

BROADCAST ENGINEERING®

3



Las Vegas '83



We've got it before you want it.

At ADM Technology we manufacture the most advanced audio consoles available. We incorporate new ideas and quality improvements into every console we build. You can be sure the ADM® console you order today will come through with the latest innovations in audio technology.

Our ADM 1600 Series II is a typical example. It is well equipped to handle a broad range of broadcast, production and post-production requirements and has a full measure of expandability.

Although it is a compact, basic console it is constantly updated to share the latest in technological advances with the larger ADM consoles.

Engineered to exacting standards and manufactured to the most rigid tolerances, all ADM's are backed by our exclusive 5-year warranty.

Let's talk consoles soon. Contact ADM Technology, Inc. - The Audio Company - 1626 E. Big Beaver Road, Troy, MI 48084, Phone (313) 524-2100. TLX 23-1114.



ADM

The
Audio
Company

WEST CENTRAL SALES
(817) 467-2990

WEST COAST SALES
(415) 945-0181

MAIN OFFICE AND
EAST COAST SALES
(313) 524-2100

WKRC, Cincinnati.



"When the news breaks, we get it together with Midwest and Ikegami!"

"Taft demands the best, and when it comes to presenting to our viewers a clear and accurate picture of the world, we turn to Ikegami cameras. Their rugged durability, combined with the "studio" quality, that Ikegami delivers, brings the news in focus for the millions of viewers who depend on Taft news operations to keep them informed.

That's also why Midwest designs and builds our mobile news gathering units. Midwest custom designed the right mobile units to meet our needs - and our deadlines. They're tough, designed to take all the punishment that on-location ENG can dish out. Midwest delivered our Ikegami-equipped mobile units on time.



John Owen, Vice President of Television Engineering
Taft Broadcasting.

We're covering the news stories and Midwest covers our needs. Taft demands the best, and we have it - with Midwest and Ikegami on our news team."

For more information on how Midwest can help you get it together with quality equipment and mobile units, call toll-free today: 1-800-543-1584 (In Kentucky 606-331-8990).



Cincinnati, OH 606-331-8990	Lexington, KY 606-277-4994
Columbus, OH 614-476-2800	Nashville, TN 615-331-5791
Dayton, OH 513-298-0421	Charleston, WV 304-722-2921
Cleveland, OH 216-447-9745	Virginia Beach, VA 804-464-6256
Pittsburgh, PA 412-781-7707	Washington, DC 301-577-4903
Detroit, MI 313-689-9730	Charlotte, NC 704-399-6336
Indianapolis, IN 317-251-5750	Atlanta, GA 404-457-4300
Louisville, KY 502-491-2888	Miami, FL 305-592-5355

Circle (2) on Reply Card

One Sperti Drive
Edgewood, KY 41017

WTVN, Columbus.



BROADCAST engineering

The journal of broadcast technology

June 1983 • Volume 25 • No. 6

1983 NAB WRAP-UP

33 NAB-'83/Las Vegas: Productivity is the key

By Bill Rhodes, editorial director

34 Highlights in perspective

By Bill Rhodes, editorial director

34 Fritts: Cautious deregulation

34 Reagan encourages productivity

35 Wasilewski: Distinguished Service Award

35 Rosenthal receives Cobb award

38 Flaherty receives Engineering Achievement Award

44 More new test equipment: A convention update

By Carl Bentz, technical editor

52 ¼-inch format emerges

By Bebe F. McClain, president, B. F. McClain Productions, Asheville, NC

60 New products introduced at NAB-'83

By Carl Bentz, Bill Rhodes, Rhonda L. Wickham, Karen Arnhart Booth and Miguel Chivite of the BE staff

OTHER FEATURES

10 Plant tour: EMCEE

By Adolph Rosset, director, sales/marketing, EMCEE, White Haven, PA

DEPARTMENTS

6 FCC update

8 Editorial

190 Advertiser's index

192 Classified ads

©Copyright 1983, by Intertec Publishing Corporation. All rights reserved. Photocopy rights: Permission to photocopy for internal or personal use is granted by Intertec Publishing Corp. for libraries and others registered with Copyright Clearance Center (CCC), provided the base fee of \$2.00 per copy of article is paid directly to CCC, 21 Congress St., Salem, MA 01970. Special requests should be addressed to Cameron Bishop, publisher.

ISSN 0007-1994.

BROADCAST ENGINEERING (USPS 338-130) is published monthly by Intertec Publishing Corporation, 9221 Quivira Road, P.O. Box 12901, Overland Park, KS 66212-9981. Postmaster, return form 3579 to P.O. Box 12938 at the above address.

BROADCAST engineering

June 1983/53



THE COVER shows some views of the NAB-'83/Las Vegas convention center floor during the 61st Annual Convention & International Exposition. This issue of BE is devoted to a wrap-up of the show, with special emphasis on new equipment exhibited.

Ampex: A corporate profile

Beginning on page 17 of this issue is a special 16-page corporate profile of Ampex, sponsored and paid for by the company. In this package, Ampex combines a series of short dissertations and formal ads to detail a portion of its services and product line for broadcasters.

NEXT MONTH:

- Audio console roundup
- Audio amplifier update
- Tape cartridge machine update
- Digital audio progress
- CBS TV studio remodeling

“My goal is to find a camera that’s broadcast quality, tough in the field and easy on the budget.”



HITACHI HEARD YOU.

The new Hitachi FP-15 is a rugged, low-cost camera that's outstanding in the field. Whether you're shooting news or a documentary.

It's packed with features normally found on a \$40,000 camera. Yet it sells for under \$6,500.

The FP-15's 3-tube prism optics with advanced $\frac{3}{8}$ " Saticon tubes shoot bright, sharp, broadcast quality pictures in just about any light or location. And the camera's aluminum die-cast housing and shock-mount RGB assembly assure high performance and maximum durability under the toughest field conditions.

The FP-15 weighs only 11.2 pounds (excluding lens). It has built-in

corner registration, 550 lines of horizontal resolution and a signal to noise ratio of 54dB.

Other features include: auto white, auto black, auto iris, ABO, a +6 and +12 dB gain switch, and built-in genlock. A full line of accessories is also available, including a 4.5" viewfinder and remote operation unit for studio use.

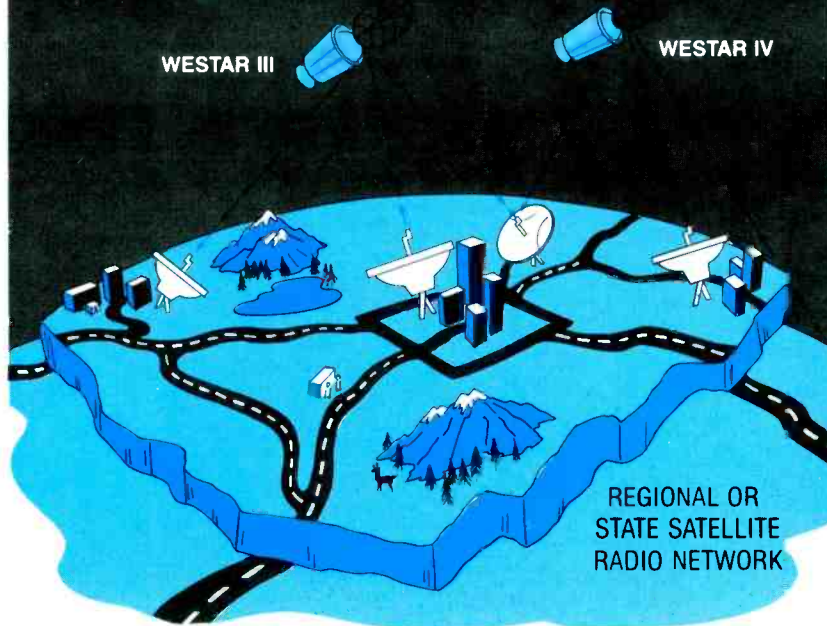
The Hitachi FP-15 ENG/EFP camera. It's a winner. Put it on *your* news or production team.

For more information, write or call Hitachi Denshi America, Ltd., Broadcast and Professional Video Divisions, 175 Crossways Park West, Woodbury, NY 11797. (516) 921-7200. Offices also in Atlanta, Chicago, Cincinnati, Dallas, Denver, Los Angeles, Seattle, and Washington, D.C.



Circle (3) on Reply Card

Comtech's satellite feed uses less than 1% of a transponder's capacity.



Our sophisticated satellite radio network system can reduce your monthly operating costs substantially compared to land lines. We design and deliver complete networks that provide the highest level of performance and reliability at a very attractive cost of ownership.

Less than 1% of a transponder's bandwidth and EIRP is required to achieve the same performance provided by other systems requiring considerably more capacity.

Network expandability is achieved via Comtech's unique mechanical package which allows a combination of SCPC, MCPC, digital data or composite video/audio demodulators. Dual and triple feeds are available for simultaneous reception from satellites spaced up to 8°, such as Westar III and Westar IV.

High quality audio is the result of Comtech's advanced audio processing system.

Up-link Terminal includes audio processor, SCPC modulator, up-converter, high power amplifier, antenna feed system, 5 meter antenna with mount, and receive-only components for system monitoring.

Receive-Only Terminals include SCPC demodulator, audio processor, 7-slot housing, down converter, low noise amplifier, antenna feed, and 3.8 meter antenna with mount.

For your complete regional or state radio network, designed, built and delivered by Comtech, call or write:



COMTECH Data Corporation
A SUBSIDIARY OF COMTECH TELECOMMUNICATIONS CORP.

350 North Hayden Road • Scottsdale, AZ 85257
(602) 949-1155, TWX 910-950-0085

BROADCAST[®] ENGINEERING

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

EDITORIAL

Bill Rhodes, *Editorial Director*
Carl Bentz, *Technical Editor*
Nils Conrad Persson, *Electronics Editor*
David Hodes, *Video Editor*
Miguel Chivite, *International Editor*
Rhonda L. Wickham, *Managing Editor*
Karen Arnhart Booth, *Associate Editor*
Mary Thornbrugh, *Editorial Assistant*
Tina Thorpe, *Editorial Assistant*
Pat Blanton, *Directory Editor*

ART

Kevin Callahan, *Art Director*
Kim Nettie, *Graphic Designer*

TECHNICAL CONSULTANTS

John H. Battison, *Antennas/Radiation*
Blair Benson, *TV Technology*
Dennis Ciapura, *Technology*
Dane E. Ericksen, *Systems Design*
Howard T. Head, *FCC Rules*
Wallace Johnson, *FCC/Bdct. Engineering*
Donald L. Markley, *Facilities*
Harry C. Martin, *Legal*
Hugh R. Paul, *International Engineering*
Art Schneider, A.C.E., *Post-production*
Elmer Smalling, III, *Cable Systems*
Vincent Wasilewski, *Communications Law*

CORRESPONDING ASSOCIATIONS

American Society of TV Cameramen
Assn. for Bdct. Engr. Standards
National Association of Broadcasters
National Radio Broadcasters Assn.

CIRCULATION

John C. Arnst, *Director*
Evelyn Rogers, *Manager*
Dee Manies, *Reader Correspondent*

ADMINISTRATION

R. J. Hancock, *President*
Cameron Bishop, *Publisher*
Eric Jacobson, *Associate Publisher*

ADVERTISING

Robyn Kahn, *Marketing Coordinator*
Mary Birnbaum, *Production Manager*

Regional advertising sales offices listed near the Advertisers' Index.

Member,
American Business Press



Member,
Business Publications
Audit of Circulation



BROADCAST ENGINEERING (USPS 338-130) is published monthly by Intertec Publishing Corporation, 9221 Quivira Road, P.O. Box 12901, Overland Park, KS 66212-9981. Postmaster, return form 3579 to P.O. Box 12938 at the above address.

BROADCAST ENGINEERING is edited for corporate management, engineers/technicians and other station management personnel at commercial and educational radio and TV stations, teleproduction studios, recording studios, CATV and CCTV facilities and government agencies. Qualified persons also include consulting engineers and dealer/distributors of broadcast equipment.

SUBSCRIPTIONS: BROADCAST ENGINEERING is mailed free to qualified persons in occupations described above. Non-qualified persons may subscribe at the following rates: United States, one year, \$25; all other countries, one year, \$30. Back issue rates, \$5, except for the September Buyers' Guide Issue, which is \$15. Rates include postage. Adjustments necessitated by subscription termination at single copy rate. Allow 6-8 weeks for new subscriptions or for change of address. Controlled circulation postage paid at Shawnee Mission, KS.



©1983. All rights reserved.
Intertec Publishing Corp.

Circle (4) on Reply Card

WHAT STANDS SEVEN INCHES HIGH, CONSUMES ONLY A PINCH OF POWER, COSTS LESS THAN \$30,000 AND IS THE PICTURE OF QUALITY?



