	Yes
Audio mix interface	.....	.....	No	No	Yes
Reader Service Number	1221	1222	1223	1224	1225

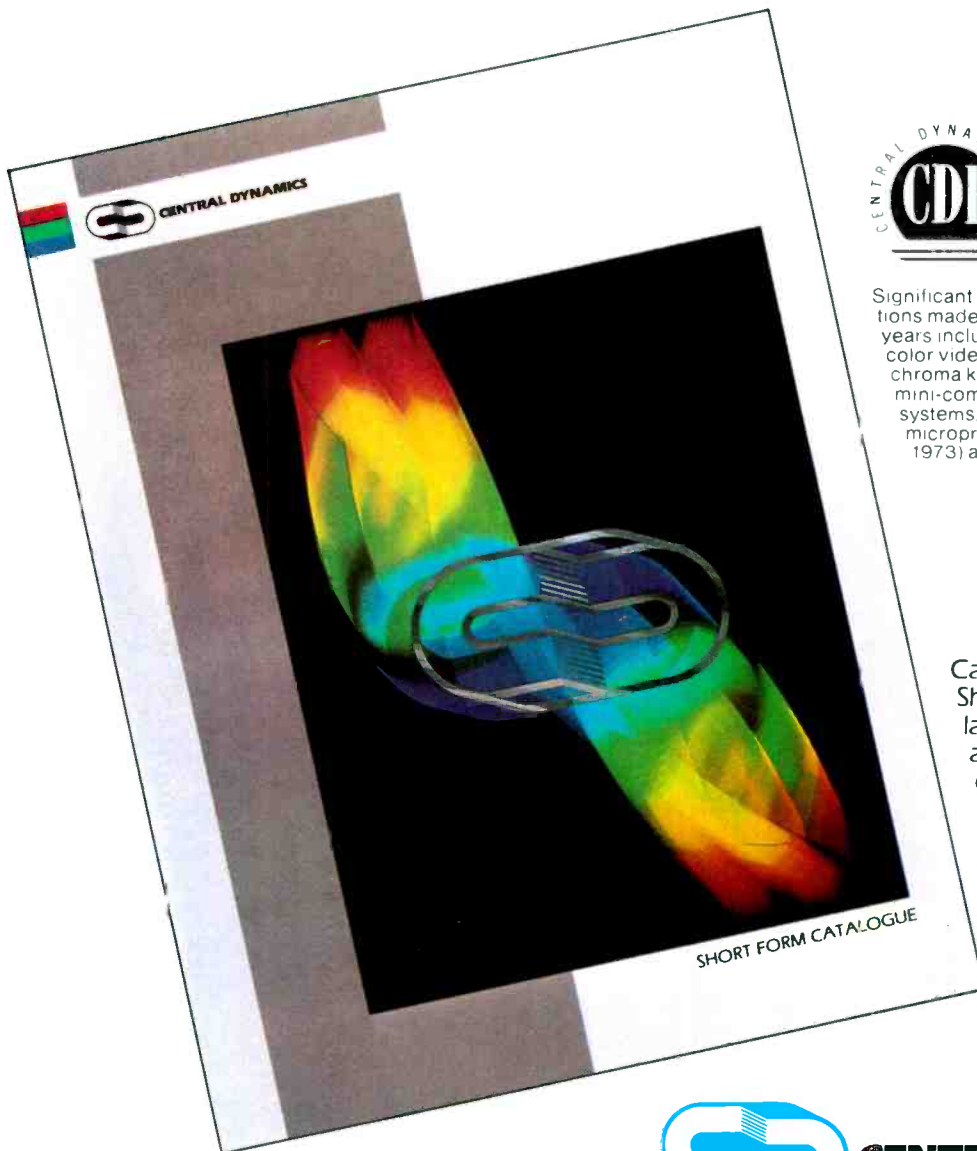


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Circle (136) on Reply Card

Manufacturer	Ross Video	Shintron	Vital Industries
Model/Series Number	508 (504/505)	Empress 2000C	3000
Design application	Production	Production component	Production
# of inputs	10V	12 component	26V
Video black source	Integral	Yes	Integral
Color backgrounds	Integral	Yes	Integral
Non-sync detector	Integral	Yes	2 backgrounds
Key sources	4 int/3 ext	Int/ext	Integral
Chroma keyer	RGB opt	Yes	84 ext
Downstream keyer	3 source std	Yes	Encoded (3)
Switching buses	3	4	29 sources
Auxiliary buses	0	1	16
Mix/effects amps	1	1	0
Pattern generator	12 patterns	16 patterns	3
Wipe effects	Soft-edge	Soft-edge	117 patterns
Spotlight effects	Integral	No	Rotary/soft-edge
Border effects	Integral	Yes	No
Shadow effects	No	Yes	Yes
Manipulations	Position/modulation	Position	Integral
Integral quad split	No	Integral option	Position/modulation
Re-entry system	Double	Triple	No
Automation interface	RS-422 option	Through M/E amp	Double
Programmable system	Crossfade/fade-black	Yes	RS-232
Failsafe memory	Yes	Yes	Yes
Diagnostics software	Yes	Yes	Yes
Digital effects port	No	Yes	Yes
Crosstalk 3.58MHz	>53dB	>53dB	Integral effects
Variable voice over	No	No	54dB
Audio metering	No	No	No
Audio level controls	No	No	No
Audio mix interface	Yes	No	No
Reader Service Number	1226	1228	1229

## TBCs/Synchronizers

These video signal stabilizing systems are used with VTRs and other electromechanical video sources, as well as remote signal sources. These systems are applicable to NTSC unless noted with model number.

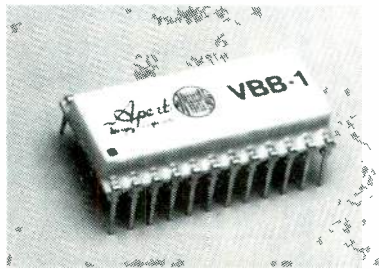
Manufacturer	ADDA Corporation	Ampex Corporation	Apert-Herzog
Model/Series Number	AC20A (AC21P) PAL	VW-3	TBC-3
Function	TBC & synchronizer	TBC & synchronizer	TBC
Sample freq/bits	14.3MHz/8-bit	14.3MHz/8-bit	10.7MHz/8-bit
Correction window	1-field/1-frame opt	1-frame	>10 TVL
Video bandwidth	4.2MHz (to 5MHz)	>2.4MHz heterodyne	To 4.2MHz
S/N ratio	56dB (55dB)	58dB	56dB
Diff phase/gain	2°/2%	2°/2%	2°/2%
Residual error	±10ns	±10ns	±2.5ns
Coherent 3.58 out	Yes	Yes	Yes
Advanced sync out	Yes	Yes	Yes
Component video in	Y/C, YUV	.....	No
Component video out	Y/C, YUV, RGB	.....	No
Velocity compensate	No	Direct & heterodyne	No
Heterodyne process	Yes	Yes	Yes
Non-servo capstan	No	.....	No
Dropout compensation	Yes	TTL & RF	RF & TTL
Dynamic tracking	To 40X fwd or rev	.....	Yes
Noise reduction	No	No	Yes
Color correction	No	No	No
Image enhancement	Production effects	No	No
Hot switch capable	No	No	No
Reader Service Number	656	657	659

Manufacturer	For-A	Fortel
Model/Series Number	FA-430 (FA-410)	FA-400/420
Function	TBC	TBC
Sample freq/bits	14.3MHz/8-bit	14.3MHz/8-bit (9 opt)
Correction window	16 TVL	30 TVL
Video bandwidth	To 4.2MHz	2.5MHz (4.2 w/subcarrier)
S/N ratio	58dB	58dB
Diff phase/gain	2°/2%	2°/2%
Residual error	±10ns	+/-10ns
Coherent 3.58 out	Yes	Yes (No -420)
Advanced sync out	Yes	Yes
Component video in	Y-688 (No -410)	No
Component video out	Y-688 (No -410)	No
Velocity compensate	No	No
Heterodyne process	Yes	Yes
Non-servo capstan	Yes	Yes (No -420)
Dropout compensation	Yes	Yes (No -420)
Dynamic tracking	Yes	No
Noise reduction	6dB (No -410)	No
Color correction	Yes (No -410)	No
Image enhancement	Yes (No -410)	No
Hot switch capable	No	No
Reader Service Number	661	662

Manufacturer	Gunnerfield Ltd.			Harris Video	
Model/Serial Number	GML2002S (PAL/SECAM)	GML8000 (PAL/SECAM)	GML4004S (PAL/SECAM)	HVS 690	632 (631 PAL)
Function	TBC	TBC & synchronizer	TBC w/ effects	Synchronizer	Synchronizer
Sample freq./bits	3xisc/8-bit Y & C	3xisc/8-bit	3xisc/8-bit	14.3MHz/9-bit	14.3MHz/8-bit
Correction window	16 TVL	1-field	16 TVL	.....	2-field
Video bandwidth	±0.5dB to 3MHz	5.5MHz lum/3MHz chroma	To 3MHz color under	To 4.2MHz	To 4.2MHz
S/N ratio	55dB	55dB	55dB	59dB	59dB
Diff phase/gain	4°/4%	4°/4%	4°/4%	2°/2%	1°/1%
Residual error	±25ns mono	±25ns luminance	±25ns mono	±20ns luma	.....
Coherent 3.58 out	Yes	No	Yes	Yes	Yes
Advanced sync out	Yes	No	Yes	No	No
Component video in	.....	Y/C	No	No	RGB
Component video out	..... (RGB)	RGB option	RGB	No	RGB
Velocity compensate	No	Yes	No	Line-by-line	.....
Heterodyne process	No	Yes	Yes	Yes	Yes
Non-servo capstan	Yes	Yes	Yes	.....	Yes
Dropout compensation	Yes	Yes	Yes	Yes	Yes
Dynamic tracking	Yes	Yes	Channel A only	Yes	No
Noise reduction	Yes	Yes	Noise coring	To 3dB	To 12dB
Color correction	R-Y/B-Y balance	Yes	R-Y/B-Y balance	Yes	No
Image enhancement	Yes	Yes	Yes	No	No
Hot switch capable	Yes	Yes	.....	Yes	Yes
Reader Service Number	666	667	668	669	670

Manufacturer	Harris Video	Hatronic	MCI/Quantel	Microtime
Model/Serial Number	516 WB	AE61	DFS 1750	T-120 (T-120D)
Function	TBC	TBC	TBC & synchronizer	TBC
Sample freq./bits	14.3MHz/8-bit	14.3MHz/8-bit	14.318MHz/8-bit	14.3MHz/8-bit
Correction window	16 TVL	16 TVL	2-field	16 TVL
Video bandwidth	To 4.2MHz	To 4.2MHz	±0.5dB/4.2MHz direct	±0.5dB to 4.2MHz
S/N ratio	55dB	59dB	58dB	58dB
Diff phase/gain	1.5°/1.5%	2°/2%	<2°/2%	1°/1%
Residual error	±20ns	±20ns luma	<2ns	±10ns luminance
Coherent 3.58 out	Yes	Yes	No	Yes
Advanced sync out	Yes	Yes	Yes	Yes
Component video in	No	No	No	No
Component video out	No	No	No	No
Velocity compensate	Yes	.....	No	No
Heterodyne process	Yes	Yes	Yes	Yes
Non-servo capstan	Yes	No	.....	Yes
Dropout compensation	Yes	Yes	Option	No
Dynamic tracking	No	Option	No	T-120D only
Noise reduction	Chroma to 3dB	.....	No	No
Color correction	Yes	No	No	No
Image enhancement	No	No	No	No
Hot switch capable	No	No	No	No
Reader Service Number	671	672	673	675

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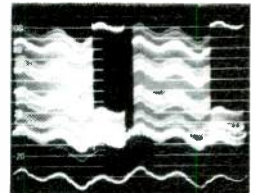
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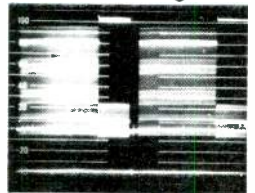
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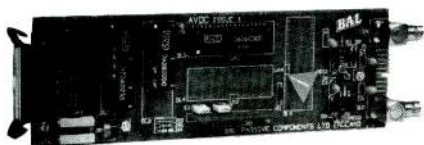
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Tel. (516) 546-4239

Circle (138) on Reply Card

Manufacturer	Microtime				NEC America	
Model/Service Number	S-130	T-220 component	S230	FS-19	FS-18	
Function	Synchronizer	TBC & synchronizer	TBC & synchronizer	Synchronizer, TBC opt	Synchronizer, TBC opt	
Sample freq/bits	14.3MHz/8-bit	13.5MHz/8-bit	14.3MHz/8-bit	14.3MHz/10-bit	14.3MHz/8-bit	
Correction window	2-field	1-field	2-field	Infinite for TBC	Infinite	
Video bandwidth	To 5MHz	To 4.1MHz	To 4.2MHz	To 5MHz	To 5MHz	
S/N ratio	58dB	58dB	58dB	60dB	>53dB	
Diff phase/gain	2°/2%	2°/2%	2°/2%	1°/1%	2°/2%	
Residual error	.....	.....	.....	±2ns	±2ns	
Coherent 3.58 out	No	No	Yes	Yes	Yes	
Advanced sync out	No	Yes	Yes	Yes	Yes	
Component video in	No	Y/I/Q	No	No	No	
Component video out	No	Y/I/Q or Y/R-Y/B-Y	No	No	No	
Velocity compensate	No	No	No	Yes	Yes	
Heterodyne process	No	Yes	Yes	Yes	Yes	
Non-servo capstan	No	Yes	Yes	Yes	Yes	
Dropout compensation	No	Yes	No	Yes	Yes	
Dynamic tracking	No	Yes	No	No	No	
Noise reduction	No	No	No	No	No	
Color correction	No	No	No	No	No	
Image enhancement	No	No	No	No	No	
Hot switch capable	Yes	No	Yes	Yes	Yes	
Reader Service Number	676	677	678	679	680	

Manufacturer	Nova Systems			Panasonic Broadcast	Questech Ltd.
Model/Service Number	Model 490	Model 500	Model 510	AU-TB30	6001P (PAL)
Function	TBC	TBC	TBC	TBC/internal system	Synchronizer
Sample freq/bits	14.3MHz/8-bit	14.3MHz/8-bit	14.3MHz/8-bit	Y13.5/IQ 6.75/8-bit	12.6MHz/8-bit
Correction window	32 TVL	32 TVL	32 TVL	32 TVL	2-field
Video bandwidth	To 2.3MHz	To 4.2MHz	4.2MHz direct mode	Y4.5MHz/IQ 1.5MHz	To 5.5MHz
S/N ratio	58dB	58dB	58dB	58dB	54dB
Diff phase/gain	2°/2%	2°/2%	2°/2%	.....	1.5°/2.5%
Residual error	±10ns	±10ns	±10ns	±15ns	±10ns
Coherent 3.58 out	No	Yes	Yes	No	No
Advanced sync out	Yes	Yes	Yes	No	No
Component video in	No	No	No	Y/I/Q	Yes
Component video out	No	No	No	Y/I/Q	Yes
Velocity compensate	No	No	No	.....	No
Heterodyne process	Yes	No	Yes	No	Yes
Non-servo capstan	No	No	No	.....	Yes
Dropout compensation	No	No	No	.....	No
Dynamic tracking	No	No	No	No	No
Noise reduction	No	No	No	.....	No
Color correction	No	No	No	.....	No
Image enhancement	No	No	No	.....	No
Hot switch capable	No	No	No	No	Yes
Reader Service Number	681	682	683	684	685

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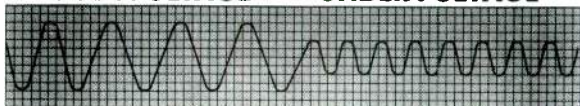
Circle (201) on Reply Card



Manufacturer	Questech Ltd.	RCA	RCA	Regis-BLT	Sony Broadcast
Model/Series Number	2101P (PAL)	TBC-410	TBC-700	FSC	BVT-2000
Function	Synchronizer	TBC	TBC	TBC & synchronizer	TBC
Sample freq./bits	13.5MHz/8-bit	14.3MHz/9-bit	14.3MHz/8-bit	12.5MHz/8-bit	14.3MHz/9-bit
Correction window	2-field	30 TVL	28 TVL	Infinite TVL/1-field	12 TVL
Video bandwidth	To 5.5MHz	±0.25dB to 4.5MHz	4.2MHz NTSC/5.5 PAL	To 3.5MHz	To 4.2MHz
S/N ratio	54dB	56dB	56dB	52dB wtd	58dB
Diff phase/gain	1.5°/2.5%	2°/2%	2°/2%	3°/3% maximum	2°/2%
Residual error	±10ns	±10ns monochrome	±10ns NTSC	<±5ns	±2.5ns
Coherent 3.58 out	No	Yes	Yes	Yes	Yes
Advanced sync out	No	Yes	Yes	Yes	Yes
Component video in	Yes	No	No	No	No
Component video out	Yes	No	No	No	No
Velocity compensate	Yes	Line-by-line	Line-by-line	Yes	Yes
Heterodyne process	Yes	Yes	Yes	Yes	Yes
Non-servo capstan	Yes	Yes	Yes	Yes	Yes
Dropout compensation	Yes	1-line delay	1-line delay	Yes	No
Dynamic tracking	Yes	Yes	Yes	Yes	Yes
Noise reduction	No	No	No	No	Yes
Color correction	No	No	No	Yes	3dB chroma
Image enhancement	No	No	No	No	No
Hot switch capable	Yes	No	Yes	Yes	No
Reader Service Number	686	687	688	689	690

Manufacturer	BKH-2150	Sony Broadcast	Tektronix	Video International
Model/Series Number	BKH-2150	BVT-810	110-S	TBC-3000 (PAL/SECAM)
Function	TBC	TBC	TBC & synchronizer	TBC & synchronizer
Sample freq./bits	14.3MHz/9-bit	10.7/8-bit	14.3MHz/10-bit	13.5MHz L/8-bit
Correction window	15 TVL	15 TVL	2-field or 4-field	1-frame
Video bandwidth	To 4.2MHz	To 4.2MHz	To 4.2MHz	>5.5MHz
S/N ratio	58dB	55dB	60dB unwdt	>53dB worst case
Diff phase/gain	2°/2%	2°/2%	1°/1%	2°/2%
Residual error	±2.5ns	±2.5ns chroma	±20ns	.....
Coherent 3.58 out	No	Yes	No	Yes
Advanced sync out	No	Yes	No	Yes
Component video in	No	No	No	YUV (Y/C)
Component video out	No	No	No	YUV (Y/C)
Velocity compensate	Yes	.....	.....	.....
Heterodyne process	No	Yes	Yes	.....
Non-servo capstan	No	No	Yes	.....
Dropout compensation	Yes	Yes	No	TTL
Dynamic tracking	Yes	Yes	No	.....
Noise reduction	No	No	No	4-levels selectable
Color correction	No	No	No	R-Y/B-Y
Image enhancement	No	No	No	H detail
Hot switch capable	No	No	Yes	Yes
Reader Service Number	691	692	693	694

## OVERVOLTAGE      UNDERVOLTAGE

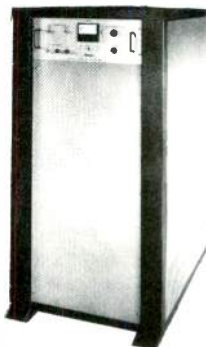


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Circle (141) on Reply Card

# Time Code Equipment

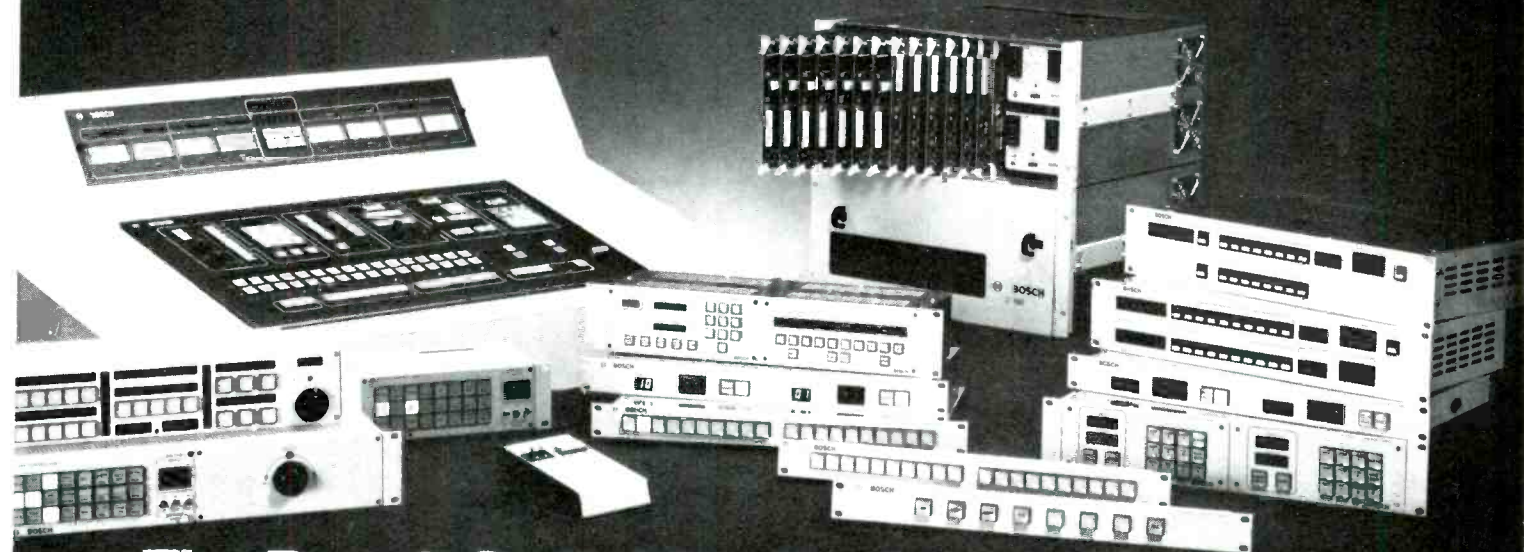
These video and/or film frame oriented timing systems include generators, readers, character inserters and signal processors, which meet the SMPTE and EBU 80-bit LTC (longitudinal) or 90-bit VITC (vertical interval) time code formats

Manufacturer	Adams-Smith	P. Albrecht	Audio Visual/AVS	Audio + Design/Cairec	Cipher Digital
Model Number	System 2600	TCU-E Reader/Generator	S160TC Reader/Keyer	TCR1 Reader	6100 Reader/Generator
Portable unit	No	Yes	No	Yes	No
Operating modes—					
Drop frame	Yes	No	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	.....	Yes	Yes
Jam sync	Yes	Yes	No	No	Yes
Standards supported	SMPTE/EBU	EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video/60Hz	Video	Video	.....	Video/60Hz/Crystal
BCD data entry for	Time set/user bits	Time set/user bits	None	Time set	Time set/user bits
BCD data displays of	Time/user bits/data	Time/user bits	Optional	Time/user bits	Time/user bits/data
# of display digits	8	8	8 optional	8	16
Display digit size	1/8" to 9/16"	1/2"	.....	1/2"	1/2"
Readout speeds	0 to 100X play	1/10X to 30X play	1/128X to 128X play	±¼ play	1/30X to 80X play
Editor interfacing	Yes	No	Option	Yes	Yes
VITC code output	SMPTE/EBU	EBU	No	No	SMPTE/EBU
Synchronizer feature	Yes	Yes	No	No	Yes
LTC output signal	+10dBm or 1V 600Ω	0 to 4Vss	Video only	0.775Vrms into 10kΩ	+4dBm
Power required	110/220Vac	220Vac	220Vac	110Vac or 6Vdc	110/220Vac
Equipment features—					
LTC-VITC translate	Yes	Yes	No	No	Yes
User bit recognize	Yes	No	No	Yes	Yes
Time code comparator	Yes	Yes	No	No	Yes
Video display keyer	17 char/15-150 TVL	8 or 16 char/16 TVL	8 char/12x16 matrix	No	16 char/variable
Display window	2-line	2-line	1-line	No	3-line
Reader Service Number	711	712	712	714	715

Manufacturer	Cipher Digital				Coherent Communications
Model Number	735V Reader/Inserter	735CD Reader/Control	716A LTC Generator	710A Reader/Regen.	TC100A Master Module
Portable unit	No	No	No	No	Yes
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	No
Jam sync	Yes	.....	Yes	No	Yes
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	.....	.....	Video/60Hz/crystal	Video	Crystal
BCD data entry for	.....	.....	Time set/user bits	.....	Time set/user bits
BCD data displays of	Time/user bits/data	Time/user bits	Time/user bits/data	Time/user bits/data	Time/user bits
# of display digits	8	8	8	8	8
Display digit size	1/2"	1/2"	1/2"	1/2"	1/2"
Readout speeds	1/50X to 80X play	1/50X to 80X play	.....	1/50X to 80X play	Sync speed only
Editor interfacing	Yes	Yes	Yes	Yes	No
VITC code output	No	No	No	No	No
Synchronizer feature	No	No	No	No	No
LTC output signal	+4dBm	+4dBm	+4dBm	+4dBm	5Vp-p
Power required	110/220Vac	110/220Vac	110/220Vac	110/220Vac	9Vdc
Equipment features—					
LTC-VITC translate	No	No	.....	No	No
User bit recognize	Yes	For event control	.....	Yes	Yes
Time code comparator	No	Yes	.....	.....	Yes
Video display keyer	8 char/variable	None	.....	2 char/variable	No
Display window	1-line	None	.....	2-line	No
Reader Service Number	716	717	718	719	720

Manufacturer	Coherent Communications		Datum		
Model Number	TC200A Recorder Module	TC300ACamera Module	5360 TC Reader	5350 TC Generator	5303 Time Processor
Portable unit	Yes	Yes	No	No	No
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	No	No	No	Yes	Yes
Jam sync	No	No	No	Yes	Yes
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Crystal	Crystal	60Hz	Video/60Hz	Video
BCD data entry for	Time set/user bits	Time set/user bits	Time set	Time set/user bits	Time set/user bits
BCD data displays of	No	No	Time code	Time/user bits	Time/user bits
# of display digits	No	None	8	8	8
Display digit size	.....	.....	1/2"	1/2"	1/2"
Readout speeds	.....	.....	1/30X to 90X play	At sync rate	1/30X to 90X play
Editor interfacing	No	No	Yes	Yes	Yes
VITC code output	No	No	No	No	SMPTE/EBU
Synchronizer feature	No	No	No	No	No
LTC output signal	5Vp-p at 220Ω	5Vp-p at 220Ω	1Vp-p 75Ω	1Vp-p 75Ω	1Vp-p 75Ω
Power required	12-30Vdc	12Vdc	110/220Vac	110/220Vac	110/220Vac
Equipment features—					
LTC-VITC translate	No	No	Yes	No	Yes
User bit recognize	Yes	Yes	No	No	Yes
Time code comparator	No	No	No	No	No
Video display keyer	No	No	No	No	8 char/variable
Display window	No	No	No	No	1-line
Reader Service Number	721	722	723	724	725

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Circle (142) on Reply Card

Manufacturer	EECO			ESE	
Model Number	VIG-850	EECOLINE Gen/Reader	TCP-250 Processor	ES261 Generator	ES256 Reader
Portable unit	No	No	No	No	No
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	.....	Yes	No
Jam sync	Yes	No	.....	Yes	No
Standards supported	EBU	SMPTE	SMPTE	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Video	.....	Video/60Hz	Video
BCD data entry for	.....	Time set	Time set/user bits	Time set/user bits	.....
BCD data displays of	Time/user bits	Time code	.....	.....	Time/user bits
# of display digits	8	8	8	.....	8
Display digit size	1"	0.4"	.....	.....	0.4"
Readout speeds	Freeze to 45X play	1/20X to 20X play	1/20X to 70X play	10X to 40X play	1/20X to 60X play
Editor interfacing	No	No	.....	.....	No
VITC code output	SMPTE/EBU	No	SMPTE	No	No
Synchronizer feature	No	No	No	No	No
LTC output signal	1Vp-p 3Ω	0dBm	.....	0dBm	.....
Power required	110/220Vac	110Vac	110/220Vac	110Vac	110Vac
Equipment features—					
LTC-VITC translate	No	No	Yes	No	No
User bit recognize	Yes	No	Yes	Yes	Yes
Time code comparator	No	.....	.....	No	No
Video display keyer	8 char	.....	.....	No	No
Display window	.....	.....	.....	No	No
Reader Service Number	726	727	728	729	730

Manufacturer	ESE		Evertz Microsystems		For-A
Model Number	ES255 Reader/Keyer	ES257 (25B) Comparator	4000 Generator/Reader	EV-Bloc System	TCG-3100 Generator
Portable unit	No	No	No	Modular/rack-mount	No
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	No
Color frame	No	No	Yes	Yes	No
Jam sync	No	No	Yes	Yes	No
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Video	Video/60Hz/crystal	Video/60Hz/crystal	Video
BCD data entry for	User bits	No	Time set/user bits	Time set/user bits	No
BCD data displays of	No	Time/user bits	Time/user bits	Time/user bits/data	Time code
# of display digits	No	8	8 reader/8 generator	.....	8
Display digit size	No	0.4"	.....	.....	7x9 matrix
Readout speeds	1/20X to 20X play	1/20X to 20X play	1/30X to 70X play	1/30X to 70X play	.....
Editor interfacing	No	No	Yes	Yes	No
VITC code output	No	No	SMPTE/EBU	Yes	No
Synchronizer feature	No	No	No	Yes	No
LTC output signal	No	No	-6 to +12dBm	-6 to +12dBm	No
Power required	110Vac	110Vac	110/220Vac	110/220Vac	110/220Vac
Equipment features—					
LTC-VITC translate	No	No	Yes	Yes	No
User bit recognize	Yes	No	Yes	Yes	Yes
Time code comparator	No	Yes	Yes	Yes	No
Video display keyer	8 char/150 TVL	No	Yes	Yes	No
Display window	Variable	No	.....	Yes	No
.....	.....	.....	.....	System may include only	.....
.....	.....	.....	.....	those features desired.	.....
Reader Service Number	731	732	733	734	735

Manufacturer	For-A	Fostex Corporation of America			GTC Film/Fernseh
Model Number	TCR-3500 Reader	8700	4030/4035	4050	TCR-1 D-CODE
Portable unit	No	Yes	No	No	Yes
Operating modes—					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	No	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	Yes
Jam sync	No	No	No	No	No
Standards supported	SMPTE/EBU	SMPTE	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video	Crystal clock	Crystal clock	Crystal clock	.....
BCD data entry for	No	Time set	Time set	Time set	No
BCD data displays of	Time code	None	Time code	Time code	Time/user bits
# of display digits	8	None	9	9	8
Display digit size	7x9 matrix	.....	1/2"	1/2"	.....
Readout speeds	No	.....	.....	.....	1/10X to 15X play
Editor interfacing	No	No	Yes	Yes	Yes
VITC code output	No	No	No	No	No
Synchronizer feature	No	No	Yes	No	No
LTC output signal	No	-10dBm	Variable	Variable	1Vp-p 2kΩ
Power required	110/220Vac	9Vdc	110Vac	110Vac	7-20V ac/dc
Equipment features—					
LTC-VITC translate	No	No	No	No	No
User bit recognize	Yes	No	No	No	No
Time code comparator	No	No	Yes	Yes	No
Video display keyer	8 char/7x9 matrix	No	No	No	No
Display window	1-line	No	No	No	No
Reader Service Number	736	737	738	739	740

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Circle (143) on Reply Card

Manufacturer	Gray Engineering				JVC Company
	DR-107B Receiver	DT-113 Transmitter	VIE-224 Encoder	VID-225 Decoder	CI-90 Inserter
Model Number	DR-107B Receiver	DT-113 Transmitter	VIE-224 Encoder	VID-225 Decoder	CI-90 Inserter
Portable unit	No	No	No	No	No
Operating modes -					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	No
Jam sync	No	No	No	No	No
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE	SMPTE	SMPTE
Timing reference	Video	Video/60Hz	Video	Video	.....
BCD data entry for	None	Time set/user bits	No	Time set/user bits	No
BCD data displays of	None	Time/user bits	Time/user bits	Time/user bits	Time code
# of display digits	.....	8	8	8	.....
Display digit size	No	0.3"	0.3"	0.3"	No
Readout speeds	1/100X to 100Xplay	Real time	Real time	1/100X to 100X play	.....
Editor interfacing	Yes	Yes	Yes	Yes	No
VITC code output	No	No	SMPTE	SMPTE	No
Synchronizer feature	No	No	No	No	No
LTC output signal	+8dBm	+8dBm	Lcqp through +8dBm	+8dBm	.....
Power required	110/220Vac	110Vac	110/220Vac	110/220Vac	110Vac
Equipment features -					
LTC-VITC translate	No	No	Yes	Yes	No
User bit recognize	Yes	Yes	Yes	Yes	No
Time code comparator	No	No	No	No	No
Video display keyer	8	No	.....	No	7
Display window	1-line	No	.....	No	1-line
Reader Service Number	741	742	743	744	745

Manufacturer	JVC Company	Noriyuki Electronics		Skotel	
	TG-P47U	KVID-8062 Reader/Keyer	YAM-7 LTC Gen/Reader	TCG-80N/P Generator	TCR-80/80V Reader
Model Number	TG-P47U	KVID-8062 Reader/Keyer	YAM-7 LTC Gen/Reader	TCG-80N/P Generator	TCR-80/80V Reader
Portable unit	Yes	No	Yes	No	No
Operating modes -					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	No	No	.....	Yes	Yes
Jam sync	No	No	Yes	Yes	Yes
Standards supported	SMPTE	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video/crystal	Video	Video/TC V-lock	Video/60Hz/crystal	Video/60Hz
BCD data entry for	Time set/user bits	None	Time set	Time set/user bits	User bits
BCD data displays of	Video/crystal	Time/user bits	Time code	Time/user bits/data	Time/user bits/data
# of display digits	.....	8	8 LCD	8	8
Display digit size	.....	.....	.....	0.3"	0.3"
Readout speeds	1/10X to 50X play	1/10X to 50X play	.....	.....	1/20X to 50X play
Editor interfacing	No	No	Remote control	Yes	Yes
VITC code output	No	No	No	SMPTE/EBU optional	No
Synchronizer feature	No	No	No	Optional	No
LTC output signal	No	No	Yes	5Vp-p	0.5-6Vp-p
Power required	12Vdc	115/240Vac	9Vdc battery	110/220Vac	110/220Vac
Equipment features -					
LTC-VITC translate	No	No	No	Optional	No
User bit recognize	No	Yes	No	No	No
Time code comparator	No	No	No	No	No
Video display keyer	.....	8 char/variable	No	8 + 8 char/9-18 TVL	8 + 8 char/9-18 TVL
Display window	No	2-line	No	1 or 2-line	1 or 2-line
Reader Service Number	746	747	748	749	750

Manufacturer	Skotel	Sony Broadcast			TimeLine
	PTC-100 Gen/Reader	BVG-100 Gen/Reader	BVG-1600 Generator	BVG-1500Reader	LYNX TC Module
Model Number	PTC-100 Gen/Reader	BVG-100 Gen/Reader	BVG-1600 Generator	BVG-1500Reader	LYNX TC Module
Portable unit	Yes	Yes	No	No	No
Operating modes -					
Drop frame	Yes	Yes	Yes	Yes	Yes
Non-drop frame mode	Yes	Yes	Yes	Yes	Yes
Color frame	Yes	Yes	Yes	Yes	No
Jam sync	Yes	Yes	Yes	No	Yes
Standards supported	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU
Timing reference	Video/crystal	Video	Video	Video	Video/60Hz/crystal
BCD data entry for	Time set/user bits	Time set/user bits	Time set/user bits	No	Time set/user bits
BCD data displays of	Time code/user bits	Time/user bits/data	Time/user bits/data	Time/user bits/data	Time/user bits
# of display digits	8	8	8	8	8
Display digit size	0.3"	1/2"	1/2"	1/2"	0.35"
Readout speeds	Standard speed only	Normal play speed	.....	1/32X to 110X play	1/15X to 60X play
Editor interfacing	Remote start/stop	No	No	Yes	Yes
VITC code output	No	SMPTE/EBU	SMPTE/EBU	SMPTE/EBU	No
Synchronizer feature	No	No	No	No	Yes
LTC output signal	+8dBm	2.5Vp-p 10kΩ	0 or 8dBm	0 or 8dBm	+6dBm and variable
Power required	9-14Vdc	9-18Vdc	110/220Vac	110/220Vac	110/220Vac
Equipment features -					
LTC-VITC translate	No	No	No	Yes	No
User bit recognize	No	No	No	Yes	Yes
Time code comparator	No	No	No	Yes	No
Video display keyer	No	No	8	9	No
Display window	No	No	1-line	1-line	No
Reader Service Number	751	752	753	754	755

# Automated VCR Systems

These automated playback systems are based on videocassette material of 1/2 inch and 1 inch widths. These systems, combining multiple playback and/or record-play decks with computer control, are designed to form a single integrated product. Simple controllers, to which assorted playback units may be connected, are not included in this category.

Manufacturer	Asaca/Shibasoku	Robert Bosch	Panasonic Broadcast	RCA	Sony Broadcast
Model Number	ACL-6000B	BCN-100	MVP-100	Silverlake	BVC-10
VCR format	Betacam or M-format	1" B-format	M-format	M-format	Betacam
# of play decks	4 maximum	2 to 3	4 to 24	4 (3-play/1-rec std)	4 max
Specific play deck	Yes	.....	Yes	Designed for system	Yes
Separate outputs	4	1 channel	2/TBC 1 uncorrected	1 corrected	3 simultaneous
# of record decks	1	1 to 3	1 to 8	1	0
Specific record deck	Yes	.....	#MVP-100	Designed for system	Yes
Editing features	Yes	Full feature system	Integral feature	Assemble in dub mode	No
Controlling computer	.....	Integral processor	Enhanced IBM-PC	IBM-PC/AT	Integral w/ disk
Control interface	RS-232C std (422 opt)	RS-423	RS-232/RS-422/disk	RS-232	RS-422
Master automation	Yes	.....	Yes	Requires software	Yes
Station automation	.....	.....	Optional interface	Requires software	Yes
Auto rec/delay play	.....	Yes	Software option	No	No
As-run log output	Yes	Yes	Yes	Yes	Yes
Event verification	Yes	Yes	Yes	Automatic	Yes
Cassette ID type	Bar code	Time code data	Time code data	Time code user bits	Bar code
Time code generator	.....	LTC	LTC	LTC integral	LTC
Time code reader	.....	LTC	LTC	LTC Integral	LTC
Auto cueing	Yes	Yes	Yes	Yes	Yes
Storage magazine	600 cassettes max	32 1" cassettes max	1 cassette per deck	280 cassettes max	40 cassettes max
Shortest pgm element	.....	2 frames + 22s	1s	1s*	.....
Manual over-ride	Of all functions	Of all functions	Of all functions	Yes	Yes
Integral TBC	Yes	Yes	2nd & 3rd optional	One on output	1 per deck
.....	.....	.....	.....	*Minimum elapsed time between two uses of a single deck must be 25s	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
Reader Service Number	786	787	788	789	829

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# VCRs, Small Format

This videocassette recording/playback equipment uses 1/2-inch and/or 1/4-inch magnetic materials. All systems are based upon the use of analog component recording methods. In references to video, L = luminance; C = chrominance.

Manufacturer	Robert Bosch	Hitachi Denshi	Panasonic Broadcast		
Model Number	BCF9/10	HR-50 Portable	AU-100B	AU-220	AU-300B
Type of cassette	1/2" CVC	1/2" VHS T/120HG	1/2" VHS/T-120	1/2" VHS/T-120	1/2" VHF/T-120
Recording format	LinePlex	M-format (Y/I/Q)	M-format (Y/I/Q)	M-format (Y/I/Q)	M-format (Y/I/Q)
Luminance response	-3dB to 3.6MHz	-3dB to 3.6MHz	To 4MHz	To 4MHz	To 4MHz
Chroma response	-3dB to 1.2MHz	-1dB to 1MHz	To 1MHz	To 1MHz	To 1MHz
Video S/N ratio	47dB L/47dB C	>47dB L/>48dB C	49dB L/50dB C	49dB L/50dB C	49dB L/50dB C
Resolution	.....	.....	.....	350 TVL L & C	360 TVL L & C
# of audio channels	2	2	2	2	2
AF input connection	Xfmr bal	Bal mic	Bal	Bal	Bal
AF input level	+6dBm nominal	+6dBm	+4dBm (-20dB 600Ω)	+4/-20 line/-60 mic	+4dBm (-60dB 600Ω)
AF response	-4, +3dB/50Hz-15kHz	±3dB/50Hz-15kHz	±3dB/50Hz-15kHz	±2dB/50Hz-15kHz	±3dB/50Hz-15kHz
AF output connection	Xfmr bal	Headphones	Unbal	Unbal	Bal
AF output level	+6dBm nominal	-20 to -32dB 8Ω	-15dB 8Ω	+4dBm (-20dB 600Ω)	+4dBm
AF S/N ratio	.....	>50dB	65dB	65dB	65dB
AF noise reduction	Yes	No	Dolby C	Dolby C	Dolby C
AF distortion	<3%	.....	.....	.....	.....
AGC circuits	A/V switchable	.....	.....	.....	.....
Video metering	No	.....	No	Yes	No
Audio metering	Yes	Yes	No	Yes	Yes
Time code channel	Yes	Yes	Yes	Yes	Yes
Time code generator	LTC included	Integral	LTC integral	LTC integral	LTC integral
Time code reader	LTC included	No	No	None	None
Integral editor	Full feature	No	No	Backspace edits	Full feature
Dynamic tracking	No	No	No	No	No
Search speeds	8X rev to 10X fwd	Fast fwd/rwd only	.....	1X rev	8X rev to 8X fwd
System control bus	RS-422	Not integrable	.....	None	Remote control
System TBC	Integral	.....	.....	External available	External available
Video input - Composite	Yes	Yes	No	Yes	Yes
Video input - Component	Y/U/V	Y/I/Q	Y/I/Q	Y/I/Q, Y/C	Y/I/Q
Video output - Composite	Yes	.....	Yes	Yes	Yes
Video output - Component	Y/U/V	.....	Y/I/Q	Y/I/Q, Y/C	Y/I/Q
Weight if portable	17 lb	13.2 lb	8.8 lb	21.6 lb	.....
Operating time	1.5 hour/14.4Vdc bat	.....	.....	2 hour 12Vdc battery	.....
Reader Service Number	831	832	833	834	835

Manufacturer	Panasonic Broadcast	RCA Broadcast			Sony Broadcast
Model Number	AU-600	HR-1A	HR-2B	HR-3/HRP-3	BVW-10 (BVW-15)
Type of cassette	1/2" MP-60 metal	1/2" VHS/T-120	1/2" VHS/T-120	1/2" VHS/T-120	1/2" Beta/HG series
Recording format	M-II format	M-format (Y/I/Q)	M-format (Y/I/Q)	M-format (Y/I/Q)	Betacam Y/R-Y/B-Y
Luminance response	To 4.5MHz	To 4.1MHz	To 4.1MHz	To 4.1MHz	0.5, -6dB/to 4.1MHz
Chroma response	To 1.5MHz	To 1.3MHz	To 1.3MHz	To 1.3MHz	0.5, -6dB/to 1.5MHz
Video S/N ratio	45dB L/50dB C	50dB L/52dB C	50dB L/52dB C	50dB L/52dB C	48dB L/50dB C
Resolution	.....	.....	.....	.....	.....
# of audio channels	2	3	3	3	2
AF input connection	Bal	Active unbal	Xfmr bal	Active bal	Player units only
AF input level	.....	0dBm	0dB	0dBm	.....
AF response	.....	±2dB/40Hz-15kHz	±2dB/40Hz-15kHz	±3dB/50Hz-15kHz	±3dB/50Hz-15kHz
AF output connection	Bal	Active unbal	Xfmr bal	Active bal	Bal
AF output level	.....	0dBm	0dBm	0dBm	+4dBm nominal
AF S/N ratio	65dB	53dB unwtd	53dB unwtd	53dB unwtd	50dB
AF noise reduction	Dolby C	Dolby optional	Dolby optional	Dolby C	Dolby C
AF distortion	.....	1% at 0dBm 1kHz	1% at 0dBm 1kHz	1% at 0dBm 1kHz	3% 1kHz
AGC circuits	.....	.....	.....	.....	.....
Video metering	Yes	Yes	Yes	Yes	No
Audio metering	Yes	Yes	Yes	Yes	Yes
Time code channel	Yes	Yes	Yes	Yes	Yes
Time code generator	LTC	None	None	LTC	Yes
Time code reader	LTC	None	None	.....	LTC
Integral editor	Full feature	Backspace	Full feature	.....	No
Dynamic tracking	Yes	No	No	.....	BVW-15 only
Search speeds	32X rev to 32X fwd	.....	20X rev to 20X fwd	.....	1/30X rev to 10X fwd
System control bus	RS-422	Remote control	Remote control	.....	RS-422
System TBC	Integral	.....	Integral unit option	.....	Integral
Video input - Composite	Yes	With adapter	Yes	.....	Yes
Video input - Component	Y/I/Q, Y/C, Y/B-Y/R-Y	Y/I/Q	Y/I/Q	Y/I/Q	Y/C, Y/R-Y/B-Y
Video output - Composite	Yes	With adapter	Yes	.....	Yes
Video output - Component	Y/I/Q, Y/C, Y/B-Y/R-Y	Y/I/Q	Y/I/Q	Y/I/Q	Y/C, Y/R-Y/B-Y
Weight if portable	.....	11 lb	.....	16 lb	.....
Operating time	.....	30 min w/ 12Vdc bat	.....	1 hour w/12Vdc battery	.....
Reader Service Number	836	837	838	839	840





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San Francisco, California 94107

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Manufacturer	Sony Broadcast		
	BVW-20 Field Player	BVW-25 Portable	BVW-40 Studio System
Model Number			
Type of cassette	1/2" Beta/HG series	1/2" Beta/HG series	1/2" Beta/HG series
Recording format	Betacam X/R-Y/B-Y	Betacam	Betacam
Luminance response	0.5, -6dB/to 4.1MHz	0.5, -6dB/to 4.1MHz	0.5, -6dB/to 4.1MHz
Chroma response	0.5, -6dB/to 1.5MHz	0.5 -6dB/to 1.5MHz	0.5, -6dB/to 1.5MHz
Video S/N ratio	48dB L/50dB C	48dB L/50dB C	40dB L/50dB C
Resolution	.....	.....	.....
# of audio channels	2	2	2
AF input connection	Player only	Bal	Xfmr bal
AF input level	.....	-60/-20/+4dBm	-60dB 3k $\Omega$ /4dB 10k $\Omega$
AF response	$\pm$ 3dB/50Hz-15kHz	$\pm$ 3dB/50Hz-15kHz	$\pm$ 3dB/50Hz-15kHz
AF output connection	Bal	.....	.....
AF output level	+4dBm	+4dBm	+4dBm (-60/4 3/10k $\Omega$ )
AF S/N ratio	50dB	50dB	50dB
AF noise reduction	Dolby C	Dolby	Dolby C
AF distortion	3%	3%	3%
AGC circuits	.....	.....	.....
Video metering	No	Yes	Yes
Audio metering	Yes	Yes	Yes
Time code channel	Yes	Yes	Yes
Time code generator	No	LTC	LTC
Time code reader	LTC	LTC	LTC
Integral editor	No	Backspace	Full feature
Dynamic tracking	No	No	No
Search speeds	.....	3.5X rev/3.5X fwd	1/30X rev/10X fwd
System control bus	.....	.....	RS-422
System TBC	.....	.....	Integral
Video input -	.....	.....	.....
Composite	Yes	Yes	Yes
Component	Y/R-Y/B-Y	Y/R-Y/B-Y	Y/R-Y/B-Y
Video output -	.....	.....	.....
Composite	Yes	Yes	Yes
Component	Y/R-Y/B-Y	Y/R-Y/B-Y	Y/R-Y/B-Y
Weight if portable	20 lb	17 lb	.....
Operating time	1.3 hour w/ 12Vdc bat	1 hour w/ 12Vdc	.....
Reader Service Number	841	842	843

## VTRs Types B and C

This 1-inch video recording equipment accepts and reproduces signals at typical levels across standard impedances. Color standards are coded as N for NTSC, P for PAL and S for SECAM, with variations indicated.