Why, the revolutionary VSP 42 Video Slide Projector, of course.

A digital slide store doesn't have to be a bulky system loaded down with unnecessary features to justify a hefty price tag. We proved that to you at NAB '83 with our latest generation digital video slide storage system — the VSP 42. This rack-mountable little beauty stands only 7 inches high! It combines the very latest in Winchester disk and digital video processing technology to deliver the highest quality images. And the price is right at \$29,900. We've

got features galore, including: on-line storage of 100 frames/200 fields, automatic intermixing of field and frames, and an optional high-speed digital streaming tape drive for backup and off-line storage.

The VSP 42. It's your opportunity to get full broadcast quality in the world's smallest slide store system. For details, call (415) 595-3346, or write to Abekas Video Systems, Inc., 319 Lincoln Centre Drive, Foster City, California 94404.

Abekas

Video Systems, Inc. 319 Lincoln Centre Drive, Foster City, California 94404

The Star Of The Show

A fully remote controlled FM transmitter with features for total automation and satellite feed.

A transmitter with micro-processor based digital diagnostics, built-in alarm points, a memory, even the ability to talk to the factory's computer.

All of this with a super-low distortion exciter, in a totally solid-state one kilowatt transmitter. Or, a single tube 3.5 kilowatt.

Get both from QEI, the FM people. For more information call John Tiedeck at 609-728-2020



The New 695T1KW



QEI Corporation

Box D / Williamstown, NJ 08094

Phone (609) 728-2020

Telex II (TWX) 710 942 0100

Circle (136) on Reply Card

FCC update

June 1983



By Harry C. Martin, partner, Reddy, Begley & Martin, Washington, DC

New opportunities for FM SCA use was a principal topic at NAB-'83/Las Vegas.

On March 31, the FCC deregulated SCAs, allowing FM stations to use this capacity for data transmission, utility load management, paging services and many other non-broadcast services. Also, the commission expanded the FM baseband from 75MHz to 99MHz, allowing two SCA services instead of one. No logs for SCA operations will have to be maintained, and no special FCC applications or authorizations will be required. Modulation of subcarriers now may be done by any means. The new rules, becoming effective this month, apply to non-commercial and commercial FM stations.

An overflow crowd at the SCA "clinic" heard broadcasters explain, in dollars and cents, what SCA deregulation means. Jim Wychor of KWOA-AM/FM, Worthington, MN (population 10,000), said his Class C FM makes an additional \$35,000 per year by leasing its SCA to a service that provides farm market and financial news to agribusiness in his service area. The SCA service, which is linked by satellite to the Chicago commodity markets, provides 15 pages of continuously updated data and text.

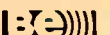
In Madison, SD (population 6315), an FM SCA is used for utility load management. Fifteen hundred air conditioners and water heaters are equipped with switches sensitive in SCA-generated signals. The power company uses this capability to switch units off for short periods during peak hours. Wychor said that the Madison FM station charges the local utility 25 cents per customer per month, and stations in larger markets could charge more.

Ed McConaghay of National Public Radio told NAB attendees that NPR plans to compete vigorously in the deregulated SCA field. Commercial use of the SCA capacity of non-commercial FM stations is an important part of Project Independence, a program which will strive to make NPR self-sufficient by 1988. NPR plans a nationwide paging service that would be offered through member stations.

The discussions included broadcaster use of SCAs to enter the common carrier field. Wychor said that, in his market, the radio common carrier (RCC) charges \$295 for a pager, plus \$10.95 per month for service. He thinks he can sell the same pagers for \$125 each and charge only \$7 to \$8 per month. Also he said paging via an SCA would provide better coverage than do the RCCs.

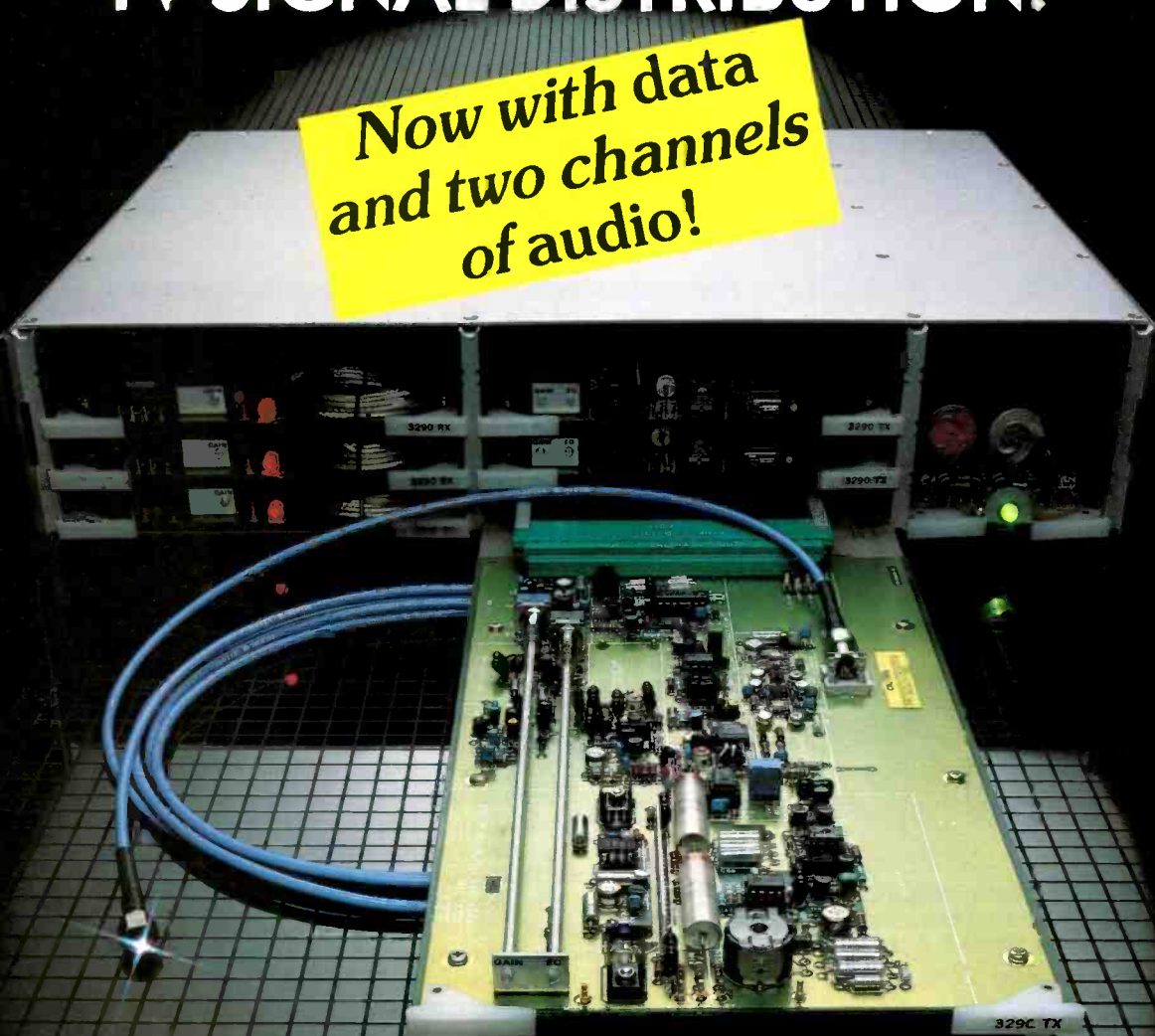
One RCC owner told the group that FM owners will face multiyear legal battles to win required state certifications as common carriers. Further, it was said that an FM SCA has a more limited range than the FM station's main channel. Because of FM reception problems, fixed-to-mobile paging may not be the best use for SCAs. Other data uses involving fixed receivers may be more practical and profitable.

On pricing SCA services, advice was given not to enter into long-term, fixed-price deals. Because no one knows the SCA profit potential at this point, it would be unwise to cap such potential. There was agreement that currently broadcasters should bargain for a percentage of their SCA lessees' gross income or enter into ventures with SCA service providers.



AN EVOLUTIONARY MILESTONE IN TV SIGNAL DISTRIBUTION.

Now with data and two channels of audio!



Broadband analog signals can now be reliably and cost-effectively transmitted over fiber optic cables, opening the door to levels of system performance and capability simply not possible with conventional metallic cable systems.

Developed by Grass Valley Group—the undisputed world leader in video switching and distribution equipment for television broadcasting and production—WAVELINK equipment is already in use internationally.

Present applications in the TV broadcast and production industry include interconnection between studios, transmitters, satellite earth stations, buildings, remote facilities and wire centers.

Our extensive experience will assure you a WAVELINK system designed to fit your exact needs. Call on our worldwide sales and service network to help you discover the fiber optic advantage.



THE GRASS VALLEY GROUP, INC.

P.O. Box 1114 • Grass Valley, California 95945 USA • Tel. (916) 273-8421 • TWX 910-530-8280

A Tektronix Company

Circle (6) on Reply Card

Broadcasting: Skepticism and unity

Guest editorial by Vincent T. Wasilewski
of Dow, Lohnes & Albertson (*Excerpted,
with permission, from his NAB '83 address*)

First, I advise you all to maintain a healthy skepticism of government. The government and broadcasting are currently enjoying peaceful coexistence. It is my fervent hope that will continue—but my experience tells me that it won't.

I believe, as Woody Allen said, "The lion may lie down with the lamb, but the lamb won't get much sleep."

Amid all the smiles and handshaking and backslapping, there is much truth in the observation that no man's life, liberty or property is safe when the legislature is in session. Witness the bureaucratic and bipartisan destruction of the radio and TV codes that were good for the public, good for broadcasters and good for the government. The best relationship between government and broadcasting—indeed one contemplated by our constitution because we are part of the press—is mutual respect, maintained at a respectful distance.

Second, I urge you never to stop fighting for broadcasting's freedom because we are, in a sense, custodians of the people's freedom. Democracy cannot function in an information vacuum. It cannot exist without communications.

And that is us.

We communicate not only through news and editorials and public affairs. We also communicate through drama, entertainment—including soap operas—and, yes, even through commercials.

Democracy is dependent upon us. Democracy is, without argument, the most inefficient form of social organization yet devised by man. Plato told us a couple of thousand years ago that a philosopher-king should run the country. That may be a good idea, but 2100 years later no one has really ever found a satisfactory philosopher-king. Philosopher-kings have a way of becoming tyrants. The framers of the constitution decided that it was better to put up with a lot of inefficiency than with a little tyranny. They made a choice between freedom of mankind and efficiency—and thank God they did.

Yes, freedom is inefficient. It carries with it a lot of risks and the opportunities for many evils.

We broadcasters must remember that although it allows opportunities for people to trespass against us, it also allows opportunities for us to trespass against others.

Despite all the pressures from bomb-throwers on the left and Little Caesars on the right and even the soft-voiced centerists, to use broadcasting to curb evil as they see it, I say to you, resist those pressures and continue the good fight to make the world safe for diversity.

My final piece of advice: Unity is necessary to get anything worthwhile done.

In fact, I regard the outstanding accomplishment of my 17 years as president of NAB as keeping you all in the same boat. The industry is stronger than it was 17 years ago, and it is still together.

But we may be facing a great period of fractionalization and wracking readjustment, a period when it may look as if the centrifugal force of the developing technologies will cause us to fly apart.

So I urge you to nurture NAB, to strengthen it, to support it, even when you don't agree with every NAB action. A strong NAB is your best hope for preserving your traditional rights, while securing your freedom to innovate and to pursue new courses in a changing world.

And above all, I urge you to be optimistic. Broadcasting's future belongs to the optimists. After all, the optimist is usually half right, and it's the right half. I really believe—along with Pogo—that we are confronted with insurmountable opportunities.

! : { :)))))



WITH NEC, A LITTLE SLEIGHT-OF-HAND MAKES MORE VIDEO MAGIC THAN EVER BEFORE.

Take the controls of the new NEC E-FLEX Perspective Rotational Accessory. You can add it to your E-FLEX DVE® System to get pictures that compress, enlarge, tumble, spin and split. Images that rotate into perspective. Virtually any picture manipulation you can imagine, all with absolute fidelity...and all for a price that's

more than magic—it's a miracle. Plus something no other system offers at any price—future add-on flexibility.

See the magic of the E-FLEX Perspective Rotational Accessory for yourself. To arrange a demonstration, call us today at 1-800-323-6656. In Illinois, call (312) 640-3792.

NEC

IMAGINE WHAT WE'LL DO NEXT

NEC America, Inc., Broadcast Equipment Division, 130 Martin Lane, Elk Grove Village, IL 60007

Also call us about ■ FS-16 FRAME SYNCHRONIZER ■ DV-10 DIGITAL MULTIPLEX ■ TVL-800-7E ■ SPC-3 CAMERA
FBN 7000 SERIES FM TRANSMITTERS ■ E-FLEX OFFLINE EDITING SYSTEM ■ HPA-4536B FM EXCITER

Circle (8) on Reply Card

Plant tour: EMCEE

By Adolph Rosset, director, sales/marketing, EMCEE, White Haven, PA

Founded in 1960, EMCEE Broadcast Products specializes in the design and manufacture of VHF and UHF TV translators and LPTV equipment. Over the past 22 years, the company has developed a range of transmission equipment for commercial, ITFS and MDS service. Among those products are innovations such as the first 1kW UHF translator, the first triode ITFS and MDS transmitters and the first FCC type-accepted, combined visual/aural, 1kW UHF transmitter.

Originally located in Mount Vernon, NY, expansion and acceptance of the product line led to the acquisition of a 27,000-square-foot facility in White Haven, PA, in 1968. The facility houses administrative and sales offices and subassembly manufacturing. Final assembly, testing, engineering, drafting and shipping functions are quartered at Mountain Top, PA, in a 47,000-square-foot facility acquired in 1982.

This presentation provides a brief tour of the EMCEE plant and introduces the staff and facilities to readers unable to take the tour in person.



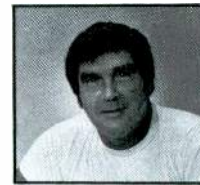
EMCEE administrative and sales offices in White Haven, PA.



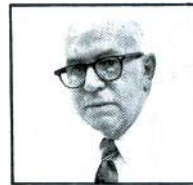
DeStefano



Rosset



Dougiallo



Kadler



Krull

The management team at EMCEE brings together a range of business and engineering backgrounds. Included in this team are James L. DeStefano, executive vice president; Adolph Rosset, director of sales/marketing; Del Dougiallo, vice president and general manager, Del's Tower Service; Edward A. Kadler, vice president/comptroller; and Kay Krull, assistant secretary.



R&D laboratory



Data processing



Drafting



Mechanical design

The electronic and mechanical engineering, research and development, and drafting departments work to develop new products and refine existing equipment. All mechanical and electronic drawings are updated, as needed, to ensure current documentation. This activity is supported by an in-house technical writer.

Double Your Troubleshooting and Testing Productivity . . . Or Your Money Back!

Six-digit readout: Automatically tracks every CRT test. We call it digital autotracking. It's patent pending.

Bright dual-trace CRT: 60 MHz (-3 dB); 100 MHz (-12 dB).

Delta PPV, Time, Freq: Measure any part of a waveform for PPV, time or frequency using Delta measurements. Just dial in the waveform section you want to measure and push.

Simplify Freq ratio tests: Automatically compare input/output ratio of multiply/divide stages from 1:1 to 1:999,999 with the push of a button.



Autotracking DCV, PPV, Freq: Measure DCV to .5%; PPV to 2%; freq. to .001%. Just push a button for either Channel A or B.

One probe input: One probe input per channel for all measurements - digital and scope - with 5 mV to 2000 V measuring range. (2 lo-cap probes provided.)

Super sync: ECL provides rock-solid sync trigger circuits with only 4 controls; includes TV sync separators for video work.

U.S. Patent Pending
Financing Available

The first scope with push button digital readout. If you use general purpose oscilloscopes for troubleshooting or testing, we can double your present productivity with the SC61 Waveform Analyzer, the first instrument to turn every conventional scope measurement into an automatic digital readout.

No more graticule counting. Connect only one probe to view any waveform to 100 MHz. Then, just push a button to read DCV, PPV, frequency and time — automatically!

There are no graticules to count or calculations to make, which speeds every measurement.

The digital readout is from 10 to 10,000 times more accurate as well.

Plus you have everything you want to know about a test point, at the push of a button, which speeds troubleshooting tremendously.

A special Delta function even lets you intensify parts of a waveform and digitally measure the PPV, time or frequency for just that waveform section.

And it's neat. No more tangled leads, piles of probes or dangling cords. The SC61 is an entire test station in one unit.

The one and only. There are other scopes with digital readout, but none of them completely automate every conventional scope measurement so you can automatically analyze any waveform without counting one single graticule. Totally automatic waveform analyzing at the push of a button. It will make all the difference in your productivity.

Double your productivity. When we say the SC61 will double your productivity, we're being conservative. We've seen cases of

Circle (144) for information
Circle (145) for demonstration

three, four, even ten time increases in productivity with this first-of-its-kind, automated oscilloscope. Every situation is different, however, so try the SC61 and judge for yourself. Here's our offer.

Money back guarantee. If the SC61 does not at least double your productivity during the first thirty days, you may return it for a full refund, including freight both ways.

Call today. Get the entire SC61 Waveform Analyzer story. Call toll-free today, and ask for our eight page color brochure. It could be the most productive call you make this year!

**Phone Toll-Free
1-800-843-3338**

Alaska, Hawaii, Canada and
South Dakota call collect
(605) 339-0100

SENCORE
3200 Sencore Drive, Sioux Falls, SD 57107

A frame synchronizer from Tektronix that sets a new standard of comparison.

Now. Authentic reproduction from any signal source. The Tek 110-S is the frame synchronizer with 10-bit resolution and accuracy. Performance that's every bit Tektronix! You get highest signal quality with correct SCH phase from any source. Resulting in the least signal degradation of any frame synchronizer on the market today.

Ten-bit digital circuitry offers digital signal processing with negligible quantizing errors. This 10-bit capability lets you cascade multiple units and depend on the 110-S for unexcelled performance. With four passes through the 110-S your signal is still better than with one pass through an 8-bit synchronizer. *Including quantizing effects,* the 110-S has the following specifications:

- 1% Diff Gain
- 1° Diff Phase
- 60dB Signal-to-Noise
- 1% Freq Response
- 0.5% 2T K-Factor

Compare these values to other frame synchronizers which omit quantizing effects from their specifications.

Noise performance unmatched.

Signals can be tracked to low signal/noise ratios, such as those encountered during ENG Microwave field freeze or black. Adaptive clamping prevents streaking while quickly responding to hot switches.

Accurate color framing. With the adaptive decoder or optional four-field memory, field 1 to field 3 conversions can be accomplished without introducing 140 nanosecond picture shifts. With four-field memory (one complete color frame), accurate color framing can be obtained without decoder artifacts.

Accurate RS-170A timing. With the 110-S's 10-bit digitizer and full memory, your original sync and burst can be passed with the signal. Or you may choose to insert a new digitally generated sync and burst with RS-170A timing.

Front loaded interchangeable boards. Internal diagnostics allow you to quickly identify any impending problems. Circuit boards are calibrated individually so you can change boards quickly, minimizing downtime.

Processing amplifier with remote control provides adjustments for signal level, set-up, chroma gain and hue. Other controls such as field/frame freeze are also provided on the remote control.

The 110-S is built in our tradition of reliability, excellence and long-term value. And backed by a worldwide service network and proven technical support.

Call your nearest Tektronix Field Office (listed in major-city directories) for more information. Or call 1-800-547-1512 for descriptive literature. (In Oregon, 1-800-452-1877).

Tektronix, Inc., P.O. Box 1700, Beaverton, OR 97075. In Europe: Tektronix Europe B.V., Postbox 827, 1180 AV Amstelveen, The Netherlands.

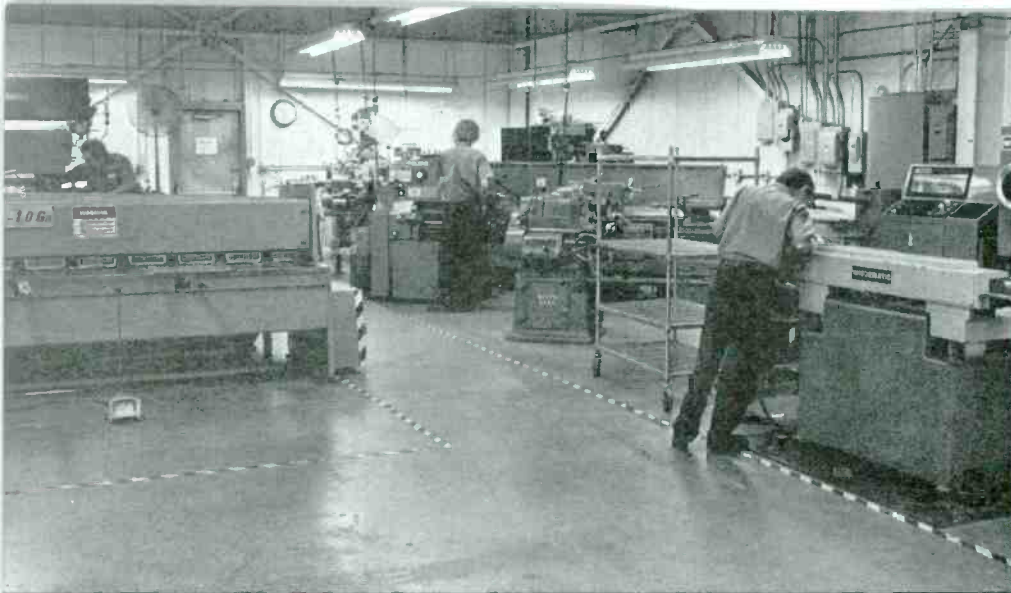
Tektronix 110-S SYNCHRONIZER

WORKING HARD FOR
YOUR SIGNAL QUALITY



Tektronix
COMMITTED TO EXCELLENCE

For Literature Circle (10) on Reply Card



The machine shop provides in-house construction of components such as microwave cavities, sheet metal cabinetry and enclosures necessary for special product requirements. It is equipped with automatic punch press, brakes, lathes, milling machines, heliarc welding systems, plating facilities and spray booths.



All EMCEE products use a modular or *building block* concept to ensure consistent product quality at every level of assembly. Module assembly is conducted primarily at White Haven; subassembly and final assembly at the Mountain Top facility.



Final assembly procedures reduce delivery time for finished hardware. Combined with a substantial product inventory, rapid shipping of equipment is ensured.



Each assembly level (module, chassis, final assembly) is subjected to test procedures before transfer to the succeeding assembly stage or inventory. Operating parameters are verified and documented before order processing and shipping.



RF transmission products are tested to ensure performance and reliability.



Domestic and international marketing representatives work with a 4-engineer staff that provides comprehensive technical proposals, technical support and consultation for systems and turn-key customers.



Field engineers oversee the installation, turn-on and on-site testing of equipment. Working with marketing representatives, field engineers provide 24-hour emergency service.

The new digital generator that lets you access and configure the vertical interval any way you want it.

Now. Four external VITS inputs. Non-volatile memory. And 39 test signals. All wrapped up in one test signal generator with all-digital family features. The new 1910 from Tektronix gives you the most access offered to the vertical interval — for inserting and configuring the location of test signals, Teletext, closed captioning, source ID and more. No other generator gives you that kind of capability.

Plus, the proven performance of the leading family of digital test signal generators. With the 1910, Tektronix has combined its 1900 Series Transmitter, NTC7 and Studio Test Sets in one highly capable unit. You get a full signal complement, with the accuracy and stability of 10-bit digital signal generation. The digital code for each signal is stored in replaceable PROMs so your 1910 won't become obsolete. Its RS232 control port adds even more versatility to the 1910 by pro-

viding a means for automatic control from such devices as the Tektronix 1980 ANSWER Automatic Video Measurement Set, with added flexibility for programming VITS and VITS in either field on lines 10 through 20, signal matrixing, VITS sequencing, redefining signal selection in the front panel or remote control unit — and more.

Solid support completes the package. The 1910 comes with a worldwide service network and proven technical support, plus the Tektronix reputation for reliability, excellence and long-term value.

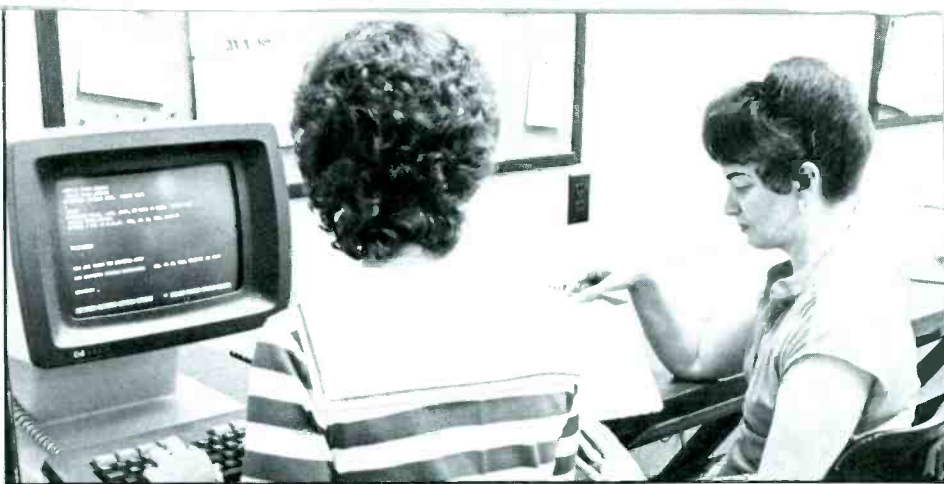
Contact your nearest Tektronix Field Office (listed in major city directories) for more information. Or call 1-800-547-1512 for descriptive literature. (In Oregon, 1-800-452-1877.)