Manufacturer	Ampex Corporation				Robert Bosch
	VPR-3	VPR-6	VPR-80	VPR-3	BCN-51 (Type B)
Model Number					
Luminance response	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.5MHz
Chroma response	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.2MHz	$\pm$ 0.5dB/to 4.2MHz	.....
S/N ratio	47dB	46dB	46dB	47dB	47dB
Diff phase/gain	4°/4%	4°/4%	4°/4%	4°/4%	4°/4%
K-factor 2T pulse	1%	1%	1%	1%	1.5%
Moire rating	40dB	40dB	40dB	40dB	37dB
# of audio channels	3	3 (4th for Europe)	3	3	3
AF response ch 1/2	$\pm$ 2dB/50Hz-18kHz	$\pm$ 2dB/50Hz-18kHz	$\pm$ 2dB/50Hz-15kHz	$\pm$ 2dB/50Hz-18kHz	2, -3dB/40Hz-14kHz
AF S/N ratio ch 1/2	56dB at 8dBm unwt'd	56dB at 100nWb/m +18dB	56dB	56dB at 8dBm unwt'd	57dB 6dBm unwt'd
AF distortion 1/2	1% at 14dBm, 1kHz	1% 1kHz, 100nWb/m	1% +8dBm, 1kHz	1% at 14dBm, 1kHz	<3% at 6dBm, 1kHz
AF response ch3	$\pm$ 2dB/50Hz-18kHz	$\pm$ 2dB/50Hz-18kHz	$\pm$ 2dB/50Hz-15kHz	$\pm$ 2dB/50Hz-18kHz	2, -3dB/40Hz-14kHz
Audio in VBI	Yes	.....	.....	Yes	No
Video metering	Yes	Yes	Yes	Yes	Yes
Video confidence	Yes	Yes	.....	Yes	No
Audio metering	Yes	Yes	Yes	Yes	Yes
LTC generate/read	Integral	Available	Yes	Integral	Integral
VITC generate/read	External available	Available	No	External available	External available
Time code displays	Yes	Yes	Yes	Yes	Yes
Integral editor	Full feature	Full feature	Full feature	Full feature	Full feature
Microprocessor logic	Multiple	Multiple	Yes	Multiple	No
Diagnostics software	Yes	Yes	.....	Yes	No
Diagnostics probe	Yes	Yes	Yes	Yes	No
Tape pull method	Vacuum capstan	Capstan/pinch roller	Capstan/pinch roller	Vacuum capstan	Capstan/pinch roller
Tape material preset	Yes	Yes	No	Yes	No
System integration	RS-422/rmt ctl	RS-422 & parallel	RS-422 & rmt ctl	RS-422/rmt ctl	RS-423 & rmt ctl
System TBC	External unit	TBC-6	TBC-80	External unit	Integral unit
Dynamic tracking	Yes	Standard feature	Yes	Yes	Yes
Slow-motion range	-1X to +3X play	-1X to +3X play	-1X to +3X play	-1X to +3X play	-1/4X to +1/2X
Slow-motion VTR	No	No	No	No	No
Animation VTR	Yes	Yes	.....	Yes	Yes
Component video in	No	No	No	No	No
Component video out	No	No	No	No	No
Max reel size	14"	11.75"	11.75"	14"	10.5"
Max rec/play time	180 minutes	2hr	2hr	180 minutes	98 minutes
Weight (if portable)	.....	.....	.....	.....	.....
Rack-mountable	In 19"	Yes	Yes	In 19"	Includes rack
Color standards	N/P/S/PAL-M	N/P/S/PAL-M	N/P/S	N/P/S/PAL-M	N/P/S/PAL-M
Reader Service Number	461	462	463	464	465

Manufacturer	Model Number	RCA				
		TH-400	TH-700	TH-900		
Hitachi Denshi	HR-230	Marconi Broadcast	MR2B	TH-400	TH-700	TH-900
Luminance response	±0.5dB/to 4.2MHz	±0.5dB/to 4.2MHz	0.5, -3dB/5MHz	0.5, -3dB/to 5MHz	0.5, -3dB/to 5MHz	
Chroma response	.....	.....	.....	.....	.....	
S/N ratio	48dB	46dB NTSC	46dB	46dB	46dB	
Diff phase/gain	±3°/3%	±4°/4%	±4°/4%	±4°/4%	±4°/4%	
K-factor 2T pulse	>1%	1%	1%	1%	1%	
Moire rating	40dB	40dB N/36dB P	40dB	40dB	40dB	
# of audio channels	3	4	3	3	3	
AF response ch 1/2	1.5, -3dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-18kHz	
AF S/N ratio ch 1/2	56dB +8dBm unwd	56dB, 251nWb/m PAL	56dB at +8dBm unwd	56dB at +8dBm unwd	56dB at +8dBm unwd	
AF distortion 1/2	1% at +8dBm, 1kHz	<1% at 100nWb/m, 1kHz	1% at +8dBm, 1kHz	1% at +8dBm, 1kHz	1% at +8dBm, 1kHz	
AF response ch3	1.5, -3dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-18kHz	
Audio in VBI	.....	No	.....	.....	.....	
Video metering	Yes	Yes	Yes	Yes	Yes	
Video confidence	Yes	Yes	No	Yes	Yes	
Audio metering	Yes	Yes	Yes	Yes	Yes	
LTC generate/read	Integral option	Generator	Integral, option	Accessory	Accessory option	
VITC generate/read	Integral option	External option	.....	Option	Accessory option	
Time code displays	Yes	Yes	Yes	Yes	Yes	
Integral editor	Full feature	Yes	Full feature	Full feature	Full feature	
Microprocessor logic	Multiple	.....	Single	Single	Multiple	
Diagnostics software	Yes	Diagnostics standard	Yes	Yes	Yes	
Diagnostics probe	No	No	Yes	Yes	Yes	
Tape pull method	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Vacuum capstan	
Tape material preset	Yes	No	No	No	Yes	
System integration	RS-422, RP-113	Rmt ctl	RS-422 & rmt ctl	RS-422 & rmt ctl	RS-422 & rmt ctl	
System TBC	Integral unit	MTBC2	TBC-400 unit	TBC-700 unit	TBC-900 unit	
Dynamic tracking	Yes	Yes	Yes	Yes	Yes	
Slow-motion range	-1X to +3X play	.....	.....	-1X to +3X play	-1X to +3X play	
Slow-motion VTR	No	No	No	No	No	
Animation VTR	No	No	No	No	No	
Component video in	No	No	No	No	No	
Component video out	No	No	No	No	No	
Max reel size	14"	10.5"	11.75"	11.75"	14"	
Max rec/play time	180 minutes	92 minutes	124 minutes	124 minutes	190 minutes	
Weight (if portable)	.....	.....	.....	.....	.....	
Rack-mountable	In 19" rack	Yes	In 19" rack	In 19" rack	In 19" rack	
Color standards	N	N/P/S	N/P	N/P	N/P	
Reader Service Number	466	467	468	469	470	

# TIME AND MOTION...

## Two Good Reasons for Time Code and DATUM's 5300 ITP



Timing and tape motion, two of the most important factors in video tape management, are what DATUM's 5300 Intelligent Time Processor (ITP) is all about.

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Circle (146) on Reply Card

TD112

Manufacturer	Sony Broadcast				Thomson-CSF
	BVH-500A Portable	BVH-2000 (-2180)	BVH-2500	BVH-2700 (Super Motion)	TTV-3705P/S
Luminance response	±0.5dB/to 4.2MHz	±0.5dB/to 4.2MHz	±0.5dB/to 4.2MHz	±0.5dB (0.7)/to 4.2MHz	±0.5dB/to 5MHz
Chroma response	.....	.....	.....	.....	.....
S/N ratio	47dB	47dB	47dB	47dB (46dB)	44dB rec/play
Diff phase/gain	4°/4%	4°/4%	4°/4%	4°/4% (6°/6%)	4°/4%
K-factor 21 pulse	1%	1%	1%	1% (2%)	1%
Moire rating	40dB	40dB	40dB	40dB	35dB
# of audio channels	3	3	3	3	3 std (4 optional)
AF response ch 1/2	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz
AF S/N ratio ch 1/2	56dB at 3% distortion	56dB at 3% distortion	56dB at 3% distortion	56dB at 3% distortion	56dB (#3 50dB)
AF distortion 1/2	1% at 0dBm, 1kHz	1% at 0dBm, 1kHz	1% at 0dBm, 1kHz	1%at 0dBm, 1kHz	1% at 0dBm, 1kHz
AF response ch3	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz	1.5, -3dB/50Hz-15kHz
Audio in VBI	No	No	No	No	No
Video metering	Yes	Yes	Yes	Yes	Yes
Video confidence	Yes	Yes	Yes	Yes	Option
Audio metering	Yes	Yes	Yes	Yes	Yes
LTC generate/read	Integral	Integral, available	External	Integral	Yes
VITC generate/read	Integral	Integral, available	External	Integral	Option
Time code displays	Yes	Yes	Yes	Yes	Yes
Integral editor	Assembly only	Full feature	Full feature	No (Assemble only)	Yes
Microprocessor logic	No	Multiple	Multiple	Multiple	Multiple
Diagnostics software	Not applicable	Yes	Yes	Yes	Yes
Diagnostics probe	No	No	No	No	No
Tape pull method	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller	Capstan/pinch roller
Tape material preset	No	No	No	No	No
System integration	Rmt ctl	RS-422	RS-422	RS-422	RS-422 & rmt ctl
System TBC	External required	Integral	External required	BVT-2700 required	TTV-3721P/3721S
Dynamic tracking	No	Yes	Yes	Yes	Option
Slow-motion range	.....	-1X to +3X play	-1X to +3X play	To +1X (3X) play	-1X to +3X play
Slow-motion VTR	No	No	No	Dual mode VTR	No
Animation VTR	No	No	Yes	No	No
Component video in	No	No	No	No	No
Component video out	No	No	No	No	No
Max reel size	9"	11.75" (14")	11.75"	11.75"	11.75"
Max rec/play time	62 minutes	126 (188) minutes	126 minutes	126 (42) minutes	128 minutes
Weight (if portable)	35 lb	.....	.....	.....	.....
Rack-mountable	No	In 19" (24") rack	In 19" rack	In 19" rack	In 19" rack
Color standards	N	N	N	N	P/S
Reader Service Number	471	472	473	474 Super Motion 3X std.	475

## VCRs, U-Matic

Videocassette recorder/player systems use 3/4-inch cassette-packaged tape. These systems are designed for ENG and production applications in the broadcast environment. All are NTSC capable. L = Luminance. C = Chrominance.

Manufacturer	JVC Company			Sony Broadcast		
	CR-8250U	CR-4900U	CR-850U	BVU-800 BVU-800 (BVU-820)	BVU-110 BVU-110 Portable	BVU-50 BVU-50 Portable
Video response	260 TVL color mode	260 TVL color mode	260 TVL color mode	340 TVL L/260 TVL C	340 TVL L/260 TVL C	340 TVL L/260 TVL C
S/N ratio	49dB L/46dB C	46dB L color mode	49dB L/47dB C	49dB L/47dB C	.....	.....
Video AGC switchable	Yes	No	Yes	Yes	Yes	.....
Video head switch in	Vertical interval	Vertical interval	Vertical interval	Vertical interval	Vertical interval	Vertical interval
AF input connection	Bal	Bal	Bal	Bal	Xfmr	Xfmr
AF input level	-20dBs, 10kΩ line	-60dBs, 600Ω	-20 to +4dBs, 10kΩ	+4dBm	-60, +4dB at 3kΩ, 10kΩ	-60dB, 3kΩ
AF response	50Hz-15kHz	50Hz-15kHz	50Hz-15kHz	3dB/50Hz-15kHz	3dB/50Hz-15kHz	3dB/50Hz-15kHz
AF output connection	Bal	Bal	Bal	Bal	Bal	.....
AF output level	-20dBm	0dBs, low Z	-20 to +4dBs	+4dBm	+4dBm	.....
Audio S/N ratio	>48dB at 3% distortion	48dB	48dB	48dB	48dB	.....
Audio distortion	.....	.....	.....	3%	2.5%	2.5%
Audio AGC switchable	Yes	Yes	Yes	Yes	Yes	.....
Video metering	Video in/tracking	Tracking/rec current	Video in/tracking	Video in/tracking	Video in	Video
Audio metering	Channels 1/2	Channels 1/2	Channels 1/2	Channels 1/2	Channels 1/2	Channels 1/2
Time code track	Yes	On audio 2	Yes	Yes	Yes	Yes
LTC facilities	No	External generator	.....	Integral BVU-800	Integral generator	External unit
VITC facilities	No	No	.....	No	No	No
Time Code display	No	No	.....	8-digit	6-digit	Yes
Display size	.....	.....	.....	1/2"	1/4"	1/4"
Integral editor	Yes	Backspace only	Yes	Assemble/insert	Backspace only	Backspace only
Edit controller	VE-93 or RM-86U	No	RM-G850U/VE-93	Various	.....	No
Microprocessor logic	Yes	Yes	Yes	Yes	No	No
System integration	Rmt ctl	Rmt ctl	RS-422 & rmt ctl	RS-422	No	Not applicable
Reference inputs	Sync/subcarrier	Sync/subcarrier	Sync/subcarrier	Sync/subcarrier	Sync/subcarrier	No
System TBC	External required	External	External required	.....	.....	No
RF Y/C dub in/out	No	Yes	Y/C	Yes	No	No
Dynamic tracking	No	No	No	Yes	No	No
Slow motion range	.....	.....	-1/30X, +15X play	-1X, +3X play	.....	No
Search speeds	15X rev, 15X fwd	10X rev, 10X fwd	20X rev, 15X fwd	1/30X rev, 10Xfwd	Continuous	13 lb
Weight (if portable)	.....	19.6 lb	.....	.....	20 lb	.....
Operating time	.....	75 minutes w/12Vdc	.....	.....	4 hour w/12Vdc battery	280 minutes/BP-90
Reader Service Number	790	791	792	793	794	795

# Color Video Monitors

These color video monitoring units apply to broadcast and production for master control, utility and graphics use. For standards, N = NTSC, P = PAL, S = SECAM for the normal forms. Where variations from PAL exist, it is noted.

Manufacturer	CMM-11	CMM7	Asac3/Shibasoku CM99A	CM22A6/CM65A	Barco Industries CM22 (33 51)
Model/Series Number	CMM-11	CMM7	CM99A	CM22A6/CM65A	CM22 (33 51)
Type	Master control	Master control	Portable	Master control	Utility
CRT diagonal	20" (14"/26")	20" (14"/26")	9"	20"/26"	9" (14", 19")
Aspect ratio	4:3	4:3	4:3	5.3 HDTV	4:3
Preferred CRT type	Delta-dot	In-line dot	In-line dot	In-line dot/celta-dot	Inline self-converge
CRT dot pitch	0.43mm (0.31/0.47mm)	0.38mm (0.31/0.48mm)	0.30mm	0.26mm/0.37mm	0.3mm (0.42mm)
Beam feedback design	No	No	No	No	No
Resolution	600 TVL	600 TVL	500 TVL	1000 TVL	320 TVL (340)
Luminance bandwidth	7MHz	7MHz	7MHz	To 30MHz	4.1MHz (5.7, 5)
Chroma bandwidth	1.3MHz	1.3MHz	1.3MHz	To 7MHz	To 7MHz in RGB mode
Aperture correction	-12, +0dB	-10, +0dB	-10, 0dB adjustable	.....	.....
Chroma decoder	Comb filter	Comb filter	Comb filter	.....	NTSC comb or PAL
Demodulation axes	I/Q	R-Y/B-Y	R-Y/B-Y	.....	R-Y/B-Y
X-Y display outputs	Yes	No	No	.....	No
NTSC test matrix	Yes	No	No	.....	No
Blue gun only	No	No	No	.....	Yes
Underscan	To 92%	To 92%	To 92%	To 92%	Yes
Cross pulses/HV delay	Yes	Yes	Yes	Yes	Yes
Available standards	N, P, S, RGB	N, P, S, RGB	N, P	RGB (Y/Cw/Cn option)	N, P, S, RGB
Multistandard unit	Switch selected	No	No	No	Options auto/manual
Input types	Encoded & components	Encoded & components	Composite & RGB	Encoded & components	Composite & RGB
VCR I/O connector	No	No	No	No	Yes
Audio system	No	No	Yes	No	Optional some models
Reader Service Number	581	582	583	584	585

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Circle (162) on Reply Card

## MOVING?

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**BROADCAST**  
engineering

Manufacturer	Barco Industries	Barco Industries	Robert Bosch	Robert Bosch	
Model/Series Number	CTVM-3D	CTVM 4 series	MC51BA-4811B	MC228A	MC37BA-487B
Type	Master control	Master control	Utility	Utility	Utility
CRT diagonal	14" (20")	14" (20")	20"	9"	14"
Aspect ratio	4:3	4:3	4:3	4:3	4:3
Preferred CRT type	Delta-gun dot	Delta-gun dot mask	Delta-dot	In-line dot	In-line slot
CRT dot pitch	<0.3mm (<0.4mm)	0.31mm (0.31mm)	0.34mm	0.3mm	0.62mm
Beam feedback design	No	Yes	.....	Yes	No
Resolution	610 TVL (770 TVL)	610 TVL (770 TVL)	800 TVL	400 TVL	350 TVL
Luminance bandwidth	7.8MHz (9.8MHz)	7.8MHz (9.7MHz)	9MHz	5MHz	7MHz
Chroma bandwidth	0.6MHz equiband	0.6MHz equiband NTSC	±1MHz	.....	±1MHz
Aperture correction	.....	.....	+3dB	+3dB	+3dB
Chroma decoder	NTSC comb or notch	NTSC comb or notch	Comb filter & notch	Notch circuit	Comb filter & notch
Demodulation axes	R-Y/B-Y	R-Y/B-Y	U/V or R-Y/B-Y	U/V or R-Y/B-Y	U/V or R-Y/B-Y
X-Y display outputs	No	Yes	Yes	No	Yes
NTSC test matrix	No	No	No	No	No
Blue gun only	Yes	Yes	Yes	Yes	Yes
Underscan	Yes	Yes	10%	10%	10%
Cross pulses/HV delay	Yes	Yes	Yes	No	Yes
Available standards	N, S, PAL-B/-M/-N	N, S, PAL-B/-M/-N	N, P, S, RGB	N, P, S, RGB	N, P, S, RGB
Multi-standard unit	Options	Yes	Switch selected	Auto-select	Switched C1/C2 model
Input types	Encoded or RGB	Encoded or RGB	Composite & RGB	Composite & RGB	Composite or RGB
VCR I/O connector	No	No	No	No	No
Audio system	No	No	No	No	No
	In-line gun dot and in-line gun slot type CRTs available	In-line gun dot or in-line gun slot types available	Model -B1 has 0.64mm dot pitch for 480 TVL resolution. C1/C2 models have 0.43mm dot pitch and 650 TVL resolution on in-line dot CRT. PAL-M and PAL-N may be requested.	PAL-M and PAL-N may be requested.	PAL-M and PAL-N may be requested. B1/B2 versions use a delta-dot CRT with 0.37mm dot pitch.
Reader Service Number	586	587	588	589	590

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Circle (176) on Reply Card



Manufacturer Model/Series Number	Digivision Broadcast BCV37	Electrohome ECM1301	GM-7100 series	GEC-McMichael GM-7200 series	GM-7356
Type	Utility	Graphics	Master control	Utility	Utility
CRT diagonal	14"	13"	20" (14")	20" (15"/10"/6.5")	22"
Aspect ratio	4:3	4:3/variable	4:3	4:3	4:3
Preferred CRT type	Delta-dot	In-line dot	In-line dot	In-line dot	In-line slot
CRT dot pitch	0.31mm	0.31mm	0.44mm (0.39mm)	0.44mm	0.81mm
Beam feedback design	Yes	Yes	Yes	Yes	Yes
Resolution	600 TVL	720x512 pixels	600 TVL	600 TVL	.....
Luminance bandwidth	To 10MHz	To 25MHz	To 7.8MHz	.....	To 6MHz
Chroma bandwidth	To 10MHz	To 25MHz	To 1.3MHz	.....	To 2.5MHz
Aperture correction	Yes	No	No	.....	.....
Chroma decoder	Notch	No decoder	NTSC comb/PAL analog	.....	4-standard decoder
Demodulation axes	R-Y/B-Y	.....	U/V	U/V	U/V
X-Y display outputs	.....	No	No	No	No
NTSC test matrix	.....	No	No	No	No
Blue gun only	.....	No	No	Yes	No
Underscan	Yes	Yes	10%	10%	No
Cross pulses/HV delay	Yes	No	Yes	Yes	No
Available standards	CCIR 625/50, 525/60	RGB only	N, P, RGB	N, P, S, RGB	N-3 58/-4.43, P, S
Multistandard unit	No	No	Switch-selectable	Auto select	Switched or auto
Input types	Encoded or RGB	RGB	Encoded, RGB, TTL	Composite & RGB	Composite or RGB
VCR I/O connector	No	No	No	No	Yes
Audio system	No	No	No	No	Yes
	Component coded inputs available as option.	.....	.....	.....	.....
Reader Service Number	596	597	598	599	600



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

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Circle (185) on Reply Card



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The logo for Basys, featuring the word "BASYS" in a stylized, blue, sans-serif font. The letters are interconnected, with the 'A' and 'S' having unique shapes.

Basys Inc.,  
2685 Marine Way,  
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Tel: 415 969 9810, Telex 171604

Circle (195) on Reply Card

Manufacturer		Ikegami Electronics			JVC Company	
Model/Series Number	TM14-10RH (10 series)	TM20-10RH (10 series)	TM-22U	TM-R9U	TM-R14U	
Type	Master & graphics	Master & graphics	Utility	Master & utility	Master & utility	
CRT diagonal	14" (20")	20" (14")	5"	9"	14"	
Aspect ratio	4:3	4:3	4:3	4:3	4:3	
Preferred CRT type	Delta-dot	Delta-dot	In-line slot	In-line slot	In-line slot	
CRT dot pitch	0.31mm	0.31mm	.....	0.47mm	0.47mm	
Beam feedback design	Yes	Yes	No	No	No	
Resolution	900 TVL	900 TVL	.....	310 TVL	400 TVL	
Luminance bandwidth	To 10MHz	To 10MHz	.....	To 4MHz	.....	
Chroma bandwidth	I-0.6MHz/Q-0.3MHz	I-0.6MHz/Q-0.3MHz	.....	To 3.58MHz	.....	
Aperture correction	Yes	Yes	No	No	.....	
Chroma decoder	Precision	Precision	.....	Comb filter	Comb filter	
Demodulation axes	I/Q	I/Q	I/Q	R-Y/B-Y	R-Y/B-Y	
X-Y display outputs	Available	Available	No	No	No	
NTSC test matrix	No	No	No	No	No	
Blue gun only	Yes	Yes	No	Yes	Yes	
Underscan	Yes	Yes	No	Yes	Yes	
Cross pulses/HV delay	Yes	Yes	No	Yes	No	
Available standards	N	N	N	N	N, RGB	
Multistandard unit	No	No	No	No	No	
Input types	Composite & RGB	Composite or RGB	Composite	Composite	Composite & RGB	
VCR I/O connector	No	No	Yes	No	No	
Audio system	No	No	Yes	No	No	
Reader Service Number	601	602	603	604	605	

Manufacturer		Lenco		Panasonic Broadcast	PESA Electronics	Phillips
Model/Series Number	PCM 519-A	ICM-219	AT-H190G	BM-4314H-N	LDH-6200 (-6220)	
Type	Master control	Utility	Master control	Master or utility	Master & utility	
CRT diagonal	19" (14")	19" (14")	19" (13")	14"	14" (20")	
Aspect ratio	4:3	4:3	4:3	4:3	4:3	
Preferred CRT type	In-line dot	In-line slot	Delta-dot	.....	In-line dot	
CRT dot pitch	0.47mm	0.68mm	0.43mm	0.31mm high res	0.65mm	
Beam feedback design	No	No	Yes	.....	No	
Resolution	650 TVL	450 TVL	600 TVL	600 TVL	>310 TVL	
Luminance bandwidth	To 10MHz	To 5.5MHz	8MHz	±0.5dB/20Hz-5MHz	To 5MHz	
Chroma bandwidth	To 3.5MHz ±1MHz	To 3.5MHz ±1MHz	1.3MHz	.....	To 0.9MHz	
Aperture correction	-3, +3dB	-6, +6dB	-6, +6dB	No	+4, -4dB	
Chroma decoder	Comb filter	No	Comb filter	Notch filter	Comb filter	
Demodulation axes	I/Q	R-Y/B-Y	I/Q	U/V	R-Y/B-Y	
X-Y display outputs	No	No	No	No	No	
NTSC test matrix	Yes	Yes	No	No	No	
Blue gun only	Yes	No	Yes	No	No	
Underscan	Yes	Yes	Adjustable	Yes	To 10%	
Cross pulses/HV delay	Yes	No	Yes	Yes	On 14" only	
Available standards	N, RGB	N	N	N, PAL-G	N, P, S, RGB	
Multistandard unit	No	No	No	No	No	
Input types	Composite & RGB	Composite	Composite & RGB	Composite	2 composite & RGB	
VCR I/O connector	No	No	No	No	No	
Audio system	No	No	No	No	No	
Reader Service Number	606	607	608	609	610	

Manufacturer		Phillips	Regis	Sharp Electronics		
Model/Series Number	LDK-7020	NT-814	XM-900	XM-1300	XM-1900	
Type	Master control	Master control	Utility	Master & graphics	Master & graphics	
CRT diagonal	20"	20" (20")	9"	13"	13"	
Aspect ratio	4:3	4:3	4:3	4:3	4:3	
Preferred CRT type	In-line dot	In-line dot	In-line dot	In-line dot	In-line dot	
CRT dot pitch	0.30mm	0.31mm	0.47mm	0.31mm	0.44mm	
Beam feedback design	No	Yes	Yes	Yes	Yes	
Resolution	>650 TVL	650 TVL	310 TVL	600 TVL	600 TVL	
Luminance bandwidth	To 5MHz	5.5MHz	To 5MHz	7MHz	7MHz	
Chroma bandwidth	To 0.9MHz	5.5MHz	To 3.58MHz	3.58MHz	3.58MHz	
Aperture correction	+4, -4dB	.....	.....	0, +8dB	-0, +8dB	
Chroma decoder	Comb filter	Delay line	Comb filter	Comb/notch switched	Comb/notch switched	
Demodulation axes	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	
X-Y display outputs	No	No	No	No	No	
NTSC test matrix	No	No	No	No	No	
Blue gun only	No	Yes	Yes	Yes	Yes	
Underscan	To 10%	10%	To 5%	Yes	To 5%	
Cross pulses/HV delay	No	No	Yes	Yes	Yes	
Available standards	N, P, S, RGB	P, RGB	N	N	N, RGB	
Multistandard unit	No	No	No	No	No	
Input types	2 composite & RGB	Composite and RGB	Composite	Composite, RGB, TTL	Encoded, RGB, TTL	
VCR I/O connector	No	Yes	No	No	No	
Audio system	No	Yes	No	No	No	
Reader Service Number	611	612	613	614	615	

Manufacturer		Sony Corporation		Tektronix	Videotek
Model/Series Number	BVM 1201/1301	BVM 8021/9021	650HR series	HR-130	Studio-13
Type	Master control	Master control	Utility	Master & graphics	Master control
CRT diagonal	12"	8"	12"	13"	13" (8", 17")
Aspect ratio	4:3	4:3	4:3	4:3	4:3
Preferred CRT type	Trinitron	Trinitron	Trinitron	In-line dot	Trinitron
CRT dot pitch	0.25mm	0.25mm	0.25mm	0.31mm	0.25mm
Beam feedback design	No	No	No	Yes	Yes
Resolution	600 TVL	400 TVL	480 TVL	>600 TVL	380 TVL
Luminance bandwidth	8MHz	5MHz	6MHz	To 10MHz	To 3.2MHz
Chroma bandwidth	1.5MHz	1.5MHz	1.3MHz	To 4.58MHz	3.58MHz
Aperture correction	+8dB at 4.5MHz	-0, +8dB at 4.5MHz	+10dBm	-6, +6dB	-3, +3dB
Chroma decoder	Precision	Comb filter	Notch filter	Comb filter	Comb filter
Demodulation axes	.....	.....	U/V cr R-Y/B-Y	R-Y/B-Y	R-Y/B-Y
X-Y display outputs	Yes	No	Yes	No	No
NTSC test matrix	Yes	No	Yes	No	No
Blue gun only	Yes	Yes	Yes	Yes	Yes
Underscan	Yes	Yes	To 20%	To 10%	To 10%
Cross pulses/HV delay	Yes	Yes	Yes	Yes	Yes
Available standards	N, RGB	N	N, P, S, RGB	N	N
Multistandard unit	No	No	Switch selected	No	No
Input types	Encoded, RGB, R-Y/B-Y	Composite	Composite & RGB	3 encoded or RGB	3 composite
VCR I/O connector	No	No	No	No	No
Audio system	No	Yes	No	No	No
Reader Service Number	616	617	618	619	620

# Put Millions of Dollars in Television Audio Technology to Work—For Only 22 Cents



Get a **FREE** Audio Needs Analysis from Neve for the cost of a stamp.

If you're about to make some very important decisions concerning your audio equipment, we'd like to help—at no charge and with no obligation. And with systems beginning at under \$10,000, anyone can take advantage of this offer.

For twenty-five years Neve has maintained its reputation as the leader in audio mixing console technology. We've crossed the hurdles other manufacturers are just reaching and we've reached the heights others will probably never achieve.

That's because, for our total history we've worked hard in the lab and the field to create superior consoles, perfecting the quality of the sound you hear and inventing newer, better and more cost-effective ways to process it.

So stop for a moment. Fill out our questionnaire and return it to our Connecticut headquarters. Or call us. We'd like to hear from you. Remember, there is absolutely no obligation.

## Neve

**RUPERT NEVE INCORPORATED:** Berkshire Industrial Park, Bethel, CT 06801 (203) 744-6230 Telex 969638 Facsimile: (203) 792-7863  
 • 7533 Sunset Blvd., Hollywood, CA 90046 (213) 874-8124  
 • P.O. Box 40108, Nashville, TN 37204 (615) 385-2727 Telex 786569  
 • NEVE ELECTRONICS INTERNATIONAL, LTD. Cambridge House, Melbourn, Royston, Hertfordshire, SG86AU England Phone (0763) 60776

Circle (149) on Reply Card

### NEVE QUESTIONNAIRE

For a **FREE** Neve audio needs analysis, please fill out the following questionnaire and return it in your company envelope to: Rupert Neve, Inc., Berkshire Industrial Park, Bethel, CT 06801.

(NAME) \_\_\_\_\_

(COMPANY) \_\_\_\_\_ (TITLE) \_\_\_\_\_

(ADDRESS) \_\_\_\_\_

(CITY) \_\_\_\_\_ (STATE) \_\_\_\_\_ (ZIP) \_\_\_\_\_

(AREA CODE) \_\_\_\_\_ (PHONE NUMBER) \_\_\_\_\_

**Position (please check):**

- |  |   |
|--|---|
| <input type="checkbox"/> corporate/management  | <input type="checkbox"/> I recommend console purchases. |
| <input type="checkbox"/> technical/engineering | <input type="checkbox"/> I approve console purchases.   |
| <input type="checkbox"/> producer/user         |   |

**Please check the description that applies to your studio:**

- |  |   |
|--|---|
| <input type="checkbox"/> television broadcasting | <input type="checkbox"/> jingles/commercials  |
| <input type="checkbox"/> video production        | <input type="checkbox"/> film                 |
| <input type="checkbox"/> video post production   | <input type="checkbox"/> multitrack recording |

**Audio Operations Personnel:**

- |  |  |
|--|--|
| <input type="checkbox"/> all staff         | <input type="checkbox"/> all freelance |
| <input type="checkbox"/> staff & freelance |  |

**Number of console inputs required:**

mono (mic/line) \_\_\_\_\_ stereo (line) \_\_\_\_\_

**Number of console outputs required:**

stereo \_\_\_\_\_ mono \_\_\_\_\_ AUX/FB/cue \_\_\_\_\_

multitrack (TKS) \_\_\_\_\_

**Console Operation Format:**

- |                                       |                                 |                                     |
|---------------------------------------|---------------------------------|-------------------------------------|
| <input type="checkbox"/> mono         | <input type="checkbox"/> stereo | <input type="checkbox"/> multitrack |
| <input type="checkbox"/> all of above |                                 |                                     |

**Need Automation?**  Yes  No

**Current Mixing Console(s) (please list):** \_\_\_\_\_

**Please Check:**

- Yes, I wish to buy a new mixing console. When? \_\_\_\_\_  
 Yes, I would like a free analysis about my studio's console needs.  
 Send info for file only.

**My Budget for a New Mixing Console is Approximately:**

- |  |  |
|--|--|
| <input type="checkbox"/> \$9,000–25,000  | <input type="checkbox"/> \$75,000–100,000  |
| <input type="checkbox"/> \$25,000–50,000 | <input type="checkbox"/> \$100,000–150,000 |
| <input type="checkbox"/> \$50,000–75,000 | <input type="checkbox"/> \$150,000 +       |

**We would like your opinion as to the importance of the following on a scale of 1 to 10:**

- |  |   |
|--|---|
| <input type="checkbox"/> Ease of operation | <input type="checkbox"/> Reliability          |
| <input type="checkbox"/> Sound quality     | <input type="checkbox"/> Manufacturer back-up |
| <input type="checkbox"/> Brand name        | <input type="checkbox"/> Other _____          |
| <input type="checkbox"/> Expandability     |   |

**Additional comments:** \_\_\_\_\_

AUDIO SPECS



## FINISH UP ON TIME WITHOUT SACRIFICING QUALITY.

You want it quick and you want it good. In today's competitive post-production audio/visual scene, the rewards go to those who can produce results that are quick *and* good. That's why TASCAM designed the MS-16 1" 16-track recorder—to bring together top-notch audio quality plus premium features that streamline production and move you ahead of schedule.

Quality reproduction starts with the heads, and TASCAM has three decades of design experience behind the MS-16's new micro-radii heads. They bring "head bumps" under control and ensure flat frequency response. And unlike most tape machines, the MS-16 record/sync and playback heads are identical in performance. Because sync response equals repro response on the MS-16, you can make critical EQ and processing decisions on overdubs or punch-ins without having to go back and listen a second time. You get what you want sooner and with fewer headaches.

The MS-16 cuts down on the time you spend locking up with other audio and video machines as well. A 38-pin standard SMPTE/EBU interface affords speedy, single-cable connection with most popular synchronizers and editing systems. It's the easy, efficient way to get the most out of today's sophisticated synchronization equipment. The MS-16's new Omega Drive transport is tough enough to stand up to long days of constant shuttling... while handling tapes with the kid-glove kindness they deserve.

Record/Function switches for each track allow effortless, one-button punch-ins. Input Enable allows instant talkback during rewinds, fast forwards and cue searches. These features speed you through sessions and let you concentrate on the project at hand... not on your tape machine.

Take a closer look at the MS-16. See your TASCAM dealer for a demo or write us for more information at 7733 Telegraph Road Montebello, CA 90640.

THE TASCAM MS-16 SIXTEEN TRACK



**TASCAM** THE SCIENCE OF BRINGING ART TO LIFE.

# Audio Mixing Consoles, On-Air

Audio mixing desks are designed for use in radio or TV master control room applications. All systems listed are reported to be stereo capable. A listing in this category does not preclude the equipment as being used for production applications.

Manufacturer	ADM Technology	Arrakis Systems	Audiotronics	Audix
Model/Series Number	ST-240 Series II	2000SC/2100SC	150/500	200 series MXT-1200
Modular construction	Yes	No	No	Yes
# of input channels	24 max	12	6/8	24 max
Output channels	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue	Pgm/aux/mono	Pgm/aud/cue
Fader type	Slider	Slider	Rotary	Slider
Bus switching	Push-button	Push-button	Push-button	Push-button
Internal switching	Solid-state	Mechanical	Solid-state	Mechanical
Machine start/stop	48 via relay contact	12 relay contacts	All w/relay contacts	24 relay contacts
Talkback circuits	Yes	Yes	No	Yes
Cueing circuits	Fader detent & cue	Fader detents	Fader detents	Fader detent/cue bus
Metering types	VU/PPM	VU	VU	VU meters
Speaker muting	Programmable	Yes	Programmable	Yes
Internal cueing	Amp & speaker	None	Cue amp only	Speaker
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Xfmr bal	Active	Active bal	Xfmr/active bal
Input impedance	150Ω/600Ω	1kΩ/10kΩ	100kΩ	150Ω/60Ω
Input levels	Mic and line	Switchable mic/line	Switchable mic/line	Mic & line
Output connection	Xfmr bal	Active bal	Active bal	Xfmr/active bal
Output impedance	600Ω	600Ω	600Ω	600Ω
Output levels	+27dBm	+4dBm	+8dBm (+27dBm max)	4dBm
AF response	±1dB at +8dBm output	±0dB at +4dBm output	±0.1dB at 20dBm out	±0.1dB at 1kHz +24dBm
Distortion	0.07% at 1kHz +24dBm	0.02% at 1kHz +18dBm	0.01% 18dBm output	0.1% 18dBm output
S/N ratio	-125.5dBm EIN	75dB	70dB	-128.5dBm EIN
Crosstalk (worst)	-72dB 100Hz-10kHz +8	-75dB at 16kHz 18dBm	-90dBm	-85dB at 1kHz
	Other models include ST-200/ST-160/ST-100 ST-164 (4-track)	.....	.....	.....
Reader Service No.	1061	1062	1063	1064

Manufacturer	Autogram	BFE	Broadcast Audio	Broadcast Electronics
Model/Series Number	Microgram	BC 20 12/4	System 8/12/16-IV	8S150 10S250
Modular construction	Yes	Yes	Yes	No
# of input channels	16 max	.....	16 max	8 max
Output channels	Pgm/aud/aux/cue/mono	Pgm/aud//cue	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue/mono
Fader type	Slider	Slider	Slider	Rotary
Bus switching	Push-button	Push-button	Push-button	Key switch
Internal switching	Solid-state	Mechanical	Solid-state	Mechanical
Machine start/stop	Solid-state or relay	10 relay contacts	Solid-state & relays	No
Talkback circuits	No	Yes	Yes	No
Cueing circuits	Fader detent	Yes	Fader detent & bus	Fader detent
Metering types	VU	.....	VU & LED	VU
Speaker muting	Programmable	Yes	Programmable	Yes
Internal cueing	Amp only	Speaker	Amp only	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Xfmr/active bal	Xfmr/active bal	Xfmr active bal	Active bal
Input impedance	600Ω	.....	150Ω/20kΩ	10kΩ
Input levels	Mic and line	.....	Switchable mic/line	Switchable mic/line
Output connection	Xfmr bal	Xfmr/active bal	Xfmr/active bal	Xfmr bal
Output impedance	600Ω	.....	150Ω	600Ω
Output levels	8dBm	.....	8dBm	8dBm
AF response	±0.5dB at +8dBm out	0.5dB	±0.5dB at +8dBm out	±0.5dB at +8dBm out
Distortion	0.5% 18dBm 15kHz	0.2% 27dBm 1kHz	0.007% 1kHz +8dBm	0.05% 18dBm 400Hz
S/N ratio	-120dBm EIN	-26dBm EIN	-125dBm EIN	70dB
Crosstalk (worst)	-67dB 18dBm 15kHz	-80dB 6dBm 15kHz	-90dB 8dBm 1kHz	.....
	Other models include AC-8/AC-6/IC-10	.....	.....	Other models include 5S150/10S150
Reader Service No.	1066	1067	1068	1069

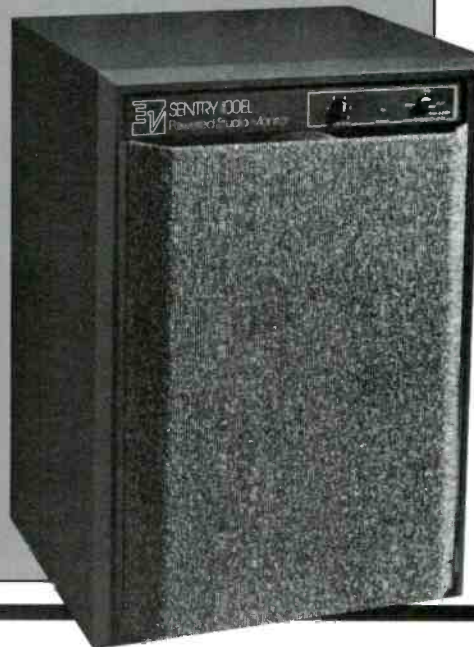
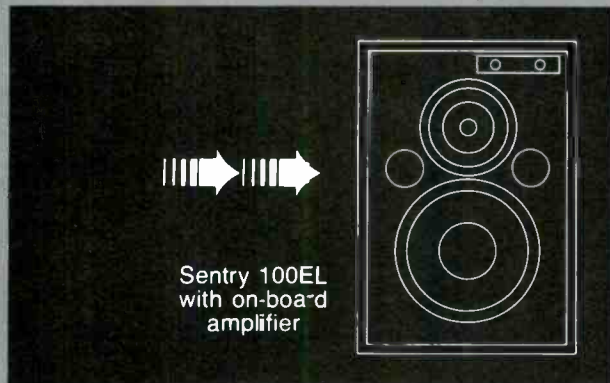
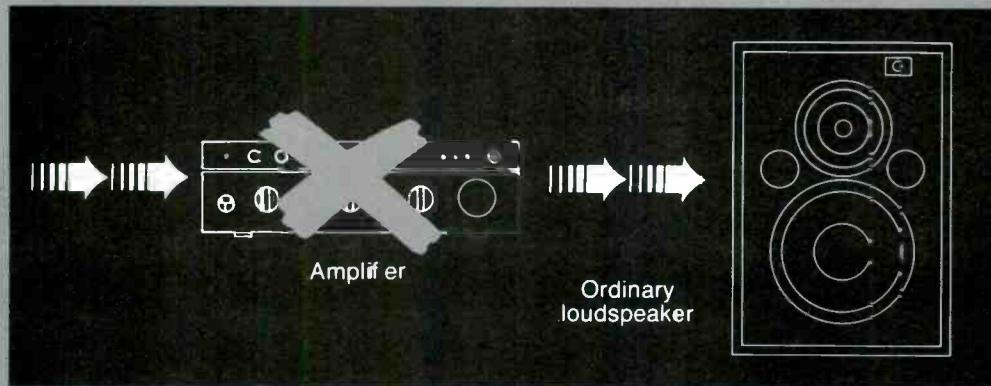
  

Manufacturer	EELA Audio	EMT-Franz/Gotham	Hallikainen & Friends	Harris
Model/Series Number	Series 300	SBM series	MuRi-output Mix TVA142/TVA132	Medalist series
Modular construction	Yes	Yes	Yes	No
# of input channels	30 max	16 max	30 max	8 (10)
Output channels	Pgm/aud/aux/cue/mono	Pgm/aux/cue/mono	Pgm/aux/aud/cue/mono	Pgm/aud/mono option
Fader type	Slider	Slicer (vca)	Slider	Slider or rotary
Bus switching	Push-button	.....	Push-button	Push-button
Internal switching	Solid-state	Solid-state	Mechanical	Solid-state
Machine start/stop	2 relay contacts	Relay contacts	30 relay contacts	8 solid-state std/relay opt
Talkback circuits	Yes	Yes	Yes	No
Cueing circuits	Fader detent & bus	Fader detent & bus	Fader detent	Cue bus switch
Metering types	VU PPM LED or RTW	VU PPM LED or RTW	PPM/LED/RTW	VU
Speaker muting	Programmable	Programmable	No	Programmable
Internal cueing	Amp & speaker	Amp & speaker	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Xfmr bal	Active bal	Xfmr bal	Active bal
Input impedance	1500Ω/10kΩ	5kΩ/20kΩ	150Ω/600Ω	8kΩ
Input levels	Switchable mic/line	Mic or line	Switchable mic/line	1-mic/2-line switch
Output connection	Xfmr bal	Xfmr bal	Xfmr bal	Active bal
Output impedance	<50Ω as source	50Ω as source	600Ω	200Ω
Output levels	21dBm	Xfmr bal	+20dBm	+24dBm
AF response	-1dB/40Hz-15kHz 4dBm	-1dB/40Hz-15kHz 0dBm	0. -1dB at +6dBm out	±1dB at +8dBm output
Distortion	<0.05% 4dBm max	0.05% 0dBm	0.1% at 1kHz +6dBm	0.05% 0.2/20kHz 8dBm
S/N ratio	-126dBm EIN	-126dBm EIN	54dB	-127dBm EIN
Crosstalk (worst)	-80dB 40Hz-15kHz	-80dB 40Hz-15kHz	-70dB at 1kHz +dBm	-85dB 15kHz +18dBm
Reader Service No.	1071	1072	1073	1075

Manufacturer	Harris	Harrison Systems	Howe Audio	Interface Electronic
Model/Series Number	Medalist 12 (AU)	AIR-7	7512A (7000) 9000	Custom modular
Modular construction	No	Yes	No	Yes
# of input channels	12 max	16 max	12 max	Per request
Output channels	Pgm/aud/mono	Pgm/aud/aux/cue	Pgm/aud/aux/cue/mono	Pgm/aud/aux/cue
Fader type	Slider only on AU	Slider	Slider (Rotary)	Slider
Bus switching	Push-button	Push-button	Push-button (Key)	Push-button
Internal switching	Solid-state	Solid-state	Solid-state	Solid-state
Machine start/stop	12 (36)	16 solid state sinks	12 solid-state (relay)	22 solid-state sinks
Talkback circuits	No	Yes	Yes (No)	Yes
Cueing circuits	Cue bus (detent AU)	Fader detent & bus	Cue bus (Detent)	Bus switch
Metering types	VU	VU/PPM/LED/Hall	VU/PPM/LED (VU/LED)	VU/PPM/LED
Speaker muting	Programmable	Yes	Programmable	Programmable
Internal cueing	Amp & speaker	Speaker	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Active bal	Active bal	Active bal	Active bal
Input impedance	8kΩ	1.2kΩ mic/10kΩ line	600Ω/10kΩ	600Ω/10kΩ
Input levels	Switchable mic/line	Mic/line/remote	Switchable mic/line	Switchable mic/line
Output connection	Active bal	Active bal	Active bal	Active bal
Output impedance	200Ω	600Ω	150Ω	150Ω
Output levels	+24dBm	+4/+6/+8dBm	+4dBm +26dBm max	+4dBm +26dBm max
AF response	-0.5dB at +8dBm out	±0.2dB at +4dBm	±0.1dB at 4dBm out	±0.1dB at +4dBm out
Distortion	0.05% 0.02-20kHz 8dB	0.1% 7kHz +18dBm	0.05% 1kHz +4dBm	0.008% 1kHz +4dBm
S/N ratio	-127dBm EIN	-128dBm EIN	-129dBm EIN	-129dBm EIN
Crosstalk (worst)	-85dB 15kHz +18dBm	-65dB 20Hz-15kHz +4dBm	-65dB 10kHz +4dBm	-70dB 10kHz +4dBm
Reader Service No.	1076	1077	1078	1079

Manufacturer	LPB	Logitek Systems	McCurdy Radio Industries	Micro-Trak
Model/Series Number	Citation C-10SL	Signature II (S-20)	Perfectionist 12	SS880E 6509-RS
Modular construction	No	No	No	Yes
# of input channels	10 max	10 max	12 max	24 max
Output channels	Pgm/aud/cue/mon/mono	Pgm/aud/mon/mono	Pgm/aud/cue/mono	Pgm/aux/cue/mono
Fader type	Slider & rotary	Stepped rotary	Slider or rotary	Slider or rotary
Bus switching	Push-button	Key switch	Push-button	Push-button
Internal switching	Mechanical	Mechanical	Solid-state	Solid-state
Machine start/stop	10 relay contacts	Contacts available	48 solid-state sinks	24 solid-state sinks
Talkback circuits	Yes	Yes	No	Yes
Cueing circuits	Yes	Fader detent	Fader detent	Fader detent
Metering types	VU	VU & LEDs	VU	VU/PPM
Speaker muting	Yes	Yes	Programmable	Yes
Internal cueing	Speaker	Speaker	Amp & speaker	Amp & speaker
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Xfmr bal	Xfmr bal	Active bal	Xfmr or active bal
Input impedance	.....	150Ω/600Ω/5kΩ	600Ω/1kΩ	150Ω/600Ω
Input levels	Mic or line on 3	Switchable mic/line	Switchable mic/line	Mic or line
Output connection	Xfmr bal	Xfmr bal	Active bal	Active bal
Output impedance	600Ω	600Ω	600Ω	600Ω
Output levels	+8dBm	+8dBm	+4dBm	+8dBm
AF response	±1dB	±1dB +4dBm output	±0.25dB at +4dBm out	±1dB +8dBm
Distortion	0.1% +18dBm overall	0.2% overall +18dBm	0.008% overall +4dBm	0.1% 30Hz +20kHz 8dBm
S/N ratio	-124dBm EIN	-124dBm EIN	-125dBm EIN	80dB
Crosstalk (worst)	Below noise	Below noise	-80dB 1kHz +4dBm	<-65dB 30Hz-15kHz
.....	.....	.....	Other models include	.....
.....	.....	.....	-12SL -8SL sliders	.....
.....	.....	.....	-12 RY -8RY rotary	.....
Reader Service No.	1081	1082	1083	1084

Manufacturer	Micro-Trak	Rupert Neve	Pacific Recorders	Quantum Audio/Gotham
Model/Series Number	IIXL-10	5322	BMX series II BMX series III	QM 22 series
Modular construction	No	Yes	Yes	Yes
# of input channels	10 max (2 input/ch)	16 max	26 max	20 max
Output channels	Pgm/aud/cue/mono opt	Pgm/aud/aux/cue/mono	Pgm/aud/cue/mono	Pgm/aud/aux/cue
Fader type	Slider	Slider	Slider	Slider
Bus switching	Key switch	Push-button	Push-button	Push-button
Internal switching	Solid-state	Solid-state/mechanical	Mechanical	Solid-state/mechanical
Machine start/stop	On all 10 channels	16 relay contacts	Solid-state sinks	Solid-state sinks
Talkback circuits	No	Yes	Yes	20 solid-state sinks
Cueing circuits	Bus-switch	Fader detent & bus	Bus-switch	Yes
Metering types	VU	VU/PPM	VU/PPM	VU
Speaker muting	Programmable	Programmable	Programmable	Yes
Internal cueing	Amp & speaker	Amp & speaker	Amp & speaker	None
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Active bal	Xfmr bal/unbal	Xfmr or active bal	Xfmr or active
Input impedance	150Ω/600Ω	150Ω/600Ω/10kΩ	150Ω/600Ω/20kΩ	1.2kΩ/12kΩ
Input levels	Switchable mic/line	Mic & line	Mic & line	Switched mic/line
Output connection	Active bal (xfmr opt)	Xfmr bal	Xfmr bal	Xfmr or active
Output impedance	600Ω	150Ω/600Ω	600Ω	600Ω
Output levels	+8dBm	+20dBm (4 04 8 = 0VU)	+28dBm	+8dBm
AF response	±1dB +8dBm	±0.5dB at +20dBm out	-1.5dB +8dBm output	1dB at +8dBm output
Distortion	0.07% 1kHz +8dBm	0.05% 1kHz +20dBm	0.02% 1kHz +28dBm	0.1% at 1kHz +24dBm
S/N ratio	-140dBm EIN	-124dBm EIN	-127dBu EIN	>80dB
Crosstalk (worst)	-55dB 1kHz +8dBm	-70dB 15kHz +20dBm	-85dB 1kHz +28dBm	<-80dB 1kHz +4dBm
.....	IIXL-5 w/5 channels	.....	-85dB 1kHz +28dBm	.....
.....	IIXL-PM-S panelmount	.....	.....	.....
Reader Service No.	1086	1087	1088	1089



## Finally, a Monitor System with the Power to Make Things Easy

Imagine a monitor speaker that provides its own power. Fits in tight spaces. Simplifies setup. And reproduces sound with test-equipment accuracy.