Tektronix, Inc., P.O. Box 1700, Beaverton, OR 97075. In Europe: Tektronix Europe B.V., Postbox 827, 1180 AV Amstelveen, The Netherlands.





Del's Tower Service, a wholly owned subsidiary of EMCEE, provides tower construction and maintenance services for EMCEE turnkey systems and communications systems in areas outside the company's product areas. This in-house service allows EMCEE to function as a total systems house.



The computerized inventory control, a high speed data processing system, is used to simplify and streamline informational requirements of the systems group, engineering and accounting departments.



Sophisticated packaging techniques and experience in domestic and international transportation are combined to provide prompt delivery of products with minimal chance of damage in transit.

||:~(=)!!!

Introducing the ultimate FM Exciter!

**Continental's Type 802A
solid-state FM Exciter
offers broadcasters
unmatched performance.**

Modulation performance of this new exciter exceeds all currently known or marketed FM exciters.

No tuning adjustments are required other than selecting the operating frequency.

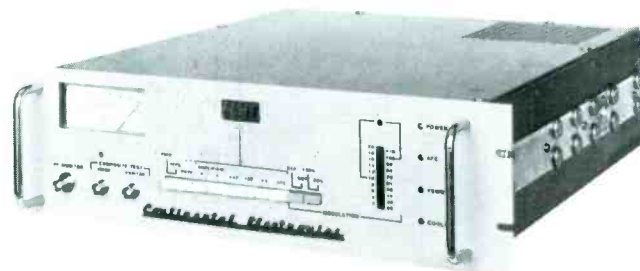
Power output is 50 watts into a 50 ohm load at all FM frequencies.

The exciter may be used as a low power transmitter.

Special circuits protect amplifier from mismatched loads. Automatic power control maintains output at preset levels from 5 watts up to the maximum level.

The Type 802A FM Exciter accepts composite baseband signal from a stereo generator, STL system or monaural and SCA programming.

A digitally-programmed, dual-speed, phase-locked frequency synthesis system generates exciter frequency.



Case design is very clean: front panel analog or digital meters and LED readouts give clear, accurate indications of system status and performance. A digital LED display shows true peak level of modulating signal in 5% increments with an accuracy of better than $\pm 2\%$.

Modular subassemblies may be removed from the exciter without removing the exciter from the transmitter. The exciter moves on slides for easy access from front of transmitter.

Call us for specs and prices.

© 1983 Continental Electronics Mfg. Co./5286

Continental Electronics

Continental Electronics Mfg. Co. Box 270879 Dallas, Texas 75227 (214) 381-7161



Circle (7) on Reply Card

BROADCAST[®] ENGINEERING

Ampex Brings
Innovation
to Broadcasting



Ampex: Technology and Innovation

In 1944, Alexander M. Poniatoff and two associates founded what is now known as Ampex Corporation, little realizing that their work would lead to the production of the world's first magnetic tape recorder, replacing crude wire recorders and thus beginning a revolution in radio, and later, television broadcasting.

Today Ampex Corporation continues this "revolution" by placing more than 7,000 Type C helical scan videotape recorders, supplying high quality magnetic tape and developing such advanced products as the ESS-3, VPR-3, VPR-80 and VPR-5 Type C video recorders and Ampex 196 1-inch and 197 3/4-inch broadcast-quality tapes.

But perhaps there are few broadcasters who know that Ampex also manufactures computer and data products, notably disk drives. Ampex makes sophisticated recording instruments used on NASA space missions and in other military and industrial applications. The combined development of these high-technology products as well as its professional audio and video equipment have brought television such innovations as slow-motion, instant replay and digital still storage.

"We've taken our computer technology and adapted it to the video world to create, for example, the world's first real time still-store system. We modified our computer disk drive for the ESS-2," said Charles A. Steinberg, executive vice president and chief operating officer of Ampex. "Another area that benefits from our computer expertise is the video display terminal business. Video displays and touch screens have been incorporated into the design of some of our video products, including the ACE video editing system."

Since the introduction of the first practical VTR in 1956, Ampex engineers have continued to set the pace for development of videotape recorders with such products as the VPR-3, the most fully automated Type C 1-inch helical scan recorder, and the VPR-5, a revolutionary portable 1-inch Type C recorder weighing less than 15 pounds.

The VPR-5 marked the beginning of an alliance between Ampex and the Swiss firm Kudelski, S.A. Ampex also has teamed up with Matsushita to market

lightweight ENG camera systems in the M format, for component video recording technologies.

On the digital TV front, Ampex has coordinated with engineering groups worldwide to push forward what many feel will be the ultimate video recording format.

A commitment to excellence in magnetic recording starts from the ground up—and at Ampex, that means tape.

"In the future, I think you'll see tape technology pacing hardware development," said Stan Faught, vice president-general manager, Magnetic Tape Division, which specializes in professional audio, video and industrial mastering tapes. "Hardware milestones have been the trigger for tape development in the past, but hardware technology is pushing tape capability."

"We're constantly trying to improve our products, or come up with new configurations," he says. "We recently announced our new 3/4-inch tape to accommodate broadcasters working in this smaller format." The tape division is also pioneering tape manufacturing techniques at its factory in Opelika, AL, and is researching metal tapes and tapes for HDTV and digital use.

"The Audio-Video Systems Division and the Magnetic Tape Division work closely together," says Faught. "A good example of the close relationship are the reels developed for the VPR-5. We knew the product was coming, so we developed a small, light reel for 1-inch tape to go along with it."

"Eventually there will be a digital videotape recorder," he said, "and the tape for it may likely be similar to some of the instrumentation tape products Ampex makes today."

In hardware, innovation in broadcast equipment centers on enhancing the company's most important product, the VTR.

"Our goal in the Audio Video Systems Division has been to expand our product line inside of a market that we address well, worldwide, and yet go beyond videotape recorders. The VTR has been our traditional product since Ampex invented it in 1956," said Jock Diermann, the division's director of technology. "We are expanding our horizons by develop-

ing new products such as the Ampex Digital Optics system, the ESS-3 digital video still-store production system, and through the acquisition of our switcher company in Wheat Ridge, CO."

"More of the investment we make in our products is software, not hardware based," he says. "One trend in the marketplace is the desire by customers to customize the software. A program for video editing is very complex, but our ACE editing system, for example, has built-in flexibility in its program. Through what we call *soft buttons*, the menu can be programmed and changed to meet the needs of the editor who uses it."

Another trend in VTRs, says Diermann, is the demand for sophisticated diagnostics. Both the Ampex VPR-80 and VPR-3 videotape recorders have computer-controlled fault-analysis routines which identify problems down to the integrated circuit.

Innovation and research

Engineering design is done at Ampex Corporation headquarters in Redwood City, CA.

Approximately 70 of the more than 400 design engineers work as part of the company's advanced technology division, headed by Michael Felix, vice president and general manager.

"Unlike other video equipment companies where a lot of research is aimed at the mass market computer video area and technology later translated to tape, the majority of our research is aimed toward our products in the computer market, and the innovations transferred later to the video products," says Felix.

"We're working, for example, in thin film heads," Felix adds. "Recording heads are made today from blocks of ferrite a few thousandths-of-an-inch thick. That's massive compared to thin film heads, which we are making in our lab here, which are millionths-of-an-inch thick."

"Another of our aims in Advanced Technology is to record a very high digital bit rate. With a rotary head machine, we have succeeded in recording roughly 50,000 bits to the inch, about 100 megabits per second. But the error rate is too great to record data in a practical way, so we are also working on sophisticated error correction for digital recording."

Intercommunication runs far down into the manufacturing phase. Engineers in Redwood City work closely with factory technicians in Colorado Springs, CO, from the earliest stages of a project. The pilot run of VPR-3 prototypes was not built in the Redwood City labs, but at the manufacturing facility in Colorado Springs; this allows Ampex to make products more readily available. Faught predicts that more R&D work with tape will be done on site in the Opelika facility. Such on-site engineering projects have led to major strides in manufacturing and quality control.

"One of the difficulties we've had in the coating of tape is going from small, R&D-sized batches and scaling up to a production size run," Faught says. "Three years ago, we made the decision to put in an engineering line in Opelika, of production size, for experimental coating lines. We're just now starting to see the benefits of this long term capital investment." Another innovation at the Opelika manufacturing site is a revolutionary tape slitter to create more uniform tapes.

Diermann says the Audio-Video Systems Division is experimenting with "beta sites." The term is derived from the computer industry and involves a special arrangement with a customer willing to put prototype equipment through its paces. "There is no way we can duplicate what happens in a television station in our plant, so this is especially important for broadcast products," Diermann explains.

Ampex has always been on the leading edge of what has been, since 1956, the heart of the television studio—the videotape recorder. Almost every two years, there's been a major innovation in VTRs from Ampex: in 1956, the recorder; in 1958, electronic editing; in 1961, helical scan recording; in 1963, high band color, then instant replay and slow motion.

"When a professional thinks recorders, they usually think of Ampex," said Mark Sanders, general manager, Audio-Video Systems Division.

As much as Ampex strives for excellence in its products, the support system for purchasers of Ampex products, is, as he sees it, another commitment to excellence that lasts the lifetime of the product.

"We have half again as many service engineers than sales people in this division," says Sanders. "We have a toll-free "800" number so that no matter what the user's problem is, if the user needs technical assistance, or a part, there is someone from Ampex to answer the call for help.

"Input from sales and service worldwide goes into product development to increase the reliability of each unit in the field," he adds. "We have, for example, a board exchange program for our higher volume products, such as the VPR-2B videotape recorder. This makes it simpler for the user to fix it himself. And, of course, more and more of our video equipment is incorporating diagnostics.

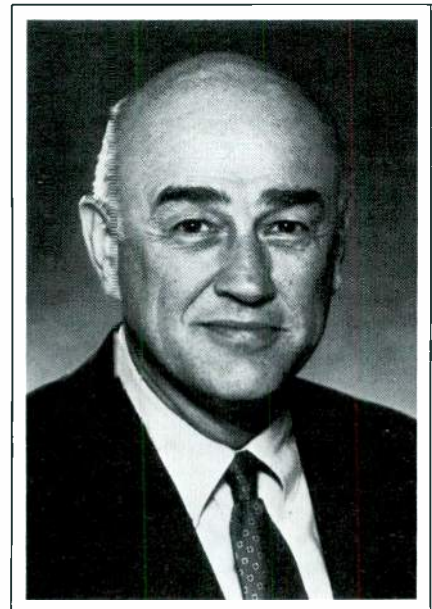
"It's always been our policy that as we upgrade and improve our products, we'll make a kit for retrofitting. We try to never leave a customer high and dry, and we support our old gear, which is fairly unusual in the business. Many of the recorders we sold back in the '50s and '60s are still in operation in the field, and still supported by Ampex."

International Division

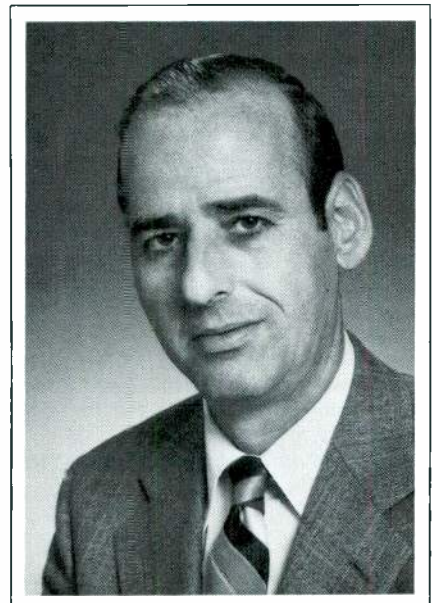
The Ampex International Division has existed as a separate entity since 1959. It is a total marketing division, committed to the sales and service of Ampex products outside of the United States. More than 50 percent of sales in audio-video products comes from outside the United States. Of that, roughly half represents sales to Japan, Western Europe, Canada and Australia. The other half comes from developing nations in Latin America, Asia, Africa and the Middle East.

Ampex has sales and service centers in 21 countries, according to David Chapman, president, Ampex International. "Outside the United States, sales and service engineers are, with few exceptions, nationals of the country where they work or third-country nationals. All are trained at Redwood City," he explains.

The international operations of Ampex extend from shipping spare parts to remote sites in the Sahara or mainland China to the building of a multicamera mobile unit for Yugoslavia's TV Beograd coverage of the 1984 Olympics in Sarajevo. Ampex's involvement in major multinational sporting events dates from



Roy H. Ekrom, president and chief executive officer, Ampex Corporation



Charles A. Steinberg, executive vice president and chief operating officer

the 1960 Olympic Games in Rome when VTRs were first used for the simple delay of monochrome signals. Color television made its debut at the Tokyo Games in 1964, and Ampex recorders were again used. In 1968, Ampex introduced "instant replay" to the world at the Olympics held in Mexico City, marking the first use of the HS-100 slow motion disk recorder.

In the search for the world television standard, Ampex employees are working closely with SMPTE and EBU in the future technologies of component and digital video.

Technological advancement in a worldwide recessionary economy is

perhaps one of the largest challenges facing Ampex in the international marketplace, says Roy H. Ekrom, Ampex president and chief executive officer. The company has reduced its work force and its overseas manufacturing operations while maintaining a high percentage of expenditure for long-term research. In 1981, Ampex Corporation became a wholly owned subsidiary of The Signals Companies, Inc., a multinational group of diversified high-technology manufacturing companies around the world.

"The broadcast business is primarily an international business," says Ekrom. "We

are going to have to find more innovative ways of making our products available, for example, to the foreign customer who would like to buy but doesn't have the dollars. We are looking at barter, trading companies and other credit arrangements to allow foreign broadcasters to purchase with the local currency. Of course," he adds, "this is not just an Ampex problem. It's a problem for all U.S. companies trading for export."

"One solution," Ekrom says, "will be to use the worldwide assets of the Signal 'family' to channel credit to customers based on local currencies. We're studying all of the assets we have available." □

Recording History: The Ampex Museum

The Ampex Museum of Magnetic Recording, located at Ampex Corporation headquarters in Redwood City, CA, is a treasure-trove of ancient machines, a look into the brief and largely obscure history of tape technology. Opened in 1982, the museum tells the story of American, European and Japanese technological developments in 28 separate displays – including gear by Ampex competitors.

"We have included all the pioneers in the industry," states curator Peter Hammar. "Our concept was, from the very beginning, to tell the whole story, to make the museum as complete and credible as possible."

Ampex set up the displays with equipment purchased, donated and obtained through trades. The exhibit is valued at more than \$1 million. Most of the machines are in working order. Among the displays are a 1911 Telegraphone model C wire recorder, sold and used as

a telephone answering device. There's a post-war Webster-Chicago wire recorder, as well as the AEG Magnetophon FT-2, built in 1936 and believed to be the oldest tape recorder on display in the United States.

For two years, Hammar traveled extensively around the country and in Europe, running ads in technical journals. BASF, Agfa-Gevaert, AEG-Telefunken, RCA, Kudelski, Studer and all three American networks assisted in gathering equipment and information. An Ampex VRX-1000 videotape recorder on display is the first VTR delivered to a U.S. network, CBS, in 1956. CBS kept the machine in operation for 22 years before returning it to Ampex in 1978.

"Finding some of the artifacts in the exhibit was pure luck," says Hammar. "The Telegraphone was discovered in an Ampex warehouse. From some documents inside it, we think it was acquired by Alexander M. Poniatoff, the founder of Ampex, and then put into storage."

Hammar adds that some of the prized elements of the collection were donated by the late Harold W. Lindsay, who had a keen interest in the development of the Ampex Museum of Magnetic Recording and was the developer of America's first professional audio recorder, the Model 200, first marketed in 1948.

Some displays posed a few logistics problems. A life-sized mannequin attired in camera and Ampex VPR-3000 portable VTR "kept falling over" until Ham-

mar removed most of its insides from the 1967 backpack machine.

"It's just another illustration of how far we've come. In contrast, the VPR-5 weighs less than 15 pounds, and makes better pictures," he said.

The Ampex Museum of Magnetic Recording is not quite complete. A videotaped documentary on the history of magnetic recording is now in production. For the museum visitor, the video documentaries will expand the space limitation of the 2500-square-foot exhibit, graphically telling the fascinating story of the birth and growth of audio, video and data recording.

The push of a button will bring the legacy of magnetic recording to life: Bing Crosby's first tape recording, a comic sketch of a bewildered Jack Benny facing the tally lights of a TV camera for the first time, the first use of color slow-motion in televised sports. Display stations all have video monitors, which can call up tapes or computer generated graphics for diverse viewer interests – whether it be the story of the earliest videotaped news broadcast or the engineering specifications of the first highband videotape recorder manufactured in 1964.

The Ampex Museum of Magnetic Recording is open weekdays from 11:30 a.m. to 1:30 p.m. Group tours can be arranged by appointment by calling the Ampex Public Relations Department at 1-415-367-4151 from 8 a.m. to noon and 1 p.m. to 5 p.m. □

Magnetic Tape: The Foundation



Ampex has recently introduced a new 3/4-inch broadcast-quality videocassette ideally suited to electronic newsgathering, electronic field production and on-line editing.

"The new Ampex 197 3/4-inch videocassette uses a high performance oxide to deliver outstanding chrominance and luminance performance, plus superior audio signal-to-noise and low distortion characteristics," says Don Bogue, director of business management, Ampex Magnetic Tape Division. "We combine a durable binder system with the latest technology in base film to produce a tape that stands up to the toughest editing situations."

The 197 was engineered to optimize the performance of the Sony BVU Series recorders, and is compatible with the other major brands of 3/4-inch tape as well. "When switching to 197, customers do not have to make any adjustments to their recorders," says Bogue.

"Extensive testing prior to market introduction is an important part of our development program," says Bogue. "In laboratory tests, blind field tests and initial customer evaluations, the 197 demonstrates high standards of picture

quality, stability and durability.

Available immediately throughout the United States and Europe, the Ampex 197 is offered in the standard BCA play lengths of 10, 20, 30 and 60 minutes, as well as in a 20-minute BCS minicassette.

"Ampex 197 offers broadcast-quality in every way," says Bogue. "Its outstanding chrominance and luminance provide the color and sharpness required for master production, and the tape's durability makes it an excellent choice for editing."

Ampex 197 also features broadcast-quality sound. The superior audio output, high signal-to-noise ratio and low distortion provide clean, crisp audio performance under heavy editing conditions and multiple-generation dubbing. The tape also delivers excellent stereo fidelity when recording music.

Ampex has placed a great deal of emphasis on increasing the consistency of its 196 1-inch videotape product line, a complex task involving everything from mechanical engineering to microtechnology in which attention to the finest details is critical.

"The electrical performance of the 196 is outstanding, and the picture quality holds up superbly in dubbing

multigenerations. We have been increasing our marketing efforts as the product has improved, and our efforts have resulted in increased market share. Our strategy is very much oriented toward customer service. We provide not only the tape, but reliability, dependability and, when the customer needs it, technical assistance," he says.

To support its performance claims, Ampex featured six real-time demonstrations at the recent NAB. In the 1-inch area, in addition to a picture-quality exhibit using segments from top-rated TV shows, Ampex ran a multiple-pass test to show the durability of the tape and a demonstration of how well performance holds up even 10 generations down from a master recorded on 196. The VTR-based demonstrations interfaced with computers so visitors could see how the tape performed in dropouts and RF after each pass.

The 197 3/4-inch videocassette made its debut at NAB, and a commercial spot explaining the product's most important performance features was played continuously throughout the show. Also a multiple-pass durability test was made by shuttling over the same section of tape.

"After 2800 passes, 197 had lost only a little more than 1dB of RF," Bogue reported. "Our still-frame test was incredible. We had several cases in which 197 ran more than three hours in still-frame without significant RF loss. This tape is built to take extreme editing abuse."

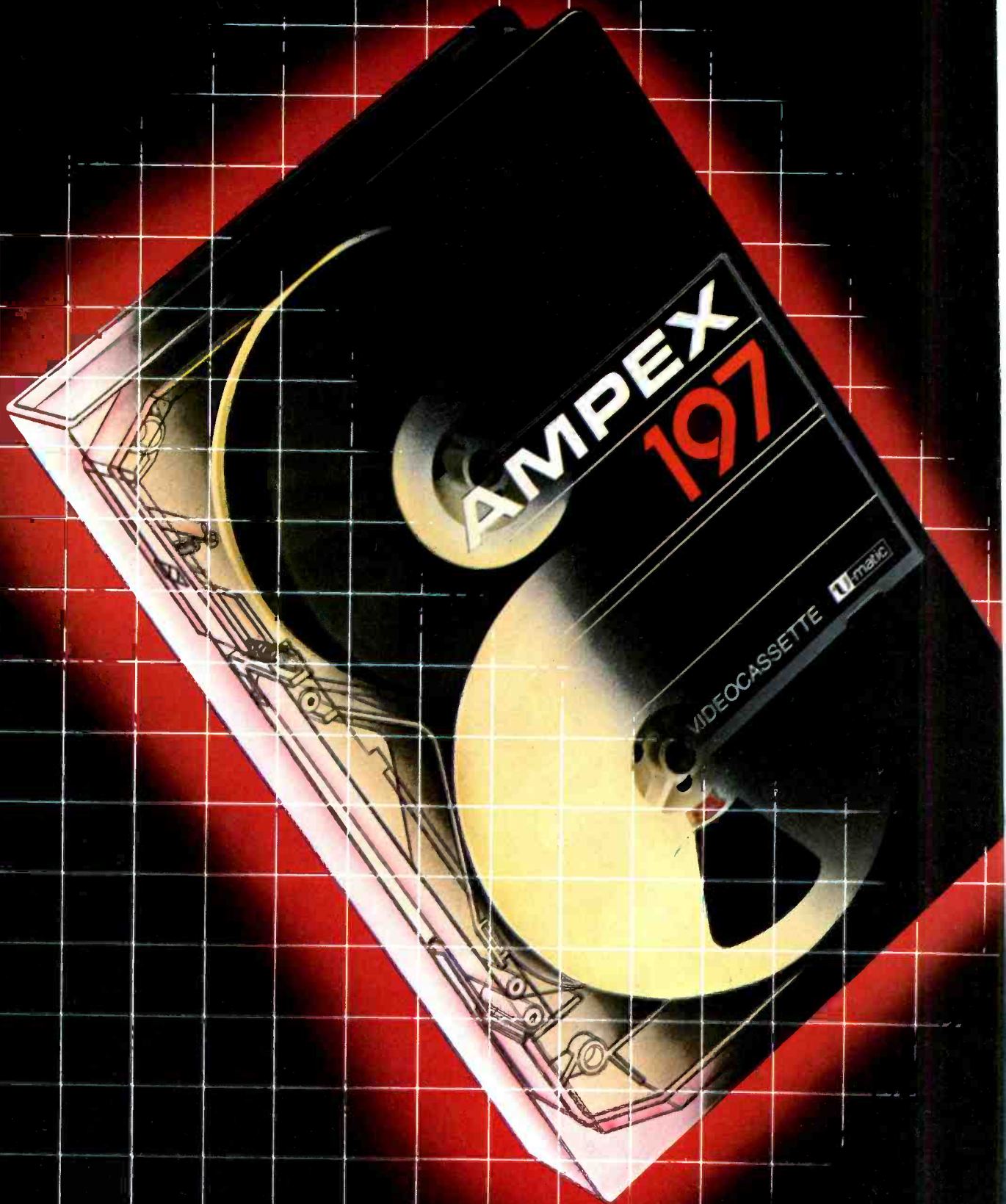
Future innovations in tape at Ampex are in the works today as the Magnetic Tape Division explores metal layering and vacuum deposition techniques, processes which will ultimately replace current coating methods.

"We have a large project group working on the generic characteristics of tape," says Bogue. "We are, for instance, looking at new base-films, thinner coatings, and advanced magnetic particles, all with a view toward providing our customers products that will take up less space, allow higher information packing densities, and deliver optimum performance under the toughest operating conditions."

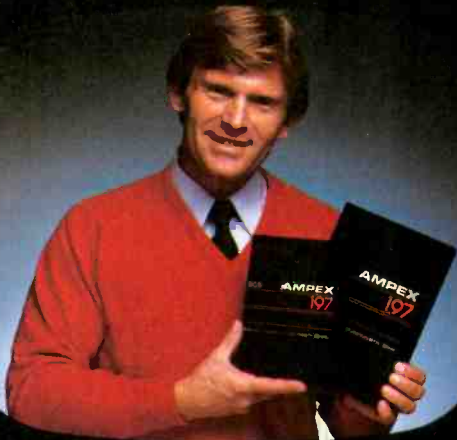
"In the past, hardware design engineers have been constrained by performance limitations of tape. We're trying to give those engineers a little more latitude. To the extent we succeed in that effort, we believe we will also succeed in increasing our participation in the professional video market," says Bogue. □

Advertisement

Introducing Ampex 197, that's broadcast-



the new 3/4" videocassette quality in every way.