If you can imagine all that, you've just pictured the **Sentry 100EL powered monitor system** from Electro-Voice. Designed and created for your monitoring convenience, the 100EL combines the superb audio reproduction

of the Sentry 100A with an integral, 50-watt amplifier.

With speaker and amplifier in one compact, rack-mountable package, this monitor system solves problems like limited rack space, equipment transport on remotes or cramped spaces in video editing booths.

Also, by requiring less hardware—fewer cables and connectors—the 100EL keeps setup simple

and reduces potential interconnect problems. And there's no possibility of power loss caused by resistance from a lengthy speaker cable.

The on-board amplifier in the 100EL makes it ideal for single-channel monitoring. Why buy one speaker and an extra amplifier channel, when the Sentry 100EL does the job all by itself? And because amplifier power is perfectly matched to the speaker system, there's no chance of damage from inadvertent signal overload.

But convenience and trouble-free operation are only part of the package. Like all Sentry designs, the 100EL offers uncompromised accuracy. So you can be certain of quality sound.

The Sentry 100EL - with the power to make your job easier. For more information, write Marketing Dept. Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107.



Manufacturer Model/Series Number	Radio Systems ESA-10	Russco Electronic 505 series	Solid State Logic SL-5000 M series	Sonosax SX-T	Soundcraft SAC-2000
Modular construction	No	No	Yes	Yes	Yes
# of input channels	36 max	5	64 max	32	24 max
Output channels	Pgm/aud/cue/mono	Pgm	Pgm/aud/cue/aux/mono	Pgm/aud/aux/mono	Pgm/aud/aux/cue/mono
Fader type	Slider	Rotary	Slider	Slider	Slider
Bus switching	Push-button	Push-button	Computer assignable	Push-button	Push-button
Internal switching	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Machine start/stop	Solid-state sinks	No	Relay contacts	Relay contacts	Solid-state sinks
Talkback circuits	No	No	Yes	Yes	Yes
Cueing circuits	Fader detent & bus	Bus-switch	Fader detents	Bus-switched	Bus-switched
Metering types	LED	VU	VU/PPM/LCD	VU/PPM/LEO	VU
Speaker muting	Programmable	Yes	Programmable	Programmable	Yes
Internal cueing	Amp & speaker	Speaker	Amp & speaker	Amp	Speaker
Internal line amp	Yes	Yes	No	Yes	Yes
Input connection	Active bal	Xfmr bal	Xfmr or active bal	Xfmr or active bal	Active bal
Input impedance	10k $\Omega$	47k $\Omega$	1.2k $\Omega$ /10k $\Omega$	150 $\Omega$ /600 $\Omega$	150 $\Omega$ /600 $\Omega$
Input levels	Switched mic/line	Modifiable	-80/-10dBu 5dB steps	Switched mic/line	Switchable mic/line
Output connection	Active bal	Xfmr bal	Active bal	Xfmr or active bal	Active bal
Output impedance	150 $\Omega$	600 $\Omega$	35 $\Omega$ as source	600 $\Omega$	600 $\Omega$
Output levels	+22dBm	+4 or +8dBm	+28dBm	+6/+15dBm	+26dBm
AF response	$\pm 0.1$ dB at +25dBm out	$\pm 1$ dB +8dBm output	$\pm 0.5$ dB at +8dBm out	$\pm 0.5$ dB at +6dBm out	0, -1dB +8dBm output
Distortion	0.02% 1kHz +25dBm	0.5% 1kHz +8dBm	0.05% 1kHz +20dBm	0.01% 1kHz +6dBm	0.01% 20Hz-20kHz +8
S/N ratio	-110dB EIN	60dB	-127.5dBm EIN	-131.5dBm EIN A-wtd	80dB
Crosstalk (worst)	-110dB 1kHz +25dBm	-60dB 1kHz +8dBm	-80dB 20kHz +dBm	<-70dB 10kHz +6dBm	-65dB 1kHz +8dBm
Reader Service No.	1091	1092	1093	1094	1095

Manufacturer Model/Series Number	TTC/Ampro Division Microtouch	UREI 1653	Ward-Beck Systems R1200/R2000	Wheatstone Broadcast A-500
Modular construction	No	No	Yes	Yes
# of input channels	5 or 8	5 max	12 (20)	22 typical (to 48)
Output channels	Pgm/aud/cue	Pgm/aud	Pgm/aud/aux/cue	Pgm/aud/aux/cue/mono
Fader type	Slider or rotary	Slider	Rotary	Slider
Bus switching	Push-button	Push-button	Push-button	Push-button
Internal switching	.....	Solid-state	Solid-state	Mechanical
Machine start/stop	User selectable	5 solid-state sinks	As requested	Relay contacts
Talkback circuits	Yes	No	Yes	Yes
Cueing circuits	Fader detent	Yes	Yes	Fader detent & bus
Metering types	VU	VU	VU/PPM	VU
Speaker muting	Yes	Yes	Yes	Programmable
Internal cueing	Yes	Speaker	Speaker	Speaker
Internal line amp	Yes	Yes	Yes	Yes
Input connection	Xfmr bal	Active	Xfmr or active bal	Active bal
Input impedance	600 $\Omega$	150 $\Omega$ /600 $\Omega$	150 $\Omega$ /600 $\Omega$	150 $\Omega$
Input levels	Mic or line straps	Mic or line	Mic or line	Mic & line
Output connection	Xfmr bal	Xfmr	Xfmr or active bal	Active bal
Output impedance	600 $\Omega$	600 $\Omega$	600 $\Omega$	600 $\Omega$
Output levels	+18dBm	+4dBm	+8dBm	+26dBm
AF response	$\pm 1$ dB +18dBm output	$\pm 1$ dB at +8dBm output	$\pm 1$ dB at +8dBm output	$\pm 0.5$ dB at 0dBm out
Distortion	1% 1kHz +18dBm	0.25% +24dBm	0.1% 50Hz-10kHz +18	<0.005% 1kHz +18dBm
S/N ratio	70dB	90dB	-125dBm EIN	-128dBm EIN
Crosstalk (worst)	-50dB 1kHz +18dBm	-70dB 1kHz +24dBm	-80dB 50Hz-10kHz +18	-90dB 1kHz
Reader Service No.	1096	1097	1098	1099

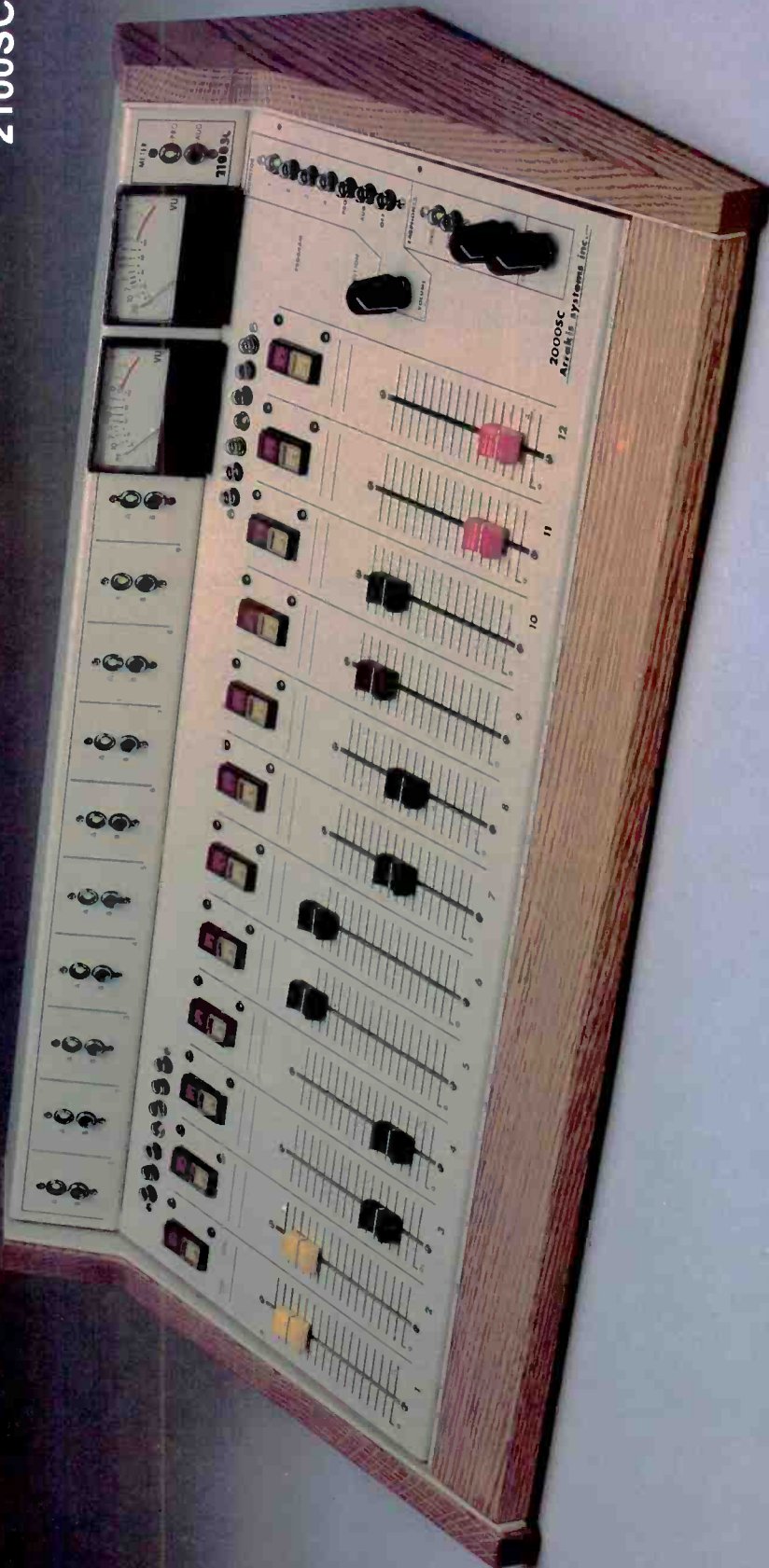
## Audio Mixers, Portable

These units are smaller audio mixing systems, applicable to ENG and small mobile units, including microphone mixers.

Manufacturer Model/Series Number	Allen-Heath/Brenell SR series	Audio + Design/Catrec M series	Audio Developments AD145 Pico Mixer	Audix Ltd. MXT500	Broadcast Electronics 4550
Modular construction	No	Yes	Yes	Yes	No
# of input channels	8/16/24	24 max	6	7	4 max
# of inputs	14/22/30	48 max	6	16 max	8 max
# of mixing buses	2 or 6	.....	2	5	2
Stereo outputs	3 pairs	Yes	1 pair	Possible	Yes
Outputs provided	Line/monitor/aux	Line/aux feed/phones	Line A/B and comm	Line/mono/aux/phone	Line/aux feed/phones
Fader type	TBM slider	Slider	Slider	Slider	Rotary
EQ/filtering	4-band/sheilding-peak	Pre & Post	Yes	Yes	None
Tone oscillator	No	Variable	~1Hz	Yes	None
Meter types	LED displays	VU & PPM	Movement	VU	VU
Int. compress/limit	No	Yes	No	No	No
Telephone interface	No	No	No	No	No
Powering	110Vac	110Vac or 12Vdc	10 C cells	ac or 24Vdc	110Vac
Operating weight	.....	.....	13.2 lb	.....	22 lb
Input connection	Active	Xfmr bal	xfmr bal	Xfmr bal	Active bal
Input impedance	.....	10k $\Omega$	1k $\Omega$ 3k $\Omega$ 10k $\Omega$	600 $\Omega$	10k $\Omega$
Input level	.....	Switchable mic/line	-32 to +20dBm	.....	Switchable mic/line
Output connection	Unbal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output impedance	.....	600 $\Omega$	For 600 $\Omega$ load	600 $\Omega$ load	600 $\Omega$
Output level	.....	24dBm	+24dBm maximum	To +18dBm	+8dBm
AF response	$\pm 1$ dB/20Hz-20kHz	$\pm 0.5$ dB +4dBm 0VU	$\pm 1$ dB/20Hz-20kHz	$\pm 0.5$ dB/20Hz-20kHz	$\pm 0.5$ dB +8dBm 0VU
Distortion	< 0.05% +4dBm	0.05% 16kHz +4dBm	0.05% 1kHz	0.1% +18dBm	0.1%THD 1kHz +18dBm
S/N ratio	-125dBv EIN	80dB EIN	-126dB EIN	-125dB EIN	70dB EIN
Crosstalk (worst)	< -60dB 4dBm overall	-80dB 16kHz +4dBm	< -70dB 40Hz-15kHz	< -76dB 15kHz	.....
Reader Service No.	1001	1002	1003	1004	1005



2100SC



## AUDIO CONSOLE PRODUCTS

Arrakis audio console products are designed by broadcast engineers for broadcasters at reasonable prices.

Our products sell themselves. Study our features, specs., and prices. Compare and you will find what thousands have found — The Arrakis Advantage —

### FEATURES

- VCA Faders
- P & G Sliders
- .01% Distortion
- Solid Oak Trim
- 10W/CH Monitor
- Remote Start
- Mix - Minus
- Modular Design
- Ultra-Reliable
- Mono Mixdowns
- Stereo Cue
- Full Muting
- Dimensions—
- 30" W x 17" D x 7" H
- Weight—55 Lbs.

### MODELS

- 6 Channel Rotary
  - 150SC-6M \$1895
  - 150SC-6S \$1995
- 8 Channel Rotary
  - 500SC-8M \$3550
  - 500SC-8S \$3750
- 12 Channel Linear
  - 2000SC-12M \$4495
  - 2000SC-12S \$4695
- 12 Channel Linear
  - 2100SC-12M \$5495
  - 2100SC-12S \$5695

**arrakis**  
SYSTEMS, INC.



204 N LINK LANE, # 3  
FORT COLLINS, CO  
80524

(303) 224-2248

Manufacturer	Comprehensive Video	Comrax	EELA Audio	Electro-Voice	Gotham Audio/EMT
Model/Series Number	MX1001 (MX1002)	SLX Sports Mixer	S50 Reportomix	ELX-1	EMT Multioutput Mix
Modular construction	.....	No	Yes	No	Yes
# of input channels	3 max	4 max	4	4 max	30 max
# of inputs	3 max	7 max	4/4	5 max	30 max
# of mixing buses	3	1	3	1	4
Stereo outputs	No	No	1	No	Yes
Outputs provided	Line/mic/aux/phones	Line/aux feed/phones	Line	Line/mic/phones	Line/aux feed/phones
Fader type	Rotary	Slider	P&G slider	Rotary	Slider
EQ/filtering	No	Yes	Hi-pass	Premix only	Post-fader only
Tone oscillator	Fixed (none)	Fixed	Yes	Fixed	Variable
Meter types	VU	VU	PPM/LED	VU or PPM with LEDs	VU/PPM/LED
Int. compress/limit	No	Yes	Yes	Yes	Yes
Telephone interface	No	Yes	No	No	No
Powering	12Vdc (3x9V)	110Vac/external dc	12Vdc or ac adapter	110-130Vac/24-45Vdc	120Vac
Operating weight	3 lb (38oz)	15 lb	6 lb	5.5 lb w/ batteries	60 lb
Input connection	Xfmr bal	Active bal	Xfmr bal	Active bal	Xfmr bal
Input impedance	50-600Ω autosensing	150Ω	600Ω	300Ω	600Ω
Input level	Switchable mic/line	Switchable mic/line	.....	Switchable mic/line	Switchable mic/line
Output connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output impedance	50-600Ω autosensing	600Ω	For 600Ω load	600Ω typically	600Ω
Output level	-20 to +4dBm	-9 to +6dBm	6dBm nominal	4dBm nom/18dBm max	+6dBm
AF response	.....	±0.5dB	0. - 1dB/20Hz-20kHz	0. - 1dB at +4dBm	0.5. - 1dB +6dBm
Distortion	.....	< 0.5% 50Hz-15kHz	<0.1% 1kHz 6dBm	<0.15% 20Hz-20kHz	0.2% 1kHz 6dBm out
S/N ratio	60dB EIN	-127dB EIN	-125dB EIN	-129dBu max gain	>54dB
Crosstalk (worst)	.....	< -60dB 1kHz +8dBm	< -80dB 6dBm 15kHz	.....	< -70dB 1kHz 6dBm
.....	.....	Includes frequency	.....	.....	.....
.....	.....	extender circuitry	.....	.....	.....
Reader Service No.	1006	1007	1008	1009	1010

Manufacturer	Logitek	Micro-Trak Corp.	Pupert Neve Inc.	Primus Sidekick	Ramko Research
Model/Series Number	Audiorack	Sport III (Sport IV)	5422	P-4MS (P-5MX)	P-4MS (P-5MX)
Modular construction	No	No	Yes	No	No
# of input channels	6 max	2 (4) max	8 max	4 max	4 (5)
# of inputs	6 max	3 (5) max	16 max	2-line/2-mic or line	4 (5)
# of mixing buses	2	1	2	1	2 (1)
Stereo outputs	No	No	Yes	No	Yes (mono only)
Outputs provided	Line/mic/phones	Line/phones	Line/aux feed/phones	Line/headphones	Line/phones (line)
Fader type	Rotary	Rotary	Slider	Rotary	Rotary
EQ/filtering	No	No	Pre-fader	No	Yes (No)
Tone oscillator	Fixed	None	Variable	Yes	No
Meter types	VU	VU	VU & PPM	VU	LED ladder (No)
Int. compress/limit	No	No	No	Yes	No
Telephone interface	No	Yes	No	No	No
Powering	117Vac/12Vdc	110/220Vac or dc	120Vac or int. Vdc	9Vdc	120/240Vac
Operating weight	20 lb	8 lb	40 lb	2.5 lb	.....
Input connection	Active bal	Xfmr bal	Xfmr bal	Bal	Active bal
Input impedance	600Ω	600Ω/150Ω	150Ω/600Ω/10kΩ	.....	.....
Input level	Switchable mic/line	Switchable mic/line	Switchable mic/line	Switchable mic/line	Switchable mic/line
Output connection	Xfmr bal	Xfmr bal (telephone)	Xfmr bal	Bal	Active bal
Output impedance	600Ω	600Ω	600Ω/150Ω	Low impedance source	600Ω
Output level	0dBm	+8dBm	+20dBm max*	+16dBm (0dBm = 0VU)	+26dBm max
AF response	±0.3dB 0dBm output	Per Telco regulation	0.5. - 1dB/ +20dBm	< +1.5dB/20Hz-20kHz	0. - 1.5dB 1kHz +8dBm
Distortion	0.07% 1kHz 0dBm	0.5% 1kHz +8dBm	0.05% 30Hz-15kHz	0.08% +8dBm	0.008% 1kHz 8dBm
S/N ratio	-114dB EIN	-120dB EIN	-125dB EIN	90dB line/72dB mic	83dB line/70dB mic
Crosstalk (worst)	Below noise	.....	< -60dBm at 15kHz +20dB	.....	< -65dB 1kHz
.....	.....	.....	*0VU = +4 or +8dBm	.....	.....
Reader Service No.	1011	1012	1013	1014	1015

Manufacturer	RAMSA	Schweizer AG	SECK	Shure Brothers
Model/Series Number	WR-500	SQN-3 Generation II	Model 18-B-2	Model 122 (62)
Modular construction	No	No	No	No
# of input channels	8	3 mic/line/aux line	18 max	12 (6) max
# of inputs	8/12	5	.....	12 (6)
# of mixing buses	3	1	8	..... (2)
Stereo outputs	3	No	Yes	Yes
Outputs provided	1 pair	Line/Nagra/phones	Line/aux feed/phones	Line/aux feed/phones
Fader type	Proprietary slider	Rotary	Slider	Slider
EQ/filtering	2-band fixed	Low cut filter	Pre-fader	Pre-fader
Tone oscillator	No	1.1kHz - 8dB	.....	None
Meter types	VU movements	VU movement	LED	LED
Int. compress/limit	No	Yes	No	No
Telephone interface	No	No	No	No
Powering	ac or 12Vdc	5.5-18V for 6-9 hr	110Vac 24Vdc	110Vac or 24Vdc
Operating weight	22 lb	4.4 lb	41 lb	17.6 lb (11 lb)
Input connection	Bal mic/line	Bal	Bal	Bal (xfmr)
Input impedance	600Ω	150-600Ω/27kΩ	1kΩ mic	600Ω
Input level	-70 to +4dBm	0.18mV mic/7.75V max	Switchable mic/line	.....
Output connection	Bal & unbal	Bal	Bal	Bal (xfmr)
Output impedance	For 600Ω load	For 600Ω load	<50Ω source	600Ω
Output level	+4dBm	+18dBm	.....	.....
AF response	0.5. - 2dB/20Hz-20kHz	0. - 1dB/30Hz-20kHz	0. - 1dB 0dBm out	-2dB
Distortion	<0.3% 18dBm	0.1% +18dBm	0.0056% 1kHz +4dBm	0.03% 1kHz
S/N ratio	-128dB EIN	.....	.....	-127.5dB EIN
Crosstalk (worst)	.....	.....	.....	.....
.....	.....	.....	.....	.....
Reader Service No.	1016	1017	1018	1019

Circle (196) on Reply Card



Circle (198) on Reply Card



Circle (197) on Reply Card

# Optimod /op'-tə-mod/

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

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

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

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

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

5. OPTIMOD; a registered trademark.

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

**orban**

ORBAN PROCESSING KEEPS YOU COMPETITIVE

Manufacturer	Shure Brothers	Sonosax	Sony Pro Audio
Model/Series Number	FP32 (FP31)	FP42	MX-P61 MX-P42
Modular construction	No	No	Yes
# of input channels	3 max	4 max	10 max
# of inputs	3 max	4 max	10 max
# of mixing buses	2 (1)	2	3
Stereo outputs	Yes (No)	Yes	Yes
Outputs provided	Line/mic/aux/phones	Line/mic/headphones	Line/aux/phones
Fader type	Rotary	Rotary	Slider
EQ/filtering	Pre-fader	Pre-fader	Yes
Tone oscillator	Fixed	Fixed	Fixed
Meter types	VU/LED	VU/LED	VU/PPM/LED
Int. compress/limit	Limiting	Limiting	Yes
Telephone interface	No	No	No
Powering	18Vdc	120/240Vac & 27Vdc	10 + 15Vdc
Operating weight	2.5 lb	6 lb	14.8 lb w/ batteries
Input connection	Xfmr bal	Xfmr bal	Xfmr or active bal
Input impedance	150Ω/600Ω	150Ω/600Ω	150Ω/600Ω
Input level	Switchable mic/line	Switchable mic/line	Switchable mic/line
Output connection	Xfmr bal	Xfmr bal	Xfmr or active bal
Output impedance	150Ω/600Ω	150Ω/600Ω	600Ω
Output level	+18dBm/ -34dBv 150Ω	+18dBm/ -34dBv 150Ω	+6dBm or +15dBm
AF response	±2dB +4dBm out	±2dB +4dBm out	±0.5dB +6dBm
Distortion	0.25% 20kHz +4dBm	0.3% 20kHz +15dBm	0.01% 1kHz +6dBm out
S/N ratio	-129dBm EIN	-129dBm EIN	-131.5dBm EIN A-wtd
Crosstalk (worst)	< -40dB 10kHz +15dBm	< -40dB 10kHz +15dBm	< -70dB 10kHz +6dBm
Reader Service No.	1021	1022	1023 1024 1025



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

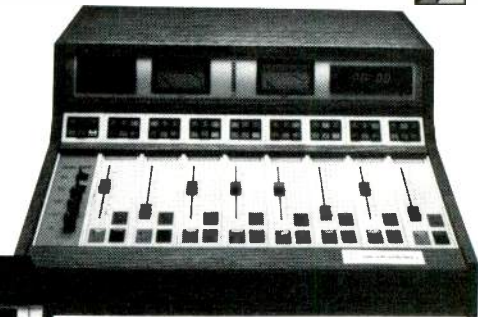
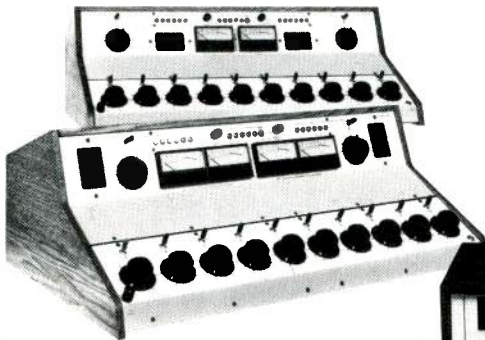
**Audio Mixers, On-Air**

Arrakis Systems	185
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Logitek Systems	82
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**Simply  
Reliable**

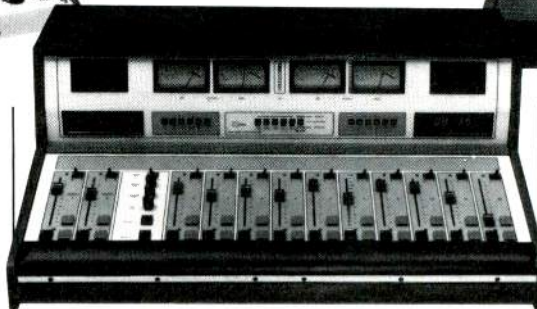
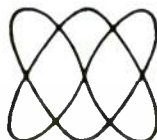
# We Have Your Console!

**Expandable**  
... at any time



## 7000

Our premier consoles are designed for simplicity and reliability. The **7012** and **7012A** consoles continue to be today's choice, allowing broadcasters excellent sound quality with efficient VCA control, all at a cost well below what others charge for less. 12 channels, 22 inputs, full stereo, with your choice of metering functions. Clearly an excellent console for today's broadcast needs.



## 7512A

This console continues the **Howe** tradition of simple-to-operate, reliable products, but adds features to make the operator's job even easier. These include: remote control for machines, a clock and timer, 2 talkback circuits, and much more. Comprehensive operator control and superior sound quality make the **7512A** an exceptional choice.

## 9000

The latest in the legacy of quality consoles from **Howe**, the **9000** is available from 8 to 22 channels tailored to your needs. There is no costly mainframe, but full modular capability is built in. 3 inputs per channel, mix-minus on all channels, sealed membrane switches for channel and machine control, and unmatched audio performance. These features and more combine to give the broadcaster outstanding flexibility.

**howe audio productions, inc.**

2300 Central Avenue • Suite E • Boulder, CO 80301 (303) 444-4693 • For more information (800) 525-7520

Circle (152) on Reply Card

# NOW ALL THE WORLD'S A SOUND STAGE.

No matter what you're recording in the field, from Shakespeare-in-the-Park to "Dancing in the Dark," you'll find a Sony portable mixer that brings the creative control and flawless sonic performance of the studio to wherever you happen to be.

## 12 FOR THE ROAD.

The big difference between the Sony MX-P61 and other studio-quality 12-channel mixers is that the Sony can be tucked neatly into a small case and carried to any location—thanks to its switching power supply, transformerless design and, of course, the fact that it's made by the company that's best at making big things small.

Its myriad professional features include transformerless, electronically-balanced inputs and outputs, complete equali-



Studio quality is no longer confined to the studio.

zation for comprehensive signal control and modular construction for reliability and easy maintenance. Along with the phenomenal sonic performance with which the name "Sony" has been synonymous for decades.

## THE 4-CHANNEL MIXER

### FOR EVERY CORNER OF THE GLOBE.

The incredibly small and light MX-P42 lessens not only your burden, but the complexities of field recording as well.

That's because each input incorporates a fast-acting compressor/expander with gain make-up control.

So input levels can be preset separately, then maintained automatically during recording.

### HIGH QUALITY FOR LOW BUDGETS.

The family resemblance between the 8-channel MX-P21 and

Sony's more expensive portable mixers is readily apparent:

The MX-P21 is portable, durable, and has an incredible array of features for its size—including phono EQ, fader-start and cascade interface.

All of which makes the choice between Sony and any other portable mixer a simple one.

Just decide whether you want all your location recordings to be as good as studio recordings.

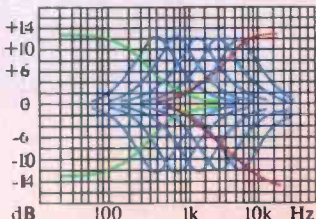
Or not to be.

For a demonstration or more information, call Sony in the North at (201) 368-5000; in the South (615) 537-4300; Central (312) 773-6000; West (213) 537-4300. Or write Sony Professional Audio Products, Sony Dr., Park Ridge, New Jersey 07656.

**SONY**  
Professional Audio



The Sony MX-P42 weighs in at a scant 8 lbs., 10 oz.




EQ characteristics of the MX-P61.



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Manufacturer	Sony Pro Audio	Spectra Sonics	Stellavox	Studer Revox
Model/Series Number	MX-P21	#1100 Line/mic mixer	AMI48	Model 069
Modular construction	No	No	.....	Yes
# of input channels	8	6 max	5 max	17 max
# of inputs	22	6 max	10 max	.....
# of mixing buses	4	1	1	6
Stereo outputs	Yes	No	Yes	Yes
Outputs provided	Line	Line/headphones	Line/aux/headphones	Line/aux/headphones
Fader type	Slider	Rotary	Slider	Slider
EQ/filtering	Pre-fader	Post-fader	Yes	Yes
Tone oscillator	Fixed	No	Fixed	Variable
Meter types	VU/LED	VU	PPM	VU or PPM
Int. compress/limit	No	No	Yes	Limit & compression
Telephone interface	No	No	No	.....
Powering	12Vdc or 110Vac	ac or dc	18Vdc	110Vac
Operating weight	28 lb	10 lb	9 lb	35 lb w/ batteries
Input connection	Active bal	Xfmr bal	Bal	Bal
Input impedance	600Ω	150Ω/600Ω	600Ω	.....
Input level	Mic and line	Switchable mic/line	Switchable mic/line	Mic -70, -10dBu*
Output connection	Active bal	Xfmr bal	Bal	Bal
Output impedance	600Ω	600Ω	200Ω/600Ω	As source <50Ω
Output level	+4dBm	+4dBm or +8dBm	+6dBm and +15dBm	24dBm or 2.4dBu 300Ω
AF response	±0.5dB at +4dBm out	±0.75dB +18dBm	-1dB +6dBm	0.5, -1dB +4dBm
Distortion	0.03% 1kHz +24dBm	0.01% 1kHz +18dBm	0.03% 1kHz +6dBm	0.03% 30Hz-15kHz
S/N ratio	-126dBm EIN	-130dBm EIN	-125dBm EIN	-125dBm EIN
Crosstalk (worst)	-60dB 1kHz +4dBm	.....	-80dB 1kHz +6dBm	< -80dB 15kHz +4dBm
Reader Service No.	1026	1027	1028	1029

Manufacturer	Tascam	Tone Seem	Yamaha Int'l.
Model/Series Number	M-106	M-216 (200 series)	SEESAM 2
Modular construction	No	No	Yes
# of input channels	6 max	16 max	8
# of inputs	12 max	40 max	16
# of mixing buses	4	4	4
Stereo outputs	No	Yes	Yes
Outputs provided	Line/aux/headphones	Line/aux/headphones	Line/aux/phones
Fader type	Slider	Slider	Slider
EQ/filtering	Pre-fader	Pre-fader	Yes
Tone oscillator	None	None	.....
Meter types	VU	VU	LED ladder
Int. compress/limit	No	No	Limiting
Telephone interface	No	No	Optional module
Powering	ac	ac	115/220Vac 12/24Vdc
Operating weight	15.5 lb	26.5 lb w/o batteries	.....
Input connection	Active unbal	Active bal	Bal
Input impedance	45kΩ	2.8kΩ	> 1kΩ as load
Input level	Switchable mic/line	Switchable mic/line	+6dBu ref. 0.775V
Output connection	Unbal	Active	Xfmr bal
Output impedance	100Ω as source	150Ω as source	300Ω minimum load
Output level	-10dBv	2.2dBm or 0dBv	+20dBu 600Ω
AF response	1, -1.5dB	1, -2dB	±0.5dB/30Hz-20kHz
Distortion	0.03% 1kHz	0.03% 20Hz-20kHz	<0.1% 20Hz-20kHz
S/N ratio	-132dBm EIN	-128dBm EIN	-125dBu EIN
Crosstalk (worst)	-60dB 1kHz	-60dB 1kHz 2.2dBm	<-80dB
Reader Service No.	1031	1032	1033



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

<p><b>Audio Mixers Studio</b></p> <ul style="list-style-type: none"> <li>Auditronics ..... 197</li> <li>Electro-Voice ..... 183</li> <li>Fostex ..... 36</li> <li>Harrison Systems ..... IFC</li> <li>Logitek Systems ..... 82</li> <li>LPB ..... 191</li> <li>Rupert Neve ..... 179</li> <li>Solid State Logic ..... 94,95</li> <li>Sony Pro Audio ..... 189</li> <li>Studer Revox ..... 209</li> <li>TTC/Ampro ..... 207</li> <li>Tascam ..... 108</li> <li>Yamaha ..... 44,45</li> </ul>
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# Audio Mixing Consoles, Studio Production

Generally, these are larger audio mixing desks for radio and TV production work. These systems may include multitrack outputs for direct recording and re-entry from multitrack tape. Audio reinforcement and PA systems are not included. Listings in this category do not preclude the equipment as being used for on-air applications.

Manufacturer	PostPro 12 (B)	S/TV 24	ADM Technologies BCS 3243	VP1603	Allen-Heath Brnell Syncom series
Modular construction	Yes	Yes	Yes	Yes	Yes
# of input channels	12 max (8)	24 max	32 max	16 max	8 to 44
# of inputs	12 max (8)	84 max	128 max	64 max	88
# of mixing buses	2	8	23	3	26
# of multitrack outs	None	4	8	3	24
Stereo output pair	Yes	Yes	Yes	No	Yes
Fader type	Slider	Slider	Slider	Slider	Slider
EQ types	Swept	Shelving/swept	14-band	14-band	4-band/shelv/swept
Filtering	Hi-/lo-pass	Hi-/lo-pass	Hi-/lo-pass	.....	.....
Panpots	No	Yes	Yes	Yes	Yes
Groups/subgroups	2 groups	2 groups/4 subs	3 groups/4 subs	3 groups	30 groups
Sends/returns	None	1 pre/1 post	5 pre/5 post	.....	6/8-44 pre or post
Solo	None	.....	In place	.....	PFL & in-place
Int. compress/limit	No	No	Yes	Yes	No
Machine start/stops	No	24 relay contacts	6 relay contacts	No	No
Talkback circuits	Yes	Yes	Yes	Yes	Yes
Speaker muting	No	Yes	Yes	No	Yes
Tone oscillator	Fixed frequency	Variable	Variable	Variable	Variable
Meter types	VU	VU	VU/PPM	VU/PPM	LED
Automation ready	Dual bus	No	No	Dual bus	Option
Input connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal/unbal
Input impedance	600Ω	600Ω	600Ω	600Ω	1kΩ/22kΩ
Input levels	Line only	Mic & line	Mic & line switched	Switchable mic/line	Switchable mic/line
Output connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output impedance	600Ω	600Ω	600Ω	600Ω	600Ω
Output levels	+27dBm	+27dBm	+27dBm	+27dBm	.....
AF response (20Hz-20kHz)	±1dB at +8dBm output	±1dB at +8dBm output	±1dB at +8dBm output	±1dB at +8dBm output	±1dB at +4dBm output
Distortion	0.07% at 1kHz +24dBm	0.07% 1kHz +24dBm	0.07% 1kHz +24dBm	0.07% 1kHz +24dBm	< 0.05% +4dBm overall
S/N ratio	-125.5dBm EIN	-125.5dBm EIN	-125.5dBm EIN	-125.5dBm EIN	-129dBm EIN
Crosstalk (worst)	-72dB 0.1-10kHz 8dBm	-72dB 0.1-10kHz +8	-72dB 0.1-10kHz +8	-72dB 0.1-10kHz +8	-76dB 30Hz-10kHz +4
Reader Service Number	1101	1102	1103	1104	1105

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Circle (230) on Reply Card

Fall 1985 *Broadcast Engineering* 191

Manufacturer Model/Series Number	AMEK Systems/Control M1000 series 2	ANT Nachrichtentechnik TRS800	AudioArts Engineering 8x (3224) recording	700	Audtronic 300
Modular construction	Yes	Yes	Yes	Yes	Yes
# of input channels	64 max	.....	48	48	32
# of inputs	128 max	Mic & line per input	96	48	32
# of mixing buses	50 with 8 aux	12	8 (24)	24 + 2 + 1 + 1	4 or 8 + 2 + 1
# of multitrack outs	Direct outs	Per input	48	24	4 or 8
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider	Slider
EQ types	4-band/parametric	3-band/D/LED	Swept	Swept/shelving	Shelving/swept/peak
Filtering	Hi-/lo-pass	Hi-/lo-pass	Hi-pass	Hi-/lo-pass	Hi-/lo-pass
Panpots	Yes	Yes	Yes	Yes	Yes
Groups/subgroups	Any combination	24	8 (24) groups	9	4 or 8
Sends/returns	8 pre or post	4/4	2 pre/4 post	4 pre/4 post	2-4 pre/2-4 post
Solo	AFL/PFL/In-place	Solo X/Y & PFL	AFL/PFL	AFL	In-place
Int. compress/limit	Plug-in module	Compressors	No	No	Accessory
Machine start/stops	Yes	.....	No	No	Yes
Talkback circuits	Yes	Yes	Yes	Yes	Accessory
Speaker muting	Yes	Yes	No	No	Yes
Tone oscillator	Variable	5-freq/pink -64/+6	Variable	Variable	Variable
Meter types	VU/PPM/LED/RTW	Peak LED/LED ladder	VU	VU/PPM/RTW	VU/PPM/RTW
Automation ready	Optional	.....	No	Yes	No
Input connection	Active bal	Bal	Active bal	Xfmr/active bal	Active bal
Input impedance	1k $\Omega$	>1.5k $\Omega$ / >1.7k $\Omega$	150 $\Omega$	>20k $\Omega$ /15k $\Omega$ bridging	15k $\Omega$ mic & line
Input levels	Switched mic/line	-64dBm to +22dBm	Mic & line	Switchable mic/line	Switchable mic/line
Output connection	Active bal	Bal	Active bal	Xfmr/active bal	Active bal
Output impedance	600 $\Omega$	600 $\Omega$	600 $\Omega$	.....	As source 60 $\Omega$
Output levels	+21dBm max	+6/+9/+15, +22dBm max	+20dBm	.....	+4dBv 60 $\Omega$
AF response (20Hz-20kHz)	$\pm$ 1dB, +10dBm output	$\pm$ 0.5dB/40Hz-15kHz	$\pm$ 0.1dB at 0dBm out	$\pm$ 1dB at +20dBm out	$\pm$ 0.5dB +24dBm out
Distortion	<0.05% 1kHz +10dBm	<0.15% 1kHz +22dBm	0.05% +20dBm overall	0.01% 1kHz +20dBm	0.01% 1kHz +24dBm
S/N ratio	-126dBm EIN	-127dBm EIN A-wtd	-129dBm EIN	-127dBm EIN	-129dBm EIN
Crosstalk (worst)	-70dB +10kHz +4dBm	<-90dB 40Hz-15kHz	-90dB 20kHz 0dBm	-76dB 1kHz +4dBm	-89dB 1kHz 18dBm out
Reader Service Number	1106	1107	1108	1109	1110

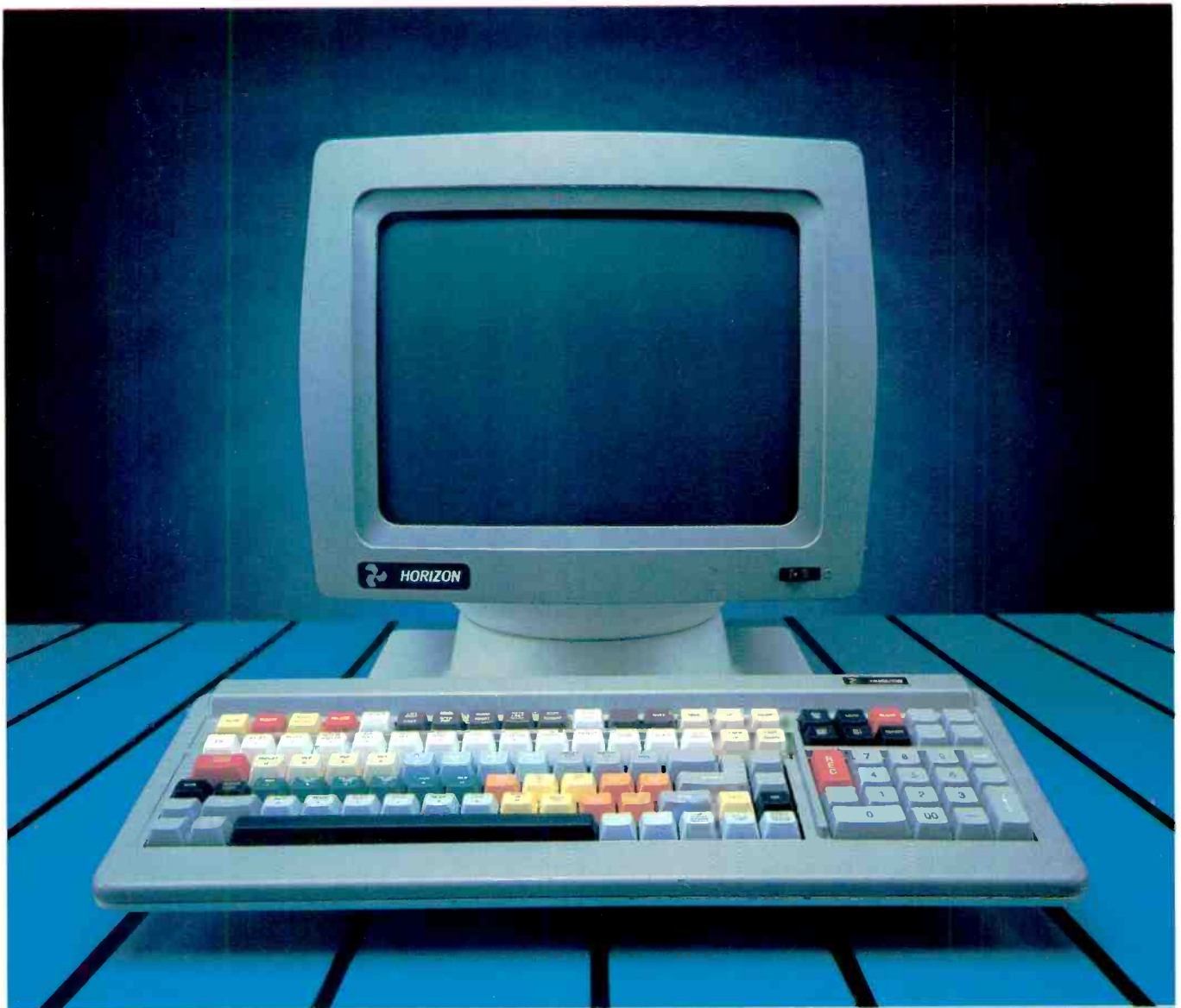
Manufacturer Model/Series Number	Broadcast Audio System 20	Broadcast Electronics 350 series	Calrec/Audio + Design UA8000	Electro-Voice 8000 series	Enertec Schlumberger UPS5200 series
Modular construction	Yes	No	Yes	No	Yes
# of input channels	20 max	10 max	64 max	32	12-16
# of inputs	60 max	20 max	128 max	64	12-16
# of mixing buses	4	4	32	10	6-8
# of multitrack outs	4	2	32	4	2-4
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Alps slider	Slider
EQ types	Peak/shelving/graphic	None	4-band/shelv/paramet	3-band/shelving/peak	3-band/shelving
Filtering	Hi-pass	None	Hi-/lo-pass	.....	Hi-/lo-pass
Panpots	Yes	No	Yes	Yes	Yes
Groups/subgroups	Configured by user	None	32/9	4 groups	6 groups
Sends/returns	20 post	None	Pre and post	2 pre/2 post	2 pre/2 post option
Solo	.....	None	AFL/PFL/In-place	AFL/PFL	.....
Int. compress/limit	No	No	Yes	.....	Limiting optional
Machine start/stops	14 circuits	No	Yes	No	.....
Talkback circuits	Yes	Yes	Yes	.....	Yes
Speaker muting	Yes	Yes	Yes	No	.....
Tone oscillator	Variable	None	Variable	None	Variable
Meter types	VU/LED	VU	VU/PPM/LED	LED	VU/PPM
Automation ready	Yes	No	Yes	No	.....
Input connection	Xfmr/active bal	Active bal	Xfmr/active bal	Xfmr active bal	.....
Input impedance	150 $\Omega$ /20k $\Omega$	High Z	20k $\Omega$	.....	>1k $\Omega$
Input levels	Switched mic/line	Switchable mic/line	Switchable mic/line	.....	Mic & line
Output connection	Xfmr/active bal	Xfmr bal	Active bal	Xfmr/active bal	.....
Output impedance	150 $\Omega$	600 $\Omega$	22 $\Omega$ as source	.....	<20 $\Omega$ as source
Output levels	+8dBm	+8dBm	+26dBm	.....	+12dBm
AF response (20Hz-20kHz)	$\pm$ 0.5dB +8dBm output	$\pm$ 0.5dB at +8dBm out	0, -0.25dB +4dBm out	2dB/20-20k	$\pm$ 0.5dB
Distortion	0.007% 1kHz +8dBm	0.05% 400Hz +18dBm	0.007% 1kHz +20dBm	<0.1% +4dB overall	0.2% 30Hz-20kHz
S/N ratio	-125dBm EIN	70dB	80dB	-129dBu EIN	-125dBm EIN
Crosstalk (worst)	-90dB 1kHz +8dBm	.....	-80dBm 0.1-10kHz +4	-6dB 1kHz	-70dB 10kHz-20kHz
Reader Service Number	1111	1112	1113	1114	1115



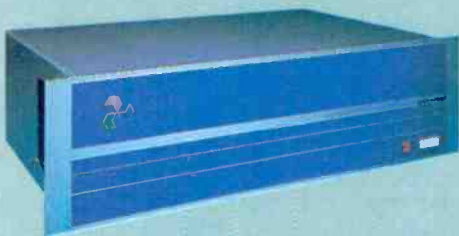
### Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.