Broadcast-quality color & sharpness.

The new Ampex 3/4" videocassette has been designed with nothing less than perfection as its goal.

Its superb chrominance and luminance performance makes it ideal to meet the stringent demands of broadcast applications such as electronic news gathering, electronic field production and on-line editing.

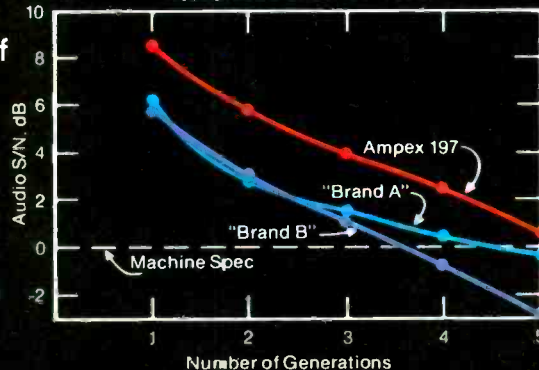
And the tape in Ampex 197 has been especially formulated to optimize the performance of the Sony 3VU series of recorders.

Broadcast-quality sound.

Ampex award-winning sound has been an industry leader for a quarter of a century. Now Ampex 197 brings this award-winning expertise to video.

Ampex 197 offers superior signal-to-noise and low distortion characteristics. This translates into crisper, cleaner audio performance under heavy editing conditions and multiple generation dubbing. It also delivers excellent stereo fidelity when used for music recording.

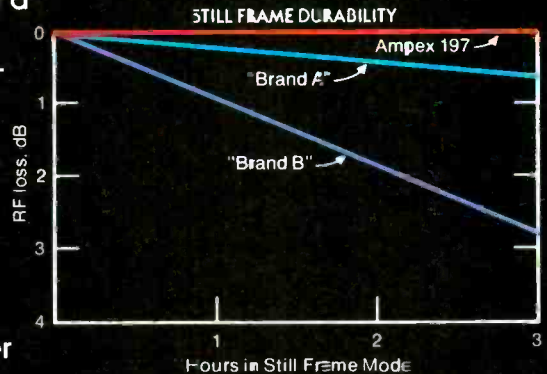
AUDIO: MULTIPLE GENERATIONS



Even after five generations, Ampex 197's audio signal-to-noise ratio exceeds the DVU series machine specifications.

Broadcast-quality reliability.

This new 3/4" videocassette is a blend of the finest broad-



Laboratory tests proved that Ampex 197 held up for three full hours with no RF loss.

cast materials and Ampex's unique technical expertise. In blind field testing, Ampex 197 got the highest marks from broadcast professionals for its picture quality, stability, and durability.

In laboratory trials, Ampex 197 held up in the still-frame mode for three full hours and showed no dropout increase or RF loss.

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

AMPEX

Ampex Corporation • One of The Signal Companies

Quality worth broadcasting.

Circle (150) on Reply Card

The Ultimate Tape Machine

Any engineer worthy of that title dreams of being an accredited member of that ultra-select team, which succeeds in creating the one acknowledged product leader in its field. To be recognized as a major contributor in the design of such "gee whiz" devices as GM's avant garde Corvette, Apple's eye-catching LISA or Nikon's super speed F-3 is a goal that motivates professionals even beyond the basic human pursuit of fame and fortune. The accolade of one's peers, whether colleagues or competitors, for a task truly well done, is the modern holy grail in our

technology-oriented society.

The Ampex VPR-3 is just that kind of an ultimate taping machine. It has attracted overwhelming approval from actual and potential users, and grudging envy from the ranks of the competition.

The VPR-3 won't beat the Corvette in a 0-60 MPH drag race at full throttle, but it will go from park to picture in an incredible 20 milliseconds, the fastest fully synchronous image and sound in the helical VTR field.

The VPR-3's onboard computer and bright fluorescent display won't give those

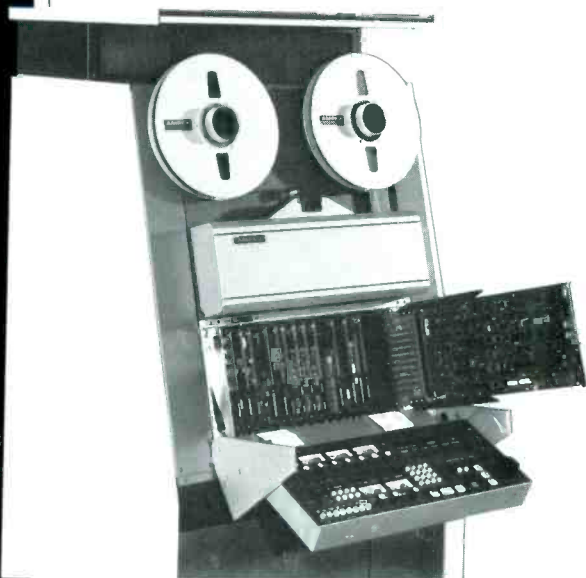
cute iconographic pictures you can chase with a "mouse" on the LISA screen, but it will tell the operator at a glance more than is actually necessary for proper operation, precise setup, and if needed, maintenance diagnostics. That easily read green screen on the right-hand side of the VPR-3 control panel is not just user friendly (as Apple claims for LISA), it is downright user lovable when you are operating this Ampex tape machine.

Nikon claims their F-3 is the most advanced camera in the history of photography with fully automated exposure, quartz-timed titanium shutter to an amazing 2000th of a second, and it will even rapidly rewind your roll with its NiCad pack. It's no wonder that *Modern Photography* referred to it as "perfection in design, construction and handling, never before achieved."

The VPR-3 could be described in the same glowing terms: The design is outstanding from both a technical and operational viewpoint. The construction is rugged, yet so easy to service because of the open access to any critical component. The tape handling is incredible because this VTR employs air lubrication, a



The VPR-3: The ultimate 1-inch Type C format VTR.



The VPR-3 electronics bay provides easy access to PC boards. The control panel flips over to allow quick access to its electronics.

vacuum capstan and a constant tension servo of unparalleled performance in any other non-Ampex video recorder.

The way the VPR-3 was conceived and created is a unique story in itself. The engineering team that Ampex pulled together for this important project combined well-honed video recorder design skills from previously successful and well-regarded VTR products, encompassing the best quads to the latest one-inchers. Al Trost, a principal engineer, headed the project design team, which included Dave Rodal on the critical servo systems and Jay Baker on the multichannel audio. VPR-3 project administration was in John Spears' good hands, and mechanical engineering went to Dennis Ryan. The overall product responsibility rested with another Ampex helical veteran, Bill Carpenter. The support team included specialists in mechanical and electronic hardware, as well as a team of software writers who could translate operational requirements into the bits and bytes.

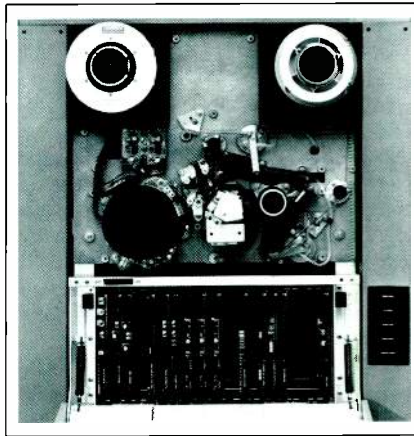
The result was the VPR-3, the ultimate taping machine, the latest proud chapter in the distinguished history of a company that introduced the world's first practical VTR in 1956, and has remained at the cutting edge of that technology ever since. Here's how Ampex and its dedicated design team really did it.

From concept to creation

Bringing the VPR-3 from a figment of imagination to factory production required at least three essential elements — experience in the field, management approval and intelligent user input. It was easy to meet the first condition because Ampex is the leader in professional VTRs. The bulk of the more than 14,000 quad recorders that still populate broadcast studios and production houses all over the world were made by Ampex. Even with the much stronger competition in the professional helical machines, such as the 1-inch Type B and Type C, Ampex is still the world's major supplier of Type C equipment and licensor for virtually every other VTR manufacturer. Through the iterations of VPR-1, VPR-2, VPR-20, VPR-80, VPR-3 and VPR-5, Ampex has pushed the Type C helical to numbers surpassing quads, establishing this format as the present workhorse of the video recording industry.

Management approval to develop the VPR-3 was a little difficult to obtain. In a world of shrinking economies, the proposal to build a super deluxe machine is not always viewed as a viable route to a corporate return on investment. Trost and Carpenter recalled the various upper

echelon hurdles that had to be crossed to get approval for some of the unique approaches engineering proposed for the VPR-3. Fortunately, management, once convinced of the validity of air-lubricated guides and the wisdom of a factory pilot run without preliminaries, supported the "Olympus" project (the internal code name for the VPR-3) to the fullest, thus making sure that it came out as planned.



Air guides and precision rotary guides significantly reduce tape path friction normally found in the Type C format recorder. The vacuum capstan eliminates the pinch roller, yet allows gentle precise control.

The last element was perhaps the hardest. Intelligent user inputs from a wide spectrum of actual field applications that VTRs are put to might lead to an incoherent babble. The large networks may need very different features from small post-production houses. Given the opportunity to express demands without guidelines, everyone would ask for everything. Confronted with this dilemma, Carpenter decided early on (circa 1980) to solicit in-house advice from regional sales offices for the first layer of suggestions to shaping "Olympus." That, combined with various on-site engineering decisions, guided the early stages of the emerging VPR-3.

The first real milestone came in September 1980 when approximately 30 Ampex representatives, from departments such as marketing, product planning and engineering, held a day-long session to brainstorm new ideas and to assign responsibilities. After the machine had taken basic shape, but before its design was fully cast in concrete, Ampex made its most important user-input move. Under the protective cloak of non-disclosure agreements, groups of experi-

enced users were invited to visit the R&D department in Redwood City, CA, and share their views on what an ultimate taping machine should look, feel and work like. This, according to Carpenter, was the most enlightening experience because it led to the best user interface for a VTR ever accomplished.

The people who came represented diverse entities ranging from the ABC Television Network to small local commercial houses such as Spindletop Productions in Dallas, TX. Ampex invited only those users with first-hand experience in daily VTR operation, rather than top-level executives too removed from real contact with the equipment. Some engineering-oriented VTR department managers, in fact, brought along their tape machine operators and maintenance people who had precise comments to make about control placement, desirable readouts, set-up procedures, etc.

The outcome was a universally acceptable control panel, with a software orientation that allowed for continuing upgradability. Both Carpenter and Trost were happy with the results, because even after introduction to the industry, there has been literally no Monday morning quarterbacking as to what the VPR-3 should have had. Carpenter also insisted that the Ampex engineers on the VPR-3 go to the first trade shows where it was to be exhibited. When they asked potential customers for opinions on the VPR-3, the response was often "not only have you guys put in everything I could want, you even have things I wouldn't have dreamed of myself."

"Olympus" had been scaled, and the Ampex flag was firmly implanted on the summit.

The technicalities

To characterize the VPR-3's advanced features over other 1-inch helical VTRs, one must identify them in some orderly form. They are as follows:

1. Tape handling: Fast, gentle, precise, and unmatched in any other helical VTR.
2. Audio performance: Three of four channels of superb, repeatable, sound quality.
3. Operational utility: Automated or manual, clear word display of machine status, a tactile and visual control panel of understandable simplicity.
4. Maintenance and setup: Mechanically agile sub-assemblies, computerized optimization, expandable diagnostics.

Each of these features required some imaginative engineering effort to accom-

plish, and only a few of the highlights can be covered in this article.

The tape handling question surfaced first. Helical recorders have a unique problem because of the complex tape path and the many surfaces over which it must pass. Trost felt that developing air-lubricated guides and a vacuum capstan (with no pinch roller to squeeze the tape) were the first steps in the gentle handling of the 1-inch tape. Although the best quad machines, such as the AVR-1, had been built this way, there was a natural antipathy to the noisy air compressor pack, or an in-house air supply. Trost's solution was an integral muted compressor, surrounded by state-of-the-art cooling that required no outside connections.

"The biggest job was convincing people this concept would work," Trost recalls. "Air had a stigma, and there were a lot of skeptics around." Once the air lubrication idea had been sold, Rodal took over and designed the constant tension servos, which made sure that the tape was never subjected to unusual strain at any speed or under any operational conditions.

Carpenter had asked his team for better and faster tape handling than anything on the market. The combined efforts of Trost and Rodal produced a lock-up time of 20 milliseconds, parking accuracy of ± 25 lines in a specific field and rapid acceleration of up to 500ips, because the vacuum capstan has no pinch roller. As a result, a 30-second tape segment can be re-cued and played in sync in just two seconds.