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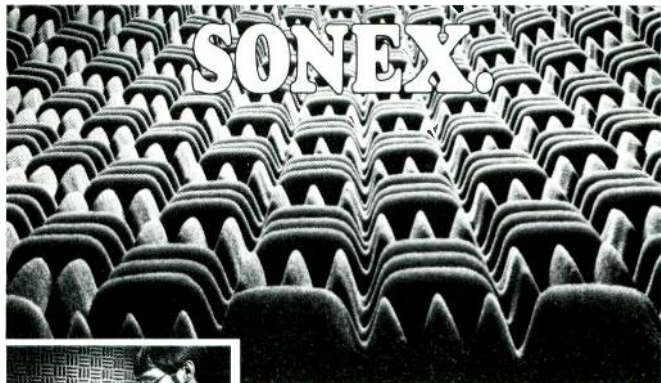
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Circle (189) on Reply Card

Manufacturer	Fostex	Interface Electronic	Logitek Systems	McCurdy Radio	Rupert Neve
Model/Series Number	450	Model 550	Custom Audio Series	SS8900E	542 series
Modular construction	No	Yes	Yes	Yes	Yes
# of input channels	8	48 max	12 max	32 std	16 max
# of inputs	15	288 max	28 max	96 w/o external	32 max
# of mixing buses	7	24	2	8 sub/2 master	2
# of multitrack outs	12	24	2	32	.....
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	P&G slider	Slider	Slider	Slider
EQ types	3-band parametric	.....	3-band	3-/4-band parametric	3-band semi-swept
Filtering	None	Hi-/lo-pass	.....	Hi-pass	Hi-pass
Panpots	Yes	Yes	Yes	Yes	Yes
Groups/subgroups	4x2	8 groups	No	8 sub/2 master	4 groups
Sends/returns	2 pre/3 post	4 pre/4 post	.....	4 switchable	2 pre/2 post switch
Solo	AFL	AFL/PFL/in-place	None	In-place	PFL
Int. compress/limit	No	.....	No	No	No
Machine start/stops	No	Yes	Solid-state sinks	Solid-state sinks	Relay contacts
Talkback circuits	No	.....	Yes	Optional	Yes
Speaker muting	No	Yes	Yes	Yes	No
Tone oscillator	None	Yes	Fixed	Variable	Variable
Meter types	VU/PPM/LED	VU/PPM/LED	VU	VU/PPM	VU/PPM
Automation ready	No	No	Yes	No	2-bus VCA
Input connection	Active bal/unbal	Xfmr/active	Active bal	Xfmr/active bal	Xfmr bal
Input impedance	1.2k $\Omega$ /10k $\Omega$	.....	150 $\Omega$ /600 $\Omega$ /50k $\Omega$	150 $\Omega$ /600 $\Omega$	150 $\Omega$ /600 $\Omega$
Input levels	Switchable mic/line	.....	Switched mic/line	Mic & line	Switched mic/line
Output connection	Unbal	Xfmr/active	Active bal	Active bal	Xfmr bal
Output impedance	500 $\Omega$	.....	600 $\Omega$	150 $\Omega$ /600 $\Omega$	150 $\Omega$ /600 $\Omega$
Output levels	10dBv 10k $\Omega$	+20dBm	+4dBm	+24dBm max	+20dBm, +4/+8dBm=0VU
AF response (20Hz-20kHz)	1, -2dB at -10dBv out	0.5dB	.....	$\pm$ 1dB at +18dBm out	0.5, -1dB at +20dBm
Distortion	0.05% at 1kHz -10dBv	0.1% 1kHz +20dBm	.....	0.1% 30Hz-20kHz +18	0.05% 30Hz-15kHz +20
	-10dBv	+20dBm	.....	+18	+20
S/N ratio	-126dBm EIN	-128dBm EIN	.....	-125dBm EIN	-125dBm EIN
Crosstalk (worst)	-60dB 1kHz -10dBv	<-68dB 1kHz +18dBm	.....	<-65dB 30Hz-20kHz	-60dB 15kHz +20dBm
	-10dBv	+18dBm	.....	.....	+20dBm
Reader Service Number	1116	1117	1118	1119	1120

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Circle (154) on Reply Card

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BENCHMARK—When Second Best is not Good Enough.

Circle (155) on Reply Card

Manufacturer	Rupert Neve	Pacific Recorders	Ramko Research	RAMSA	Solid State Logic
Model/Series Number	5104/5114 (5106/5116)	AMX (ABX)	DC38-10S	WR-8616	SL4000E (SL6000E)
Modular construction	Yes	Yes	No	Yes	Yes
# of input channels	36 max (48 max)	34 max	10 max	16 max	64 max
# of inputs	144 max (192 max)	58 max	40 max	32 max	128 max
# of mixing buses	2 (4)	3 (4)	2	11	4 (6)
# of multitrack outs	4 (12)	34 (8)	0	16	32
Stereo output pair	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Rotary	Slider	Slider
EQ types	2-band swept	Shelving/swept/peak	None	3-band/shelv/swept	4-band swept
Filtering	Hi-/lo-/band-pass	Hi-/lo-/band-pass	None	Hi-/lo-pass	Hi-/lo-pass
Panpots	Yes	Yes	No	Yes	Yes
Groups/subgroups	4/4 (8/8)	3 sub (8 grp/1 sub)	No	2 groups	32/8 (32/8+6)
Sends/returns	4 switched (8)	2 pre/post (4 pre/post)	No	2 pre/post	6 pre/6 post
Solo	AFL/PFL/In-place	AFL/PFL/In-place	No	PFL	AFL/PFL/In-place
Int. compress/limit	Yes	Yes	No	No	Yes
Machine start/stops	Relay contacts	Solid-state sinks	Optional	Yes	Yes
Talkback circuits	Yes	Yes	Yes	Optional	Yes
Speaker muting	Yes	Yes	Yes	Optional	Yes
Tone oscillator	Variable	Fixed & variable	Yes	1kHz & slate	Variable
Meter types	VU/PPM	VU/PPM/NTP	LED	VU/LED	VU/PPM/bar graph
Automation ready	2-bus VCA or NECAM96	No	No	No	Yes
Input connection	Xfmr/active bal	Xfmr/active bal	Bal	Xfmr/active bal	Bal/unbal
Input impedance	150Ω/600Ω/10kΩ	150Ω/600Ω/40kΩ	150Ω/High Z	.....	600Ω
Input levels	Switched mic/line	Mic & line	Mic & line	Switched mic/line	Mic/line switchable
Output connection	Xfmr bal/unbal	Active bal	Bal	Xfmr/active bal	Bal
Output impedance	150Ω/600Ω	600Ω	600Ω	.....	35Ω as source
Output levels	20dBm (+4/+8dBm=0VU)	+28dBm	+8dBm	+4dBm	+26dBm
AF response (20Hz-20kHz)	±0.5dB/+20dBm output	-0.9dB, +8dBm output	0, -2dB at +8dBm out	0, -1.5dB +20dBm out	±0.5dB +4dBm output
Distortion	0.03% 40Hz-15kHz +20	0.008% 1kHz +28dBm	0.5% +8dBm	0.1% 1kHz +20dBm	0.03% 1kHz +4dBm
S/N ratio	-125dBm EIN	-127dBm EIN	63dB	-128dBm EIN	-128.5dBm EIN (84dB)
Crosstalk (worst)	-60dB 15kHz +20dBm	-85dB 1kHz +28dBm	-70dB 1kHz +8dBm	-60dB 1kHz +4dBm	-64dB 10kHz +4dBm
Reader Service Number	1121	1122	1123	1124	1125

Manufacturer	Sony Pro Audio	Soundcraft Electronics	Sound Workshop	Spectra Sonics
Model/Series Number	JH-600	TS24	400B	Series 30 (34) 1032 (1024/1026)
Modular construction	Yes	Yes	Yes	Yes
# of input channels	56 max	56 max	32 max	24 (24/26)
# of inputs	182 max	112 max	32 max	32 (24/26)
# of mixing buses	6	24	6	2
# of multitrack outs	24	24	8	24
Stereo output pair	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Slider
EQ types	Shelving/parametric	4-band mid-parametric	4-band/shelv/swept	3-band shelving
Filtering	Hi-/lo-pass	.....	Hi-pass	None
Panpots	Yes	Yes	Yes	Yes
Groups/subgroups	VCA's/subs optional	24 groups/multiple	4/4	3 (unlimited)
Sends/returns	6 pre or post	6 pre or post	2 post/2 pre-post	4 (6) pre or post
Solo	PFL/In-place	AFL/PFL/In-place	AFL/PFL	AFL/In-place
Int. compress/limit	No	No	No	No
Machine start/stops	Yes	Optional	No	Yes
Talkback circuits	Yes	Yes	Yes	Yes
Speaker muting	Yes	Yes	No	Yes
Tone oscillator	Variable	Variable	700Hz & 10kHz	Fixed
Meter types	VU/PPM/LED	VU/PPM/LED	VU	VU/PPM/LED
Automation ready	Yes	Yes	No	Yes
Input connection	Xfmr/active bal	Active bal	Bal	Active bal
Input impedance	>1.5kΩ	3kΩ/47kΩ	3kΩ/10kΩ	>40kΩ
Input levels	Mic & line	Switchable mic/line	Switched mic/line	Switchable mic/line
Output connection	Xfmr/active bal	Active bal	Unbal	Active bal
Output impedance	>120Ω as source	<75Ω as source	<75Ω as source	<100Ω as source
Output levels	+4dBm 600Ω	+4dBm	+4dBm	+4dBm
AF response (20Hz-20kHz)	0, -0.5dB +2dBm out	0, -1dB at +20dBm	0, -1dB +4dBm output	0, -0.25dB +4dBm out
Distortion	<0.05%	0.006% 1kHz +12dBm	0.007% 1kHz +12dBm	<0.03% 10kHz
S/N ratio	-126dBm EIN	-128dBm EIN	-129dBm EIN	-129dBm EIN
Crosstalk (worst)	-70dB 16kHz	-85dB 10kHz +4dBm	-80dB 10kHz	-70dB 1kHz
Reader Service Number	1126	1127	1128	1129



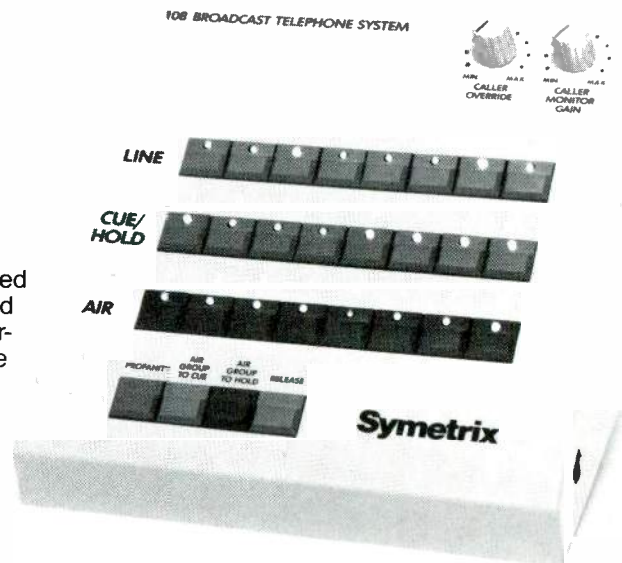
**Spec Note:**

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

Manufacturer	Studer Revox	TTC/Ampro Division	Tascam		
Model/Series Number	900 series	LC series (AC series)	M520 (500 series)	M-320 (M-312/308)	Studio 8
Modular construction	Yes	No	No	No	No
# of input channels	56	6-12	20 max	20 max (12/8)	8 max
# of inputs	448 max	24-48	44 max	50 max	18 max
# of mixing buses	24	2	8	4	10
# of multitrack outs	48	.....	16	8	8
Stereo output pair	Yes	Yes	Nc	Yes	Yes
Fader type	Slider	Slider (Rotary)	Slider	Slider	Slider
EQ types	4-band/swept	None	3-band/swept	3-band/swept	3-band/swept
Filtering	Hi-/lo-pass	None	None	None	None
Panpots	Yes	No	Yes	Yes	Yes
Groups/subgroups	24 groups	None	8/8	5/4	None
Sends/returns	5 pre/3 post	None	4 pre or post	5 send/2 return	1 pre/2 post
Solo	In-place	None	In-place	AFL/PFL	Stereo in-place
Int. compress/limit	With VCA faders	No	Nc	No	No
Machine start/stops	Custom solid-state	Yes	No	No	No
Talkback circuits	Yes	Yes	Yes	Yes	No
Speaker muting	Yes	Programmable	Yes	No	No
Tone oscillator	Variable	None	Variable	None	No
Meter types	VU/PPM	VU/PPM/LED	VU	VU	VU
Automation ready	Yes	No	Nc	No	No
Input connection	Xlfr or active bal	Xlfr bal	Active bal	Active bal	Active bal/unbal
Input impedance	>5k $\Omega$	150 $\Omega$ /600 $\Omega$	2k $\Omega$	2.8k $\Omega$	>10k $\Omega$ mic & line
Input levels	Switched mic/line	Switchable mic/line	Mic & line	Mic & line	Switched mic/line
Output connection	Xlfr bal	Xlfr bal	Active bal	Active bal	Active bal/unbal
Output impedance	<50 $\Omega$ as source	150 $\Omega$ /600 $\Omega$	100 $\Omega$ as source	20 $\Omega$ as source	100 $\Omega$ as source
Output levels	+6dBm	+18dBm	+4dBm or -10dBv	+4dBm or -10dBv	-10dB or +4dB, 100 $\Omega$
AF response (20Hz-20kHz)	0.5, -1dB +6dBm	$\pm$ 1dB at +18dBm-out	$\pm$ 1dB +4dBm	$\pm$ 1dB at +4dBm out	1, -1.5dB
Distortion	0.1% 0dBm 31Hz-16kHz	0.5% 1kHz +18dBm	0.025% 1kHz +4dBm	0.025% +4dBm	0.03% 1kHz
S/N ratio	-100dBm EIN	74dB	-132dBm EIN	-132dBm EIN	80dB mic-to-parm
Crosstalk (worst)	-85dB 0dBm	-68dB 1kHz +18dBm	-70dB 1kHz +4dBm	-70dB 1kHz	-60dB 1kHz
Reader Service Number	1131	1132	1133	1134	1135

# Talk... Talk...

If listener involvement is a part of your format you need a multi-line telephone interface specifically designed for broadcast. The Symetrix Model 104 Four-line Interface and Model 108 Eight-line Interface (108 remote console shown here) connect your on-air or production consoles directly to incoming phone lines. Sophisticated 104/108 firmware makes system operation simple and fool-proof. Consider these important advantages: **FCC certified** for direct connection to incoming phone lines via *standard* RJ-11 (modular) connectors. **Loop current detectors** assure no dial-tone on air; if a caller abandons he is *automatically released*. **Stand alone operation** — the 104 and 108 are complete electronic phone systems and require *no additional* telco equipment to operate. **Caller conferencing** — up to six callers on air at once with the 108, four callers with the 104. **Call director option** — the 108 system supports the addition of a second remote console specifically programmed for *off-air call handling*. **Plus**, additional system features too numerous to list. Please call or write for our complete 104/108 system brochure.



## Symetrix

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Seattle, Washington, 98121, USA  
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Telex 703282 SYMETRIX UD

Circle (156) on Reply Card



# AF Bandwidth Extenders

These transmitter/receiver systems are designed to improve the low-frequency response of audio transmitted from one location to another via telephone lines.

Manufacturer	Comrex Corporation			Gentner Engineering	C. N. Rood/Marcom
Model Number	PTLX/RTLX	PLX II/RLX II	TLX/PLX	EFT-1000	BAX114/110D
System type	Dual line	Single line	Single line	Single line	Dual line
Frequency offset	250Hz/2kHz	250Hz	250Hz	250Hz	-300Hz/ +2100Hz
AF response	±2dB/50Hz-5kHz	±1.5dB/50Hz-3kHz	±1.5dB/50Hz-3kHz	±0.5dB/50Hz-3.5kHz	±0.5dB/50Hz-4.95kHz
Translation error	±0.08Hz	±0.08Hz	±0.08Hz	±0.0006Hz	±1Hz
Transmitter model #	PTLX	PLX II w/ coupler	TLX	EFT-1000	BAX114
Source inputs	Line 600Ω	Line 600Ω	Line 600Ω	Mic 150Ω/line 600Ω	Mic/line
Output connection	Xfmr bal	Xfmr bal	Bal	Active bal	Xfmr bal
Output level	-9dBm/ +8dBm	-10dBm to +4dBm	-9dBm	-13dBm	+60dBm
Packaging	Portable	Portable	Rack-mount	Portable or rack	Portable
Powering	120/240Vac	120Vac	120/240Vac	110/220Vac & 9Vdc	ac & dc
Receiver model #	RTLX	RLX II w/ coupler	RLX	EFT-1000	BAX110D
Input connection	Xfmr bal	Xfmr bal	Xfmr bal	Bal	Xfmr bal
Input level	-40dBm	-40dBm	-40dBm	-25dBm	+8dBm
Output connection	Unbal	Xfmr bal	Unbal	Active bal	Xfmr bal
Output level	0dBm	0dBm	+8dBm	+10dBm	+8dBm
Packaging	Rack-mount	Desktop unit	Rack-mount	Rack, desktop unit	Rack-mount
Reader Service Number	391	392	393	394	395

# Audio Processors, Level Control

This is equipment for general automatic level control of audio signals, including compression, limiting and expansion functions, singly or combined. All systems are rack-mountable and operate from 110Vac. C = compression; L = limiting; GR = gain reduction.

Manufacturer	ATI-Audio Technologies, Inc.	Aphex Systems Ltd.	AudioArts Engineering	Audio + Design/Calrec	
Model Number	Emph'a'Sizer EM1000	Compellor #300	Model 1202	F769X Stresser	Complex 2 Limiter
Function(s) -					
Compression	Yes	Yes	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes	Yes	Yes
Asymmetric limiting	No	No	No	No	No
Expansion	Yes	No	No	Yes	Yes
Multiband control	4-band	No	No	No	No
Programmable	Yes	No	Yes	No	No
Digital processing	No	No	No	No	No
Stereo system	w/ 2 units	Yes	Model 1201 mono	Requires 2	Two units needed
Meter type	LED ladder	LED ladder	LED ladder	Peak LED/VU movement	Peak LED/VU movement
Meter functions	Out/GR	In/out/GR/peak/VU	out/GR	GR/peak	In/out/GR/peak
Time constants	Pgm dependent	Pgm dependent	Variable	Var/pgm dependent	Var/pgm dependent
Input connection	Active bal	Active bal	Active bal	Xfmr bal	Active bal
Input level	0dBm (-50dB 150Ω)	+27dBm	-25dBm/+26dB 20kΩ	+36dBm	+22dBm
Output connection	Xfmr or active	Active bal	Active bal	Xfmr bal	Active bal
Output level	+24dBm	+24dBm	+22dBm	+22dBm	+22dBm
AF response	±0.25dB/20Hz-20kHz	±1dB/15kHz-65kHz*	±0.5dB/20Hz-50kHz	0. -0.5dB/20Hz-20kHz*	0. -0.5dB/20Hz-20kHz
Distortion	0.2% 22dBm 10dB C/L	0.1% 4dBm 1kHz 20dB C	0.04% 0dBm 10dB C	<0.1% 8dBm 8dB C/L	0.05% 10dBm 10dB C/L
S/N ratio	80dB 4dBm out unwt'd	95dB +27dBm unwt'd	>90dB 0dBm unwt'd	88dB 8dBm unwt'd	100dB 8dBm unwt'd
	.....	*Referred to +27dBm	.....	*Responses referenced	.....
	.....	output level	.....	to 8dBm output	.....
Reader Service Number	956	957	958	959	960

Manufacturer	Audio + Design/Calrec	Broadcast Electronics		CRL Inc.	
Model Number	SCAMP	FM-601	AM-400/AM-500	APP-400/SPP-800	TVS-3001
Function(s)					
Compression	Yes	Yes	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes	No	Optional
Asymmetric limiting	No	No	Yes	No	No
Expansion	Yes	No	With AM-500	AGC action	No
Multiband control	4-band	No	No	2-band	3-band
Programmable	Yes	No	Yes	Yes	No
Digital processing	No	No	No	No	No
Stereo system	Yes	Yes	No	SPP-800	Yes
Meter type	Peak/LED ladder	.....	VU movement	Peak LED	Peak LED
Meter functions	In/out/GR/peak	Out/GR	Out/GR	Input	In/out/GR
Time constants	Var/pgm dependent	Variable	Variable	Var/pgm dependent	Pgm dependent
Input connection	Active bal	Xfmr bal	Xfmr bal	Active bal or unbal	Active bal
Input level	+22dBm	-20, +26dBm	-20, +26dBm	-30, +20dBm	10dBm
Output connection	Active bal	Xfmr bal	Xfmr bal	Active bal or unbal	.....
Output level	+22dBm	+20dBm max	+20dBm max	-10, 0 or +10dBm	0dBm
AF response	0. -0.5dB/20Hz-20kHz*	±0.5dB/20Hz-20kHz*	±1dB/30Hz-15kHz*	0.5, -0.9dB/50Hz-15kHz	±0.75dB/50Hz-15kHz*
Distortion	0.05% 10dBm 10dB C/L	0.5% 20dBm 0dB C/L	0.5% 20dBm out	0.2% 0dBm 9dB C/L	<0.15% 10dBm 20dB C
S/N ratio	100dB 8dBm unwt'd	70dB 20dBm out	60dB 20dBm unwt'd	70dB 0dBm unwt'd	70dB 10dBm unwt'd
	*Referred to 8dBm	*Referred to 20dBm	*Measured at 20dBm	*Measured at 0dBm	*Measured at 10dBm
	output signal	20dBm signal output	signal output	.....	.....
Reader Service Number	961	962	963	964	965

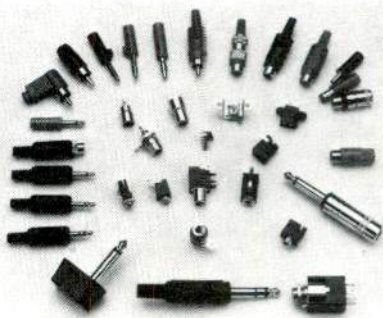
Manufacturer	CRL Inc.			dbx Inc.	
Model Number	SMP-800 (SMP-900)	SEP 800	PMC-300A	165A	160x
Function(s)					
Compression	No	Yes	No	Yes	Yes
Peak limiting	Yes	Yes	Yes	Yes	No
Asymmetric limiting	No	No	No	No	No
Expansion	No	No	No	No	No
Multiband control	2-band	4-band	..... Yes	No	No
Programmable	Yes	Yes	No	No	No
Digital processing	No	No	No	No	No
Stereo system	Yes	Yes	Peak LED	Two units required	Two units required
Meter type	Peak LEDs	Peak LED	Peak LED	VU movement	LED ladder
Meter functions	Input	Input	Input	In/out/GR	In/out/GR
Time constants	Var/pgm dependent	Var/pgm dependent	Var/pgm dependent	Var/pgm dependent	Pgm dependent
Input connection	Active bal or unbal	Active bal or unbal	Active bal or unbal	Active bal	Active bal
Input level	-15/15dBm (10/20)	-10, +20dBm	-30, +20dBm	+24dBm	+24dBm
Output connection	Active bal or unbal	Active bal or unbal	Active bal or unbal	Active unbal	Active unbal (bal opt)
Output level	0, +15dBm (0, +20dBm)	0, +20dBm	0, +21dBm adjustable	+24dBm	+24dBm
AF response	±0.8dB/50Hz-15kHz*	0.5, -0.6dB 5dBm*	0.1, -0.5dB/10dB out	0, -1dB/20Hz-20kHz	0, -1dB/20Hz-20kHz*
Distortion	0.1% 10dBm 10dB C/L	0.05% 5dBm 14dB C/L	0.05% 10dBm 9dB C/L	0.05% 0dBm 1kHz	0.07% 0dBm 1kHz
S/N ratio	65dB 10dBm unwt'd	75dB 5dBm unwt'd	75dB 10dBm unwt'd	94dB 4dBm unwt'd	93dB 4dBm unwt'd
	*Measured at 10dBm	*Measured on range	*Referred on	*Referred to +4dBm	*Referred to 4dBm
	Response for -900	50Hz-15kHz	range 50Hz-10kHz.	.....	.....
	rs -1.5dB 50Hz-15kHz	.....	.....	.....	.....
	at 8dBm with distortion to	.....	.....	.....	.....
	0.5% at 8dBm.	.....	.....	.....	.....
Reader Service Number	966	967	968	969	970



**Spec Note:**

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

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- SPH-4** - full-featured telephone interface system for on-air use
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- DPH-5\*** - dual-line, auto-nulling teleconferencing system
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Manufacturer	Dorrough Electronics	Festex	Gotham Audio/Neumann
Model Number	610C-FM/710-TV	610B-AM	3070
Function(s)			
Compression	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes
Asymmetric limiting	No	Yes	No
Expansion	Yes	Yes	Yes
Multiband control	3-band	3-band	No
Programmable	Yes	Yes	No
Digital processing	Yes	Yes	No
Stereo system	Two units needed	Yes	No
Meter type	Peak LED & ladder	Peak LED & ladder	LED ladder
Meter functions	In/out/GR/peak	In/out/GR/peak	GR
Time constants	Variable	Variable	Variable
Input connection	Active bal	Active bal	Unbal
Input level	-30dBm	-30dBm	-10dBv 50kΩ
Output connection	Active bal	Active bal	Unbal
Output level	+22dBm (0, +20dBm)	+22dBm	+10dBv 10kΩ
AF response	Adj. pre-/de-emphasis	0dB/20Hz-20kHz 22dBm	±1dB/20Hz-20kHz*
Distortion	0.1% w/o C/L	0.1% w/o C/L	±0.3dB/40Hz-15kHz*
S/N ratio	78dB 12dBm unwt'd	78dB 12dBm unwt'd	0.1% 0dBm 20dB C/L
	610C-FM includes a stereo generator		80dB 6dBm wtd
			*Referred to -10dBm output.
Reader Service Number	971	972	973

Manufacturer	Gotham Audio/EMT	Harris	Inovonics
Model Number	EMT 266	EMT 261	Ulti-Mate 91
Function(s)			
Compression	No	Yes	Yes
Peak limiting	Transient limiter	Yes	Yes
Asymmetric limiting	No	No	No
Expansion	No	Yes	No
Multiband control	2-band	No	3-band
Programmable	No	No	Yes
Digital processing	No	No	No
Stereo system	Yes	With two units	With two units
Meter type	Peak LED	VU movement	LED ladder
Meter functions	In/out/peak	GR	GR
Time constants	Var/pgm dependent	Variable	Var/pgm dependent
Input connection	Xfmr bal	Xfmr bal	Active bal
Input level	-20, +15dBv 5kΩ	6dBm	-10, +15dBm
Output connection	Xfmr bal	Xfmr bal	Active bal
Output level	+22dBv 200Ω	6dBm	+24dBm
AF response	0.3, -0.5dB/30Hz-15kHz	±0.5dB/40Hz-15kHz*	±1dB/100Hz-20kHz*
Distortion	0.2% 6dBm 0dB C/L	0.2% 0dBm 0dB C/L	1% 20dBm 40dB C/L
S/N ratio	92dB 6dBm unwt'd	73dB 0dBm unwt'd	90dB 20dBm unwt'd
	*Referred to 15dBm	*Referred to 6dBm	*Referred to 20dBm
Reader Service Number	976	977	978

Manufacturer	Inovonics	Marti Electronics	Modular Devices	Moseley Associates	Rupert Neve
Model Number	201	CLA-40A	MAP 3320	TGR-340	33609 series
Function(s)					
Compression	Yes	Yes	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes	No	Yes
Asymmetric limiting	No	Yes	No	No	No
Expansion	No	No	No	Yes	No
Multiband control	No	No	No	No	No
Programmable	No	No	Yes	No	No
Digital processing	No	No	No	No	No
Stereo system	With two units	With two units	With two units	With two units	Yes
Meter type	VU movement	VU movement	LED ladder	VU movement	PPM movement
Meter functions	GR	Out/GR	In/GR	GR	GR
Time constants	Variable	Variable	Fixed	Fixed	Var/pgm dependent
Input connection	Xfmr bal	Xfmr bal	Active unbal	Xfmr	Xfmr bal
Input level	+4dBm	-15, +20dBm	-20, +18dBm	-26, 0dBm	+4dBm adjustable
Output connection	Xfmr bal	Xfmr bal	Xfmr bal	Active bal	Xfmr bal
Output level	+4dBm	4dBm	+4dBm	+18dBm	+4dBm/26dBm max
AF response	0, -0.5dB/20Hz-20kHz	±0.5dB/50Hz-15kHz*	±0.5dB/20Hz-20kHz*	±1dB/30Hz-15kHz 4dBm	±0.5dB/20Hz-20kHz*
Distortion	0.5% 4dBm 10dB C/L	1% 4dBm w/ any C/L	1% 4dBm 30dB C/L	0.3% 20dB C/L	0.2% 6dBm 5dB C/L
S/N ratio	70dB 4dBm unwt'd	66dB 10dBm output	91dB 20dBm unwt'd	70dB wtd 20Hz-20kHz	>75dB 0dBm unwt'd
	*Referred to 4dBm	*Referred to 4dBm	*Referred to 4dBm		*Referred to 4dBm
Reader Service Number	981	982	983	984	985



### Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.



Manufacturer	Optimod-AM 9100A/2	Orban Associates Optimod-M 8100A/1	Optimod-TV 8182A	Processing + Plus Imp 3	Spectra Sonics 610 Compliter
Model Number	Optimod-AM 9100A/2	Orban Associates Optimod-M 8100A/1	Optimod-TV 8182A	Processing + Plus Imp 3	Spectra Sonics 610 Compliter
Function(s)					
Compression	Yes	Yes	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes	Yes	Yes
Asymmetric limiting	Yes	No	No	No	No
Expansion	Yes	No	Yes	No	No
Multiband control	6-band	3-band (opt 6-band)	3-band	3-band	No
Programmable	No	No	No	Yes	No
Digital processing	No	No	No	No	No
Stereo system	Yes	Yes	Yes	No	With two units
Meter type	VU movement	VU movement	VU movement	Peak LED/ladder/VU	Peak LED/VU movement
Meter functions	In/out/GR/multimeter	In/GR	In/out/GR	Out/peak	Out/GR
Time constants	Var/pgm dependent	Var/pgm dependent	Var/pgm dependent	Fixed	Variable
Input connection	Active bal	Active bal	Active bal	X1mr bal	X1mr bal
Input level	-30dBm	-30dBm	-30dBm	-20, +20dBm	+4dBm
Output connection	Active bal	Active unbal	Active bal	X1mr bal	X1mr bal
Output level	+20dBm	4V-p comp stereo	20dBm	-20, +20dBm	+16dBm max
AF response	±1dB/50Hz-10kHz 10dB	±0.75dB/35Hz-15kHz	±0.75dB/35Hz-15kHz*	±0.5dB/50Hz-15kHz	±0.1dB/10Hz-40kHz*
Distortion	0.1% 10dBm 15dB C/L	0.025% 1kHz 10dB C/L	0.04% 10dBm 10dB C/L	0.4% 10dBm 6dB C/L	<0.001% 16dBm 30dB C
S/N ratio	75dB 100% mod unwt'd 9100A/1 monaural	82dB 100% mod unwt'd *Stereo generator is integral, producing composite stereo baseband	82dB 100% mod unwt'd *Referred to 10dBm	58dB 4dBm *Referred to 4dBm	80dB 4dBm unwt'd *Referred to 8dBm
Reader Service Number	986	987	988	989	990



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

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## TAJIMI T.M.W.

### Self-Terminating BNC Jacks



BNC313-TBR



BNC312-TBR



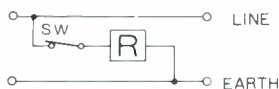
BNC314-TR



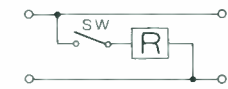
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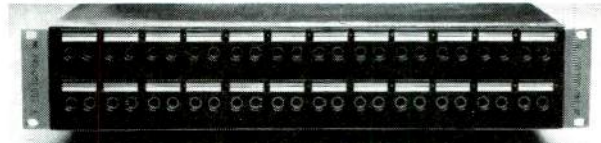
AFTER CONNECTION



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Manufacturer	Symatrix	TEXAR	Thomson-CSF
Model Number	501 (525)	CL-150	Volumax 4300/4101FM Audimax 4440A/4450A
Function(s)			
Compression	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes
Asymmetric limiting	No	No	Yes
Expansion	525 only	No	Yes
Multiband control	No	No	4-band
Programmable	No	No	Yes
Digital processing	No	No	Yes
Stereo system	525 only	With two units	Yes
Meter type	LED ladder	LED ladder	VU movement
Meter functions	GR	GR	GR
Time constants	Var/pgm dependent	Var/pgm dependent	Var/pgm dependent
Input connection	Active bal	Active bal	Xfmr bal/unbal
Input level	+20dBm	+20dBm	-10dBm
Output connection	Active bal	Active bal	Active bal
Output level	+20dBm	+20dBm	+14dBm
AF response	-1dB/20Hz-20kHz 20dB	0, -1dB/20Hz-20kHz*	-1dB/50Hz-16kHz 10dB
Distortion	0.025% 0dBm 10dB C/L	0.03% 0dBm 10dB C/L	0.13% 10dBm 10dB C/L
S/N ratio	87dB 0dBm A-wtd	87dB 0dBm A-wtd	72dB 10dBm unwt
Reader Service Number	991	992	993

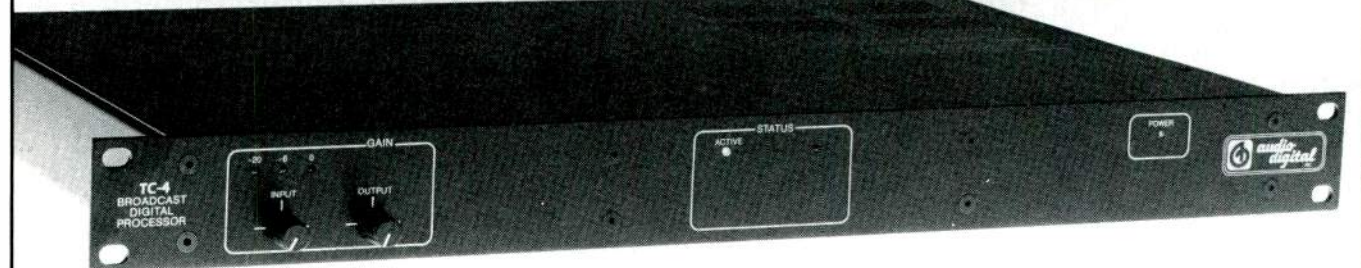


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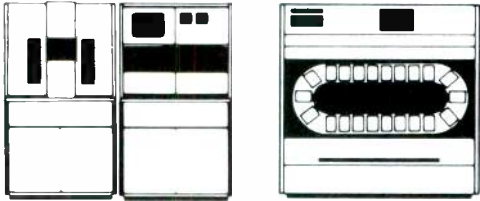
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Manufacturer ..... UREI  
 Model Number ..... 1178

Valley People  
 610 Dual Compressor      430 Dyna-Mite

Function(s)			
Compression	Yes	Yes	Yes
Peak limiting	Yes	Yes	Yes
Asymmetric limiting	No	Yes	No
Expansion	No	Yes	Yes
Multiband control	No	No	No
Programmable	Yes	No	No
Digital processing	No	No	No
Stereo system	Yes	Yes	Yes
Meter type	VU movement	LED ladder	LED ladder
Meter functions	GR/peak	GR	GR
Time constants	Variable	Pgm dependent	Fixed
Input connection	Xfmr bal	Active bal	Active bal
Input level		+24dB 100k $\Omega$	+24dB >100k $\Omega$
Output connection	Xfmr bal	Active bal	Unbal
Output level	+4/ +8dBm	+24dBm	+21dBm
AF response	$\pm$ 1dB/20Hz-20kHz 8dBm	$\pm$ 0.5dB/20Hz-20kHz 4dBm	$\pm$ 0.5dB/20Hz-20kHz 4dBm
Distortion	0.5% any output	0.04% 0dBm 20dBm C/L	0.04% 0dBm 0dB C/L
S/N ratio	81dB 8dBm	88dB 4dBm unwt'd	88dB 4dBm unwt'd
Reader Service Number	996	997	998

## ME-318 Stereo Sound



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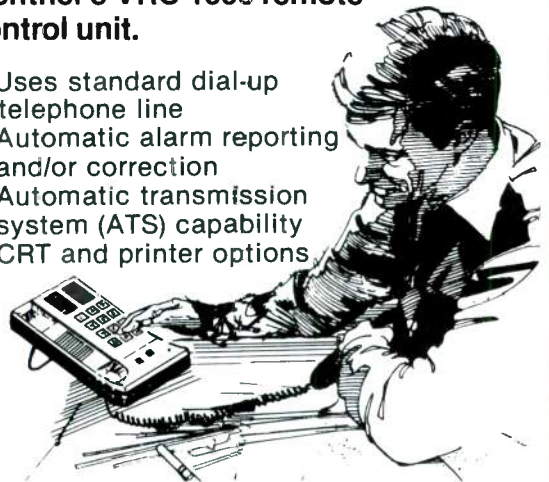
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Circle (147) on Reply Card

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## GENTNER

RF PRODUCTS DIVISION

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Circle (163) on Reply Card

# Audio Delay Systems

This audio processing equipment is based upon signal delays, applicable to broadcast production and/or on-air use.

Manufacturer	AKG Acoustics	Pitch Transposer	ART/Applied Research DP1 (DR2)	1500	Advanced Music Systems Timeflex
Model Number	TDU 7000 Delay				
Design function—					
Talk show delay	No	No	No	1.5s	No
Delay catchup	No	No	No	No	No
Plate/room simulate	Limited	No	Variable	No	No
Reverb/echo	Yes	No	Variable	Variable echo	No
A-V sync	No	No	No	No	No
Time change	No	50% comp/100% expand	No	No	50% comp/100% expand
Pitch change	No	Yes	No	No	Yes
Phasing/flanging	No	No	No	Yes	No
Time reversal	No	No	No	No	No
Programmability	Manual setting	User programmed	User programmed	No	User programmable
Delay type	Digital	Digital	Digital	Digital	Digital
Delay range	399ms	.....	.....	1.5s	600ms
Stereo system	Possible	No	Yes	No	Yes
Multiband control	No	No	No	No	No
AF bandwidth	To 15kHz	12kHz	14kHz (10kHz)	20kHz	18kHz
Input connection	Bal	Active unbal	Active bal	Active unbal	Active bal
Input level	+12dBm max	16dBm	15dBm (6dBm)	17dBm	0dB 10kΩ
Output connection	Xfmr bal	Active unbal	Active unbal	Active unbal	Active bal
Reader Service Number	526	527	528	529	530

Manufacturer	Advanced Music Systems DMX 15-80S	Advanced Music Systems RMX 16	BEL Electronics BD320	H969 Harmonizer	Eventide BD955 (931/932)
Design function—					
Talk show delay	No	No	Yes	No	Yes
Delay catchup	No	No	.....	No	Variable
Plate/room simulate	No	Yes	Possible	No	No
Reverb/echo	Yes	Yes	Yes	Yes	No
A-V sync	No	No	No	No	No
Time change	No	No	By editing	200% comp/100% expand	No
Pitch change	Yes	No	No	Yes	No
Phasing/flanging	Yes	No	Yes	Yes	No
Time reversal	No	Yes	No	Yes	No
Programmability	User programmable	User programmable	Manual settings	Factory programmed	Factory programmed
Delay type	Digital	Digital	Digital	Digital	Digital
Delay range	14.7s	1.6s	8s std expandable	0-3s*	6.4s (3.2s or 6.4s)
Stereo system	Yes	Yes	Possible	No	2 units (BD932)*
Multiband control	No	No	.....	No	No
AF bandwidth	18kHz	18kHz	15kHz for 8s	16kHz	15kHz
Input connection	Active bal	Active bal	Bridging bal 39kΩ	Active bal	Active bal
Input level	0dB 10kΩ	0dB 10kΩ	.....	+24dBm 10kΩ	+24dBm 10kΩ
Output connection	Active bal	Active bal	Unbal 600Ω	Active bal	Active bal
				*H949 to 400ms delay	*BD955 available in stereo with 3.2s delay.
Reader Service Number	531	532	533	534	535

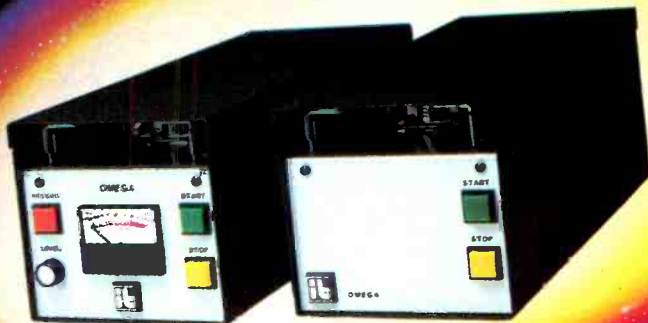
Manufacturer	Eventide SP2016	Fostex 3050	EMT245 Reverb	Gotham Audio/EMT EMT251/252 Reverb	EMT445 digital delay
Design function—					
Talk show delay	No	No	No	No	Yes
Delay catchup	No	No	No	No	Variable
Plate/room simulate	Variable	No	Variable	Variable	No
Reverb/echo	Variable	Echo	Variable	Variable	No
A-V sync	No	No	No	No	No
Time change	No	No	No	No	No
Pitch change	No	No	No	No	No
Phasing/flanging	Yes	No	No	Yes	No
Time reversal	No	No	No	No	No
Programmability	Factory programmed*	.....	No	Factory/user program	Factory/user program
Delay type	Digital	Digital	Digital	Digital	Digital
Delay range	3.276s	270ms	4.5s	10s	10.9s
Stereo system	Yes	No	Yes	Yes	Yes
Multiband control	No	No	No	No	No
AF bandwidth	16kHz	±2dB/30Hz-10kHz	8kHz	14.8kHz	15kHz
Input connection	Active bal	RCA unbal	Xfmr bal	Xfmr bal	Xfmr bal
Input level	+24dBm 10kΩ	-10dBv 50kΩ	+15dBm	+15dBm	+15dBm
Output connection	Active bal	RCA unbal	Xfmr bal	Xfmr bal	Xfmr bal
	*User programming development system is optional.	.....	.....	.....	.....
Reader Service Number	536	537	538	539	540



## Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

INTRODUCING  
THE "OMEGA" SERIES...  
AFFORDABLE PERFORMANCE YOU CAN TRUST



# A NEW ITC CARTRIDGE MACHINE ... FOR EVERYONE

## WHAT THE NEW "OMEGA" SERIES BRINGS TO YOU

OMEGA series cartridge machines embody ITC quality at an affordable price with features to delight everyone... including low-cost stereo performance.

Microprocessor technology brings you many operational flexibilities with easy, economical maintainability. The OMEGA series is covered by the same bold 2-year warranty International Tapetronics Corporation/3M offers on all its new equipment. Additionally, you receive detailed, comprehensive technical manuals, field tested for clarity at the same time the machines were field tested for reliability. All this reinforced by the finest technical service support group in the industry readily accessible to you at no charge via our Toll Free number.

**OMEGA stereo reproducers** have simple, clean electronics for clear, accurate audio

reproduction, and feature:

- Standard 150 Hertz secondary cue tone detection
- Long life stereo heads
- Modular design for easy servicing
- Efficient servo motor providing stable, cool operation
- Flashing ready lamp indicating cartridge has been played

Match your OMEGA stereo reproducers with a high-quality stereo recorder such as the ITC "DELTA" or "99B" recorder and insure optimum playback audio quality from your OMEGA reproducers.

**OMEGA mono reproducers and mono recorders** have all the features and contain the same rugged, reliable mechanics for trouble-free operation as the OMEGA stereo reproducers. *The OMEGA mono reproducers are even field upgradeable to stereo!* The OMEGA mono recorders have a selectable 1kHz cue tone defeat and include a built-in microphone preamp. With direct microphone input and ITC's "FB-1" telephone interface device, your

station can offer automatic dial-in weather information, sports scores, concert dates and perform a variety of news room and research functions.