According to Carpenter (and a legion

of other TV engineers), audio has always been the stepchild of VTRs. Not on the VPR-3. Right from the start, audio's scope and performance was factored in as a major requirement because of the emphasis on stereo sound on public television in the near future, with two countries (Japan and West Germany) already airing TV with stereo audio. With the growing population of home VCRs and videodisc players that have stereo capabilities, TV production facilities want good multichannel sound, and the VPR-3 was designed to give them just that.

Meticulously engineered by Baker, the VPR-3 audio system includes three or four channels of audio, confidence heads to ensure proper recording, and, more importantly, auto optimization of record characteristics to guarantee the best audio quality. These features have been extended even to the degree of internal computerized memories that store three different tape type characteristics. The operator, knowing the brand of tape on the machine, can switch in the appropriate record/playback parameters for perfect stereo reproduction. To top it all, there is virtually zero phase shift between the main audio channels.

Because VTR audio systems are often used with a host of external devices — such as noise reducers, companders, harmonizers, etc. — the VPR-3 has rear access plugs to each audio board, permitting easy interface with such outboard gear. This, of course, includes timing information to synchronize multitrack audio

machines when that is necessary.

For the first time in a professional VTR, audio is not playing second fiddle to video. Everything practical has been done on the VPR-3 to ensure high fidelity sound, and both automatic and manual means to keep it that way, day in and day out.

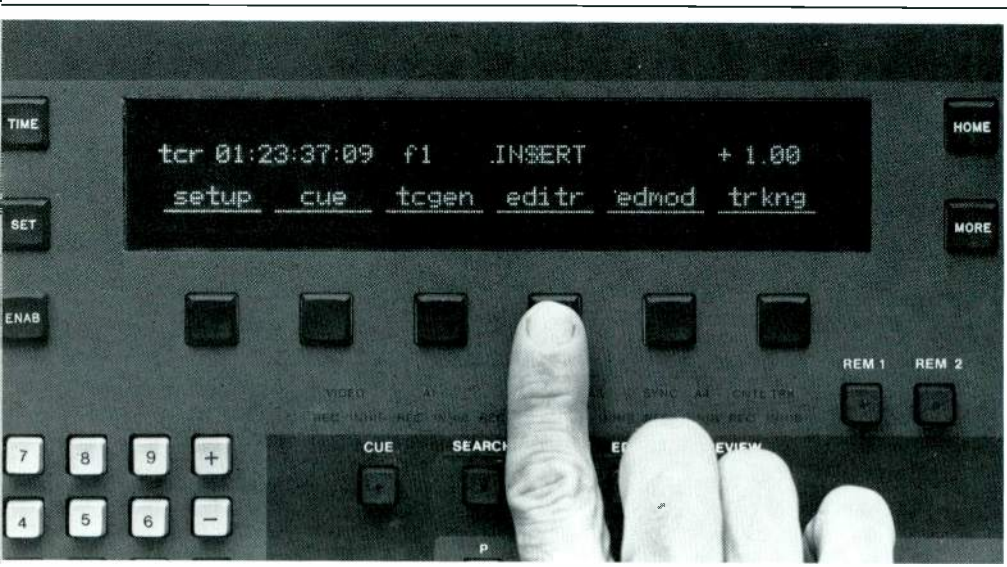
For operational and maintenance utility, few modern day electromechanical devices can boast the flexibility of the VPR-3. The control panel swings out of place to not only allow easy access to every printed circuit board behind it, but also to stay in an easily operable position. The transport cover comes off to expose the front mechanics, while the power pack in the back folds out to provide a clear path to everything mounted on the back of the top-plate.

When the machine is operating, the display window on the upper right section of the control panel provides constant monitoring on its bright fluorescent dot matrix. The 26x265 dots can present words, numbers and even graphics when needed to convey machine information to the operator. There are test circuits to determine that all the LEDs work or to return all signals to unity setting. There is an SC/H meter that monitors subcarrier to horizontal phasing of off-tape and input video signals to make sure that an edit will color lock.

User inputs also revealed the need for multiple-machine editing control. The VPR-3 will handle up to four machines from its own front panel. On the diagnostic front, the software, using the on-board computer and a special diagnostic probe, will provide extended setup and maintenance help for any foreseeable purpose. The readouts are clear and in plain language, not requiring interpretive codes.

Summary

The VPR-3 combines into a single VTR all of the advanced technology, and all of the wide field experience that Ampex was able to bring to bear on the goal of building its best broadcast VTR. It represented the latest entry into a rapidly moving field in which they have set the pace for technological innovation. The VPR-3 joins those other Ampex "VTR Hall of Fame" products such as the VR-1000 series in monochrome and color; the pioneers of high band, the VR-2000 and 1200; the so-called "portable" VR-3000; the slo-mo HS-100; and the lightest of all Type C machines, the VPR-5. Each step along the way probably contributed something tangible to the VPR-3, the ultimate taping machine of this era. □



A fluorescent display with menu-identified "soft keys" shows important operational, status and diagnostic functions.

THE ULTIMATE VTR. FAST, YET GENTLE. SOPHISTICATED, YET SIMPLE.



THE REMARKABLE VPR-3.

Meet the classic one-inch Type "C" VTR. Light years ahead in technology. With everything you want in one machine. We call it the VPR-3.

VPR-3 has it all. Just look into its exclusive features. Gentle air-guided and vacuum-controlled tape handling. Tape acceleration to 500 inches per second shuttle in one second with one-hour reels. "Fail-safe" dynamic braking. Fast synchronous lockup. The ability to run with three-hour to "spot" reels



without adjustment. Superior built-in audio features. Simpler operation using a fluorescent display screen and soft-key-driven menus. And extensive diagnostics.

Get all details from your nearest Ampex sales office, or call us today.

AMPEX

Ampex Corporation • One of The Signal Companies

Atlanta 404/451-7112 • Chicago 312/593-6000
Dallas 214/960-1162 • Los Angeles
213/240-5000 • New York/New Jersey
201/825-9600 • San Francisco 408/255-4800
Washington, D.C. 301/530-8800

Circle (151) on Reply Card

A NEW PORTABLE "C" VTR THAT WEIGHS ONLY 15 POUNDS.

THE AMAZING VPR-5.



We started a revolution by combining our talents with those of Kudelski SA, an innovator in audio technology, to create the Ampex Nagra VPR-5.

At 15 pounds (including 20-min. reels, battery and cover), the VPR-5 is the world's lightest and most portable one-inch Type "C" VTR.

VPR-5 is as small as a briefcase, measuring 17½" × 8½" × 5½", yet it delivers the quality and editing capability demanded from any full performance C-format VTR.

VPR-5 features: dual micro-processors, two high-quality audio channels plus a SMPTE/EBU time code channel, dual-cue editing, LCD display of VU and PPM levels, audio confidence playback selector independent of video, and a rugged aluminum alloy casing.

Get all details from your nearest Ampex sales office, or call us today.

AMPEX

Ampex Corporation • One of The Signal Companies

Atlanta 404/451-7112 • Chicago 312/593-6000
Dallas 214/960-1162 • Los Angeles
213/240-5000 • New York/New Jersey
201/825-9600 • San Francisco 408/255-4800
Washington, D.C. 301/530-8800

Circle (152) on Reply Card

Advertisement

VPR-5: A Technological Milestone



The VPR-5: Type C format VTR at less than 15 pounds.

Full Type C format recording performance realized in a VTR weighing less than 15 pounds is a portable achievement in the Ampex Nagra VPR-5. Two of the most famous names in magnetic recording—Ampex Corporation and Kudelski—worked together to produce this state-of-the-art portable VTR.

Ampex and Kudelski S.A., a Swiss company, recognized the need for a truly portable Type C 1-inch helical scan VTR and entered into a joint development program in 1981 to produce this unique field recorder. The merging of the Kudelski expertise in rugged portable audio recorders—the ubiquitous Nagras—with Ampex video engineering has created a VTR with superior audio and unique video characteristics plus sophisticated computer controls.

The VPR-5 weighs less than 15 pounds fully loaded and with battery. It has been designed with a shoulder strap for carrying, a backpack option, or it may be carried in front of the body. For studio and tabletop applications, the VPR-5 can accommodate 60-minute reels. For field use, Ampex has introduced a 20-minute reel of 1-inch tape.

The VPR-5 is an impressive mix of mechanical, electrical and manufacturing innovations, according to C. Thomas Hasty, senior product manager, Audio-Video Systems Division.

"Its rugged exterior is machined by computer control from a solid block of aluminum alloy, cutting away about 90 percent of the metal. The aluminum used is the same structural alloy used in aerospace applications," Hasty explains. "The VPR-5 has the same skin as a 747 jet."

The front panel and top of the cover are totally machined for strength against impact. Five latches clamp the case with a weathertight vinyl seal.

Achieving a four-to-one weight reduction for equivalent performance over any other portable VTR is a marvel of Swiss engineering.

Kudelski's concept of the self-contained scanner was the key, according to Hasty. Hidden within the scanner are a direct-drive brushless motor and three rotary transformers for the flying heads—the three active heads and the dummy heads of the C format.

"The mechanism is all direct-drive and fits above the top plate," says Hasty. "In the reel hub is a high torque motor, a tachometer, mechanical brake and gear set. It's a marvel of packaging."

As in other Ampex-designed videotape recorders, the heads on the VPR-5, should they fail, are individually replaceable. The scanner has a sturdy anodized guideband and roller scanner guides to minimize tape friction. Simultaneous audio and video confidence playback is available through the camera viewfinder, plus external monitoring of audio through an earphone jack. Time code is automatically inserted onto the third audio channel.

"We took a modular approach to camera and microphone inputs, because this VTR will be adapted to a great variety of configurations around the world," says Hasty. "The interface that we call a *personality module* slides right into a recessed space on either side of the VTR. This will make it possible to change, for example, from mixer input audio to a hand held microphone on location."

As a microprocessor-based VTR, the VPR-5 is designed for maximum *human* interface as well. LCD displays highlight tape time remaining, time code, operational status and diagnostic information. A multipurpose bar graph on the control panel converts to a VU meter, RF meter or video level meter.

Remote control capabilities are an additional benefit of its software design. The VPR-5 uses two NSC 810 CMOS microprocessors. Internal time code is implemented by the NSC 810 instead of by a special-purpose time code generator chip.

"The microprocessor overhead gives us lots of power for self diagnostics," explains Hasty. "In the field, the operator relies on an LCD readout of a number code, referring to a printed guide to locate the problem area."

The VPR-5 additionally has the recognized high performance audio record capability embodied in the Nagra-IV. The VTR has automatic audio level controls with built-in filters to accommodate a wide audio dynamic range in location recording.

The VPR-5 also has comprehensive editing capabilities. A dual-cue editor provides the director with the capability to return to an edit point or insert edit.

"We were concerned with reducing total weight in the field," Hasty explains. "Minimizing power requirements of the VTR means you can use a smaller battery. Energy conservation means you don't have to tote along a big inventory of batteries on location."

The VPR-5 is *partitioned* electronically. The microprocessor monitors the mode of operation and turns on power only to *essential* circuits. There is no power loss to *inactive* circuits.

The VTR can be powered externally or by its internal battery bar, an Ampex design of standard nickel-cadmium cells. Also, within each battery pack is a digital memory cell. The microprocessor within the VPR-5 monitors the current use of the battery and calculates remaining battery life, which can be displayed. This calculation relies on the actual amp-hour consumption of the machine.

"If the VPR-5 is turned off in mid-operation," says Hasty, "the operator gets an accurate reading of time remaining. Standard battery life is one hour; capacity to cover three 20-minute reels. External power can also be used to recharge the batteries." □

Manufacturing at the Leading Edge of Technology

"The heart of the Ampex VTR equipment manufacturing complex is our Colorado Springs, CO, operations," said Gail Clason, plant manager, Audio-Video Systems Division.

"It is our job to manufacture the equipment designed in our R&D facilities at Redwood City, CA," he says. "That's not an easy task. We have to translate what is accomplished in the lab into processes and procedures that lead to a final product. But that's not all. There are marketplace requirements that must be accommodated. First, we have to be sure that the final product meets the high standards of performance and reliability expected from Ampex equipment. Second, we must organize the production flow with an efficiency that yields a product at a marketable price."

Clason manages staff and equipment in the 300,000-square-foot plant, established in 1964. With him on the manage-

ment team are two key people: William Loss, manager of manufacturing operations, and Richard Guidotti, manager of quality assurance. This team, supported by the latest in business equipment and purchasing operations, manages a 2000-person staff.

"We continue to find that definitions of quality are ever changing and expanding," Guidotti said. "Our component inspection process is being developed to further improve our circuit board yield and our product performance. Now our vendors are being asked to work directly with us to simplify or eliminate the need to get their products past our receiving department. This is helping us improve production and quality."