**CALL US TODAY for more information** about the OMEGA series and ask about our trade-in policy and *new lease program* available on ITC's complete line of cartridge machines.

- 99B Cartridge Machines, "The Best"
- DELTA Cartridge Machines, "Today's Most Popular Cartridge Machines"
- OMEGA Cartridge Machines, "Affordable Performance You Can Trust"

When better performance emerges, it will come from International Tapetronics Corporation/3M, "The Leader In Reliability And Service."

In the U.S., call Toll Free **800-447-0414**, or collect from Alaska, Hawaii and Illinois 309-828-1381. In Canada, call Maruno Electronics, Ltd. 416-255-1445.

**International Tapetronics Corporation/3M**  
2425 South Main Street  
P.O. Box 241  
Bloomington, Illinois 61702-0241

3M hears you...

Circle (164) on Reply Card

**3M**

Manufacturer ..... Granite Telcom  
 Model Number ..... Bleepmate 675(675II)

..... Klark Teknik ..... Lexicon  
 DN701 (DN700) DN780 1200C 1300S

Design function—

Talk show delay	Yes	No	No	No	No
Delay catchup	No	No	No	No	No
Plate/room simulate	No	No	Variable	No	No
Reverb/echo	No	No	Variable	No	No
A-V sync	No	Yes	No	No	Yes
Time change	No	No	No	33% comp/25% expand	No
Pitch change	No	No	No	+33% -25%	No
Phasing/flanging	No	No	No	No	No
Time reversal	No	No	No	No	No
Programmability	No	User programmable	Factory/user program	User programmed	No
Delay type	Digital	Digital	Digital	Digital	Digital
Delay range	3s or 6s (6s & opts)	1.7s (434ms)	99s	.....	2048ms
Stereo system	No	With 2 units	Yes	With 2 units	Yes
Multiband control	No	3 outputs	No	.....	No
AF bandwidth	7.5kHz mono	15kHz	12kHz	15kHz	20kHz
Input connection	Bal	Active bal	Active bal	Xfmr bal	Active bal
Input level		+18dBm	+20dBm	+24dBm 15kΩ	+24dBm
Output connection	Bal 600Ω	Xfmr bal/unbal	Xfmr bal	Xfmr bal	Xfmr bal
Reader Service Number	541	542	543	544	545

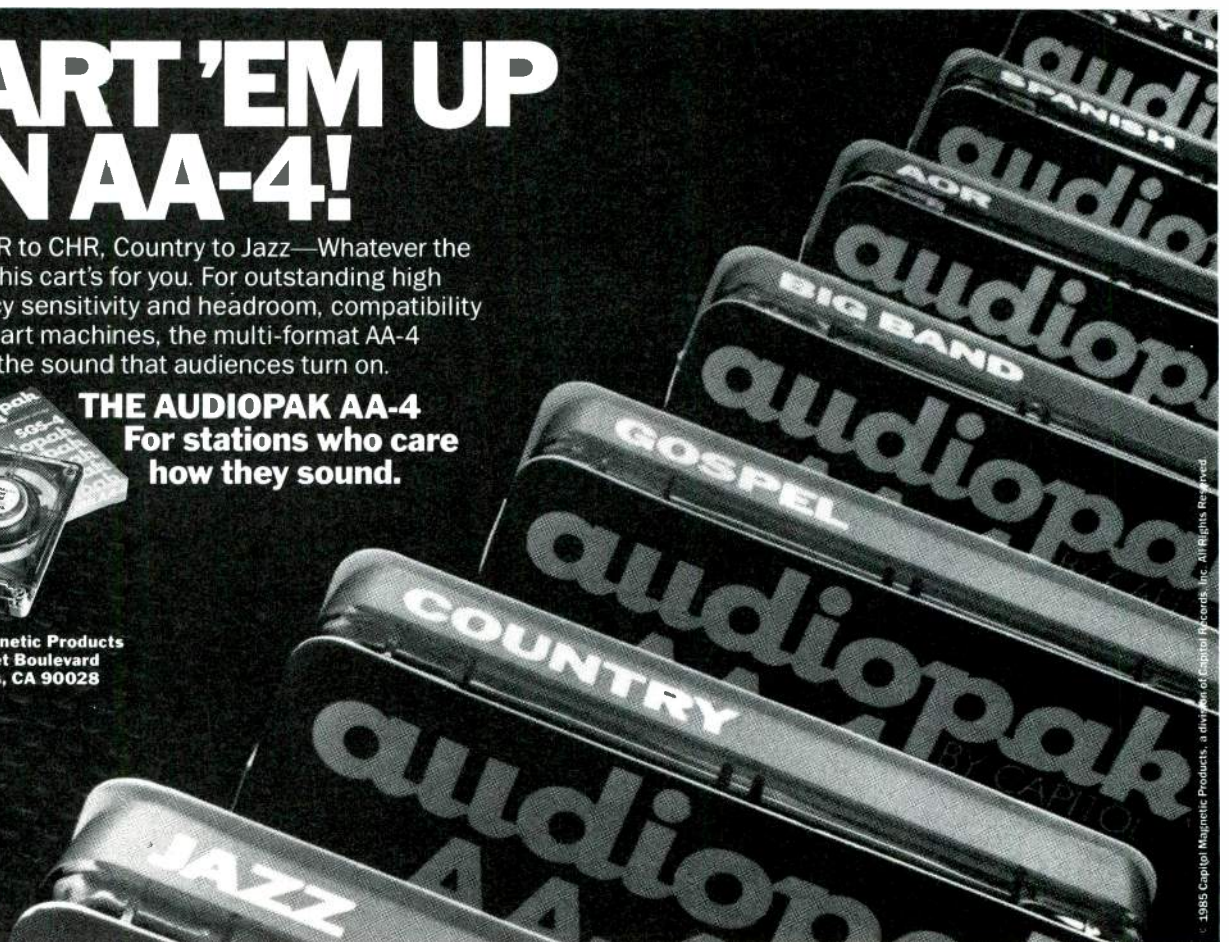
# CART 'EM UP ON AA-4!

From AOR to CHR, Country to Jazz—Whatever the format, this cart's for you. For outstanding high frequency sensitivity and headroom, compatibility with all cart machines, the multi-format AA-4 delivers the sound that audiences turn on.

**THE AUDIOPAK AA-4**  
 For stations who care  
 how they sound.



Capitol Magnetic Products  
 6902 Sunset Boulevard  
 Los Angeles, CA 90028



Circle (165) on Reply Card

Manufacturer ..... Lexicon  
 Model Number ..... Model 200

AES-357 Ambience

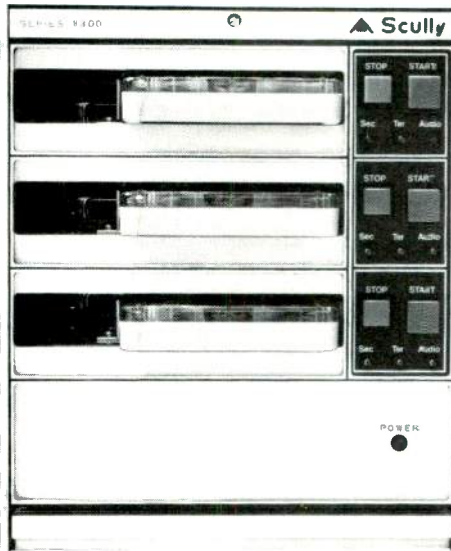
Marshall Electronic  
 5402 Time Modulator

McCurdy Radio  
 ADU-10

Orban Associates  
 111B Dual Reverb

Design function —					
Talk show delay	No	No	No	Yes	No
Delay catchup	No	No	No	Yes	No
Plate/room simulate	Variable	Variable	No	No	No
Reverb/echo	Variable	Variable	Variable	No	Yes
A-V sync	No	No	No	No	No
Time change	No	No	No	No	No
Pitch change	No	No	+4/-4 octave	No	No
Phasing/flanging	No	No	Yes	No	No
Time reversal	No	No	No	No	No
Programmability	User programmed	User programmed	User programmed	User programmed	No
Delay type	Digital	Digital	Digital/analog	Digital	Spring
Delay range		10s	150µs to 400ms	7.1s	30ms fixed/2s decay
Stereo system	Yes	Yes	No	No	Yes
Multiband control		No	No	No	No
AF bandwidth	10kHz	20kHz	15kHz	20kHz	5kHz
Input connection	Active bal	Active bal	Active unbal	Bal	Active unbal
Input level	+24dBm 100kΩ	+8dBm nominal	+30dBm maximum	+8dBm	-10/ +4dBm
Output connection	X1mr bal	Active bal	Active unbal	Bal	X1mr bal
Reader Service Number	546	547	548	549	550

# SCULLY - The Originator of the DELTA Revolution.



ITC would like you to believe they first conceived the modular tri-deck cart machine, but really it was part of the Scully 8300 way back in 1981.

Now that AMPRO/Scully is a Television Technology Company you can have the ORIGINAL revolutionary design. What else would you expect of Scully.

#### The Scully 8300 offers:

- Three independently removable decks
- Crystal referenced DC Servo Motor
- Non-magnetic stainless steel capstan shaft
- Even MORE affordable

AMPRO/Scully Division

Circle (166) on Reply Card

2360 Industrial Lane  
 Broomfield, Colorado 80020  
 (303) 465-4141  
 TWX: 910-938-0396

Manufacturer	Sony Pro Audio	Spectra Sound	Tektronix	URSA Major
Model Number	DRE-2000A	4020 audio delay	118-AS	SST-282 (8x32) Stargate 232
Design function—				
Talk show delay	Delay to 999ms	No	No	No
Delay catchup	No	No	No	No
Plate/room simulate	Variable	Variable	No	Yes
Reverb/echo	Yes	Variable	No	Multiple research
A-V sync	No	No	Yes	No
Time change	No	No	No	No
Pitch change	No	Yes	No	No
Phasing/flanging	No	Yes	No	No
Time reversal	No	No	No	No
Programmability	User programmed	No	No	No
Delay type	Digital	Analog	Digital	Digital
Delay range	To 999ms	120ms	160ms expandable	To 3.5s (to 20s)
Stereo system	Yes	W/ 2 units	No	Yes
Multiband control	High/low-cut filters	No	No	Yes
AF bandwidth	1, -3dB/30Hz-15kHz	16kHz	20kHz	To 7kHz (to 8kHz)
Input connection	Bal 10kΩ	Active bal/unbal	Bal	Active bal 10kΩ
Input level	-10 to +10dB	+16dBm	+24dBm max	0dBm, 1kHz
Output connection	Bal 150Ω source	Active bal/unbal	Bal	Single-ended, +18dBm
Reader Service Number	551	552	553	554 555

Manufacturer	Yamaha Int'l.		
Model Number	YDD-2600/YDM-2600	D-1500 digital delay	REV-1
Design function—			
Talk show delay	Yes	No	No
Delay catchup	No	No	No
Plate/room simulate	No	Yes	Yes
Reverb/echo	No	Yes	No
A-V sync	Yes	No	No
Time change	No	No	No
Pitch change	No	No	No
Phasing/flanging	No	Yes	Yes
Time reversal	No	No	No
Programmability	Yes	User programmable	User programmable
Delay type	Digital & Analog	Digital	Digital
Delay range	To 2.66s adjustable	1023ms in 1ms steps	To 99.9s
Stereo system	Yes	W/ 2 units	Yes
Multiband control	Yes	Adjustable low-pass	Yes
AF bandwidth	20Hz-20kHz	±3dB/20Hz-18kHz	30Hz-18kHz stereo
Input connection	Bal	Active bal	Bal
Input level	+4dBu 10kΩ	+4, -20dB 20kΩ	+4dB 10kΩ
Output connection	Bal	Active bal	Bal
Reader Service Number	556	557	558

## AF Recorders, Cartridge

These audio recording systems use continuous loop tape cartridges of the NAB AA type.

Manufacturer	Appel	Audi-Cord	Broadcast Electronic	Fidelipac
Model/Series Number	#578	A, S, TDS series	3200RPS 2100RPS	5410 w/ 5404 3-deck CTR124
Other cart sizes	No	BB	BB/B	None
Control logic	Transistor-logic	CMOS logic	TTL	CMOS
Replay inhibit	No	Yes	No	No
Record timer	Yes	Yes	No	No
2nd/3rd tones std	Yes	Yes	No	Secondary only
Stereo system	Yes	Yes	Yes	Yes
Phase error adjust	No	No	No	No
Capstan motor type	ac synchronous	ac synchronous	ac synchronous	ac synchronous
Capstan drive	Belt	Direct	Direct	Direct
Play speed(s)	7.5ips	7.5ips	3.75ips, 7.5ips	3.75ips, 7.5ips
Cue output (sec/ter)	TTL	Solid-state	Relay closure	Relay closure
Meter types	VU record/play/erase	VU movement	VU movement	VU movement
Related mono		S21/A21	3200P-PS/3300-RP	5401/5402 with 5409
Related play only	#557	S11/-16/A11/-16	2100P/-PS/-PA	5401/5402/5403
Related multideck	#2214	TDS-1/TDS-6 (twin)	5300/5400/5500	5300 5500 series
Input connection	Bal 5kΩ	Xlfr bal	Xlfr bal	Xlfr bal
Input level	-5dBm to +20dBm	-12dBm or -22dBm	-18dBm to +20dBm	-18dBm to +20dBm
Output connection	Bal 110Ω	Xlfr bal	Xlfr bal	Xlfr bal
Output level	+12dBm (+18dBm max)	-8dBm	0dBm	0dBm
AF response	±1.5dB/42Hz-12.5kHz	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz
S/N ratio (rec/play)	54dB	>47dB stereo*	-52dB unwt'd	-52dB unwt'd
Crosstalk (L to R)		<-50dB	-50dB 1kHz	-50dB 1kHz
Crosstalk (cue-pgm)		<-50dB	0VU	0VU
Distortion	<1.5% at 1kHz*	1% 1kHz	<2% 1kHz, 0VU	<2% 1kHz, 0VU
Flutter (ANSI S4.3)	±0.3% unwt'd	160nWb/m	0.15%	0.12% DIN
	*1dB under saturation	max	max	max
		*ref. 1kHz	5400 is 3-deck unit	5500 is 5-deck unit
Reader Service Number	371	372	373	374 375 376



## Studer Audio: Advanced Recording Systems



# The hardware is typically Studer. The software is simply astounding.

The transport mechanics in our new A820 Analog Master Recorder are solid, stable, and precision-crafted in the Swiss tradition. That's all typically Studer. What's new is an ingenious network of software-controlled operating systems.

**Future Perfect.** The A820 is designed to meet the demands of tomorrow's computer-controlled audio production facilities. Multiple on-board microprocessors control all operating sub-systems, including capstan drive, spooling motors, and audio parameter settings. Most operating features are user programmable, allowing you to tailor an A820 to your exact needs in a matter of minutes. If your needs change, you simply re-program your features. Also, virtually every operating feature of the A820 may be accessed and controlled through an optional RS232/RS422 serial data port.

**Gentle on the Wind.** The A820 handles your valuable tapes with kid gloves. The DC capstan motor starts, following a defined ramp, only after the pinch roller is engaged. A closed

loop servo system monitors tape tension and reel inertia to provide optimum acceleration and braking. Both tape tension and tape winding speeds are user programmable.

**The Wheel Thing.** The A820's dual thumbwheel shuttle/edit control makes tape-cut editing a breeze. One wheel fast winds tape in either direction at increasing speeds while the other precisely positions tape for the edit.

**Also Noteworthy.** The A820 incorporates Studer's new generation of phase compensated audio electronics, available with either transformer or active balanced inputs and outputs. In sound quality, the A820 takes a quantum leap ahead of recorders made just a few years ago. Options for the A820 include a center-track SMPTE time code channel and test generator.

**The Payback.** The "hardware" in the Studer A820 is made to give you dependable service for years to come. That's the Studer tradition. Plus, with its advanced software, the A820 also does more different jobs,

gets more jobs done in less time, and produces sonically superior results. That's the bottom line in any upgrading program.

For more information on the new A820 Analog Master Recorder, please contact: Studer Revox America, 1425 Elm Hill Pike, Nashville, TN 37210; (615) 254-5651.

**STUDER REVOX**



Manufacturer	ITC/3M			Pacific Recorders		Sonifex	
	Model/Serial Number	99B RPSE	Delta IV/Delta I	OMEGA Mono	TOMCAT		MICROMAX
Other cart sizes	None	(B/BB/C/CC Delta II)	None	None	None	None	None
Control logic	Microprocessor	Microprocessor	Microprocessor	Microprocessor	CMOS	CMOS	CMOS
Replay inhibit	Yes	Yes	Yes	Yes	Yes	No	No
Record timer	Start pulse only	Reset pulse output	No	No	No	No	No
2nd/3rd tones std	Yes	Yes	Secondary only	Yes	Yes	Yes	Secondary only
Stereo system	Yes	Yes	Playback unit only	Yes	Yes	Yes	Yes
Phase error adjust	Yes	No	No	No	No	No	No
Capstan motor type	dc servo	dc servo	dc servo	dc servo	dc servo	dc servo	dc servo
Capstan drive	Direct	Direct	Direct	Direct	Belt	Belt	Belt
Play speed(s)	7.5ips std (3.75/15 opt)	7.5ips std (3.75/15 opt)	7.5ips std (3.75 opt)	7.5ips, 15ips	7.5ips	7.5ips	7.5ips
Cue output (sec/ter)	Solid-state std	Solid-state or relay	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Meter types	Tautband A & peaks	Tautband A	Tautband A	VU movement	VU movement	VU movement	Bar graph
Related mono	99B-RPME	Delta I/IV or II/IV	Yes	.....	.....	.....	CQ 10-R
Related play only	99B-PM or -PS	Delta I or II	Stereo and mono	.....	.....	.....	CQ 20
Related multideck	None	Delta III	None	.....	.....	.....	.....
Input connection	Xfmr or active bal	Xfmr or active bal	Line, xfmr bal	Active	Active bal	Active bal	Active unbal
Input level	-20dBm to +28dBm	-20dBm to +18dBm	Line and mic levels	+8dBm	+8dBm	+8dBm	0dBm
Output connection	Xfmr bal	Xfmr or active bal	Xfmr bal	Xfmr bal	Active bal	Active bal	Active unbal
Output level	-18dBm to +25dBm	-18dBm to +18dBm	+18dBm max	+8dBm	+8dBm	+8dBm	0dBm
AF response	±1dB/31Hz-16kHz*	±2dB/50Hz-16kHz*	±2dB/50Hz-16kHz*	±1dB/40Hz-15kHz*	+0.5, -1dB/40Hz-16kHz*	+0.5, -1dB/40Hz-16kHz*	1.5, -2.5dB/40Hz-15kHz
S/N ratio (rec/play)	56dB unwd/70dB A-wtd	60dB unwd/70dB A-wtd	56dB unwd/68dB A-wtd	59dB 0VU out unwd	58dB unwd, 1kHz, 0VU	58dB unwd, 1kHz, 0VU	53dB
Crosstalk (L to R)	<-50dB 1kHz, 0VU	<-50dB, 1kHz, 0VU out	<-50dB, 1kHz, 0VU out	<-50dB 1kHz, 0VU out	-50dB 1kHz, 0VU	-50dB 1kHz, 0VU	-50dB 1kHz, 0VU out
Crosstalk (cue-pgm)	<-50dB	<-50dB	<-50dB	-60dB	-60dB	-60dB	-50dB
Distortion	0.8% 1kHz, 0VU out	1.5% 1kHz, 0VU out	1.5% 1kHz, 0VU output	0.9% 1kHz, 0VU out	0.9% 1kHz, 0VU out	0.9% 1kHz, 0VU out	1% 1kHz, 0VU out
Flutter (ANSI S4.3)	0.12%	0.15%	0.15%	0.1%	0.08%	0.08%	0.1%
	*at -10dB below std op level	*at -10dB below std op level	*at -10dB below std op level	*at -10dB below std op level	*at -10dB below std op level	*at -10dB below std op level	.....
Reader Service Number	377	378	379	380	381	381	382

Manufacturer	Sonifex	Ramko Research		TTC/Scully	TTC/Ampro	Telex Communications
		PhaseMaster RPS-1	Primus RP-18	8300 3-deck playback	CT-3500	
Model/Serial Number	Mico HS200R (R-X)					
Other cart sizes	None	Yes	Yes	A/B/BB	A/B/BB	BB
Control logic	CMOS	Microprocessor	Microprocessor	TTL	Buffered TTL	TTL logic
Replay inhibit	No	No	No	Yes	Yes	Yes
Record timer	No	Yes	Option	No	Option	No
2nd/3rd tones std	Yes	Yes	Yes	Yes	Yes	Yes
Stereo system	Yes	Yes	Yes	Yes	Yes	Yes
Phase error adjust	No	Yes	No	Option	Option	No
Capstan motor type	dc servo	dc servo	dc servo	dc servo	ac hysteresis	dc servo
Capstan drive	Belt	Direct	Direct	Direct	Direct	Belt
Play speed(s)	7.5ips	7.5, 15, 3, 7.5ips	7.5, 15, 3, 7.5ips	3.75, 7.5ips	3.75, 7.5ips	3.75, 7.5ips
Cue output (sec/ter)	Solid-state	Relay & solid-state	Relay closure	Solid-state	Contact closure	Relay closure
Meter types	VU movement	Bar graph	Bar graph	VU	VU	VU movement
Related mono	HS100/-R (HS100RS)	PS-1	RP-1m	8321 mono play	Available	MC-P3/MC-PR3
Related play only	HS200 (HS200-X)	PM-1/PS-1	P-1m	8322 stereo play	Available	MC-PS3/PC-PRS3
Related multideck	...../T	None	None	Model 8300	.....	None
Input connection	Active (xfmr) bal	Active bal	Active bal	.....	Xfmr bal	Xfmr bal
Input level	0dBm	Typical line levels	Typical line levels	.....	-20dBm to +20dBm	-18 to +20dBm
Output connection	Active (xfmr) bal	Active bal	Active bal	Xfmr or active bal	Xfmr bal	Xfmr bal
Output level	0dBm	To +25dBm	+25dBm max	+14dBm max, 160nWb/m	8dBm clip at 20dBm	+18dBm max
AF response	1, -1.5dB/20Hz-16kHz*	±1.5dB/50Hz-16kHz*	±1.5dB/50Hz-16kHz*	±2dB/50Hz-15kHz	±2dB/50Hz-15kHz	±1dB/50Hz-15kHz
S/N ratio (rec/play)	55dB	64dB typical	62dB typical std	>58dB stereo	>58dB 20Hz-20kHz	48dB stereo, 160nWb/m
Crosstalk (L to R)	-50dB 1kHz, 0VU out	<-50dB	<-50dB	<-50dB	<-50dB 1kHz	<-50dB
Crosstalk (cue-pgm)	-50dB	<-50dB	<-50dB	<-50dB overall	<-50dB 1kHz	<-50dB
Distortion	1% 1kHz, 0VU out	0.3% amp only	<0.9%	<0.5% at +18dBm	<3% max 8dB over ref*	<2% system, 160nWb/m
Flutter (ANSI S4.3)	0.06%	0.095% max DIN wtd	0.095% max DIN wtd	0.15% peak wtd	0.15%	<0.1% peak wtd
	*at 10dB below std op level	*Record/play system	*Record/play system	.....	*ref to 160nWb/m	*Mic input from -65 to -30dBm
Reader Service Number	383	384	385	386	387	388

# AF Recorders, Cassette

This audiocassette recording/playback equipment is designed for broadcast use, based on Philips C-type cassettes.

Manufacturer	Fostex of America	Nakamichi	Studer Revox
Model/Series Number	X-15	250 (250AV)	MR-1
Control logic	Mechanical	TTL	Microprocessor
Record timer	No	Yes	No
Cue tone track	No	No	Yes
Phase error adjust	No	No	No
Capstan motor type	dc-servo	dc-servo	dc-servo
Capstan drive	Belt	Belt	Direct
Reel motor type	dc-servo	dc-servo	dc-servo
Play speed(s)	1.875ips	3.75ips (1.875ips)	1.875ips ±6%
Number of heads	2	2	3
Meter types	Bar graph	VU mvmt, peak lamp	VU mvmt, peak lamp
Input connection	Unbal	Unbal	Unbal
Input level/imped	-50dBv 10kΩ	-60dBv 10kΩ	-60dBv 10k
Output connection	Unbal	Unbal	Unbal
Output level	-20dBv 20kΩ	-10dBv 10kΩ	-10dBv 10k
AF response	±3dB/40Hz-12.5kHz*	2, -3dB/20Hz-18kHz*	2, -3dB/20Hz-18kHz
S/N ratio (rec/play)	50dB unwt'd/60dB wtd	71dB wtd	71dB wtd
Crosstalk (L to R)	-40dB at 1kHz, 0VU out	-50dB at 1kHz, 0VU out	-40dB at 1kHz, 0VU out
Crosstalk (cue-pgm)	.....	.....	.....
Distortion	1.5% at 1kHz, 0VU out	1.5% 315Hz, any level	<1% 400kHz 0VU
Flutter (ANSI S4.3)	±0.1%	<0.02%	<0.048%
Equalization	3180μs + 70μs	3180μs + 70μs	3180μs + 70μs 120μs
	*Response measured at -10dBm output	*Switchable Dolby C included in response	.....
Reader Service Number	361	362	363

## Compression with the Model 440 is as easy as 1, 2, 3.

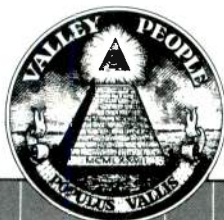


1. Turn the unit on.
2. Select *Auto* mode.
3. Adjust the compressor threshold control for the sound you want.

That's all there is to it. If this process appears to be oversimplified, it's only because during the design of the Model 440 Limiter/Compressor/Dynamic Sibilance Processor great pains were taken to ensure that we delivered a highly sophisticated signal processor, capable of unsurpassed performance while remaining very straightforward and easy to use.

Prove to yourself how easy it is to operate a Valley People Model 440.

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Circle (168) on Reply Card

Manufacturer	Tascam			Yamaha
Model/Series Number	1228	1338	234	C200
Control logic	TTL	TTL	TTL	Microprocessor
Record timer	No	No	No	Linear counter
Cue tone track	No	Simple tone	No	No
Phase error adjust	No	No	No	No
Capstan motor type	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Belt	Belt	Direct
Reel motor type	dc-servo	dc-servo	dc-servo	dc-motor
Play speed(s)	1.875/3.75ips	1.875/3.75ips	3.75ips	1.875ips ±15%
Number of heads	3	2	.....	4
Meter types	Bar graph	VU mvmt	VU mvmt	LED peak meters
Input connection	Active bal/unbal	Active bal/unbal	Unbal	Bal
Input level/imped	+4dBm or -10dBv	+4dBm or -10dBv	-10dBv	+4/8dBm
Output connection	Active bal/unbal	Active bal/unbal	Unbal	Bal
Output level	+4dBm or -10dBv	+4dBm or -10dBv	-10dBv	+4/8dBm (18dBm max)
AF response	±3dB/35Hz-14kHz, 4dBm	±3dB/30Hz-15kHz, 4dBm	±3dB/40Hz-14kHz 4dBm	±3dB/20Hz-20kHz
S/N ratio (rec/play)	60dB unwt'd, 0VU out	55dB wtd, 0VU out	55dB unwt'd 0VU out	>68dB w/ Dolby B NR
Crosstalk (L to R)	-40dB at 1kHz, 0VU out	-45dB	-50dB at 1kHz 0VU	>42dB at 3150Hz (EIAJ)
Crosstalk (cue-pgm)	.....	-55dB	.....	.....
Distortion	1% at 1kHz, 0VU out	1.5% at 1kHz, 0VU out	1% at 1kHz 0VU out	<0.8% unsaturated
Flutter (ANSI S4.3)	0.055%	0.07%	0.06%	0.08% max, peak wtd
Equalization	3180µs + 70µs or 120µs	3180µs + 70µs	3180µs + 70µs	Tape types I/II/IV
.....	.....	.....	*Measured 0dB under std op lvl	.....
.....	.....	.....	160nWb/m	.....
Reader Service Number	366	367	368	369

## Audio Recorders, Reel

This audio recorder/playback equipment uses reel-type magnetic materials. Portable units are included.

Manufacturer	AEG-Telefunken	Elektroimpex	Enertec/Schlumberger	Fostex	
Model/Series Number	Magnetophon M-20	STM-631 Editor	F500	B-16/B-16D/B-160M	#20
# of tracks	3	Various on request	1 or 2	16	3
Tape width (inches)	1/4"	.....	1/4"	1/2"	1/4"
Deck control logic	8085 µP chip	.....	Microprocessor	Microprocessor	Microprocessor
Edit control link	SMPTÉ synchronizer	None	Synchronizer	Synchronizer	SMPTÉ port
Recorder timer	Yes	.....	LED readout	Yes	Real time
Cue track	SMPTÉ time code	No	No	No	SMPTÉ center track
Phase error adjust	.....	No	No	No	No
Capstan motor type	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Direct	Direct	Direct or belt	Belt
Reel motor type	dc-servo	.....	dc-servo	dc-servo	dc-servo
Tape speed(s)	3.75-30ips ±10%	7.5/15ips	3.75/7.5/1.5 variable	15/30ips	7.5ips & 15ips
# of heads	6	2	2	2 (-DM has 3)	3
Meter types	VU optional	None	VU movement	Bar graph	Bar graph
Equalization	NAB/CCIR/IEC1/IEC2	DIN	NAB/CCIR	TEC 15ips/AES 30ips	NAB/IEC
Input connection	Active bal	.....	Bal	RCA unbal	Active unbal
Input level	0dBm to +15dBm	.....	0dBu 15kΩ min	-10dBv 25kΩ	-20dBv 30kΩ
Output connection	Active bal	.....	Bal	RCA unbal	Active unbal
Output level	+24dBm max	.....	+20dBu 600Ω max	-10dBv 10kΩ	-10dBv 10kΩ
AF response	±1.5dB/20Hz-16kHz*	0, -3dB/40Hz-16kHz	2dB/31Hz-16kHz, 7.5ips	±3dB/40Hz-18kHz*	±3dB/30Hz-20kHz*
S/N ratio (rec/play)	>65dB, 7.5ips stereo	65dB, 7.5ips	59dB, 7.5ips 510nWb/m	80dB wtd	70dB wtd
Crosstalk (L to R)	<-55dB	.....	<-40dB stereo 7.5ips	-55dB 1kHz 0VU	-70dB 1kHz 0VU out
Crosstalk (cue-pgm)	.....	.....	.....	.....	-70dB
Distortion	<0.6% stereo	.....	<1% 185nWb/m	1% 1kHz 0VU output	<1% 1kHz 0VU
Flutter (ANSI S4.3)	0.1% 7.5ips	0.08% 7.5ips	<0.08% 7.5ips DIN	±0.05% peak wtd	±0.06% 15ips
.....	*7.5ips	.....	.....	*40Hz-22kHz (30ips)	*at 0dB below std op
.....	.....	.....	.....	at 0dB below std op	level 514nWb/m 0VU
.....	.....	.....	.....	level 320nWb/m 0VU	.....
Reader Service Number	926	927	928	929	930



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

### AF Recorder, Reel

Fostex	.....36
ITC/3M	.....205
Sony Pro Audio	.....189
Studer Revox	.....209
TTC/Ampro	.....207
Tascam	.....180

Manufacturer	Fostex	Lyrec Mfg. A/S	Nagra-Kudelski	Otari Corporation
Model/Series Number	#80	TR-55	T-audio	IV-STC
# of tracks	8	2	2 or 3	3
Tape width (inches)	1/4"	1/4" or 1/2"	1/4"	1/4"
Deck control logic	Microprocessor	.....	Microprocessor	Mechanical
Edit control link	SMPT E port	Available	RS422/RS232/SMPT E	To synchronizers
Recorder timer	Yes	Electronic	Electronic	Mechanical
Cue track	.....	.....	Time code track	SMPT E time code
Phase error adjust	No	No	No	No
Capstan motor type	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Belt	Direct	Dual direct	Direct
Reel motor type	dc-servo	dc-servo	Servo	dc
Tape speed(s)	15ips	7.5/15/30ips variable	3.75-30ips variable	3.75/7.5/15ips
# of heads	2	.....	4	4
Meter types	Bar graph	.....	LEDs	VU movement
Equalization	IEC	NAB/CCIR	NAB/DIN/IEC/CCIE/EIA	NAB/CCIR/Nagramaster
Input connection	Active unbal	.....	Xfmr bal	Bal/unbal
Input level	-10dBv 30k $\Omega$	.....	390mV-4.4V 10k $\Omega$	Mic & line levels
Output connection	Active unbal	.....	Xfmr bal	Resistive bal
Output level	-10dBv 10k $\Omega$	.....	>24dBm max	1V 5k $\Omega$
AF response	$\pm$ 3dB/40Hz-18kHz*	1dB/60Hz-18kHz	$\pm$ 1.5dB/30Hz-15kHz*	2dB/30Hz-30kHz
S/N ratio (rec/play)	60dB unwt d	68dB, 15ips	71dB, 7.5ips 810nWb/m	>72dB, 810nWb/m 400Hz
Crosstalk (L to R)	.....	<-40dB 510nWb/m	>50dB at 1kHz	<-60dB 1kHz
Crosstalk (cue-pgm)	<-70dB	.....	.....	.....
Distortion	1% 1kHz 0VU out	.....	<1% 7.5ips 1020nWb/m	<1% 810nWb/m 40Hz
Flutter (ANSI S4.3)	$\pm$ 0.06%	.....	<0.025% 7.5ips	0.028% NAB 15ips
Reader Service Number	931	932	933	934

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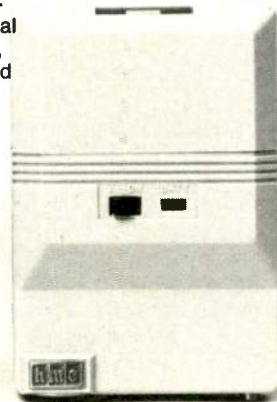
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Circle (169) on Reply Card

Manufacturer	Otari	L. J. Scully	Sony Pro Audio	
Model/Series Number	MX-70	MTR-10-2	LJ-7	APR-2003 portable APR-5000 series
# of tracks	8 or 16	2	2	3
Tape width (inches)	1"	1/4"	1/4"	1/4"
Deck control logic	Microprocessor	Microprocessor	.....	Full/half/half + TC
Edit control link	RS-232/RS-422	RS-422	.....	16-bit $\mu$ P
Recorder timer	Yes	Yes	Electronic	RS-422
Cue track	No	SMPTE center option	No	.....
Phase error adjust	Yes	Yes	Tape counter	APR-5003 TC track
Capstan motor type	dc-servo	dc-servo	Yes	.....
Capstan drive	Direct	Direct	.....	dc-servo
Reel motor type	dc-servo	dc-servo	.....	Direct
Tape speed(s)	7.5/15/30/variable	3.75-30ips/variable	dc-servo	dc-servo
# of heads	3	3 or 4	7.5/3.75ips	3 + time code
Meter types	VU movement	VU movement/peak LED	3	VU movement
Equalization	NAB/IEC/AES-30ips	NAB/IEC/AES at 30ips	5 positions	NAB/AES/IEC
Input connection	Active bal	Active bal (xfmr opt)	NAB/IEC	Bal (xfmr opt)
Input level	+30dBm (switchable)	+4dBm	Active bal	-70dBs to +4dBs
Output connection	Active bal	Active bal (xfmr opt)	.....	Unbal 600 $\Omega$
Output level	+28dBm (switchable)	+28dBm max	Active bal	1V (0dB) 10k $\Omega$ load
AF response	$\pm$ 2dB/30Hz-20kHz*	$\pm$ 2dB/30Hz-25kHz*	1, -2dB/30Hz-24kHz	$\pm$ 3dB/30Hz-18kHz 7.5ips
S/N ratio (rec/play)	72dB unwdt 30ips 8ch	73dB unwdt 30ips	>65dB 510nWb/m	0.75, -2dB/40Hz-28kHz
Crosstalk (L to R)	-55dB 1kHz adj ch.	-60dB 1kHz 0VU	<-60	74dB 30ips mono
Crosstalk (cue-pgm)	.....	-60dB	.....	-55dB 1kHz, 510nWb/m
Distortion	0.2% 1kHz 0VU	0.25% 1kHz 0VU out	0.75%	.....
Flutter (ANSI S4.3)	0.04% at 30ips	0.04%	.....	0.35% 1kHz
	*at 0dB below std op level 250nWb/m 15ips	*at 0dB below std op level 250nWb/m 0VU	.....	0.025% 30ips DIN 45507
Reader Service Number	936	937	938	939

Manufacturer	Soundcraft Electronics			Stellavox	Studer Revox
Model/Series Number	#760	S/20	SP8	T09	AB20
# of tracks	16 or 24	2	3	1 to 5*	2
Tape width (inches)	1" or 2"	1/4" or 1/2"	1/4"	1/4" or 1/2"	1/4" or 1/2"
Deck control logic	CMOS	Microprocessor	Mechanical	CMOS/microprocessor	TTL/CMOS/microprocessor
Edit control link	37 wyD type	RS-232, RS-422	Manual editing	RS-422 or direct	RS 232 RS-422
Recorder timer	No	No	Option	Yes	Yes
Cue track	No	SMPTE center	SMPTE center	SMPTE center	SMPTE center
Phase error adjust	Yes	Yes	No	No	Yes
Capstan motor type	dc-servo	dc-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Direct	Direct	Special	Direct
Reel motor type	ac-synchronous	dc-servo	dc-servo	dc-servo	dc-servo
Tape speed(s)	15-30ips & variable	7.5/15/30 & variable	3.75/7.5/15 variable	3.75-30ips/variable	3.75-30ips/variable
# of heads	3	3	4	5	3 or 4
Meter types	VU movement	VU movements	Tautband A	Tautband A	VU movement
Equalization	NAB	NAB	NAB/IEC/DIN/CCIR	NAB/IEC/DIN/EIA/CCIR	NAB/CCIR
Input connection	Unbal	Active bal	Bal	Bal	Active or xfmr bal
Input level	-10/+20dB 10k $\Omega$	.....	-72dBm	+6dBm	600 $\Omega$
Output connection	Unbal	Active bal	Bal	/Bal	Active or xfmr bal
Output level	+22dBm	+22dBm	+6dBm	+6dBm (+15dBm max)	+28dBm
AF response	1, -2dB/40Hz-24kHz*	$\pm$ 1	1, -2dB/20Hz-20kHz*	1, -2dB/30Hz-20kHz**	$\pm$ 2dB/30Hz-20kHz*
S/N ratio (rec/play)	60dB unwdt	68dB	68dB	70dB	69dB unwdt/75dB wtd
Crosstalk (L to R)	-55dB 1kHz 0VU	-65dB 1kHz 0VU	-55dB 1kHz 0VU	-55dB	-65dB 1kHz 0VU
Crosstalk (cue-pgm)	-18dB	.....	-90dB	-90dB	-90dB
Distortion	0.1% 1kHz 0VU	<0.1%	0.6% 1kHz 0VU	0.5% 1kHz 0VU	0.3% 1kHz 0VU
Flutter (ANSI S4.3)	<0.04%	<0.03%	0.02%	0.02%	0.04% DIN wtd
	*referenced to 30ips and 510nWb/m	*at +4dB over std op level 185nWb/m	*at 10dB below std op level 510nWb/m	**at 0dB below std op level 510nWb/m	*at 0dB below std op level 200nWb/m
	.....	.....	.....	*modular head block changes heads & tape width.	.....
Reader Service Number	941	942	943	944	945

Manufacturer	Studer Revox		Tascam		
Model/Series Number	PR99 MKII	AB10	42 NB (40 series)	44-0B (48-0B)	52 NB (58 0B)
# of tracks	2	2	2	4 (8)	2 (8)
Tape width (inches)	1/4"	1/4"	1/4"	1/4" (1/2")	1/4" (1/2")
Deck control logic	TTL/microprocessor	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Edit control link	.....	RS-232 RS-422	Elco 8016	Elco 8016	Elco 8016
Recorder timer	Yes	Yes	Yes	No	No
Cue track	No	SMPTE center	No	No	No
Phase error adjust	.....	Yes	No	No	No
Capstan motor type	Servo	ac-servo	dc-servo	dc-servo	dc-servo
Capstan drive	Direct	Direct	Direct	Direct	Direct
Reel motor type	Triac controlled	ac-servo	dc-servo	dc-servo	dc-servo
Tape speed(s)	3.75/7.5 or 7.5/15	3.75/7.5/15/30ips	7.5 and 15ips	7.5/15ips (15ips)	7.5/15ips (15ips)
# of heads	3	3	3	3	3
Meter types	VU movement	VU movement	VU movement	VU movement	VU movement
Equalization	NAB/CCIR	NAB/CCIR	NAB/IEC	NAB/IEC (IEC)	NAB/IEC (IEC)
Input connection	Xfmr bal	Xfmr or active bal	Active bal/unbal	Active bal/unbal	Active bal/unbal
Input level	+4dBu 5k $\Omega$	.....	+4dBm or -10dBv	+4dBm or -10dBv	+4dBm or -10dBv
Output connection	Xfmr bal	Xfmr or active bal	Active bal/unbal	Active bal/unbal	Active bal/unbal
Output level	+4dBu 600 $\Omega$	0 to +10dB variable	+4dBm or -10dBv	+4dBm or -10dBv	+4dBm or -10dBv
AF response	2, -3dB/30Hz-22kHz*	$\pm$ 2dB/20Hz-20kHz*	$\pm$ 2dB/30Hz-24kHz*	$\pm$ 2dB/30Hz-22kHz*	$\pm$ 2dB/30Hz-25kHz*
S/N ratio (rec/play)	72dB ASA A-wtd	75dB ASA A-wtd	70dB A-wtd 62dB unwdt	69dB A-wtd/62dB unwdt	70dB A-wtd/62dB unwdt
Crosstalk (L to R)	-45dB 1kHz 0VU	-55dB 1kHz 0VU	-55dB 1kHz 0VU	-55dB 1kHz 0VU	-64dB 1kHz 0VU
Crosstalk (cue-pgm)	-60dB	-65dB	.....	.....	.....
Distortion	0.3% 1kHz 0VU	0.6% 1kHz 510nWb/m	0.8% 1kHz 0VU	0.8% 1kHz 0VU	0.8% 1kHz 0VU
Flutter (ANSI S4.3)	0.06% DIN 45507 15ips	0.05% DIN 45507 15ips	0.08%	0.08%	0.08%
	*at 20dB below std op level 255nWb/m	*at 20dB below std op level 250nWb/m	*at 0dB below std op level 250nWb/m	*at 0dB below std op level 250nWb/m	*at 0dB below std op level 250nWb/m
Reader Service Number	946	947	948	949	950

Manufacturer	Tascam	TTC/Ampro	Technics/Panasonic	Telex Communications	
Model/Series Number	MS-16	Studio 8	Model 280B	RS-1700	3000 series
# of tracks	16	8	1/2/4	4	1/2/4
Tape width (inches)	1"	1/4"	1/4" or 1/2"	1/4"	1/4"
Deck control logic	Microprocessor	Microprocessor	Solenoid	.....	CMOS logic
Edit control link	Elco 8016	Elco 8016	No	.....	.....
Recorder timer	.....	.....	No	Electronic	4-digit linear
Cue track	No	.....	No	.....	No
Phase error adjust	.....	.....	No	No	No
Capstan motor type	dc-servo	dc-servo	dc-servo optional	dc-servo	ac synchronous
Capstan drive	Direct	Belt	Direct	Direct	Direct
Reel motor type	dc-servo	dc-servo	ac hysteresis	dc-servo	ac synchronous
Tape speed(s)	15ips	7.5ips	3.75-30ips available	3.75/7.5/15ips	3.75/7.5 or 7.5/15ips
# of heads	3	3	3	6	3
Meter types	VU movement	VU movement	VU movement optional	Peaking analog	None
Equalization	IEC	IEC	NAB/IEC	NAB	NAB/IEC/DIN/CCIR/EIA
Input connection	Active bal/unbal	Active bal/unbal	Xfmr bal	Unbal	Xfmr bal
Input level	+4dBm or -10dBv	+4dBm or -10dBv	200mV 10kΩ min	.....	-75dB mic/120mV line
Output connection	Active bal/unbal	Active bal/unbal	Xfmr bal	Unbal	Xfmr bal/unbal
Output level	+4dBm or -10dBv	+4dBm or -10dBv	+24dBm max	.....	+20dBm max bal
AF response	±3dB/40Hz-22kHz*	±3dB/30Hz-16kHz	2dB/30Hz-15kHz 7.5ips	3dB/30Hz-30kHz	3dB/30Hz-18kHz 7.5ips
S/N ratio (rec/play)	69dB A-wtd/62dB unwtd	90dB unwtd	68dB 2Tr, 7.5ips*	66dB	>55dB NAB unwtd
Crosstalk (L to R)	-55dB 1kHz 0VU	-75dB 1kHz 0VU	<-60dB 250nWb/m 1kHz	.....	<-50dB
Crosstalk (cue-pgm)	.....	.....	.....	.....	<-50dB
Distortion	0.6% 1kHz 0VU	0.5dB 1kHz 0VU	<3%	<1%	<1% 0VU system
Flutter (ANSI S4.3)	0.08%	0.1%	0.05% w/ dc-servo	.....	0.15% DIN at 7.5ips
	*at 0dB below std op level 250nWb/m	Includes audio mixer *at 0dB below std op level 250nWb/m	*500nWb/m NAB wtd	.....	.....
Reader Service Number	951	952	953	954	955

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Circle (170) on Reply Card

# Audio CD Players

These digital audio compact disc systems are applicable to radio or TV audio use.

Manufacturer	Philips	Sony/Pro Audio		
<b>Model Number</b>	<b>LHH-2002</b>	<b>LHH-2000 Production</b>	<b>CDP(CDS)-3000</b>	<b>CDP-5000</b>
System configuration	Multiplayer	Multiplayer	Multiplayer	Single player
Total player trays	99 max	3 max	2 per controller	1 per controller
Programmable	To 55 events	To 3 events	Yes	Yes
Output connection	Xfmr bal	Xfmr bal/unbal	Bal	Bal 600Ω
Output level	+6dBm	+6dBm	+4dBm nominal	4dBm
AF response (20Hz-20kHz)	±/-0.05dB at +6dBm	±/-0.05dB at +6dBm	0.8, -1dB/20Hz-20kHz	0.5, -1dB/20Hz-20kHz
Distortion rating	0.01% at +6dBm out	0.01% at +6dBm out	0.01%	0.01%
Dynamic range	>90dB	>90dB	94dB	>94dB
Crosstalk rating	80dB at 20kHz +6dBm	80dB at 20kHz +6dBm	90dB at 1kHz	90dB at 1kHz
S/N rating	>90dB unwt'd +6dBm	>90dB unwt'd +6dBm	.....	.....
Access time (worst)	2s	2s	2s	2s
<b>Reader Service Number</b>	<b>351</b>	<b>352</b>	<b>353</b>	<b>354</b>

Manufacturer	Studer Revox	Technics	
<b>Model Number</b>	<b>A725</b>	<b>B225</b>	<b>SL-P50P</b>
System configuration	Single player	Single player	Single player
Total player trays	.....	.....	1
Programmable	To 19 events	To 19 events	Yes
Output connection	Xfmr bal	Unbal	600Ω bal
Output level	+3 to 15dBm variable	0 to 2V variable	+4dBm, -10dBm
AF response (20Hz-20kHz)	0, -0.6dB at +4dBm	0, -0.6dB/20Hz-20kHz	0.5dB/20Hz-20kHz
Distortion rating	<0.006% at 4dBm out	0.006%/20Hz-20kHz	<0.01%
Dynamic range	96dB	96dB	>96dB
Crosstalk rating	90dB at +4dBm output	90dB/20Hz-20kHz	<-90dB
S/N rating	96dB A-wtd +4dBm out	96dB unwt'd	>96dB
Access time (worst)	3s	3s	<6s
<b>Reader Service Number</b>	<b>357</b>	<b>358</b>	<b>359</b>

# Wireless Microphone Systems

This section is devoted to FM radio systems that allow unwired microphone use by performers on stage or in the studio. Distance capability, depending upon environment, will average 1,000 feet for all systems. Performance quality audio is intended.

Manufacturer	AKG Acoustics	Eugene Beyer	Cetec Vega		
<b>Model/System Number</b>	<b>#185</b>	<b>System 185</b>	<b>66A/77D11</b>	<b>R42/77D11</b>	<b>67A/T82</b>
RF frequency band	130-190MHz	150-225MHz (US)	150-216MHz	150-216MHz	150-216MHz
AF response (system)	±2dB/20Hz-20kHz*	-2dB/40Hz-20kHz	±1.5dB/40Hz-15kHz	±1.5dB/40Hz-15kHz	±1.5dB/40Hz-15kHz
S/N ratio (system)	90dB ref 1mV RF in	.....	103dB 0dBm A-wtd	108dB 0dBm A-wtd	103dB A-wtd
Distortion (system)	<0.5%	0.5%	0.3% 0dBm output	0.15% 0dBm output	0.3%
Modulation control	Peak limiting	Limiting compandor	Soft compression	Soft compression	Soft compression
Companding	Yes	Yes	No	No	No
<b>Transmitter model #</b>	<b>T185</b>	<b>T185 US</b>	<b>77/D11</b>	<b>77/011</b>	<b>T82</b>
Transmitter style	Hand-held	Hand-held	Body/pocket pack	Pocket pack	Hand-held
RF output power	25mW	35mW	50mW	50mW	50mW
Carrier deviation	±60kHz	±13kHz	±15kHz	±15kHz	±15kHz
Frequency stability	0.005%	.....	0.005%	0.005%	0.005%
Mic type	Dynamic or electret	Adapts to various	Dynamic	External mic	Internal
Aux line input	No	No	No	No	No
Line input level	.....	.....	.....	.....	.....
Power requirement	9Vdc	9Vdc	9Vdc	9Vdc	9Vdc
Operating weight	13.4oz	12.7oz	5oz	5oz	9.5oz
<b>Receiver Model #</b>	<b>SR185</b>	<b>NE185</b>	<b>66A</b>	<b>R42</b>	<b>67A</b>
Sensitivity	.....	1μV/20dB quieting	0.8μV/20dB quieting	0.6μV/20dB quieting	0.8μV/20dB quieting
Spurious rejection	.....	-75dB	-85dB	-90dB	-85dB
Output connection	Bal	.....	Active bal	.....	Active bal
Output level	+6dBm	+6dBm	+16dBm	+20dBm	+16dBm
Power requirement	+18Vdc/117Vac	15-27Vdc/117Vac	-18/+8.5Vdc	15Vdc/110-220Vac	10.5-18Vdc
Metering	RF/AF level battery	.....	RF level/VU/battery	RF level/AF/VU	RF/AF VU/battery
Panel indicators	Power/carrier	Carrier present	Carrier present	Carrier present LED	.....
Antenna type	Whip furnished	Whip furnished	Whip furnished	Whip or dipole incl	Whip
Diversity receiving	Yes	NE185 11 option	No	Yes	Yes
Multiple channels	1 per channel	1/receiver (3 opt)	1/receiver	2/receiver	2/receiver
	*Measured at +6dBm output, S/N includes companding.	.....	.....	.....	.....
<b>Reader Service Number</b>	<b>756</b>	<b>757</b>	<b>758</b>	<b>759</b>	<b>760</b>



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

## Wireless Microphones

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Manufacturer	Coherent Communication		Com Tek		Edcor
Model/System Number	RM400/RM110(120)	72	172	Base/personal receiver	ECOM highband
RF frequency band	160-240MHz	170-216MHz	170-216MHz	170-216MHz	150-216MHz
AF response (system)	±2dB/80Hz-20kHz	±3dB/40Hz-15kHz 0dBm	0, -2dB/40Hz-15kHz*	±3dB/100Hz-10kHz	±2dB/200Hz-16kHz
S/N ratio (system)	69dB ref 10dBm A-wtd	75dB 0dBm unwtc	95dB + 10dBm unwtc	65dB + 10dBm unwtc	.....
Distortion (system)	<1% + 10dBm output	<1% 0dBm output	0.5% + 10dBm output	1% + 10dBm output	1%
Modulation control	Compression	Compression	Compression	Compression	Soft compression
Companding	No	No	Yes	No	.....
Transmitter model #	RM110/RM120	M-72L	M-72CL	M-72BS	E COM 1
Transmitter style	Pocket pack	Body/pocket pack	Body/pocket pack	Base station	Hand-held
RF output power	50/250mW	50mW	50mW	50mW	100mW
Carrier deviation	±12kHz	±30kHz (15kHz US)	±30kHz (15kHz US)	±30kHz (15kHz US)	±7.5kHz
Frequency stability	0.0025%	0.005%	0.005%	0.005%	0.005%
Mic type	Dynamic or electret	Dynamic or electret	Dynamic or electret	Electret	EV671 element
Aux line input	No	Optional unbal	Optional unbal	Active unbal	No
Line input level	.....	10dBm (-50dB at 200Ω)	10dBm (-50dB, 200Ω)	10dBm	.....
Power requirement	9Vdc	9Vdc	9Vdc	9Vdc/115Vac	12Vdc
Operating weight	6.5oz	4oz	4.5oz	40oz	8.7oz w/o battery
Receiver Model #	RM400	MR-72	MR172	PR-72b	E COM 5
Sensitivity	<0.8μV/20dB quieting	0.5μV/20dB quieting	0.3μV/20dB quieting	0.7μV/20dB quieting	1μV/20dB quieting
Spurious rejection	< -85dB	-85dB	-80dB	45dB	-70dB
Output connection	Xfmr bal	Active bal	Active bal	Active unbal	.....
Output level	-60dBm (+10dB at 50Ω)	0dBm (-40dB at 150Ω)	+8dBm (-40dB, 150Ω)	+10dBm	3Vp-p
Power requirement	9Vdc	12Vdc/115Vac	12Vdc/115Vac	9Vdc	12Vdc/115Vac
Metering	RF level/battery	AF level	RF/AF level	Battery	.....
Panel indicators	Power/carrier	Power/carrier	Power/carrier	Power	Carrier present
Antenna type	Whip furnished	Whip or dipole	Whip or dipole	With output cable	Furnished
Diversity receiving	No	No	Option	No	Yes
Multiple channels	1/receiver	4/receiver	8/receiver	2/receiver	1/receiver
Reader Service Number	761	762	763	764	765

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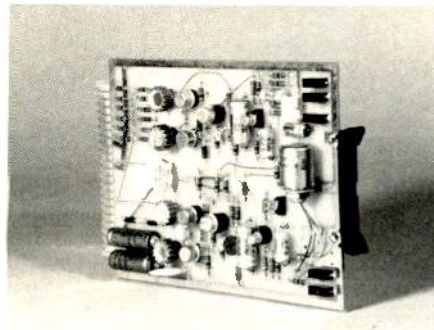
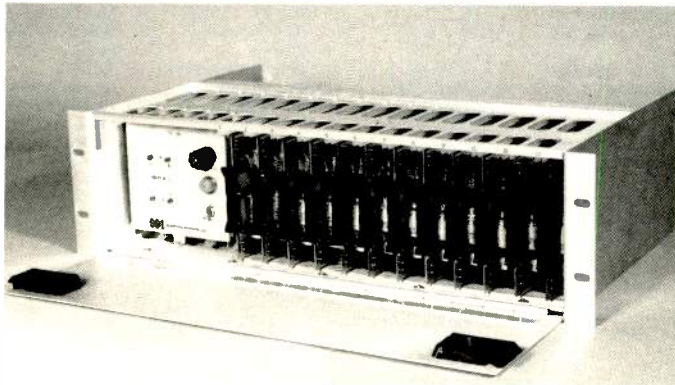
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Circle (171) on Reply Card

Manufacturer	Edcor	HM Electronics		Micron Audio
Model/System Number	E COM Highband	System 87/870	System 85/850	System 82/820
RF frequency band	150-216MHz	150-216MHz	150-216MHz	150-216MHz
AF response (system)	±2dB/200Hz-16kHz	±3dB/50Hz-15kHz 0dBm	-3dB/50Hz-15kHz 0dBm	±3dB/50Hz-15kHz 0dBm
S/N ratio (system)	115dB	115dBm A-wtd	115dB A-wtd	115dB
Distortion (system)	1%	0.3% ref -40dBm out	3% ref -40dBm out	0.3% ref -40dBm out
Modulation control	Soft compression	Compression	.....	Compression
Companding	.....	Yes	Yes	Yes
<b>Transmitter model #</b>	<b>E COM 1 Lavalier</b>	<b>TX872</b>	<b>TX852</b>	<b>TX-822</b>
Transmitter style	Pocket pack	Hand-held	Hand-held	Body/pocket pack
RF output power	100mW	50mW	50mW	50mW
Carrier deviation	±7.5kHz	±15kHz	±15kHz	±15kHz
Frequency stability	0.005%	0.005%	0.005%	0.005%
Mic type	Various lavaliers	Electret	Electret	Electret
Aux line input	No	No	No	No
Line input level	.....	.....	.....	.....
Power requirement	9Vdc	9Vdc	9Vdc	9Vdc
Operating weight	10.7oz w/o battery	12oz	12oz	12oz
<b>Receiver Model #</b>	<b>E COM 2 or 3</b>	<b>RX722/752</b>	<b>RX722/752</b>	<b>RS-722/752</b>
Sensitivity	1µV/12dB SINAD	0.1µV/30dB quieting	1µV/30dB quieting	1µV/30dB quieting
Spurious rejection	-70dB	-60dB	-60dB	-60dB
Output connection	.....	Xfmr bal	Bal	Bal
Output level	100mV or line	-30dBm or +18dBm	-30dBm or +18dBm	-30dBm or +18dBm
Power requirement	12Vdc/115Vac	12-30Vdc/110Vac	12-30Vdc/220Vac	12-30Vdc/110-220Vac
Metering	.....	RF/AF level/battery	RF/AF level/battery	RF/AF level/battery
Panel indicators	Carrier present	Power/carrier	.....	Power/carrier
Antenna type	Whip furnished	Whip	.....	Whip
Diversity receiving	No	Option	.....	Option
Multiple channels	1/receiver	1/receiver	1/receiver	1/receiver
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
<b>Reader Service Number</b>	<b>766</b>	<b>767</b>	<b>768</b>	<b>769</b>

Manufacturer	Micron Audio	Nady Systems	RF Technology
Model/System Number	MDR-530SH	601LT (701HT)	RM-102 (RM-100)
RF frequency band	150-216MHz	150-216MHz	947-952MHz
AF response (system)	±2dB/50Hz-15kHz 0dBm	±2dB/50Hz-15kHz*	±1dB/50Hz-10kHz
S/N ratio (system)	115dB	115dB	60dB ref 8dBm unwt'd
Distortion (system)	<0.3% 1kHz line tone	<0.3% 1kHz tone	1% at 8dBm out w/ AGC
Modulation control	Peak limiting	Peak limit/compress	Soft limiting
Companding	Yes	Yes	No
<b>Transmitter model #</b>	<b>TX-503</b>	<b>TX-501</b>	<b>Standard unit</b>
Transmitter style	Hand-held	Bodypack	Pocketpack
RF output power	50mW	50mW	50mW
Carrier deviation	±15kHz	±15kHz	±50kHz
Frequency stability	0.005%	0.005%	0.005%
Mic type	Electret	Dynamic or electret	External mic
Aux line input	No	Bal or unbal	No
Line input level	.....	0dBm	.....
Power requirement	9Vdc	9Vdc	9Vdc
Operating weight	11oz	16oz	12.5oz
<b>Receiver Model #</b>	<b>MDR-530</b>	<b>MR-510</b>	<b>RM-102 (RM-100)</b>
Sensitivity	1µV/30dB SINAD	1µV/60dB SINAD	.....
Spurious rejection	<-80dB	<-80dB	-70dB
Output connection	Xfmr bal	Xfmr bal/unbal	Bal/unbal
Output level	0dBm (-53dBv, 50Ω)	0dBm 600Ω/-53dBv 50Ω	Mic or line levels
Power requirement	12-18Vdc/120-240Vac	10-22Vdc	12Vdc/115Vac
Metering	RF level/battery	RF level/battery	.....
Panel indicators	Power/carrier	Power/carrier	Power/carrier
Antenna type	Dipole furnished	Dipole furnished	Furnished
Diversity receiving	Yes	Optional	Yes
Multiple channels	1/receiver	1/receiver	1/receiver (5 RM-100)
.....	.....	*Measured at -53dBv and 0dBv	.....
.....	.....	.....	.....
.....	.....	.....	.....
<b>Reader Service Number</b>	<b>771</b>	<b>772</b>	<b>775</b>



**Spec Note:**  
Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

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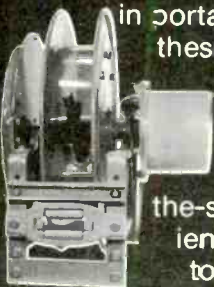
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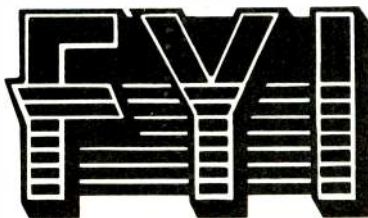
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Circle (220) on Reply Card

Manufacturer		Sennheiser Electric			
Model/System Number	EM1036-9H/SK2012-9H	EM2003-9H	EM1001-9H	EK2012 TVH	EM1036 TVH
RF frequency band	174-216MHz	150-216MHz	150-216MHz	947-952MHz	947-952MHz
AF response (system)	40Hz-12kHz	20Hz-12kHz	20Hz-12kHz	40Hz-20kHz	20Hz-20kHz
S/N ratio (system)	96dB	92dB A-wtd	90dB A-wtd	96dB A-wtd	92dB A-wtd
Distortion (system)	.....	.....	.....	.....	.....
Modulation control	Compression	.....	.....	Compression	Compression
Companding	Yes	Yes	Yes	Companding	Yes
<b>Transmitter model #</b>	<b>SKM4031-9H/SK2012-9H</b>	<b>SKM4031-9H</b>	<b>SK2012-9H</b>	<b>SKM4021 TVH</b>	<b>SK2012 TVH</b>
Transmitter style	Hand-held/bodypack	Hand-held	Bodypack	Hand-held	Bodypack
RF output power	30mW	30mW	30mW	20mW	20mW
Carrier deviation	±8kHz	±8kHz	±8kHz	±40kHz	±40kHz
Frequency stability	0.005%	0.005%	0.005%	0.005%	0.005%
Mic type	Dynamic or electret	Dynamic or electret	Dynamic or electret	Dynamic or electret	Dynamic or electret
Aux line input	No	No	No	Unbal	Unbal
Line input level	.....	.....	.....	.....	.....
Power requirement	4.5Vdc	4.5Vdc	4.5Vdc	4.5Vdc	4.5Vdc
Operating weight	6.3oz	6.3oz	6.3oz	6.3oz	6.3oz
<b>Receiver Model #</b>	<b>EM1036-9H</b>	<b>EM2003-9H</b>	<b>EM1001</b>	<b>EK2012 TVH</b>	<b>EM1036 TVH</b>
Sensitivity	.....	.....	.....	.....	.....
Spurious rejection	-74dB	.....	.....	.....	-75dB
Output connection	Bal	Bal/unbal	Bal/unbal	Unbal	Bal
Output level	0-1.55V	0-1.55V	0-1.55V	.....	0-1.55V
Power requirement	110/220Vac	27Vdc/110-220Vac	12-24Vdc/110-220Vac	4.5Vdc	110/220Vac
Metering	RF level/AF level	RF level/AF level	RF level/AF level	Battery	RF/AF level/drift
Panel indicators	Power/carrier/drift	Carrier present	Power/carrier	Power	Power/carrier/boost
Antenna type	Dipole not furnished	Not furnished	Furnished	Whip furnished	Dipole not furnished
Diversity receiving	Optional	Yes	No	No	Optional
Multiple channels	3 diversity or 6	2/receiver	1/receiver	2nd channel optional	3/receiver diversity
.....	.....	.....	.....	.....	6 non-diversity
<b>Reader Service Number</b>	<b>776</b>	<b>777</b>	<b>778</b>	<b>779</b>	<b>780</b>

Manufacturer		Sony		Swintek Enterprises		Telex Communications	
Model/System Number	VHF systems	UHF systems	.....	Mark 2L RFS0 50A	.....	WHM-300/FMR-1	.....
RF frequency band	174.6-215.4MHz	947-952MHz	.....	150-470MHz	.....	150-200MHz	.....
AF response (system)	±2.5dB/100Hz-15kHz	±2dB/40Hz-15kHz	.....	±1dB/20Hz-12kHz 0dBm	.....	±2dB/50Hz-15kHz +10dB	.....
S/N ratio (system)	>60dB	50dB A-wtd -64dBm	.....	96dB ref -20dBm	.....	80dB ref 10dBm wtd	.....
Distortion (system)	<0.7% at 15kHz -58dBm	0.3% -64dBm	.....	1% ref -20dBm out	.....	1% ref 10dBm out	.....
Modulation control	Compression	.....	.....	Compression	.....	Limiting/compression	.....
Companding	Yes	No	.....	Yes	.....	Yes	.....
<b>Transmitter model #</b>	<b>WRT210/WRT220</b>	<b>WRT27/27A</b>	.....	<b>Mark 50A/dbs</b>	.....	<b>WHM-300</b>	.....
Transmitter style	Hand-held	Bodypack	.....	Body/pocket pack	.....	Hand-held	.....
RF output power	50mW 50Ω load	30mW	.....	50mW	.....	15mW	.....
Carrier deviation	±15kHz	±15kHz	.....	±10kHz	.....	±12kHz	.....
Frequency stability	0.005%	0.005%	.....	0.001%	.....	0.005%	.....
Mic type	Dynamic	Electret supplied	.....	SM87/ECM-50 electret	.....	Electret	.....
Aux line input	No	No	.....	X1mr bal	.....	No	.....
Line input level	.....	.....	.....	0dBm	.....	.....	.....
Power requirement	3Vdc	9Vdc	.....	9Vdc	.....	9Vdc	.....
Operating weight	14oz	6.4oz	.....	6oz	.....	5.4oz	.....
<b>Receiver Model #</b>	<b>WRR210/WRR220</b>	<b>WRR27/37/57</b>	.....	<b>Mark 2L/RFS0</b>	.....	<b>FMR-1</b>	.....
Sensitivity	.....	.....	.....	0.2μV/20dB quieting	.....	<1μV/12dB SINAD	.....
Spurious rejection	<-70dB	<-80dB	.....	<-80dB	.....	<-70dB	.....
Output connection	X1mr bal	X1mr bal	.....	Bal	.....	.....	.....
Output level	-58dBm	-64dBm	.....	-40dBm/0dBm	.....	10dBm (-50dB mic)	.....
Power requirement	9Vdc (6 AA cells)	9Vdc/120Vac	.....	12Vdc/115-230Vac	.....	12Vdc/10Vac	.....
Metering	.....	RF level/AF level/power	.....	RF/AF level/battery	.....	AF level	.....
Panel indicators	Power/carrier/channel	Power/	.....	Carrier present	.....	Carrier/channel	.....
Antenna type	Whip	Furnished whip	.....	Whip furnished	.....	5/8 whip furnished	.....
Diversity receiving	Yes WRR220	No	.....	Yes	.....	Option	.....
Multiple channels	2/receiver	.....	.....	2/receiver	.....	1/receiver	.....
<b>Reader Service Number</b>	<b>781</b>	<b>782</b>	.....	<b>783</b>	.....	<b>784</b>	.....



**Spec Note:**

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.

# TEK'S NEW 1710B: THE BRIGHTEST IDEA IN WAVEFORM MONITORING.

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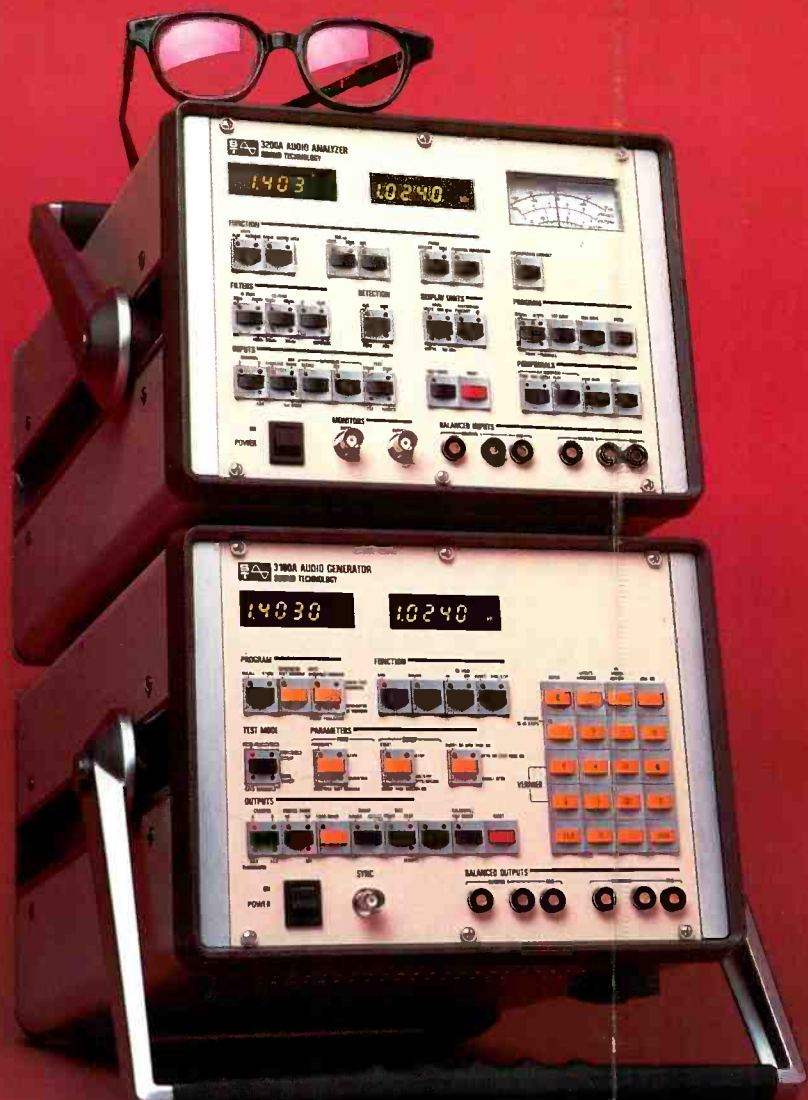


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# Remote Pickup Units

These frequency modulated, low power radio systems allow remote location origination of radio programming.

Manufacturer	Marti Electronics			Moseley Associates	
Model/Series Number	RPT-2 (RPT-15)	RPT-25	RPT-40	RPL-3A	RPL-4A
Frequency band	148-174/450-470MHz	450-470MHz	148-174MHz	148-174MHz	450-470MHz
Multichannel system	2-channel	2-channel	2-channel	2-channel	2-channel
Typical range	6 miles (15 miles)	25 miles	20 miles	20 miles	20 miles
AF response (system)	±0.15dB/50Hz-15kHz	±1.5dB/50Hz-12.5kHz	±1.5dB/50Hz-7.5kHz	±0.5dB/30Hz-10kHz	±1.5dB/30Hz-10kHz
S/N ratio (system)	55dB 100% mod unwt'd	58dB 100% mod unwt'd	50dB 100% mod unwt'd	55dB 100%	55dB 100%
Distortion (system)	2% 100% mod	0.2% 100% mod	0.2% 100% mod	<1.3% 100% mod 1kHz	<1.3% 100% mod 1kHz
Transmitter Model #	RPT-2 (RPT-15)	RPT-25	RPT-40	RPL-3A	RPL-4A
RF power output	2.5W (15W)	25W	40W	10-13W	10W
Carrier stability	0.00025%	0.00025%	0.0005%	0.00025%	0.00025%
Carrier deviation	±5kHz	±20kHz	±5kHz	±5kHz	±5kHz
Modulation control	Compressor/limiter	Compressor/limiter	Compressor/limiter	Limiter	Limiter
Auto relay encoder	27Hz	27Hz	27Hz	No	No
Integral audio mix	From 2 channels	4-channel	4-channel	2-channel	2-channel
Mic level inputs	1 active unbal	3 active bal/unbal	3 xfmr bal	Xfmr	Xfmr
Line level inputs	1 active unbal	1 xfmr bal	1 xfmr bal	Active	Active
Front panel metering	RF/ + dc/compression	RF/ + dc/compression	AF/RF/amp stages	AF level/RF output	AF level/RF output
Power required	115Vac/13Vdc	115Vac/13Vdc	115Vac/13.5Vdc	110Vac/13.5Vdc	110Vac/13.5Vdc
Internal battery	Yes (No)	No	No	No	No
Operating weight	5.25 lb (9.25 lb)	20 lb	20 lb	16 lb	16 lb
Receiver model #	AR-10 (CR-10)	CR-10	BR-10	RPL-3A	RPL-4A
Conversion design	Dual	Dual	Dual	Dual	Dual
Sensitivity	0.5µV 28dB quieting	0.5µV 28dB quieting	0.5µV	1µV 20dB quieting	1µV 20dB quieting
Spurious rejection	90dB below carrier	90dB below carrier	90dB below carrier	65dB below carrier	65dB below carrier
Output connection	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
Output level	4dBm (10dBm)	10dBm	+10dBm	10dBm	10dBm
Power required	115Vac/13Vdc	120Vac/13.5Vdc	120Vac/13.5Vdc	120Vac	110Vac
Front panel metering	AF/RF in/decode	AF/RF in	AF/RF/ + dc/amp stages	AF/RF in/ + dc	AF/RF in/ + dc
Auto relay decoder	27Hz	27Hz	27Hz	No	No
Reader Service Number	821	822	823	824	825

# AM Radio Transmitters

These amplitude-modulated radio transmitter systems are for operation from 535kHz to 1650kHz and/or shortwave frequencies. Typical audio input levels to these systems is approximately 10dBm.

Manufacturer	CSI Electronics			Continental Electronic Mfg. Co.	
Model/Series Number	T-1-A1 (T-3-A1)	T-5-A (T-10-A1)	T-100-A1 (T-50-A1)	315R-1	315F
Frequency band	Broadcast/shortwave	Broadcast/shortwave	Broadcast/shortwave	Broadcast	Broadcast
Power output rating	1.1kW (3kW)	6kW (12kW)	110kW (55kW)	5.5kW	10.6kW
RF output terminal	1½"	1½"	6½" (3½")	1½" EIA male	1½" male
Carrier stability	±5Hz	±5Hz	±5Hz	±5Hz	±5Hz
Carrier shift	3% 100% mod 400Hz	3% 100% mod 400Hz	3% 100% mod 400Hz	<2% 100% mod 400Hz	<3% 100% mod 400Hz
Modulation maximum	125%	125%	125%	125%	125%
AF input connection	Xfmr bal	Xfmr bal	Xfmr bal	Active bal	Active bal
AF response	±1.5dB/50Hz-10kHz	±1.5dB/50Hz-10kHz	±1.5dB/50Hz-10kHz	±1dB/20Hz-10kHz	±1.5dB/20Hz-10kHz*
THD distortion	2.5% at 95% mod	2.5% at 95% mod	3% at 95% mod	2% at 95% mod	<3% 100% 50Hz-10kHz
SMPT E IMD distortion	.....	.....	.....	.....	.....
AM noise figure	-55dB unwt'd	-55dB unwt'd	-55dB unwt'd	-60dB unwt'd	-60dB unwt'd
Final amp type	6146	3CX10000A3	4CV10000C*	3CX3000F7	4CX15000A
Modulator final type	7527A (4-1000A)	4CX3000A	4CV50000E*	3CX3000F7	Solid-state
IPA amp type	Solid-state (tube)	Tube	Tube	Solid-state	Solid-state
Stereo capable	Motorola exciter	Motorola exciter	Motorola exciter	Any exciter	Any exciter
Floor space required	38"x34"	76.5"x34"	237"x55" (118"x55")	34"x35"	66"x25"
Separate power rack	No	No	Yes	No	No
Input ac power	240Vac 1- or 3-phase	240Vac 3-phase	460Vac (380Vac) (3-phase)	240Vac 3-phase	230Vac 3-phase
Power factor	0.89	0.89	0.89	0.95	0.92
Power consumption	3.25kW (8.6kW)	13.5kW (27kW)	295kW (132kW)	13kVA	28.4kVA
Overall efficiency	71% (65% at carrier)	56% at carrier	63% (58%)	57%	53%
Monitoring output	5Vrms 50Ω	5Vrms 50Ω	5Vrms 50Ω	10-40Vrms 50Ω	10-40Vrms 50Ω
Fault architecture	Relay	Relay	Relay	Relay	Relay
Computer diagnostics	No	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes	Yes
Reader Service Number	796	797	798	799	800



More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

AM Radio Transmitters	
Continental Electronics	233
LPB	191
TTC/Wilkinson	77

Manufacturer	Continental Electronics	Elcom-Bauer			Harris
Model/Series Number	317C-2	705C (710C)	715C	750	SX-5A
Frequency band	Broadcast	Broadcast/shortwave	Broadcast/shortwave	Broadcast/shortwave	Broadcast
Power output rating	60kW	5kW (10kW)	15kW (25kW)	50kW	5kW
RF output terminal	3/4" EIA female	LC or 1/4"	1/4"	.....	3/4" EIA female
Carrier stability	±5Hz	±5Hz	±5Hz	±5Hz	±20Hz
Carrier shift	<2%	3%	3% 100% mod 400Hz	3% 100% mod 400Hz	2%
Modulation maximum	125%	125%	125%	125%	125%
AF input connection	Active bal	Xfmr bal	.....	.....	Active bal
AF response	±0.5dB/10Hz-7.5kHz	±1dB/50Hz-10kHz 95%	±1dB/50Hz-10kHz	±1dB/50Hz-7.5kHz	0.5, -1.5dB/20Hz-12.5kHz
THD distortion	<22.5% 100% mod	<2.5% (2%) 95% mod	2% (2.5%) 95% mod	<2.5%	1% 95% mod overall
SMPT E IMD distortion	.....	<2.5% at 95% mod	<2.5% at 95% mod	.....	1% 95% mod
AM noise figure	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd
Final amp type	4CX35000C	4CX5000A (4CX15000)	4CX20000B	4CX20000B	Solid-state
Modulator final type	3CX3000A1	4CX5000A	4CX20000B	4CX20000B	Solid-state
IPA amp type	Tube	Solid-state	Solid-state	Solid-state	Solid-state
Stereo capable	Any exciter	Any exciter	Any	Any	Harris STX-1B
Floor space required	144"x54"	70"x31"	70"x31" (138"x30")	144"x40"	28"x30"
Separate power rack	No	No	Yes (No)	Yes	No
Input ac power	440Vac 3-phase	208-240Vac 3-phase	208-240Vac 3-phase	380-450Vac 3-phase	208Vac 3-phase
Power factor	0.9	0.9	0.9	0.9	.....
Power consumption	178kVA	10.6kW (25kW)	40kW (60kW)	86kW	11.6kW
Overall efficiency	60% at carrier	55% (54%)	54%	54% at carrier	65% at carrier
Monitoring output	10-40Vrms 50Ω	5Vrms 50Ω	5Vrms 50Ω	5Vrms 50Ω	10Vrms 50Ω
Fault architecture	Relay	Relay	Relay	Relay	Microprocessor
Computer diagnostics	No	No	No	No	Yes
Auto recycle	Yes	Yes	Yes	Yes	Yes
	*Measured at 70% mod	*701B rated 1kW out	.....	.....	SX-1A rated 1kW
	.....	.....	.....	.....	SX-2.5A, 2.5kW
Reader Service Number	801	802	803	804	805

Manufacturer	Harris Broadcast RF				LPB
Model/Series Number	MW-10B	MW-50C3	VP-100A (VP-200A)	SW-50A (SW-100A)	AM5/25 (AM50/150)
Frequency band	Broadcast	Broadcast	Broadcast	Shortwave	Broadcast
Power output rating	11kW	50kW	100kW (200kW)	50kW (100kW)	5-25W (50-150W)
RF output terminal	1/4"	3/4" EIA male	230Ω unbal	300Ω bal	UHF connector
Carrier stability	±20Hz	±20Hz	±20Hz	±22Hz	±10Hz
Carrier shift	2%	2%	5% (2.5%)	2%	3% (2%) 100% mod
Modulation maximum	125%	125%	100%	100%	110%
AF input connection	Active bal	Active bal	Xfmr bal	Xfmr bal	Xfmr bal
AF response	±1dB/20Hz-10kHz 95%	±1dB/20Hz-12.5kHz	±1.5dB/40Hz-10kHz	±1.5dB/50Hz-10kHz	±1dB/20Hz-15kHz 95%
THD distortion	2% 95% mod overall	2.4% 95% mod	3% 95% mod	3% 95% mod to 10kHz	2% 95% mod
SMPT E IMD distortion	.....	2.4% 95% mod	.....	.....	.....
AM noise figure	-60dB unwt'd	-60dB unwt'd	-55dB unwt'd	-55dB unwt'd	-50dB unwt'd
Final amp type	3CX15000H3	4CX35000C	4CV10000C	4CV50000E	Solid-state
Modulator final type	4CX15000A	4CX35000C	4CV10000C	4CV50000E	Solid-state
IPA amp type	Solid-state	Tube	Tube	Tube	Solid-state
Stereo capable	Harris STX-1B	Harris STX-1B	Harris STX-1B	Not applicable	No
Floor space required	72"x32"	144"x48"	12"x4.5' (24"x4.5')	144"x54"	Rack-mounted
Separate power rack	No	Yes	Yes	Yes	No
Input ac power	208Vac 3-phase	480Vac 3-phase	480Vac 3-phase	480Vac 3-phase	117Vac 1-phase
Power factor	0.95	0.95	0.95	0.95	.....
Power consumption	28kW	110kW	215kW (450kW)	130kW (250kW)	150W (975W)
Overall efficiency	20.5%	60%	65%	56%	83% (85%)
Monitoring output	10Vrms 50Ω	10Vrms 50Ω	10Vrms 50Ω	10Vrms 50Ω	5Vrms 50Ω
Fault architecture	Relay	Relay	Relay	Relay	Relay
Computer diagnostics	No	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes	No
	.....	.....	.....	.....	AM-5 rated 5W
	.....	.....	.....	.....	AM-50 rated 50W
	.....	.....	.....	.....	AM-100 rated 100W
Reader Service Number	806	807	808	809	810

Manufacturer	Marcom	Nautel			Radio Systems
Model/Series Number	Series 200	AMPFET P400	AMPFET 10	AMPFET 50	TR-20
Frequency band	Broadcast	Broadcast	Broadcast	Broadcast	Broadcast
Power output rating	To 5kW	0.4kW	10kW	50kW	0.2kW
RF output terminal	7/8"	L/C connector	1/4" EIA male	3/4" EIA male	UHF female
Carrier stability	±1Hz	±5Hz	±5Hz	±5Hz	±10Hz
Carrier shift	0.05%	<1%	<3% at 100% mod	<1% 100% mod 400Hz	0.002%
Modulation maximum	150%	125%	125%	125%	100%
AF input connection	Active bal	Xfmr bal	Xfmr bal	Xfmr bal	Xfmr bal
AF response	±0.5dB/20Hz-10kHz	±0.5dB/30Hz-10kHz	±0.5dB/50Hz-10kHz	±0.5dB/30Hz-10kHz	±1dB/20Hz-15kHz
THD distortion	0.1% 100% mod 1kHz	<2% 95% mod overall	<2% 95% mod overall	<2% 95% mod overall	<2% 100% mod overall
SMPT E IMD distortion	.....	<1% 85% mod	<1% 85% mod	<1% 85% mod	<2% 100%
AM noise figure	.....	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd	-60dB unwt'd
Final amp type	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Modulator final type	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
IPA amp type	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Stereo capable	Motorola C-Quam	Any system	Any system	Any system	No
Floor space required	24"x30"	Rack-mounted	25"x225"	157"x24"	.....
Separate power rack	No	No	Yes	No	No
Input ac power	208Vac 1- or 3-phase	115Vac 1-phase	240Vac 3-phase	480Vac 3-phase	110Vac
Power factor	0.85	0.8	0.95	0.95	.....
Power consumption	6.6kW	0.9kVA	20kVA	100kVA	0.1kVA
Overall efficiency	75%	65%	>75%	>75% at carrier	20%
Monitoring output	No	5-10Vrms 50Ω	5Vrms 50Ω	5Vrms 50Ω	2Vrms 50Ω
Fault architecture	Microprocessor	CMOS/TTL	CMOS/TTL	CMOS/TTL	CMOS/TTL
Computer diagnostics	Yes	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes	Yes
	.....	.....	AMPFET 1 rated 1kW	AMPFET 25 25kW	.....
	.....	.....	AMPFET 2.5 2.5kW	.....	.....
	.....	.....	AMPFET 5 5kW	.....	.....
Reader Service Number	811	812	813	814	815



Manufacturer	TTC/WW Kinson Division		
	Model/Series Number	AM-3000D	AM-10000D
Frequency band	Broadcast/shortwave	Broadcast/shortwave	Broadcast/shortwave
Power output rating	3kW	10kW	20kW
RF output terminal	7/8" EIA male	1 1/4" EIA male	1 1/4" EIA male
Carrier stability	±10Hz	±10Hz	±10Hz
Carrier shift	3%	3%	3% 100% mod
Modulation maximum	140%	140%	140%
AF input connection	Xfmr bal	Xfmr bal	Xfmr bal
AF response	±1dB/50Hz-10kHz 95%	±1dB/50Hz-10kHz 95%	±1dB/50Hz-10kHz
THD distortion	3% 100% mod	3% 100% mod	3% 100% mod
SMPTD IMD distortion	.....	.....	.....
AM noise figure	-60dB unwt'd	-60dB unwt'd	-54dB unwt'd
Final amp type	4-1000A	3CX10000A3	4CX2000B
Modulator final type	4-1000A	4CX3000	4CX10000D
IPA amp type	Solid-state	Tube	Tube
Stereo capable	.....	No	No
Floor space required	34"x38"	40"x42"	114"x30"
Separate power rack	No	No	Yes
Input ac power	240Vac 3-phase	240Vac 3-phase	240Vac 3-phase
Power factor	0.9	0.9	0.9
Power consumption	7kW	23kW	60kW
Overall efficiency	80%	80%	85%
Monitoring output	1-10Vrms 50Ω	1-10Vrms 50Ω	1-10Vrms 50Ω
Fault architecture	Relay	Relay	Relay
Computer diagnostics	No	No	No
Auto recycle	Yes	Yes	Yes
	AM-1000B rated 1kW with 4-400C tubes	AM-500C <sup>2</sup> rated 5kW	.....
	AM-2500B rated 2.5kW	.....	.....
Reader Service Number	816	817	818

## FM Radio Transmitters

These frequency-modulated radio transmission systems operate in the 88-108MHz (Band II) radio spectrum. Audio input signals to the system are typically +10dBm, 0dBm = 0.776mV across 600Ω. All values given relate to monaural operation.

Manufacturer	Broadcast Electronics			CSI Electronics	
	Model/Series Number	FM-30	FM-250		FM-3.5A
Power output rating	10kW (3kW)	30kW	250W	3.5kW	27.5kW
RF output terminal	.....	3 1/4" EIA female	Type N female	1 1/4" EIA female	3 1/4" EIA female
Carrier freq stab	<700Hz/3 months	±300Hz	±300Hz	±300Hz	±250Hz
Modulation capable	±100kHz	±200kHz	±200kHz	±200kHz	±150kHz
AF input connection	Unbalanced	Active bal/unbal	Resistive bal	Resistive balanced	Balanced
AF response mono	±0.2dB/40Hz-43kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz
THD distortion mono	<0.4%	0.08% at 100% mod	0.08% at 100% mod	0.08% at 100% mod	0.5% max
SMPTD IMD distortion	.....	0.08% at 100% mod	0.08% at 100% mod	0.08% at 100% mod	.....
Pre-emphasis	Any value	75μs std & opts	Any pre-emphasis	75μs std & opts	75μs std
AM noise figure	<-50dB unwt'd	-55dB	-55dB	-55dB	-55dB
FM noise figure mono	<-62dB unwt'd	-72dB unwt'd 100% mod	-72dB unwt'd	-72dB unwt'd	-65dB below 100% mod
Recommended exciter	ANT S3150 50W	BEI FX-30	BEI FX-30	BEI FX-30	CSI EX-20-F
Wideband comp input	Yes	Yes	Yes	Yes	Yes
Final amp type	Tetrode	8990 or 4CX20000	Solid-state	4CX3500A	3CX25000A7
IPA amp type	Solid-state	Solid-state	.....	Solid-state	3CX3000A7 & 8874
Stereo capable	Per exciter	Per exciter	Per exciter	Per exciter	Per exciter
Floor space required	23.6"Wx39.4"D	56.5"Wx31.5"D xmf'r	22.3"Wx30.75"D	34.5"Wx37.25"D	76.5"Wx 37.75"D
Separate power rack	No	34.5"Wx31.5"D p.s.	No	No	No
Input ac power	380Vac 3-ph (110/220)	220Vac 3-ph	220Vac 1-ph	200Vac 1-ph	190-460Vac range
Power factor	.....	0.9	0.9	0.9	.....
Power consumption	20kVA (5.5kVA)	50kW	450W	6.8kW	36kW
Overall efficiency	.....	60%	.....	50%	.....
Monitoring output	.....	GM	.....	GM	.....
Fault architecture	.....	CMOS/TTL	CMOS/TTL	CMOS/TTL std	.....
Computer diagnostics	.....	Yes	No	Microprocessor opt	.....
Auto recycle	Yes	Yes	Yes	Yes	Yes
	50W, 100W, 300W, and 1kW models available	FM-60 rated 60kW	FM100 rated 100W FM250 rated 250W	FM1.5A rated 1.5kW FM5A rated 5kW	20kW and 1kW models available
Reader Service Number	856	857	858	859	860

Manufacturer	Continental Electronics			Elcom-Bauer	
	Model/Series Number	814R-1	817A	816R-1A	SS-20 (SS series) 6100
Power output rating	2.5kW	60kW	10kW	20W	100W
RF output terminal	1 1/4" EIA male	6 1/4" EIA flange	3 1/4" EIA male	Type N	N connector
Carrier freq stab	±500Hz	±500Hz	±500Hz	±300Hz	±300Hz
Modulation capable	±100kHz	±100kHz	±150kHz	±150kHz	±200kHz
AF input connection	Active bal	Active bal	Active bal	Balanced	Active bal
AF response mono	±1dB	±1dB	±1dB	±0.5dB/50Hz-15kHz	±0.5dB/30Hz-15kHz
THD distortion mono	0.25% 100% mod	0.25% 100% mod	0.25% 100% mod	<0.2% at 400Hz	<0.08% 100% mod
SMPTD IMD distortion	0.08% 100% mod	0.08% 100% mod	0.08% 100% mod	.....	<0.08% 100% mod
Pre-emphasis	75μs	Per request	75μs	75μs	Any value
AM noise figure	-55dB	-55dB	-55dB	-60dB	-60dB
FM noise figure mono	-65dB de-emphasized	-65dB de-emphasized	-65dB de-emphasized	-65dB	-72dB de-emphasized
Recommended exciter	Continental 802A	Continental 802A	Continental 802A	Elcom-Bauer 690	Elcom-Bauer 6020
Wideband comp input	Yes	Yes	Yes	Yes	Yes
Final amp type	5CX1500A	4CX40000G	4CX10000D	Solid-state	Solid-state
IPA amp type	Solid-state	Tube	Tube	Solid-state	Solid-state
Stereo capable	Yes	Yes	Yes	Yes	Yes
Floor space required	35"x24"	42"x125"	72"x28"	24"Wx12"D	19"x8.5" rack-mount
Separate power rack	No	Optional separated	No	No	No
Input ac power	200-250Vac 3-phase	200-250Vac 3-phase	200-250Vac 3-phase	110/220Vac 1-phase	110Vac 1-phase
Power factor	0.94	0.93	0.89	0.9	0.9
Power consumption	4.9kW	93kW	17.7kW	1kW	250kW
Overall efficiency	50%	64%	60%	50%	50%
Monitoring output	1Vrms 50Ω	1Vrms 50Ω	1Vrms 50Ω	.....	2Vrms 50Ω
Fault architecture	CMOS/TTL	CMOS/TTL	Relay	.....	CMOS/TTL
Computer diagnostics	No	No	No	.....	No
Auto recycle	Yes	Yes	Yes	No	Yes
	.....	B17R-1 rated 50kW	B16R-3 rated 25kW	0.1kW & 0.25kW units available	6300 rated 300W 6600 rated 600W
Reader Service Number	861	862	863	864	865

Manufacturer	Elcom-Bauer	Harris Broadcast RF			Larcon Communication
Model/Series Number	630C	FM-3.5K (FM-1K)	FM-25K	FMD-50K (FM-40K)	FMT-25L
Power output rating	30kW	4kW (1kW)	25kW (20kW)	50kW (40kW)	25kW
RF output terminal	6 1/2" EIA female	1 1/2" EIA female	3 1/2" EIA	6 1/2" (3 1/2")	3 1/2" flange
Carrier freq stab	±300Hz	±300Hz	±300Hz	±300Hz	±200Hz
Modulation capable	±200kHz	±100kHz	±100kHz	±150kHz	>±100kHz
AF input connection	Active bal	Balanced	Bal	Active bal	Balanced
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.1dB/30Hz-15kHz
THD distortion mono	0.08% 100% mod	0.15% at 100% mod	0.15% at 100% mod	0.15% at 100% mod	<0.08% 100% mod
SMPTM IMD distortion	0.08% 10% mod	0.045% at 100% mod	0.1% at 100% mod	0.1% (0.15%)	.....
Pre-emphasis	Any value	Any std value	All std values	Any value	75µs std
AM noise figure	-60dB	-55dB	-55dB (-55dB)	-55dB (-50dB)	-60dB nonsynchronous
FM noise figure mono	-72dB de-emphasized	-80dB unwt'd de-emph	-80dB	-80dB unwt'd de-emph	-75dB
Recommended exciter	E-B SS-20 exciter	Harris MX-15	Harris MX-15	Harris MX-15	Larcan FME-30L
Wideband comp input	Yes	Yes	Yes	Yes	Yes
Final amp type	4CX30000C	4CX35000A (4CX1000A)	4CX20000A (4CX15000A)	4CX20000A (4CX15000A)	RCA 9011 tetrode
IPA amp type	Solid-state	Solid-state	Solid-state (tube)	Solid-state (tube)	Solid-state
Stereo capable	Yes	Yes	Yes	Yes	Yes
Floor space required	58"x29"	33"Wx34"D	35"Wx31"D	90"Wx31"D (133x33D)	48"Wx30"D
Separate power rack	Yes	No	Yes	Yes	No
Input ac power	230Vac 3-phase	220Vac 1-phase	208-240Vac 3-phase	220Vac 3-phase	208Vac 3-phase
Power factor	0.9	.....	0.9	0.9	0.9
Power consumption	55kVA	7kW (2.25kW)	40kW (30.1kW)	80kW (60kW)	35.2kVA
Overall efficiency	50%	50% (45%)	62.5%(66%)	63% (66%)	71%
Monitoring output	2Vrms 50Ω	10Vrms 50Ω	10Vrms at 50	10Vrms 50Ω	.....
Fault architecture	Relay	CMOS/TTL	CMOS/TTL/Relay	CMOS/TTL (Relay)	CMOS
Computer diagnostics	No	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes	Yes
	610C rated 10kW	FM-5K rated 5kW	FM-10K rated 10kW	.....	FMT-10L rated 10kW
	605C rated 5kW	FM-300K rated 300W	.....	.....	.....
	603C rated 3kW	.....	.....	.....	.....
	601C rated 1.5kW	.....	.....	.....	.....
Reader Service Number	866	867	868	869	870

Manufacturer	Marconi	Marconi		NEC America	
Model/Series Number	Series 400	B6529/S	B6525	B6526	FBN-11K20E
Power output rating	To 3kW	1kW	10kW	20kW	20kW
RF output terminal	1 1/2" EIA flange	N connector	3 1/2" EIA flange	3 1/2" EIA flange	3 1/2" EIA female
Carrier freq stab	±300Hz	±500Hz	±200Hz	±200Hz	±500Hz
Modulation capable	±200kHz	±75kHz	±75kHz	±75kHz	±150kHz
AF input connection	Active balanced	Balanced	Balanced	Balanced	Balanced
AF response mono	±0.1dB/20Hz-15kHz	±0.25dB/30Hz-15kHz	±0.5dB/40Hz-15kHz	±0.5dB/40Hz-15kHz	±0.5dB/30Hz-15kHz
THD distortion mono	0.05% at 5kHz 100% mod	.....	.....	.....	0.3% at 1kHz 100% mod
Pre-emphasis	Any value	0 to 50µs	0 to 50µs, switched	0 to 50µs, switched	Any value
AM noise figure	-80dB	< -55dB	< -50dB	< -50dB	-50dB
FM noise figure mono	-80dB	< -70dB	< -70dB	< -70dB unwt'd < -72dB	-70dB de-emph unwt'd
Recommended exciter	#415	.....	.....	.....	HPB-1210
Wideband comp input	Yes	Yes	Yes	Yes	Yes
Final amp type	Solid-state	Solid-state	8986	9011	4CX15000A
IPA amp type	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Stereo capable	Per exciter	Yes	Yes	Yes	Per exciter
Floor space required	24"x19"-rack	.....	23.6"Wx39.4"D	42"Wx39.4"D	51"Wx29"D
Separate power rack	No	No	No	No	No
Input ac power	208Vac 1-phase	190-260Vac 1-phase	380-415Vac 3-phase	380-415Vac 3-phase	208Vac 3-phase
Power factor	0.85	ca 1	<0.9	<0.9	0.9
Power consumption	.....	1.9kVA	16.7kVA	33kVA	33.5kVA
Overall efficiency	55%	55%	60%	60%	60%
Monitoring output	None	None	None	None	0.5Vrms 50Ω
Fault architecture	CMOS/TTL & relay	None	CMOS	CMOS	CMOS/TTL
Computer diagnostics	No	No	No	No	No
Auto recycle	Yes	Yes	Yes	Yes	Yes
Reader Service Number	871	872	873	874	875

Manufacturer	Philips TV Systems				QEI
Model/Series Number	LDM1239	LDM1233	LDM1236	659T30KW	695T5KW (-1KW)
Power output rating	1kW	10kW	27.5kW	30kW	5kW (1.2kW)
RF output terminal	Type N female	1 1/2" EIA male	3 1/2" EIA male	3 1/2" EIA male	1 1/2" male
Carrier freq stab	±500Hz	±500Hz	±500Hz	±200Hz	±200Hz
Modulation capable	±100kHz	±100kHz	±100kHz	±75kHz	±75kHz
AF input connection	Bal/unbal	Bal/unbal	Bal/unbal	Balanced	Balanced
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	0.5dB/30Hz-15kHz
THD distortion mono	0.3% 75kHz 100% mod	0.3% 75kHz 100% mod	0.3% 75kHz 100% mod	0.25% at 100%	0.025% at 100% mod
SMPTM IMD distortion	0.5% at 100% mod	0.5% at 100% mod	0.5% at 100% mod	0.25% at 100%	0.025% at 100% mod
Pre-emphasis	Any value	Any value	Any value	Any value	Any value
AM noise figure	-65dB	-65dB	-65dB	-55dB	-55dB
FM noise figure mono	-75dB (-76dB wtd)	-75dB (-76dB wtd)	-75dB (-76dB wtd)	-75dB	-75dB
Recommended exciter	Philips LDM1248	Philips LDM1248	Philips LDM1248	QEI 695	QEI 695
Wideband comp input	Yes	Yes	Yes	Yes	Yes
Final amp type	Solid-state	TH-399	TH-374	3CX15000	3CX3000A7 (solid-state)
IPA amp type	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Stereo capable	Per exciter	Per exciter	Yes	Per exciter	Yes
Floor space required	22"Wx29"D	44"Wx37"D	43"Wx37"D	72"Wx30"D	24"Wx30"D
Separate power rack	No	No	No	Yes	No
Input ac power	220Vac 1-ph 47-63Hz	220Vac 3-ph 47-63Hz	220Vac 3-ph	208-240Vac 3-ph	208-240Vac 1-ph
Power factor	0.9	0.9	0.9	0.95	0.9
Power consumption	2.1kVA	18.5kVA	50kVA	48kVA	9.5kVA (2.5kVA)
Overall efficiency	48%	55%	55.5%	60%	60%
Monitoring output	0.5Vrms 50Ω	0.5Vrms 50Ω	0.5Vrms 50Ω	1Vrms 50Ω	1Vrms 50Ω
Fault architecture	CMOS/TTL	CMOS/TTL	CMOS/TTL	Microprocessor	Microprocessor
Computer diagnostics	No	No	No	Yes	Yes
Auto recycle	Yes	Yes	Yes	Yes	Yes
	LDM1238 rated 0.5kW	.....	.....	695T20kW rated	695T3.5kW 3.5kW
	LDM1237 rated 0.3kW	.....	.....	20kW	.....
	LDM1248 rated 0.1kW	.....	.....	.....	.....
Reader Service Number	876	877	878	879	880

Manufacturer	QEI	Rohde & Schwarz	TEM-Milano	TTC/Wilkinson Div.
Model/Series Number	675T500	NU 421	NU 331	AR-10E (AR-10F) 8090 series "C"
Power output rating	500W	20kW	3kW	>1kW (>10kW)
RF output terminal	Type N male	Air line 25/58	13/30 connector	7/8" EIA (1 1/8")
Carrier freq stab	±200Hz	.....	.....	±500Hz/6 months
Modulation capable	±75kHz	.....	.....	±100kHz peak
AF input connection	Balanced	Balanced	Balanced	Bal or unbal
AF response mono	±1dB/30Hz-15kHz	±0.1dB/40Hz-43kHz	±0.1dB/40Hz-43kHz	±0.1dB/30Hz-40kHz
THD distortion mono	0.25% at 100% mod	<0.4%	<0.4%	0.4% at 75kHz dev
SMPT E IMD distortion	0.25% at 100% mod	.....	.....	0.2% for 2nd order
Pre-emphasis	Any value	50µs, 75µs	50µs, 75µs	50µs, 75µs
AM noise figure	-60dB	.....	.....	<-70dB
FM noise figure mono	-70dB	<-68dB 40kHz dev.	<-68dB at 40kHz	<-70dB
Recommended exciter	QEI 675	R&S SU 155	R&S SU 155	TEM 7A-100
Wideband comp input	Yes	Yes	Yes	Yes
Final amp type	Solid-state	Siemens RS2024CL tet	Solid-state	Solid-state (4CX7500A)
IPA amp type	Solid-state	Solid-state	Solid-state	Solid-state
Stereo capable	Yes	Yes	Yes	Yes
Floor space required	Rack-mounted	69"Wx29"D	43"Wx33"D	22.5"Wx26.4"D(56"D)
Separate power rack	No	No	No	No
Input ac power	120/240Vac 1-ph	220/380Vac 3-ph	220/380Vac 3-ph	240V 1-ph (380V 3-ph)
Power factor	0.9	0.9	>0.92	>0.85 (>0.88)
Power consumption	1.2kVA	44.4kVA (40kW)	6.36kVA (5.85kW)	<1.9kVA (<21.3kVA)
Overall efficiency	50%	.....	.....	75%
Monitoring output	1Vrms 50Ω	Yes	Yes	Yes
Fault architecture	Relay	Yes	Yes	CMOS
Computer diagnostics	No	Yes	Yes	No
Auto recycle	No	Yes	Yes	Yes
Reader Service Number	881	882	883	885

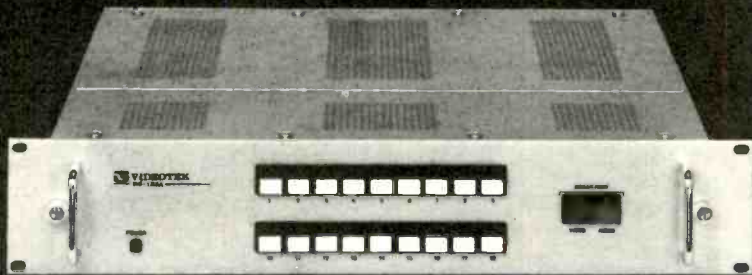


More information on the manufacturers who advertised in this issue can be obtained by referring to their advertisements on the pages given.

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### ◀ RS-183A

#### 18x1 Audio Follow Video Routing Switcher\*

- 18 Looping Video Inputs
- 18 Stereo & Data Inputs
- Video/Audio Breakaway
- RS422 Computer Interface



### ▲ RS-10A

#### 10x1 Audio Follow Video Routing Switcher\*

- 10 Looping Video Inputs
- 2 Audio Inputs per Video Channel
- Video/Audio Breakaway



### ▲ RS-12 12x1 Video Only Routing Switcher\*

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Circle (175) on Reply Card

Manufacturer	TTC/Walkman	8090 series "G"	Thomson-LGT
<b>Model/Series Number</b>	<b>8090 Series "F"</b>	<b>8090 series "G"</b>	<b>EFM-2500</b>
Power output rating	15kW	21.5kW	2.5kW
RF output terminal	3/8" EIA male	3/8" DIA male	1 1/2" EIA
Carrier freq stab	±100Hz	±100Hz	<0.00006Hz/yr
Modulation capable	±500kHz	±500kHz	±150kHz
AF input connection	Active bal	Active bal	Bal or unbal
AF response mono	±0.25dB/25Hz-15kHz	±0.25dB/25Hz-15kHz	±0.2dB/30Hz-15kHz
THD distortion mono	0.01% at 100%	0.01% 100% mod	<0.2%
SMPTE IMD distortion	0.01% at 100%	0.01% 100% mod	.....
Pre-emphasis	75µs	75µs	Any value
AM noise figure	-80dB	-80dB	-52dB
FM noise figure mono	-90dB	-90dB	-82dB
Recommended exciter	Model X	Model X	Thomson-LGT EFM-10
Wideband comp input	Yes	Yes	Yes
Final amp type	Single tube PA	4CX15000	Solid-state
IPA amp type	Solid-state	Solid-state	Solid-state
Stereo capable	Yes	Yes	Yes
Floor space required	.....	.....	31.5"Wx23.6"D
Separate power rack	No	Yes	No
Input ac power	240Vac 3-ph	240Vac 3-ph	208-240Vac 3-ph
Power factor	0.9	0.9	0.9
Power consumption	.....	.....	7.2kVA
Overall efficiency	75%	75%	30% with exciter
Monitoring output	1-10Vrms	1-10Vrms	.....
Fault architecture	Relay	Relay	.....
Computer diagnostics	No	No	.....
Auto recycle	Yes	Yes	Yes
	Model D rated 4.4kW	Model H rated 32kW	EFM-50 rated 50W
	Model E rated 7.5kW	.....	EFM-100 rated 100W
<b>Reader Service Number</b>	<b>886</b>	<b>887</b>	<b>888</b>

## UHF TV Transmitters

This TV transmission equipment is capable of operating between 470MHz and 890MHz, covering all U.S. UHF as well as European Band IV and V TV channels. All are stated as capable of transmitting NTSC standard signals.

Manufacturer	Acrodyne Industries			Comark	
Model/Series Number	TRU-10KV/TRU-10KVC	TRU/5KA	CTT-U-10T (-5T)	CCT-U-30S (-60SE)	CTT-U-120S (-240S)
Frequency range	Ch 14-69	Ch 14-69	Ch 14-69	Ch 14-69	Ch 14-69
Visual peak power	10kW	5kW	10kW (5kW)	30kW (60kW)	120kW (240kW)
Carrier regulation	3%	3%	3%	3%	3%
Modulation capable	3%	3%	97%	97%	97%
Response/brightness	±0.75dB	±0.75dB	±0.5dB	±0.75dB	±0.75dB
ICPM rating	±3° w/o correction	±3° w/o correction	±2° w/o correction	±1°	±1°
Rec ICPM corrector	Integral circuitry	Integral circuitry	No	Integral circuitry	Integral circuitry
Diff phase/gain	±3°/0.5dB	±3°/0.5dB	±2°/3%	±3°/0.5dB	±3°/0.5dB
Linearity (LF)	5%	5%	±2%	1dB	1dB
S/N ratio	52dB	52dB	-55dB	55dB	55dB
K-factor 2T/12.5T	2%, 5%	2%, 5%	2%, 5%	2%, 5%	2%, 5%
Harmonic radiation	-60dB below visual	-60dB below visual	-60dB below visual	-60dB below visual	-60dB below visual
Visual PA device	TH-582 tetrode	TH-382 tetrode	Tetrode	Klystron	Klystron
IPA type device	TH-347 tetrode	Solid-state	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	1kW	0.5kW	1kW (0.5kW)	3kW (6kW)	12kW (24kW)
Carrier deviation	±100kHz max	±100kHz max	±150kHz max	±150kHz max	±150kHz max
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz
Harmonic distortion	1% at 1kHz 100% mod	1% at 1kHz 100% mod	0.3% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod
AM/FM noise figures	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB
Aural PA device	Diplexed	Diplexed	Tetrode (5T diplexed)	Klystron	Klystron
IPA type device	.....	.....	Solid-state	Solid-state	Solid-state
Cooling system	Vapor-phase	Forced air	Forced air	Water	Water
Heat exchanger	Integral	No	No	External equipment	External equipment
Input power required	208Vac 3-phase	208Vac 3-phase	208-240Vac 1-/3-phase	460/480/500Vac 3-phase	460/480/500Vac 3-phase
Power consumption	28kVA w/ bars-tone	21kVA w/ bars-tone	14kVA (20kVA)	128kVA (245kVA)	225kVA (475kVA)
Power factor	0.95	0.95	.....	0.95	0.95
Visual efficiency	.....	.....	.....	75%	75%
Wideband aural	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
	.....	.....	CCT-U-2MX rated	.....	.....
	.....	.....	2kW w/ 10% aural	.....	.....
<b>Reader Service Number</b>	<b>501</b>	<b>502</b>	<b>503</b>	<b>504</b>	<b>505</b>

Manufacturer	EMCEE		Harris Broadcast		ITS
Model/Series Number	TTU50000P	TTU1000E	TVE-60S	TVE120S	ITS-230
Frequency range	470-890MHz Band IV/V	470-890MHz Band IV/V	Ch 14-69/470-806MHz	470-806MHz/Ch 14-69	470-890MHz/Ch 14-83
Visual peak power	5kW	1kW	60kW	120kW	1kW
Carrier regulation	2%	2%	<2%	<2%	2%
Modulation capable	5%	5%	0%	0%	1%
Response/brightness	±0.5dB	±0.5dB	±0.75dB	±0.75dB	±0.5dB
ICPM rating	±2° w/o correction	±2°	±4°/2% corrected	±4°/2% corrected	±2° w/ correction
Rec ICPM corrector	None	None	.....	Integral circuitry	Integral circuitry
Diff phase/gain	±3°/0.5dB	±2°/0.5dB	±3°/0.5dB	±3°/0.5dB	±1°/0.2dB
Linearity (LF)	5%	5%	12% uncorrected	1dB	5%
S/N ratio	55dB	55dB	55dB	55dB	55dB
K-factor 2T/12.5T	2%, 3%	2%, 2%	2%, 5%	2%, 5%	2%, 2%
Harmonic radiation	-60dB below visual	-60dB below visual	-70dB below visual	-70dB below visual	-60dB below visual
Visual PA device	TH-382 tetrode	TH-347 tetrode	VKP-7550S klystron	VKP-7550 klystron	RCA-9017 tetrode
IPA type device	TH-327 tetrode	Solid-state	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	0.5kW	0.1kW	12kW	24kW	0.1kW
Carrier deviation	±40kHz max	±40kHz max	±120kHz	±120kHz	±75kHz max
AF response mono	±1dB/50Hz-15kHz	±1dB/50Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz
Harmonic distortion	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5%	0.5% 100% mod 1kHz	0.5% at 1kHz 100% mod
AM/FM noise figures	-55dB/-55dB	-55dB/-60dB	-55dB/-59dB	-55dB/-60dB	-55dB/-60dB
Aural PA device	Diplexed	Diplexed	VKP-7550S klystron	VKP-7550 klystron	Diplexed
IPA type device	.....	Solid-state	Solid-state	Solid-state	Solid-state
Cooling system	Forced air	Forced air	Vapor-phase	Vapor-phase	Forced air
Heat exchanger	No	No	.....	External equipment	No
Input power required	208/230Vac 3-phase	208/220Vac 1-/3-phase	480Vac 3-phase	460Vac 3-phase	208/240Vac 1-phase
Power consumption	20kVA w/ bars-tone	5.5kVA w/ bars-tone	135kW	245kVA	5kVA w/ bars-tone
Power factor	0.97	0.98	>0.95	0.9	0.95
Visual efficiency	46%	53%	65%	65%	.....
Wideband aural	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
<b>Reader Service Number</b>	<b>506</b>	<b>507</b>	<b>508</b>	<b>509</b>	<b>510</b>

Manufacturer	ITS	NEC America		Philips TV Systems	
Model/Series Number	ITS-240 (-235)	PCU-960H	PCU-912KS	LDM-1780	LDM-1208 (-1219)
Frequency range	470-890MHz/Ch 14-83	470-806MHz/Ch 14-69	470-806MHz/Ch 14-69	470-860MHz/Ch 14-78	470-860MHz/Ch 14-78
Visual peak power	10kW (5kW)	60kW	120kW	5kW (10kW)	55kW
Carrier regulation	2%	2%	2%	100%	100%
Modulation capable	1%	0%	0%	100%	100%
Response/brightness	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB
ICPM rating	±2° w/ correction	±3° w/correction	±3° w/ correction	±4°	±4° w/o correction
Rec ICPM corrector	Integral circuitry	Integral	Integral	.....	.....
Diff phase/gain	±1°/0.2dB	±3°/0.5dB	±3°/0.5dB	±3°/0.5dB	±3°/0.3dB
Linearity (LF)	5%	1dB	1dB	90%	90%
S/N ratio	55dB	60dB wtd random	60dB wtd	60dB	55dB
K-factor 2T/12.5T	2%, 4%	1.5%, 5%	1.5%, 5%	2%, 2%	2%, 2%
Harmonic radiation	-60dB below visual	-80dB below visual	-80dB below visual	-70dB below visual	-70dB below visual
Visual PA device	TH-382 tetrode	YK-1265 klystron	YK-1265 klystron	TH-382 tetrode	Klystron YK1195-96
IPA type device	RCA-9017 tetrode	Solid-state	Solid-state	Philips	Philips
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	1kW (0.5kW)	6kW	12kW	0.5kW (1kW)	5.5kW
Carrier deviation	±75kHz max	±150kHz max	±150kHz max	±100kHz max	±100kHz max
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz
Harmonic distortion	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod
AM/FM noise figures	-55dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB
Aural PA device	Diplexed	Klystron	Klystron	Diplexed klystron	Klystron (diplexed)
IPA type device	Solid-state	Solid-state	Solid-state	Philips	Philips
Cooling system	Forced air	Water & vapor-phase	Water & vapor-phase	Forced air	Water or vapor-phase
Heat exchanger	No	External equipment	External equipment	No	External equipment
Input power required	208/240Vac 1-phase	480Vac 3-phase	480Vac 3-phase	220Vac	226Vac 3-phase
Power consumption	36kVA (20kVA)	132kVA w/ bars-tone	240kVA	21kVA (23kVA)	150kVA
Power factor	0.95	0.9	0.9	0.9	0.9
Visual efficiency	75%	75%	75%	75%	65%
Wideband aural	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
	.....	.....	.....	.....	YK1197 or K3382-83 klystrons usable.
Reader Service Number	511	512	513	514	515

Manufacturer	Philips TV Systems		RCA Broadcast Systems		
Model/Series Number	LDM1791 (1790)	LDM4x1790 (1791/2x90)	TTG-60U (TTG-120U)	TTG-100U (-100U/HA)	TTG-200U (-200U/HA)
Frequency range	470-810MHz/Ch 14-69	470-810MHz/Ch 14-69	Ch 14-69	Ch 14-69	Ch 14-69
Visual peak power	60kW (120kW)	240kW (180kW)	60kW (120kW)	100kW	200kW
Carrier regulation	100%	100%	3%	3%	3%
Modulation capable	100%	100%	1%	1%	1%
Response/brightness	±0.5dB	±0.5dB	±1dB	±1dB	±1.0dB
ICPM rating	±4° w/o correction	±4° w/o correction	±2° w/ correction	±2° w/ correction	±2° w/correction
Rec ICPM corrector	None	None	Integral circuitry	Integral circuitry	Integral circuitry
Diff phase/gain	±3°/0.5dB	±3°/0.5dB	±2°/0.5dB	±2°/0.5dB	±2°/0.5dB
Linearity (LF)	90%	90%	90% or 1dB	90% or 1dB	90% or 1dB
S/N ratio	60dB	60dB	55dB	55dB	55dB
K-factor 2T/12.5T	2%, 2%	2%, 2%	2%, <5%	2%, <5%	2%, <5%
Harmonic radiation	-70dB below visual	-70dB below visual	-60dB below visual	-60dB below visual	-60dB below visual
Visual PA device	YK1265x2 klystron	4xYK1265 (3xYK1265)	VKP-7553S klystron	VKP-7853 klystron	VKP-7853 klystron
IPA type device	Philips solid-state	Philips	50W solid-state	100W solid-state	100W solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	6kW (12kW)	24kW (12kW)	13.2kW (25.4kW)	22kW	24kW
Carrier deviation	±100kHz	±100kHz	±100kHz	±100kHz max	±100kHz
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz
Harmonic distortion	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod	0.5% at 1kHz 100% mod
AM/FM noise figures	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB
Aural PA device	Klystron	Klystron	VKP-7553S klystron	VKP-7853 klystron	VKP-7853 klystron
IPA type device	Philips solid-state	Philips	20W solid-state	20W (100W) solid-state	20W solid-state
Cooling system	Integral	Vapor-phase	Water for visual	Water for visual	Water for visual
Heat exchanger	Integral	Integral	Integral equipment	Integral equipment	Integral equipment
Input power required	226Vac 3-phase	226Vac 3-phase	440-480Vac 3-phase	440-480Vac 3-phase	440-480Vac 3-phase
Power consumption	125kVA (273kVA)	545kVA (375kVA)	130kW (255kW)	216kW (225kW)	415kW (422kW)
Power factor	0.9	0.9	0.9	0.9	0.9
Visual efficiency	65%	65%	72%	72%	72%
Wideband aural	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
	K3672CD klystron may be used	K3672BCD klystron may be used	May be expanded for parallel operation.	Aural is vapor-phase for TTG-100U.	Vapor-phase cooling for TTG-200U aural.
Reader Service Number	516	517	518	519	520

Manufacturer	Rohde & Schwarz	TTC/Television Technology	Thomson-LGT		Townsend Associates
Model/Series Number	NT424-A1 (425-A1)	XL1000TU	EUHF 5000S	EUHF 10000S	TA-55NE-10
Frequency range	470-860MHz/Ch 21-68	470-890MHz	470-860MHz	Ch 14-78/band IV/V	Any UHF (band IV/V)
Visual peak power	20kW	1kW	10kW	10kW	55kW
Carrier regulation	<0.3dB	.....	.....	.....	3%
Modulation capable	1%	100%	100%	.....	5%
Response/brightness	.....	0.5dB	0.5dB	.....	-1.5dB
ICPM rating	2°	1°	1°	.....	.....
Rec ICPM corrector	.....	.....	.....	.....	.....
Diff phase/gain	±<3°	2°/.....	±3°/0.3dB	...../0.3dB	3°/1dB
Linearity (LF)	<5%	1dB	0.5dB	.....	1dB
S/N ratio	>63dB	55dB	60dB	>60dB below visual	.....
K-factor 2T/12.5T	<2% for 20T pulse	2% .....	2%, 2%	2% .....	<30ns
Harmonic radiation	<-60dB below visual	-80dB	-60dB below visual	<-60dB	-60dB below visual
Visual PA device	YK1230 kly (TH582)	TH347 tetrode	TH382 tetrode	TH-382 tetrode	K-3276 or 4KM150
IPA type device	Solid-state (TH547)	Solid-state	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	2kW	0.1kW	0.5kW	1kW or 500W & 100W	5.5kW
Carrier deviation	±50kHz	±50kHz	±100kHz	±75kHz max	50kHz
AF response mono	±1dB/30Hz-75kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	1dB/per FCC curve
Harmonic distortion	<0.4% at 50kHz dev	0.5% at 1kHz 100% mod	0.5% w/ +10dBm drive	<0.5%	<1.2%
AM/FM noise figures	-46dB/-60dB	-60dB/-60dB	-60dB/-60dB	-50dB/-60dB	-60dB/-60dB
Aural PA device	YK1230 kly (TH593)	TH347 tetrode	Diplexed	Diplexed	EEV-370W
IPA type device	Solid-state (TH547)	Solid-state	Solid-state	Solid-state	Solid-state
Cooling system	Vapor-phase	Forced air	Forced air	Forced air	Water
Heat exchanger	.....	No	No	No	Required
Input power required	220-380Vac 3-phase	220-240Vac 1-phase	220V/380Vac 3-phase	220/380Vac 3-phase	480Vac
Power consumption	78kVA (60kVA)	4.8kW	19kW	24kW	189.7kW
Power factor	>0.9	0.9	>0.95	>0.95	.....
Visual efficiency	.....	.....	.....	.....	31.9% w/o pulser
Wideband aural	Yes	.....	Yes	Yes	BTSC ready
	Systems for CCR G/D/H/ I/K/M/N available	.....	EUHF100S rated 0.1kW	.....	.....
	.....	.....	EUHF1000S rated 1kW	.....	.....
Reader Service Number	521	522	523	524	525

# VHF TV Transmitters

These transmission systems are designed for CCIR bands I and III, generally the equivalent of U.S. Lowband (Channels 2 to 6) and Highband (Channels 7 to 13). All are capable of transmitting NTSC signals with monaural sound. Some may not accommodate the stereo aural system for the United States.

Manufacturer	Acrodyne Industries			EMCEE	
Model/Series Number	TRH-2.5KA	TRH-5KA	TRH-10KA	TTV100RM (TTV100RM)	TTV1000RM
Frequency range	Ch 7-13/Band III	Ch 7-13/Band III	Ch 7-13/Band III	Ch 2-6/7-13/Band I/III	Ch 7-13/Band III
Visual peak power	2.5kW	5kW	10kW	0.01kW (0.1kW)	1kW
Carrier regulation	±3%	±3%	±3%	2%	2%
Modulation capable	3%	3%	3%	5% (100%)	5%
Response/brightness	±0.75dB	±0.75dB	±0.75dB	±0.5dB	±0.5dB
ICPM rating	±3° w/o correction	±3° w/o correction	±3° w/o correction	±2° w/o correction	±2° w/o correction
Rec ICPM corrector	Internal circuitry	Internal circuitry	Internal circuitry	None	None
Diff phase/gain	±3°/0.5dB	±3°/0.5dB	±3°/0.5dB	±2°/0.5dB (±3)	±2°/0.5dB
Linearity (LF)	5%	5%	5%	5%	5%
S/N ratio	52dB	52dB	52dB	55dB	55dB
K-factor 2T/12.5T	2%/5%	2%/5%	2%/5%	2%/2% (2%/3%)	2%/3%
Harmonic radiation	-60dB below visual	-60dB below visual	-60dB below visual	-60dB below visual	-60dB below visual
Visual PA device	TH-361 tetrode	TH-361 tetrode	TH-371 tetrode	Solid-state	TH-298 tetrode
IPA type device	8791	8791	8791	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	0.25kW	0.5kW	1kW	0.001kW (0.01kW)	0.1kW
Carrier deviation	±100kHz max	±100kHz max	±100kHz max	±40kHz	±40kHz max
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±1dB/50Hz-15kHz	±1dB/50Hz-15kHz
Harmonic distortion	1% at 1kHz, 100% mod	1% at 1kHz, 100% mod	1% at 1kHz, 100% mod	0.5% at 1kHz, 100% mod	0.5% at 1kHz, 100% mod
AM/FM noise figures	-50dB/-60dB	-50dB/-60dB	-50dB/-60dB	-55dB/-60dB	-55dB/-60dB
Aural PA device	Diplexed	Diplexed	Diplexed	Diplexed to visual	Diplexed
IPA type device	.....	.....	.....	Solid-state	Solid-state
Cooling system	Forced air	Forced air	Forced air	Forced air	Forced air
Input power required	230Vac 1-phase	208Vac	208Vac 3-phase	115Vac 1-phase	208/220Vac 1-/3-phase
Power consumption	16kVA w/ bars-tone	21kVA w/ bars-tone	32kVA w/ bars-tone	180VA (900VA)	10kVA
Power factor	0.95	0.95	0.99 (0.98)	0.99 (0.98)	0.98
Visual efficiency	.....	.....	.....	18% (43%)	44%
Wideband aural	BTSC ready	BTSC ready	BTSC ready	No	BTSC ready
Reader Service Number	476	477	478	479	480

## With our Automatic Remote Control System your transmitter – and your personnel – will operate with increased efficiency

Have you ever wondered if your night operator will remember . . . to switch patterns at sunrise? . . . to periodically check critical levels? . . . the correct transmitter restart sequence? You'll never have to worry if Potomac Instruments' RC16+ is on the job. Because it'll do all these tasks for you. Plus a lot more. Automatically.

With its microprocessor based control logic, the basic RC16+ provides 16 telemetry channels with automatic out-of-tolerance alarms and remote raise/lower controls;

plus 16 status channels. The automatic functions — pattern shift, transmitter restart, power control — are pre-programmed in accordance with station license requirements and controlled with an accurate master clock.

The RC16+ is also expandable. In 16 channel increments, up to a total of 64 channels. With the remote video display option your chief engineer can get a detailed readout of all measured parameters. It's updated every 30 seconds and connects to any standard telephone. The optional plug-in automatic logger provides a permanent record of all transmitter activity. Log intervals, sequence, and alarm flags are user-selectable.

And, best of all, the RC16+ is cost effective. No other unit on the market offers these features and capabilities at this low price.

Basic System	\$4,995.00
Additional 16 Channels	1,865.00
Plug-In Automatic Logger	2,499.00
Remote Video Display Unit	650.00



**POTOMAC INSTRUMENTS**  
 932 PHILADELPHIA AVE. SILVER SPRING, MD 20910  
 (301) 589-2662

Circle (174) on Reply Card

Manufacturer	Harris Broadcast			Larcan Communications	NEC America
Model/Series Number	TV-30L	TV-30H	TV-50H	TTC-30LL (-30LH)	PCN-1420AL
Frequency range	Ch 2-6/Band I	Ch 7-13/Band III	Ch 7-13/Band III	Ch 2-6 Ch. 7-13	Ch 2-6/Band I
Visual peak power	30kW	30kW	50kW	30kW	20kW
Carrier regulation	0%	0%	0%	2%	0%
Modulation capable	0%	0%	0%	1%	0%
Response/brightness	±0.75dB	±0.75dB	±0.75dB	±0.5dB	±0.5dB
ICPM rating	±3°/1.5° corrected	±3°/1.5° corrected	±3°/1.5° corrected	±1° w/ correction	±1° w/o correction
Rec ICPM corrector	Integral circuitry	Integral circuitry	Integral circuitry	Integral	Integral
Diff phase/gain	±1°/0.25dB	±1°/0.25dB	±1°/0.25dB	±2°/0.5dB	±3°/0.3dB
Linearity (LF)	12% uncorrected	12% uncorrected	12% uncorrected	5%	1dB
S/N ratio	55dB	55dB	55dB	55dB	60dB unwt'd random
K-factor 2T/12.5T	2%/5%	2%/5%	2%/5%	2%/5%	1.5%/5%
Harmonic radiation	-80dB below visual	-80dB below visual	-80dB below visual	-80dB below visual	-80dB below visual
Visual PA device	RCA 9007 tetrode	RCA 9007 tetrode	RCA 8984 tetrode	RCA 9007 tetrode	8F68R tetrode
IPA type device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	6kW	3kW	5kW	3kW	2kW
Carrier deviation	±25kHz	±25kHz max	±25kHz max	±120kHz	±150kHz max
AF response mono	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz
Harmonic distortion	0.5% 100% mod, 1kHz	0.5% 100% mod, 1kHz	0.5%	0.5% at 1kHz, 100% mod	0.5% at 1kHz, 100% mod
AM/FM noise figures	-55dB/-60dB	-55dB/-60dB	-55dB/-60dB	-55dB/-60dB	-50dB/-60dB
Aural PA device	8807 tetrode	RCA 8807 tetrode	RCA 8807 tetrode	RCA 8806 tetrode	Solid-state
IPA type device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Cooling system	Forced air	Forced air	Forced air	Forced air	Forced air
Input power required	230Vac 3-phase	230Vac 3-phase	480Vac 3-phase	208Vac 3-phase	208Vac 3-phase
Power consumption	50kVA	50kVA	85kVA	63.6kVA w/ black-tone	37kVA w/ bars-tone
Power factor	0.9	0.9	0.9	0.95	0.9
Visual efficiency	70%	70%	70%	.....	68%
Wideband aural	BTSC ready	BTSC ready	BTSC ready	BTSC ready	BTSC ready
	.....	.....	.....	TTC16LH/LL 16kW	.....
	.....	.....	.....	TTC5LH/6LL 5/6kW	.....
	.....	.....	.....	TTC10LH/12LL 10/12kW	.....
Reader Service Number	481	482	483	484	485

Manufacturer	NEC America	PESA Electronics	Philips TV Systems		RCA
Model/Series Number	PCN-1435AH	TT-4823	LDM-1761	LDM1215	TTG-30L
Frequency range	Ch 7-13/Band III	Ch 7-13/Band III	Ch 7-13/Band III	Ch 2-6/Band I	Ch 2-6/Band I
Visual peak power	35kW	2kW or 6kW	10kW	20kW	20kW
Carrier regulation	2%	<1%	<±2%	<±2%	3%
Modulation capable	0%	10% or better	100%	100%	1%
Response/brightness	±0.5dB	<0.1%	±0.5dB	±0.5dB	±0.75dB
ICPM rating	±1° w/ correction	.....	±4° w/ correction	±4° w/o correction	±5° w/o correction
Rec ICPM corrector	.....	.....	None	None	Integral circuitry
Diff phase/gain	±3°/0.3dB	<±2°/2%	±3°/0.3dB	±3°/0.5dB	±3°/0.5dB
Linearity (LF)	1dB	<1%	90%	90%	90%
S/N ratio	60dB unwt'd random	>50dB	55dB	55dB	55dB
K-factor 2T/12.5T	1.5%/5%	.....	2%/2%	2%/2%	2%/5%
Harmonic radiation	-80dB below visual	<-60dB	-70dB below visual	-70dB below visual	-80dB
Visual PA device	8984 tetrode	TH-361 tetrode	YL-1610 tetrode	YL-1520 tetrode	9007 tetrode
IPA type device	Solid-state	Solid-state	.....	YL-1440 tetrode	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	3.5kW	0.2kW or 0.6kW	1kW	2kW	6.6kW
Carrier deviation	±150kHz max	±25kHz	±100kHz max	±100kHz max	±50kHz
AF response mono	±0.5dB/30Hz-15kHz	±3dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±0.5dB/50Hz-15kHz
Harmonic distortion	0.5% at 1kHz, 100% mod	< 2%, ±30kHz dev	0.5% at 1kHz, 100% mod	0.5% at 1kHz, 100% mod	0.5% at 1kHz, 100% mod
AM/FM noise figures	-50dB/-60dB	-65dB/-65dB 25kHz	-60dB/-60dB	-50dB/-60dB	-53dB/-60dB
Aural PA device	Solid-state	Diplexed	Solid-state	YL-1440 tetrode	8977 tetrode
IPA type device	Solid-state	Solid-state	.....	.....	Solid-state
Cooling system	Forced air	Forced air	Forced air	Forced air	Forced air
Input power required	208Vac 3-phase	220-380Vac 3-phase	220Vac	220Vac	208Vac/440Vac 3-phase
Power consumption	61.5kVA w/ bars-tone	20kVA 6kW no mod	25kVA w/ bars-tone	36kVA w/ bars-tone	51kW
Power factor	0.9	>0.9	0.9	0.94	0.94
Visual efficiency	68%	.....	70%	60%	50%
Wideband aural	BTSC ready	No	No	BTSC ready	BTSC ready
	.....	TT-4813 rated 1kW	.....	.....	.....
Reader Service Number	486	487	488	489	490

Manufacturer	RCA Broadcast		Ruhde & Schwarz	Thomson-LGT	Townsend Associates
Model/Series Number	TTG30-H	TTG-50H	VU series	EVHF10000S	TA-10NTL (-H)
Frequency range	Ch 7-13/Band III	Ch 7-13/Band III	Ch 5-12/174-230MHz	Ch 2-6/7-13/Band I/III	Ch 2-6 (Ch 7-13)
Visual peak power	30kW	50kW	0.1 to 2kW	10kW	10kW
Carrier regulation	3%	3%	.....	.....	3%
Modulation capable	1%	1%	.....	100%	5%
Response/brightness	±0.75dB	±0.75dB	<0.3dB	±0.7dB	±0.75dB
ICPM rating	±5° w/o correction	±5° w/o correction	.....	±1°	.....
Rec ICPM corrector	Integral circuitry	Integral circuitry	.....	.....	.....
Diff phase/gain	±2°/0.5dB	±2°/0.5dB	±3°/2%	±3°/3%	±3°/1dB
Linearity (LF)	93%	93%	< 5%	0.5%	1dB
S/N ratio	55dB	55dB	>63dB wtd	60dB	60dB
K-factor 2T/12.5T	2%/5%	2%/5%	...../ <2%	2%/2%	<60ns
Harmonic radiation	-80dB below visual	-80dB below visual	>60dB	-60dB	-80dB below visual
Visual PA device	9007 tetrode	8984 tetrode	Tetrode	TH-361 tetrode	EIMAC 3CX10000U7
IPA type device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
IF level modulation	Yes	Yes	Yes	Yes	Yes
Aural power output	6.6kW	6.6kW	10 or 20% of visual	1kW (500W + 100W)	1kW
Carrier deviation	±50kHz max	±50kHz max	±50kHz	±100kHz	±50kHz
AF response mono	±0.5dB/50Hz-15kHz	±0.5dB/50Hz-15kHz	<1dB/30Hz-15kHz	±0.5dB/30Hz-15kHz	±1dB/30Hz-15kHz
Harmonic distortion	0.5% at 1kHz, 100% mod	0.5% at 1kHz, 100% mod	0.4%, 40Hz-15kHz	0.5% at 10dBm	<1% overall
AM/FM noise figures	-53dB/-60dB	-53dB/-60dB	-46dB/-60dB	-50dB/-60dB	-55dB/-58dB
Aural PA device	8977 tetrode	8977 tetrode	Solid-state	Solid-state	Solid-state
IPA type device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Cooling system	Forced air	Forced air	Forced air	Forced air	Forced air
Input power required	208/440Vac 3-phase	440Vac 3-phase	220Vac	220/380Vac 3-phase	208/240Vac
Power consumption	52kW	85kVA w/ bars-tone	0.9kW for 100W out	24kW	35kVA
Power factor	0.94	0.94	>0.9	>0.95	.....
Visual efficiency	50%	50%	.....	.....	.....
Wideband aural	BTSC ready	BTSC ready	For German system	For European system	BTSC ready
	.....	.....	.....	EVHF5000S 5kW	.....
	.....	.....	.....	EVHF-100S 100W	.....
Reader Service Number	491	492	493	494	495

# Aural STL Systems

This section contains frequency-modulated microwave radio systems for signal transportation from the radio studio location to the transmitter site.

Manufacturer	Marti Electronics	Micro Control	Moseley Associates		TFT
Model/Series Number	STL-10	PTS-10C	PCL-505/PCL-505C	PCL-606/PCL-606C	8300
System for stereo	Dual	Composite	Dual or composite	Dual or composite	Composite
AF response (comp)	±0.25dB/20Hz-15kHz	±0.25dB/30Hz-60kHz	±0.3dB/30Hz-60kHz	±1dB/30Hz-53kHz	±0.5dB/50Hz-75kHz
AF response (dual)	.....	.....	±0.4dB/30Hz-15kHz	±0.25dB/30Hz-15kHz	±0.2dB/50Hz-15kHz
Distortion THD comp	.....	0.4% 30Hz-60kHz	0.4% 30Hz-15kHz	0.3% 30Hz-53kHz	0.2% 30Hz-75kHz
Distortion THD dual	0.2% 20Hz-15kHz	.....	0.4% 30Hz-60kHz	0.2% 30Hz-15kHz	0.2% 30Hz-15kHz
Distortion IMD comp	.....	.....	0.4% 100% mod	0.3% 100% mod	0.2% 100% mod
Distortion IMD dual	0.25% 20Hz-15kHz	.....	0.4% 100% mod	0.2% 100% mod	0.2% 100% mod
S/N ratio comp (100% mod)	.....	65dB wtd	68dB unwt'd	72dB unwt'd	>72dB unwt'd
S/N ratio dual (100% mod)	75dB unwt'd	.....	68dB unwt'd	72dB unwt'd	>72dB unwt'd
Crosstalk main-sub (100% mod)	-50dB	-46dB	<-43dB	-50dB	-46dB
Crosstalk sub-main (100% mod)	-72dB	-45dB	<-43dB	-45dB	-50dB
Stereo separation	72dB	36dB	38dB	48dB	40dB
Hot standby system	Yes	Option on transmit	Option	Yes	Option
Transmitter Model #	STL-10/950	PTS-10C	PCL-505/C	PCL-606/C	7700B
RF power output	10W	10W	7W	10W	12W
RF output connector	N female (UG-58)	N connector	N female 50Ω	Type N female	N female 50Ω
Frequency stability	0.00025%	0.0005%	0.0005%	0.00025%	1ppm/yr
AM noise rating	-72dB	-65dB	-60dB	-60dB	65dB below carrier
AF input level/imped -					
Composite		1Vp-p/3kΩ	3.5Vp-p/12kΩ	3.5Vp-p/6kΩ	1.24Vp-p/10kΩ
Dual	8dBm/600Ω	.....	10dB/600Ω bal	10dB/600Ω	10dB/10kΩ
Multiplexed	1V/300Ω	1V/600Ω	1.5Vp-p/2kΩ	1.5Vp-p/4kΩ	0.53dB/10kΩ
Transmitter metering	Movement	Movement	Movement	Movement	Movement & LEDs
Metered parameters	RF/final/driver/main	RF/final/multi/mux	All primary	All primary	RF/AF/C/main/mux
Rack space needed	3.5"	3.5"	3.5"	3.5"	5.25"
Receiver model #	R-10/950	PRC-10C	PCL-505C	RCL-606/C PCL-606/C	7707
Conversion design	Dual	Dual	Dual	Triple	Triple
Sensitivity -					
Composite/dual	14μV 60dB S/N	2μV 20dB S/N	125μV/20μV 60dB S/N	150μV/20μV 60dB S/N	40μV/20μV 60dB S/N
Bandwidth -					
Dual baseband	10Hz-16kHz	.....	30Hz-15kHz	30Hz-15kHz	50Hz-15kHz
Dual multiplexed	20kHz-80kHz	.....	22kHz-85kHz	22kHz-185kHz	39Hz-67kHz
Composite baseband	.....	20Hz-75kHz (95kHz)	30Hz-85kHz	30Hz-85kHz (115kHz)	30Hz-75kHz
Composite mux	.....	110kHz-185kHz	100kHz-200kHz	110Hz-185kHz	152kHz-185kHz
Receiver metering	Movement	Movement	Movement	Movement	Movement
Metered parameters	RF/LO/AF/Sub/+dc/Mix	RF/multi/main/+volts	All primary	All primary	RF/main/mux/+V
Rack space needed	3.5"	3.5"	1.75"	1.75"	3.25"
Reader Service Number	496	497	498	499	500

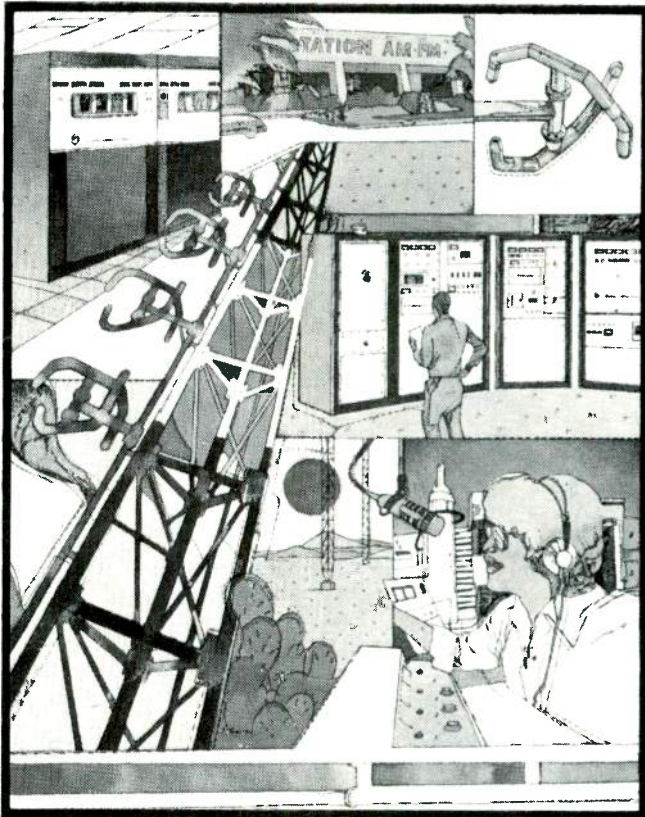
# Audio Distortion Analyzers

These measurement systems determine total harmonic distortion (THD) and, where available, intermodulation distortion (IMD).

Manufacturer	Amber Electro Design			ASACA/Shibasoku	Audio Precision
Model Number	3501	5500	796F	725B	System One
Frequency range	10Hz to 100kHz	10Hz to 100kHz	20Hz to 200kHz	5Hz to 110kHz	10Hz to >500kHz
Input level/imped	30mV-100V, 100kΩ	30mV-100V, 100kΩ	0.14 to 100V, 100kΩ	0.1 to 100V	10mV-140V 100kΩ
Input connection	Active bal	Active bal	Bal or unbal	.....	Active bal
Input switchable	Yes	Yes	Yes	.....	Yes
Fundamental reject	>100dB at 1kHz	> 100dB at 1kHz	Via Wien bridge	>120dB at 1kHz	110dB at 1kHz
Auto level set	Yes	Yes	.....	Yes	Yes
Auto null	Yes	Yes	Yes	Yes	Yes
Minimum THD reading	0.008%	0.003%	0.1% full scale	0.0001% (-120dB)	0.001% residual
THD accuracy	±1dB	±1dB	±5% full scale	.....	±5% of reading
IMD measurements	Optional	Optional	.....	.....	Optional
IMD procedure	SMPTE, DIN, CCIF	SMPTE, DIN, CCIF	.....	.....	SMPTE, DIN, CCIF
IMD accuracy	±1dB	±1dB	.....	.....	±5% of full scale
Minimum IMD reading	0.003%	0.001%	.....	.....	0.001%
Additional functions					
ac volts/accuracy	-120 to 40dBm 2% fs	-100 to 4dBm 2% fs	0.3mV to 100V, 5% fs	-90, +40dBs ±3% fs	-80 to 45dBm ±1%
AF noise	<-120dBm min	-120dBm min	0dB to -70dB S/N	>100dB range	-114dBm (22kHz bw)
Signal generator	10Hz to 100kHz 28dBm	10Hz to 100kHz 30dBm	20Hz to 200kHz 20dBm	No	10Hz to 200kHz 30dBm
Generator stability	±2% worst case	±2% worst case	±2% worst case	.....	±0.01% worst case
Output connection	Xfmr bal	Xfmr bal	Bal 600Ω	.....	Xfmr bal or unbal
AM detector	Option	Option	No	No	No
Recorder tests	No	No	No	.....	Yes
Frequency counter	Option	Yes	No	Yes	Yes
Meter types	Movements	LED	Movement & LED	Movement & LEDs	Bar graph & CRT
Digital design	No	Yes	.....	Yes	Yes
Auto test device	No	GPIO RS-232	No	GPIO	Uses IBM-PC
Scope output/level	Yes	Yes	Yes	1V for full scale	1.0Vy fs/600 source
Plotter output/level	No	No	No	.....	Through PC printer
Reader Service Number	696	697	698	699	700



# Call Continental for the best in AM & FM broadcast equipment.



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## AM Transmitters

1 kW 10 kW  
5 kW 50 kW

## FM Transmitters

1.25 kW 27.5 kW  
2.5 kW 40 kW  
10 kW 50 kW  
20 kW 55 kW  
25 kW 60 kW

## SW Transmitters

10 kW 100 kW  
50 kW 250 kW

## High Power Transmitters

100 kW 500 kW  
150 kW 1,000 kW  
250 kW 2,000 kW

## Transmitter-Related Equipment

Combiners  
Dummy loads  
Combiner & exciter controls  
FM exciters  
AM stereo exciters  
FM antennas  
Antenna transmission line  
Phasing & coupling

## Studio & Remote Equipment

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Remote pickup

## STL

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Monitor & test  
Consoles  
Turntables  
Turntable pick-up arms & cartridges  
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Cartridge tape systems  
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Studio speakers  
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Clocks & warning lights  
Studio furniture

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Telex: 73398

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**Continental Electronics**

  
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Circle (190) on Reply Card

Fall 1985 **Broadcast Engineering** 233

Manufacturer	Leader Instruments	Potomac Instruments	RE Instruments	Rohde & Schwarz	Sound Technology
Model Number	LDM-170	AA-51 Analyzer	RE-201	SUN-2	3000A
Frequency range	20Hz to 20kHz	20Hz-20kHz	20Hz to 25kHz	40Hz 1000Hz 4700Hz	5Hz to 105kHz
Input level/imped	0.35-30Vrms	0.1 to 80Vrms	5mV to 15V 600kΩ	-20 to 32dBm 1MΩ/20kΩ	1mV to 100V 200kΩ
Input connection		Bal	Active bal	Unbal or Xfmr bal	Active bal
Input switchable		Auto ranging	No	Yes	Yes
Fundamental reject		>80dB 20Hz-20kHz	90dB at 1kHz	>65dB	110dB at 1kHz
Auto level set		Yes	Yes	Also auto-ranging	Yes
Auto null		Yes	Yes	No	Yes
Minimum THD reading	0.01%	0.1% of full scale	0.001%	0.06%	0.001%
THD accuracy		±5% full scale	±0.5% fs	±0.1dB	±10% of full scale
IMD measurements		Yes	Yes	Yes	Optional
IMD procedure		SMPTE	SMPTE, DIN, CCIR	DIN	SMPTE, DIN
IMD accuracy		±5% full scale	±0.5% fs	.....	±4% of full scale
Minimum IMD reading		0.1%	0.01%	.....	0.001%
Additional functions					
ac volts/accuracy	100μV-300Vrms	1mV to 100Vrms	-95% to 12dBm 1% fs	Yes	-0.15 to +0.15dBm 0.05%
AF noise	To 70dB	Signal + noise/noise	No	Yes	-100dBm
Signal generator		With AG-51 package	25Hz to 25kHz	Yes	1Hz to 105kHz 30dBm
Generator stability			±0.5% worst case	.....	±0.03%
Output connection		Xfmrless bal/unbal	Active bal	ac & dc linear	Active bal
AM detector		DX-51 option	No	No	No
Recorder tests	No	Wow/flutter IEEE193	No	No	No
Frequency counter	No	No	Yes	No	Yes
Meter types		Movement	CRT	LED	Movement & LED
Digital design		No	Yes	Microprocessor ctl	Yes
Auto test device		No	GPIB RS-232	No	GPIB RS-232
Scope output/level		100mVp-p full scale	No	Possible	0.03Vx, 0.03Vy, fs, 1kΩ
Plotter output/level		No	No	Possible	1Vx, 1Vy, fs, 1kΩ
Reader Service Number	701	702	703	704	705

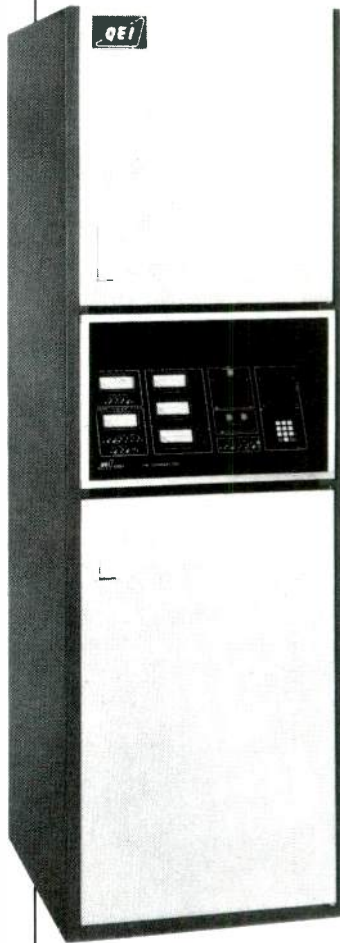
Manufacturer	Sound Technology	Technical Projects	Tektronix
Model Number	1710A	MJS 401D/MD404	AA-501 AA-5001
Frequency range	10Hz to 110kHz	18Hz to 22kHz	10Hz to 100kHz
Input level/imped	0.03mV to 100V, 200kΩ	0.01mV to 40V, 100kΩ	60mV-200V, 100kΩ
Input connection	Active bal	Active bal	Bal
Input switchable	Yes	Yes	No
Fundamental reject	<100dB at 1kHz	100dB	10dB*
Auto level set	Yes	Yes	Yes
Auto null	Yes	Measures 2nd/3rd har	Yes
Minimum THD reading	0.002%	0.01%	0.0025%
THD accuracy	±10% of full scale	±5% of full scale	±10% of full scale
IMD measurements	Optional	No	Optional
IMD procedure	SMPTE DIN	.....	SMPTE, DIN, CCIF
IMD accuracy	±4% of full scale	.....	±10% of full scale
Minimum IMD reading	0.0025%	.....	0.0018%
Additional functions			
ac volts/accuracy	-0.2, +0.2dBm, 2% fs	-0.2, +0.2dBm, 1% fs	-107, +45dBm, 0.05dB
AF noise	-103dBm	-78dBm	-120dBm, 22kHz bw
Signal generator	10Hz-110kHz, 26dBm	20Hz-40kHz, 30dBm	10Hz to 300kHz 28dBm
Generator stability	±2%	±3%	±0.25% freq
Output connection	Active bal	Active bal	Bal or unbal
AM detector	No	No	No
Recorder tests	No	Yes	Yes
Frequency counter	No	No	Yes
Meter types	Movement	Bar graph & CRT	Movement
Digital design	No	Yes	Yes
Auto test device	No	GPIB	GPIB RS-422, RS-232
Scope output/level	0.03Vx, 0.03Vy, fs, 1kΩ	No	300mVx approximately
Plotter output/level	No	No	No
Reader Service Number	706	707	708 709 710

\* Below specified residual THD & N or actual THD, whichever is greater.

## Modulation Monitors, AM

Manufacturer	Bejar Electronics Laboratory	Harris	TFT
Model Number	AMM-3 AMM-2A/-2B	AM-90	753
Frequency range	200kHz-160MHz	450kHz-30MHz	500kHz-4MHz
Input level off-air	100μV	.....	100μV
Input level direct	5-10Vrms 50Ω	1Vrms 50Ω	1-10Vrms 50Ω
Internal AGC circuit	Yes	Yes	Yes
Modulation range	+133%, -100%	+140%, -100%	+125%, -100%
Input attenuator	Yes	No	Yes
AF response mono	±0.5dB/20Hz-25kHz	±0.5dB/20Hz-25kHz	±1dB/50Hz-15kHz
Peak mod indicators	Programmable	Adjustable	Adjustable
Peak indicator count	No	No	No
Peak flash accuracy	2% all frequencies	2% all frequencies	±2% 400Hz
AF output level	10dBm	10dBm	0dBm
AF output connection	Xfmr bal	Xfmr bal	Bal/unbal
Distortion mono	0.25% 100% overall	0.25% all frequencies	0.15% 400Hz 100% mod
S/N ratio mono	75dB unwt'd 100% mod	75dB unwt'd 100% mod	>75dB unwt'd 100% mod
Display type	Movement	Movement	Movement
Scope output	Yes	Yes	No
Remote meter output	Yes	Yes	Yes
Internal calibrator	Yes	Yes	Yes
Frequency counter	No	No	Option 754
Counter accuracy	.....	.....	2Hz/year
ATS compatible	Yes	Yes	Yes
Alarm for	Carrier failure	Carrier failure	Carrier/mod failure
AM stereo capable	No	No	Yes
Reader Service Number	891	892	893 894

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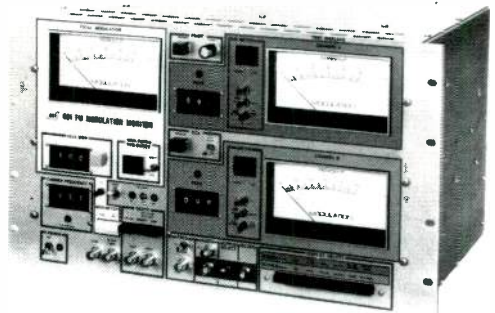
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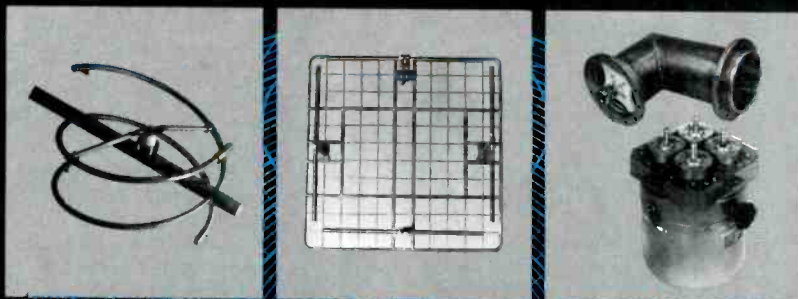
# QEI Corporation

# Modulation Monitor, FM

Manufacturer	Belar Electronics Laboratory		QEI	Rohde & Schwarz	TFT
Model Number	FMM-1	FMM-2	691	FKD/FKDL	844
Frequency selection	Crystal control	Crystal control	Pre-selector switch	Tuned PLL	Pre-selector switch
Input level off-air	100 $\mu$ V w/ RFA-1 pre-amp	100 $\mu$ V w/ RFA-1 pre-amp	3.16mV	.....	200 $\mu$ V
Input level direct	0.2-10Vrms 50 $\Omega$	1-10Vrms	0.2-10Vrms 50 $\Omega$	7.5Vrms 50 $\Omega$	1-10Vrms 50 $\Omega$
Internal AGC circuit	Yes	Yes	No	.....	Yes
Modulation range	+133%, -133%	-133%, -133%	0-133%	To 77.5kHz	+133% -100%
Input attenuator	No	No	Yes	No	Yes
AF response (meter)	$\pm$ 0.1dB/50Hz-100kHz	$\pm$ 0.1dB/50Hz-100kHz	$\pm$ 0.2dB/30Hz-75kHz	$\pm$ 0.5dB/40Hz-65kHz	$\pm$ 0.5dB/30Hz-120kHz
Peak mod adjust	50-120% programmable	1-199% programmable	To 199% adjustable	No	50-199%
Peak indicator count	No	No	Yes	.....	Yes
Peak flash accuracy	1% 75kHz	1% all frequencies	$\pm$ 2% 5kHz	5%	$\pm$ 2% 5kHz
Residual AM monitor	Internal	Internal	internal	.....	Internal
AF output level	10dBm	10dBm	10dBm	6dBm	0dBm
AF output connection	Xlmr bal	Xlmr bal	Xlmr	Bal	Unbal
AF response	$\pm$ 0.1dB/50Hz-75kHz	$\pm$ 0.01dB/50Hz-15kHz	$\pm$ 1dB/30Hz-15kHz	$\pm$ 0.5dB/40Hz-65kHz	$\pm$ 0.5dB/30Hz-120kHz
AF distortion mono	0.1% 50Hz-75kHz	0.01% 50Hz-15kHz	0.05% 30Hz-15kHz	0.3% 30Hz-15kHz	0.1% 50Hz-120kHz
AF S/N ratio mono	75dB wtd 100% mod	90dB wtd 100% mod	75dB wtd 100% mod	66dB wtd 100% mod	80dB wtd 100% mod
Composite out level	1Vrms 2k $\Omega$ , 100% mod	1Vrms 2k $\Omega$ , 100% mod	2Vrms 100% mod	+6dBm 100% mod	5Vrms 10k $\Omega$ , 100% mod
Display type	Movement	Movement	Movement	32-LED bar graphs	Movement & LED
Scope output	Yes	Yes	Yes	No	Yes
Remote meter output	Yes	Yes	Yes	Yes	Yes
Internal calibrator	Yes	Yes	Yes	.....	Yes
Frequency counter	No	No	Yes	No	No
Counter accuracy	.....	.....	0.1Hz	.....	.....
ATS compatible	Yes	Yes	Yes	Yes	Yes
Alarm Indicators—					
Modulation failure	None	None	Indicator	None	Relay closure
Carrier failure	Lamp/relay closure	Lamp/relay closure	Indicator	Lamp/relay closure	Relay closure
Stereo monitor #	FMS-1	FMS-2	Integral to 691	Integral	Integral to 844
SCA monitor #	SCM-1/SCM-2	SCM-1	Single & dual opt	Integral	TFT-730A 845
Reader Service Number	896	897	898	899	900

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Circle (179) on Reply Card

# Modulation Monitor, TV Aural

Manufacturer	Belar Electronics Laboratory		TFT
	TVM-1	TVM-100	850
RF frequency range	Single channel	All VHF and UHF	All VHF and UHF
RF input sensitivity	100 $\mu$ V w/ RFA-3 pre-amp	100 $\mu$ V air/1mV direct	200 $\mu$ V air/2-10Vrms
Input attenuator	Yes	Yes	No
Internal AGC circuit	Yes	Yes	No
Modulation range	$\pm 133\%$ for $\pm 25$ kHz dev	$\pm 133\%$ for $\pm 25$ kHz dev	$\pm 100\%$ for $\pm 25$ kHz dev
Meter freq response	$\pm 0.5$ dB/50Hz-75kHz	$\pm 0$ dB/50Hz-100kHz	$\pm 0.2$ dB/50Hz-15kHz
Peak mod indicators	Adjustable	Programmable	Adjustable
Peak counter	No	No	No
Peak flash accuracy	1% all frequencies	1% all frequencies	$\pm 1\%$
Residual AM monitor	Internal	Internal	Internal
AF output level	10dBm	10dBm	12dBm
AF output connection	Xfmr bal	Xfmr bal	Active bal
AF response mono	$\pm 0.5$ dB/50Hz-15kHz	$\pm 0.1$ dB/50Hz-14kHz	$\pm 0.2$ dB/50Hz-15kHz
AF distortion mono	0.1%	0.01%	0.2%
AF S/N ratio mono	70dB below 100%	80dB below 100% mod	70dB below 100% mod
Composite out level	1V 2k $\Omega$	1V 2k $\Omega$	1.5Vrms 75k $\Omega$
Display type	Movement	Movement/digital	Movement & LED
Scope output	Yes	Yes	Yes
Remote meter output	Yes	Yes	Yes
Internal calibrator	Yes	Yes	Yes
Frequency counter	No	No	Yes
Counter accuracy			
ATS compatible	Yes	Yes	Yes
Alarm Indications—			
Carrier off-air	None	None	Relay closure
Off frequency	None	None	Relay closure
Modulation failure	None	None	Relay closure
Stereo monitor #		TVM-200	TFT 850
SCA monitor #	SCM-1/SCM-2	SCM-1/SCM-2	
Reader Service Number	826	827	828

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# TV Test Systems

This microprocessor-controlled test equipment is designed to monitor signal quality monitoring of video. These products make use of vertical interval test and reference signals (VITS/VIRS) to determine the occurrence of non-linearities or failures in the video chain.

Manufacturer	Marconi Instruments	Philips T&M	Rohde & Schwarz	Tektronix	Thomson-CSF
Model Number	TF2914 analyzer	PM5578	UVF video analyzer	1980 Answer	TTV8400 THOM-C.A.T.
Control computer	...	Proprietary	Proprietary	Proprietary	Apple II
Signal generator	TF2913	External	Bar and dot only	External (1910)	TTV8410 Prodigie
Manual control	Yes	Yes	Yes	Yes	Yes
Programmed signals	No	No	No	No	Yes
Standards supported	NTSC/PAL	NTSC/PAL	PAL	NTSC/PAL	NTSC/PAL
External data store	Possible	Possible	...	Non-volatile memory	Floppy disk
Auto logging	Yes	Yes	Yes	Yes	Yes
Waveform plotting	...	On CRT only	Yes	Yes	Yes
Remote control	Yes	RS-232	IEC-625/IEEE-488	Via RS-232C	Yes
Parameter limits	Defined by TF2915	Set via jumpers	EEPROM/User defined	User defined	User defined
Parameter alarm	Aural & printer	Yes	Blinking LED	Printer & CRT	Printer & CRT
System fault alarm	...	VITS low LED	No	No	None
Measurements per	NTC-7/FCC	CCIR/NTC-7	CCIR-569-1	FCC/NTC-7/CCIR-569	CCIR-569
Tests made on	Individual lines	Lines 17/18 2-field	Individual lines	Any selected line	1-line, 1-field
Reader Service Number	1146	1147	1148	1149	1150

# TV Demodulators

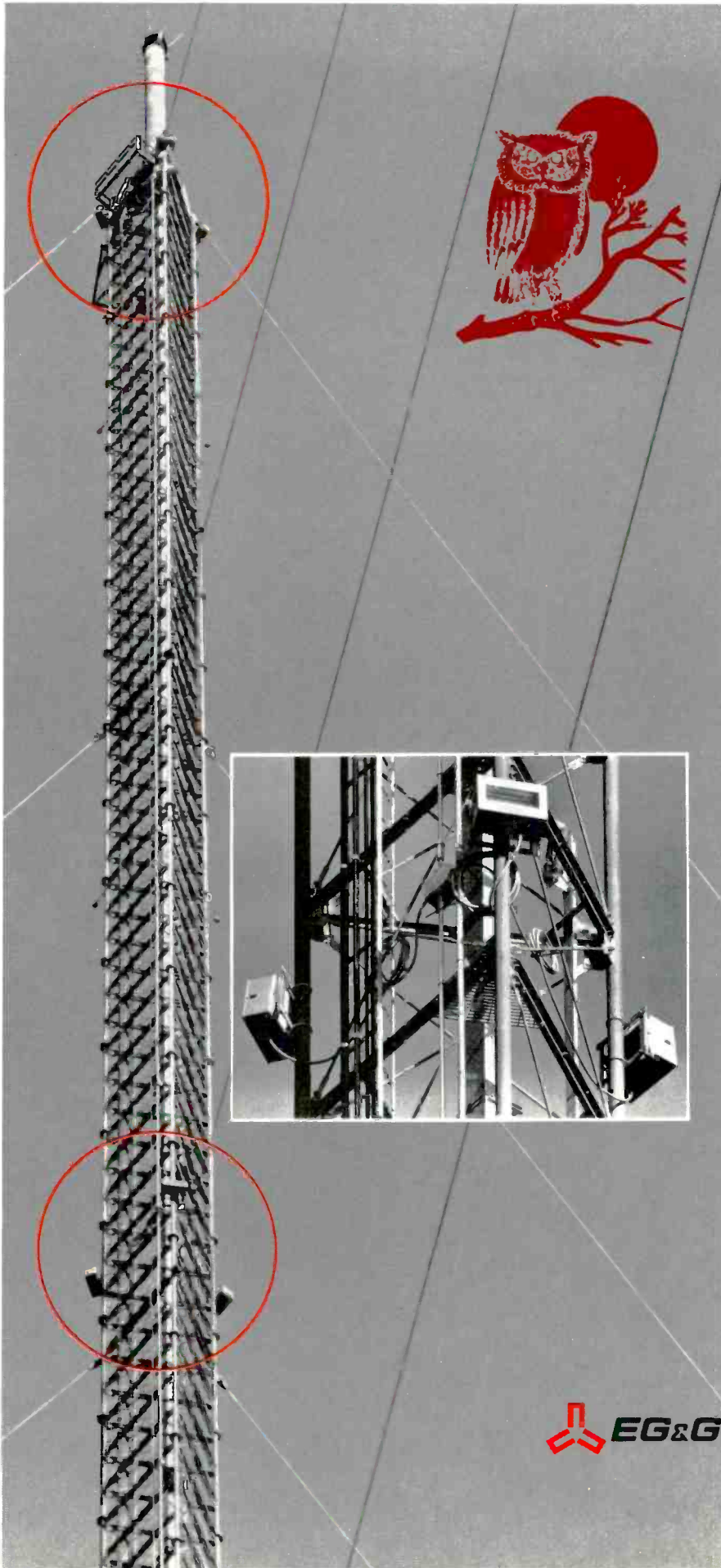
This signal demodulation equipment is applicable to signal quality monitoring.

Manufacturer	Philips T&M	Rohde & Schwarz	Tektronix	Telemet	Videotek
Model Number	PM5560M	EKF2D (EKF2)	1450-1	4501/4504	DM-4RA (DM-40RA)
Frequency range/band	EIA IF/VHF/UHF	IF/VHF/UHF (CATV)	IF/UHF/VHF	IF/VHF/UHF	VHF/UHF (CATV1-125)
Channel selection	Crystal tuned	Crystal and tunable	Fixed crystal-tuned	Fixed channel	PLL-tuned
Input impedance	50Ω	50Ω/75Ω	50Ω	50Ω & 75Ω	75Ω
Input level off-air	100mV direct	20mV-1.5V	80μV-5mV	5mV-50mV	<15μV-100μV
IF input level	70mV	5mV-100mV	22μV-5mV	+35dBmV (4504)	...
Level indicator	Meter	Meter	LEDs	Detector meter	LEDs (None)
Intercarrier input	Yes	...	Yes 50	...	No
Split carrier mode	Yes	...	Yes	...	No
Zero carrier ref	Internal	Internal or external	Internal & external	Yes	No
Envelope detect	Yes	Yes	Yes	Yes	No
Synchronous detect	Yes	Yes	Yes	With 4504	Yes
Quadrature detect	Yes	Yes	Yes	Yes	Yes
Aural signal reject	No	Yes	Yes	Yes	No
SAW filtering	Yes	...	Yes	...	Yes
# of video outputs	2 at 75Ω	2 at 75Ω	2 at 75Ω	2	2 sync/2 envelop
Aural deviation out	+6dBm at ±25kHz dev	0-50kHz	50mV/kHz 600Ω	...	300mV/kHz 75Ω
Audio line output	6dBm 600Ω	+6dBm for 30kHz dev	...	0dBm	+8dBm
Audio speaker output	No	Yes	8Ω output	Yes	Yes
Video clamp position	Zero level	...	Sync/front porch	Sync tip	Sync tip
ATS compatible	...	...	...	...	No
Alarm outputs -					
Carrier failure	No	No	No	Yes	Yes
Modulation failure	No	No	No	Yes	Yes
Stereo aural system	Yes	...	Yes	Yes	No
Remote control	Yes	Yes	No	No	No (Yes)
Reader Service Number	1140	1141	1142	1143	1144

# Waveform Monitors

This monitoring and measuring equipment is designed for observing levels and timing information from composite and component video signals.

Manufacturer	Electronic Visuals	Elektroimpex	Leader Instruments	Philips T&M	System Video
Model Number	EV4011	EV4041	TR-1854/H113	LB05869L (5861)	PM5565
Display size	8x10cm	8x10cm	8x10cm	7.6x9.5cm	8x10cm
Graticule type	External	External	External	Internal	Internal
Color standards	NTSC/PAL(-M)/SECAM	NTSC/PAL(-M)/SECAM	PAL/SECAM/NTSC	NTSC (and PAL)	NTSC/PAL/SECAM
Calibrator	No	Yes	Yes	Yes	Yes
Vertical response	Flat/IRE/chroma	Flat/IRE/chroma	Flat/IRE/chroma	Flat/IRE/chroma	Flat/IRE/chroma
Horizontal time base	1H/2H/1V/2V/2H mag, 2V mag	diff gain/linearity 1H/2H/1V/2V/2H mag, 2V mag	1H/2H/1V/2V	2H/2V/2H mag/2V mag	diff gain/linearity 1H/2H/1V/2V/2H mag, 2V mag
Magnifications	...	10X	5X/20X/25X	10X	10X/20X
RGB/YRGB parade	No	Yes	Yes	Yes	Yes
dc restore/clamp	Back porch	Back porch	Back porch	Back porch	Back porch or sync
VITS line select	No VITS function	Lines 7 to 22	Yes	Lines 14-21 (13-22)*	No
Programmable control	No	No	No	No	Yes
Line strobe output	No	No	No	Blanking out	No
Video inputs	Video A	A & B	A & B	A & B	A & B
Test probe input	No	No	No	No	1MΩ
Other functions -					
Vectorscope	No	No	No	No	No
Oscilloscope	No	No	No	No	No
Waveform comparison	Yes	Yes	No	No	Yes
Packaging	Bench case, 2-wide rack	Bench case, 2-wide rack	Full-width rack	2-wide rack	Bench case, 2-wide rack
Portable unit	...	...	No	No	No
Operating time	...	...	...	...	Yes
Reader Service Number	446	447	448	449	451



# If there's an OWL™ on your mast, it'll never be hit\*

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The money you'll save from not having to repaint your tower will likely pay for the StrobeGuard OWL system within the warranty period. And the light-weight stainless steel design of the new single-enclosure SS-125 adds only 85 pounds per unit to the tower, and greatly reduces wind loading.

Add to this such advantages as plug-in modular circuit construction, simple two-bolt adjustment, self-contained levelling device and you've bought convenience as well as proven performance and reliability. Like all E G & G StrobeGuard OWL systems, the SS-125 handily meets or exceeds applicable FCC and FAA/DOD specifications.

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*\*Since E G & G introduced high-intensity xenon arc obstruction warning lighting in 1968, no StrobeGuard-protected structure has ever been hit. OWL is a trademark for obstruction lighting systems manufactured by E G & G.*

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Circle (181) on Reply Card

Manufacturer	Tektronix					Videotek
Model Number	528A	1480 series	1750 series	1740 series	1710B	TSM-51
Display size	8x10cm	8x10cm	8x10cm	8x10cm	8x10cm	8.3x10.3cm
Graticule type	Internal	Internal & external	Internal	Internal & external	Internal	Internal
Color standards	NTSC/PAL(-M)/SECAM	NTSC/PAL(-M)/SECAM	NTSC/PAL	NTSC/PAL(-M)	NTSC/PAL	NTSC/PAL(-M)
Calibrator	Yes	Yes	Yes	Yes	.....	Yes
Vertical response	Flat/IRE/chroma diff gain	Flat/IRE/chroma low-pass/diff gain	Flat/IRE/chroma .....	Flat/IRE/chroma .....	Flat/low-pass .....	Flat/IRE/chroma diff gain
Horizontal time base	2H/2H/2H mag/ 2V mag	1H/2H/1V/2V/2H 2V mag	1H/2H/1V/2V/2H mag 2V mag	1H/2H/1V/2V/1H/2H mag 2V mag	2H/2V/2H mag/ 2V mag	1H/2H/2V/2H mag 2V mag
Magnifications	20X	5X/10X/20X/25X/50X	10X/20X/50X	10X/20X	10X	5X
RGB/YRGB parade	Yes	Yes	Yes	Yes	No	Yes
dc restore/clamp	Back porch	Back porch or sync	Back porch & sync	Back porch & sync	Back porch	Back porch
VITS line select	No	Any & groups of 16	8-23 or any by remote	Internal switching	No	Lines 14-21
Programmable control	No	No	All functions	All functions	No	No
Line strobe output	No	Yes	Yes	No	No	No
Video inputs	A & B	A & B	A & B	A & B	A & B	A & B
Test probe input	No	Yes	No	No	No	No
Other functions -						
Vectorscope	No	No	Yes	Yes	Burst phase	No
Oscilloscope	No	No	SC/H phase test	No	No	No
Waveform comparison	No	Yes	No	No	No	No
Packaging	Bench case, 2-wide rack	Bench case, rack .....	Bench case, 2-wide rack	Bench case, 2-wide rack	Bench case, 2-wide rack	Bench case, 2-wide rack
Portable unit	No	No	.....	30 lb w/ battery	20 lb w/ battery	No
Operating time	.....	.....	.....	3 hours w/ 12Vdc battery	4 hours w/ 23Vdc	No
Reader Service Number	452	453	454	455	456	457

## Vectorscopes

This monitoring and measuring equipment ascertains interrelationships between color information and the composite video signal.

Manufacturer	Electronic Visuals	Electroimpex	Hitachi Denshi	Leader Instruments
Model Number	EV4021	TR-1867/H024	V-089	LVS-5850
Display size	5 1/2" diameter	5 1/2" diameter	3 1/2" diameter	8x10cm
Graticule type	Internal	External	External	Generated
Other functions -				
Waveform monitor	No	Yes	No	No
Test oscilloscope	No	No	No	No
Color standards	NTSC/PAL-M	NTSC/PAL	NTSC	NTSC/PAL
Calibrator	No	No	Frequency counter	Yes
Video inputs	A & B	A & B	One	A & B
Subcarrier input	Yes	No	One	Yes
Sync input	Yes	Yes	.....	No
Display reference to	A, B or external	A, B or external	Internal or external	A or B
Measurement range -				
Diff gain	1%	1%	.....	1%
Diff phase	1°	1°	.....	1°
VITS line selection	No	No	No	Through WFM
Luminance display of	No luminance	Y component	Y-T	No luminance
Packaging	Bench case, 2-wide rack	Bench case, 2-wide rack	Bench case, rack	Bench case, 2-wide rack
Weight (portable)	.....	.....	13.2 lb (6kg)	13.2 lb
Operating time	.....	.....	.....	>2 hours
Reader Service Number	436	437	438	440

Manufacturer	Philips T&M	System Video	Tektronix		Videotek
Model Number	PM5567	Model 1255	R520A series	1420 series	VSM-5A
Display size	8x10cm	10x10cm	5" diameter	5" diameter	3 1/25" diameter
Graticule type	Internal	Internal	Internal & external	Internal	Internal
Other functions -					
Waveform monitor	No	x-y display	Partial	No	No
Test oscilloscope	No	No	No	No	No
Color standards	NTSC/PAL	NTSC/PAL/PAL-M	NTSC/PAL(-M)/SECAM	NTSC/PAL(-M)	NTSC/PAL
Calibrator	Yes	Yes	Yes	No	Yes
Video inputs	A & B	A & B	A & B	A & B	A & B
Subcarrier input	Or color black	Yes	Yes	Yes	Yes
Sync input	No	Yes	Yes	No	No
Display reference to	A, B or external	A, B or external	A, B or external	A, B or external	A or B
Measurement range -					
Diff gain	20%	2%	10%	10%	10%
Diff phase	10°	2°	10°	10°	10°
VITS line selection	No	No	Lines 15 to 21	No	No
Luminance display of	No luminance	No	Y/I/Q/R/G/B	No luminance	Y/I/Q
Packaging	Bench case, 2-wide track	Bench case, 2-wide rack	Bench case, rack	Bench case, 2-wide rack	Bench case, 2-wide rack
Weight (portable)	.....	22 lb	.....	.....	.....
Operating time	.....	.....	.....	.....	.....
Reader Service Number	441	442	443	444	445



### Spec Note:

Performance specs are not directly comparable because of variations in references used by manufacturers in determining those specifications' values. Equipment performance should be discussed with the manufacturers' representatives before making final decisions.



## Service/Parts Centers

AVS/Applied Video Systems  
7 Tallman St.  
Spring Valley, NY 10977  
914-352-4004  
(Cheshington, England)  
01-391-5678  
Telex: 267439 AVS G

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

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

Allen Avionics  
224 E. 2nd St.  
Mineola, NY 11501  
516-248-8080

Alpha Audio  
2049 W Broad St  
Richmond, VA 23220  
804-358-3852

Alpha Products  
5740 Corsa Ave  
Westlake Village, CA 91362  
818-889-9304

Alumna Tower  
Box 2806BE  
Vero Beach, FL 32960  
305-567-3423

Ampex AVSD  
401 Broadway  
Redwood City, CA 94063  
415-367-2296  
Parts Hotline  
800-227-8402  
800-982-5875 in CA  
Service engineers  
(Atlanta, GA)  
404-491-7112  
(Chicago, IL)  
312-593-6000  
(Dallas, TX)  
214-960-1162  
(New York/New Jersey)  
201-825-9600  
(Seattle, WA)  
206-575-0156  
(Toronto/Canada)  
416-821-8840

Ampex MTD  
401 Broadway  
Redwood City, CA 94063  
415-367-3809

Anton/Bauer  
1 Controls Drive  
Shelton, CT 06484  
203-929-1100

Apert-Herzog  
7007 Realm Drive, B3  
San Jose, CA 95119  
408-225-1425

Apex Systems  
13340 Satcoy St.  
North Hollywood, CA 91605  
818-765-2212

Aristocart  
505 Burrard St  
Vancouver, BC, Canada V7X 1M6  
604-687-2844

Arrakis Systems  
204 N Link Lane, #3  
Fort Collins, CO 80524  
303-224-2248  
[Allied Broadcast]  
(Richmond, IN)  
317-962-8596

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12509 Beatrice St  
Los Angeles, CA 90066  
213-827-7144  
800-423-6347

Auburn Instruments  
107 Church St.  
Watertown, MA 02172  
617-923-4747

Audio Precision  
Box 2209  
Beaverton, OR 97075  
800-231-7350

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

Audio Video Engineering  
65 Nancy Blvd  
Merrick, NY 11666  
516-546-4239

Auditronics  
3750 Old Getwell Road  
Memphis, TN 38118  
901-362-1350

Barco  
2211-B Executive St  
Charlotte, NC 28208  
704-392-9371  
(Menlo Park, CA)  
415-328-4380  
(Nashua, NH)  
603-880-1430

BASYS  
2685 Marine Way  
Mountain View, CA 94043  
415-969-9810  
(London, England)  
Phone: 01 631 0286  
Telex: 21852 BASYS G

Belar Electronic Labs  
Lancaster Ave. at Dorset  
Devon, PA 19333  
215 687-5550

Benchmark Media  
3817 Brewerton Road  
North Syracuse, NY 13212  
315-452-0400

Bird Electronics  
30303 Aurora Road  
Cleveland, OH 44139  
216-248-1200  
(Ojai, CA)  
805-646-7255

Robert Bosch/Video Equipment  
2300 S 2300 W.  
Salt Lake City, UT 84119  
801-972-8000 or  
801-972-8340 nights/weekends  
(Los Angeles, CA)  
213-559-5631  
(Saddlebrook, NJ)  
201-843-2500  
(Arlington Heights, IL)  
312-577-9780

Broadcast Services  
Route 3, Box 45E  
Four Oak, NC 27524  
919-934-6869

Broadcast Systems/BSM  
Box 8081  
Spokane, WA 99203  
509-448-0697

Broadcast Systems  
8222 Jamestown Drive  
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Cetec Antennas  
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Sacramento, CA 95828  
916-383-1177

Cetec Gauss  
9130 Glenoaks Blvd.  
Sun Valley, CA 91352  
213-875-1900

Cetec Vega  
PO Box 5348  
El Monte, CA 91734  
818-442-0782  
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(Reston, VA)  
703-471-1230  
[J-Mar, Toronto]  
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Circuit Research Labs/CRL  
2522 West Geneva Drive  
Tempe, AZ 85282  
800-535-7648  
602-438-0888

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P.O. Box 43  
Boise, ID 83707  
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Irvine, CA 92714  
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1121 Bristol Road  
Mountainside, NJ 07092  
201-654-8100

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Anaheim, CA 92806  
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516-921-7200

HM Electronics  
9675 Business Park Ave.  
San Diego, CA 92131  
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Horizon International  
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[Omega Video]  
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213-849-1104

ITC/3M  
2425 S. Main St.  
Bloomington, IL 61702-0241  
800-447-0414  
309-828-1381 AK, HI, IL  
[Maruno Electronics]  
(Toronto, Canada)  
416-255-8231  
[3M France, Cergy, France]  
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213-243-3147

Lerro Electrical  
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Philadelphia, PA 19132  
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213-946-6886

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516-694-8963  
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818-247-9247

Logitek  
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Houston, TX 77057  
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800-231-5870

MCG Electronics  
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Deer Park, NY 11729  
516-586-5125

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La Grange, IL 68525  
312-354-4350

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St. Paul, MN 55144  
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718-625-7333

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Lyndonville, NY 14098  
716-765-2254

Moseley Associates  
111 Castilian Drive  
Santa Barbara Research Park  
Goleta, CA 93117  
805-968-9621

NEC America  
130 Martin Lane  
Elk Grove Village, IL 60007  
312-640-3792  
800-323-6656

Nakamichi  
19701 S. Vermont Ave  
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National Video Service  
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Pleasanton, CA 94566  
415-846-1500

Nemal Electronics International  
12240 NE 14th  
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415-969-9810

Neve  
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Bethel, CT 06801  
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Alan Osborne Associates  
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Telex. 43203 PIHE E

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Fort Worth, TX 76140  
817-293-1761

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Williamstown, NJ 08094  
609-728-2020

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801-974-0992  
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203-384-1266

Scientific Systems  
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212-944-9440

Shallco  
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919-934-3135

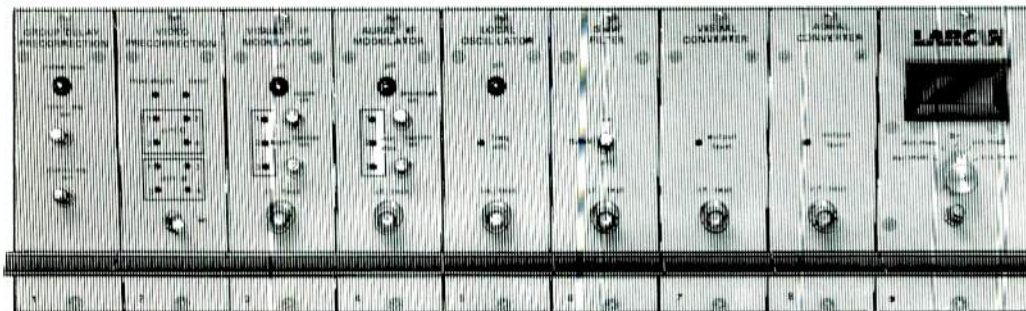
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Telex. 837400 SSL OX G  
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201-368-5000

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408-946-9219, emergency

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(Midwest/Chicago)  
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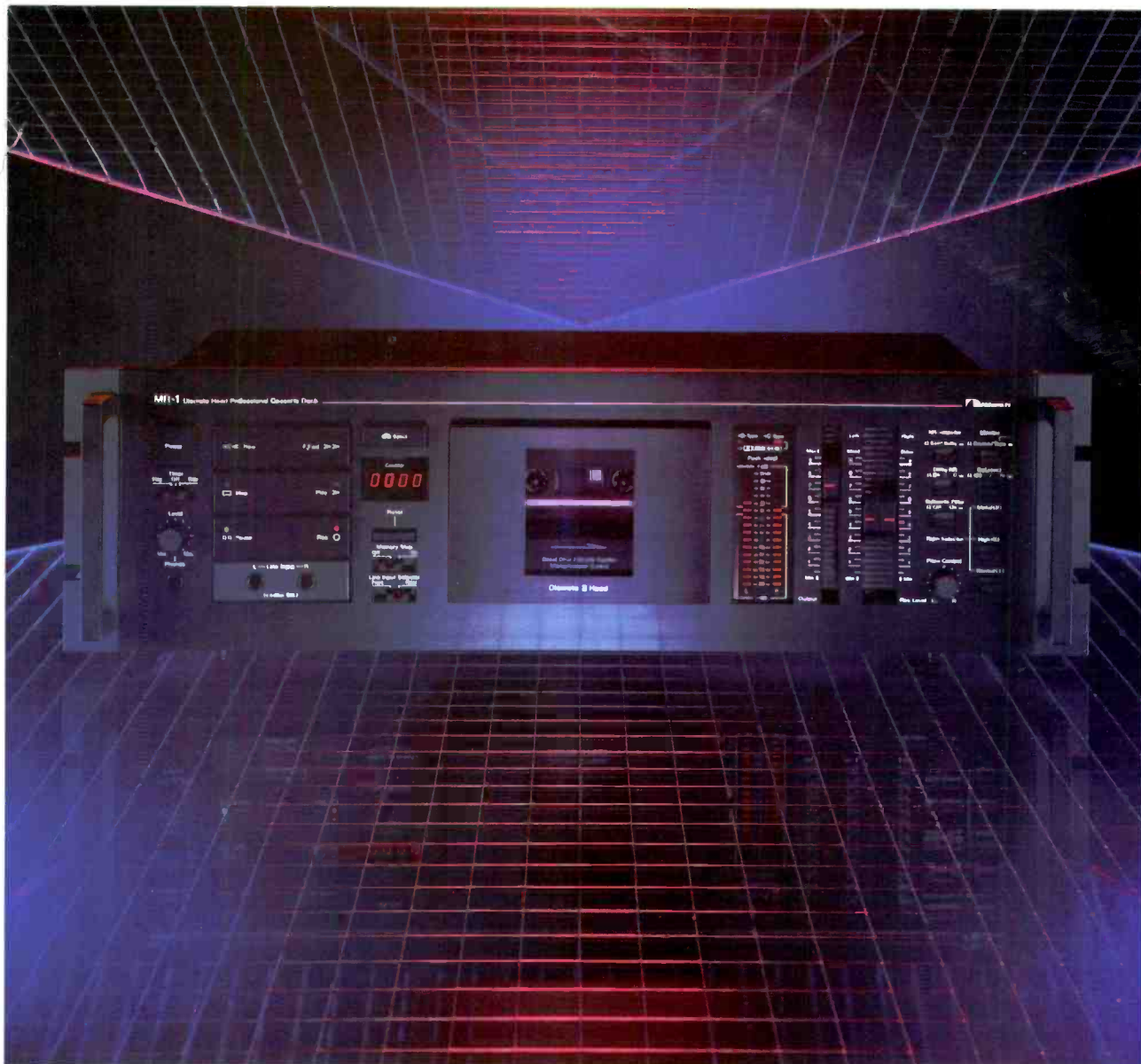
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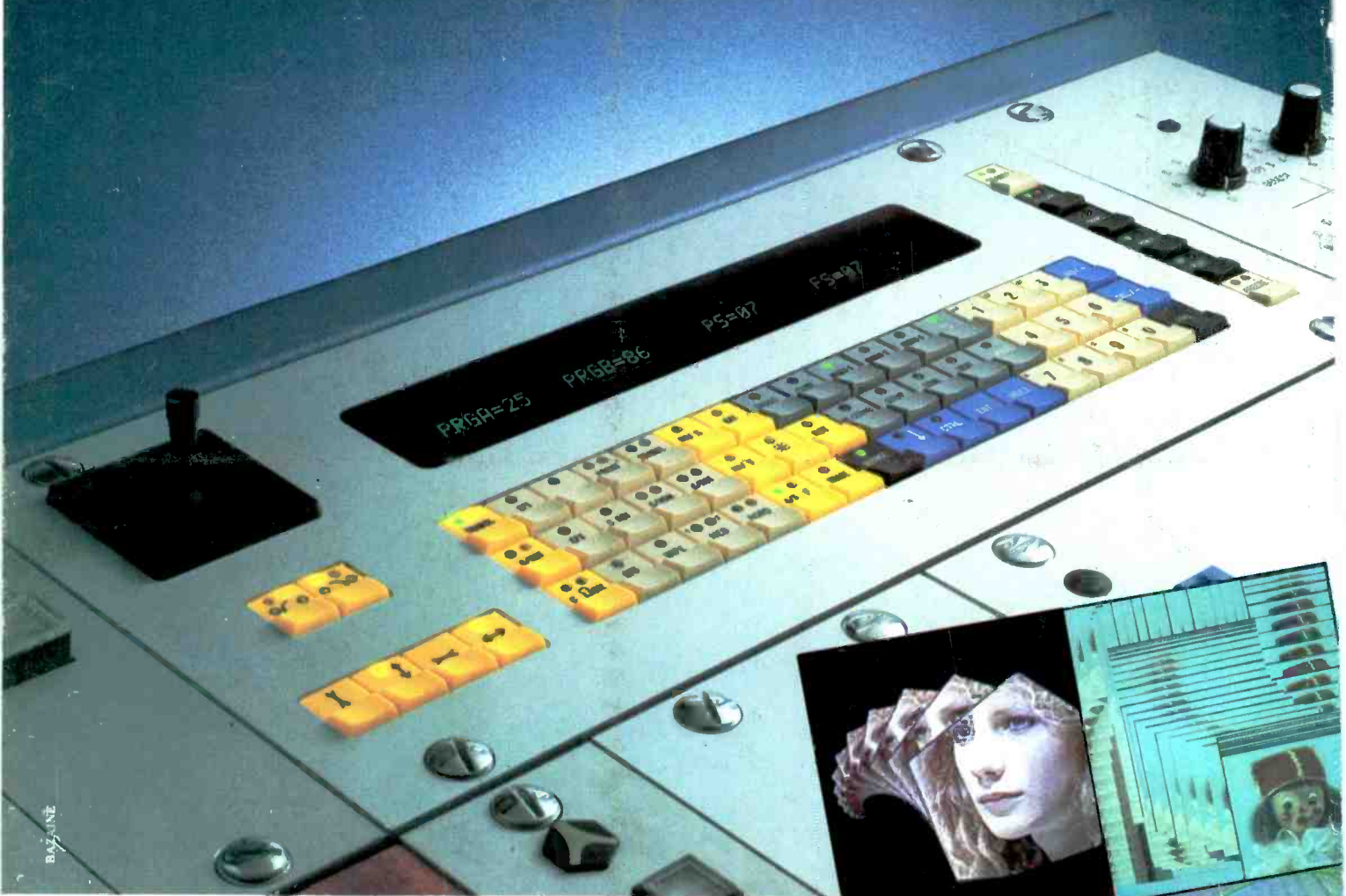
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