But electronics is only part of the picture. Modern videotape recorders for television production have material requirements and mechanical tolerances that are at the leading edge of production

capabilities. "Meeting these needs requires sophisticated machining equipment and skilled operators," Loss says. "Although we've been fortunate to find the equipment and the people we need, we're constantly looking for new equipment that will yield greater accuracy or more products."

The problems of distance between the design engineers at Ampex's headquarters in Redwood City and the manufacturing plant in Colorado Springs have been minimized by the use of rapid air transportation and modern communications networks. Thus, the advantage of being able to have qualified talent in Colorado for precision electronic and mechanical work does not have to be offset by the problem of space separation between the design and production facilities for Ampex. □

Production Switchers: Adapting the Microprocessor

"If you want to see how technology has reshaped equipment for broadcasters," says George Merrick, general manager of the Ampex Switcher Company (ASC), "take a look at the video switcher."

Ampex entered the video production switcher market in May 1978 through its acquisition of the Duca-Richardson Corporation (DRC), Wheat Ridge, CO. ASC is still located on the original plant site, but the facilities have been expanded to more than 40,000 square feet of space. Now, approximately 250 people handle all phases of company operations, design engineering, switcher manufacturing and marketing.

The first major new switcher to come from Ampex was the 4100 Series production switcher introduced at the NAB-'81 convention in Las Vegas, NV. "Essentially an upgraded and improved version of the original DRC 4000, the newer 4100 series continues to be among the best and most operationally sound analog switchers on the market," says James Duca, head of engineering for

ASC and originator of the 4000 switcher.

To date, more than 400 switchers have been provided to users in more than 40 countries, and sales are still strong. "That's the good side," points out Merrick, "and we're pleased to provide this quality product as long as the customer interest remains high. However, the design factors that make this system attractive—elaborate circuitry and painstaking hand assembly for high reliability—are also the same ones that prohibit rapid, efficient production."

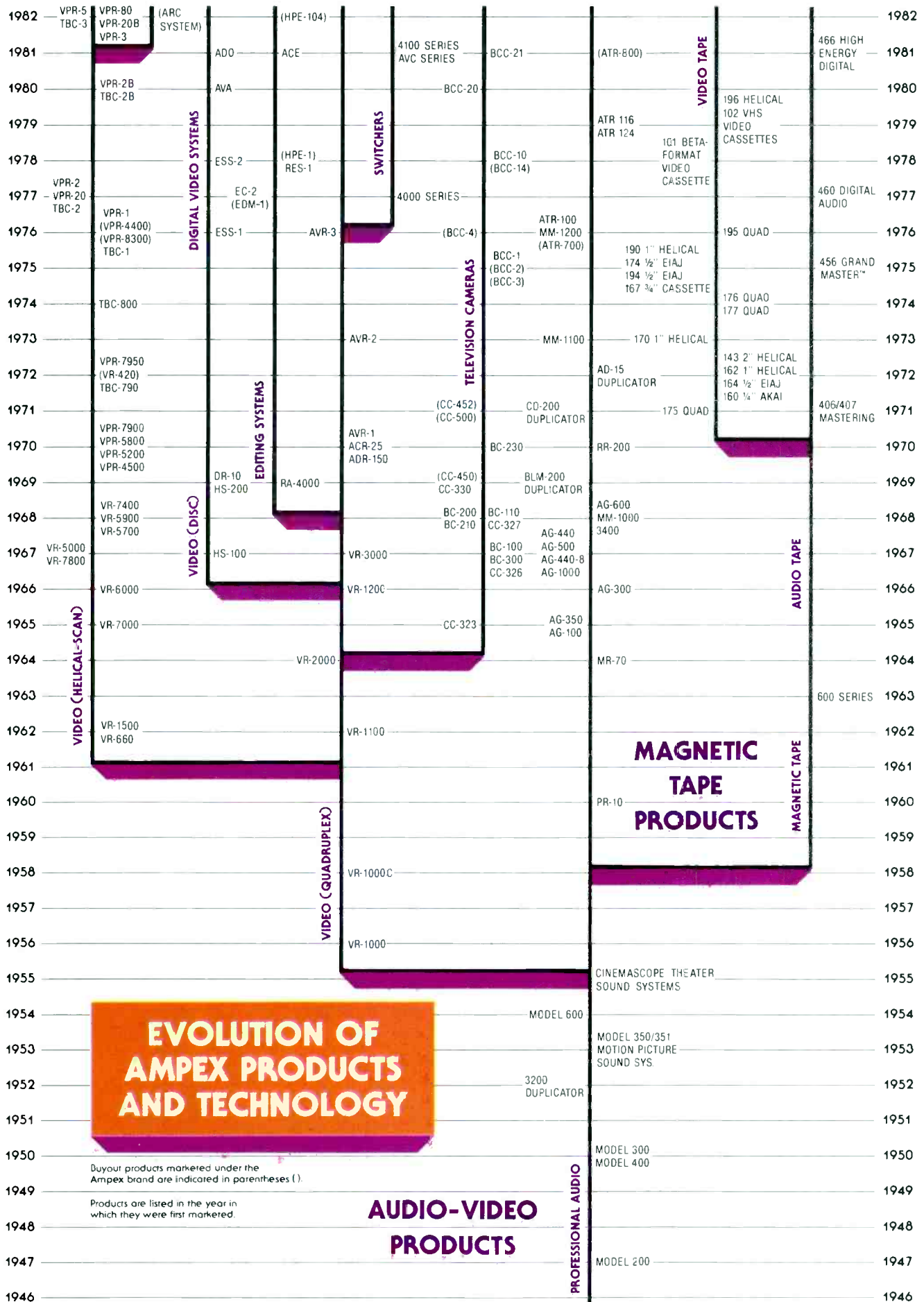
To take advantage of the powerful control capabilities of microprocessors, Ampex also introduced the AVC Series production switchers at the NAB-'81 convention.

"The AVC Series," points out Duca, "consists of advanced analog video switching electronics and extensive digital control via microprocessors. Designed new from the ground up, the AVC switcher represents a major breakthrough in terms of modern, state-of-the-art electronic technology coupled with the latest

assembly/production techniques."

"With the 4100 and AVC Series of switchers, Ampex has firmly established itself in the worldwide video switcher market," points out Merrick. "Our R&D expenditures, which have been substantial since the acquisition, have developed products that meet the needs of both broadcasters and production people. We're now shipping products to sophisticated users throughout the world."

The demands placed upon the Ampex resources to design and manufacture the AVC Series switcher have been extensive, stretching across all levels of engineering and manufacturing. A quantum jump into digital and microprocessor design technology has been required, with an attendant shift to marry digital and analog techniques with streamlined manufacturing processes. Also computer aided design techniques have been incorporated to provide engineers with the latest resources for circuit development. □



EVOLUTION OF AMPEX PRODUCTS AND TECHNOLOGY

Buyout products marketed under the Ampex brand are indicated in parentheses (). Products are listed in the year in which they were first marketed.

AUDIO-VIDEO PRODUCTS

Once upon a time, in the land of creative giants, there appeared an extremely red-hot video effects magician called ADO. Now, ADO could flip, tumble and spin with grace and ease. And certain visionary wise men, who saw the potential in such gyrations, hired this video master to create a wondrous tapestry of eye-dazzling three-dimensional video effects.

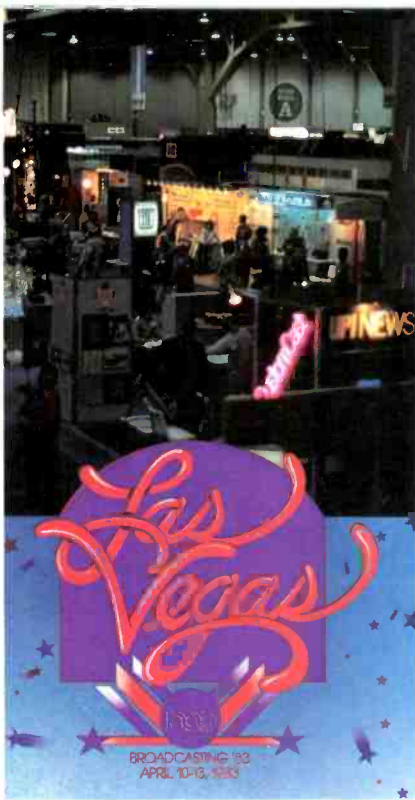
Clients here and abroad were delighted and amused. And everyone lived happily ever after, except for a handful of video troglodytes who were left to live out the rest of their days in a dull, flat and listless universe.

ADO



For details about ADO, the hottest Digital Optics system in the creative universe, call your local Ampex AVSD sales office:
 Atlanta 404/451-7112 • Chicago 312/593-6000 • Dallas 214/960-1162 • Los Angeles 213/240-5000
 New York/New Jersey 201/825-9600 • San Francisco 408/255-4800 • Washington, D.C. 301/530-8800

AMPEX
 Ampex Corporation • One of The Signal Companies



NAB-'83/Las Vegas: Productivity is the key

By Bill Rhodes, editorial director

- Convention Center, Las Vegas, NV
- April 10-13
- 33,000-plus registration
- attendees from 25 countries
- 580 exhibit booths
- 280,157 square feet of exhibit space indoors
- extensive outside exhibit space for vans and dishes

For the last couple of years, the United States has been bumping along the road to economic recovery. Despite the weather-worn ruts that have slowed us, we seem to have found the path toward once again becoming the world leader in developing high technology products. A drive toward increased national productivity is fueling us on our journey.

Pushing toward the destination was the National Association of Broadcasters 61st Annual Convention and International Exposition (NAB-'83/Las Vegas), which aptly designated the 1983 theme as "Productivity—Let's Work Together."

As the show was getting geared up, the 500-plus exhibit booths, array of workshops, panel discussions and expert speakers encouraged broadcasters to become more professional and productive.

Booths sparkled with new equipment as more than 33,000 broadcasters streamed through, seeking details and observing demonstrations. The convention floor buzzed with discussions that finalized business contracts and purchases.

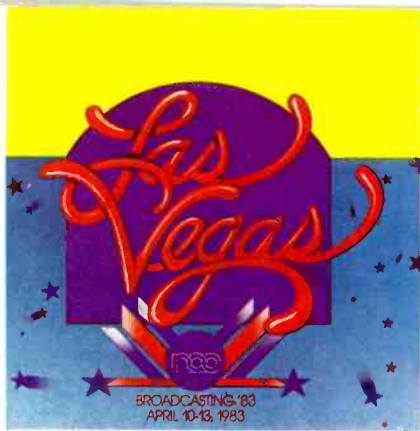
The technical sessions were also packed. The NAB Steering Groups are

commended for putting together an outstanding program. Although a natural aura of excitement surrounds the booths, the session topics made time spent in sessions just as exciting and valuable.

The major focus of our NAB coverage is on new products at the show. If you missed something at the

show, or if you did not make it to Las Vegas, you may use this issue as a vehicle for obtaining product literature from exhibiting manufacturers. In addition to providing product information, we also have detailed some highlights of the technical sessions, which include some keynote addresses. **||:~>))))**





Highlights in perspective

By Bill Rhodes, editorial director

Fritts: Cautious deregulation

NAB President Edward O. Fritts opened NAB-'83/Las Vegas by urging broadcasters to capitalize on the positive atmosphere for deregulation in the Congress by encouraging their Congressman to cosponsor pending legislation, HR 2382.

"Ultimate success will depend on your persuasiveness," he told more than 6000 broadcasters. The legislation would codify radio deregulation, extend deregulation to television and eliminate the comparative renewal process.

However, Fritts said he was concerned about government's rush to deregulate everything, and that additional deregulatory steps must be taken carefully.

"Our technology, indeed our entire system of broadcasting, has been structured on basic premises—single system standardization, localism, spectrum integrity. Today, we have reason for alarm. Government's push for deregulation appears to be taking an unfortunate, potentially damaging, turn," he said.

Specifically, Fritts referred to the FCC decision for marketplace determination of technical standards for AM stereo and teletext, its "chipping away" at the localism provision of the Communications Act of 1934 and its proposed allocation plans for FM radio and the displaced occupants of the 12GHz band.

Fritts emphasized the importance of NAB and the convention as broadcasters face the influx of new technologies.



Fritts: "...a time of transition at NAB, in the marketplace and in Washington."

"Our industry is expanding, and we are widening our scope to encompass new horizons," he said. "I pledge to you," Fritts continued, "that NAB will exhaust every resource to ensure that you are not precluded from having the opportunity to compete in the new environment and that unfair advantages will not be extended to a privileged few."

Reagan encourages productivity

In a taped message at the final joint session of NAB-'83, President Ronald Reagan complimented broadcasters on their efforts to encourage American productivity.

"Through your national 'Let's Work Together Campaign,' you are using your microphones, cameras and transmitters to inspire our people to greater achievement and a heightened sense of national unity," he said.

"By increasing awareness, your Broadcasting Industry Council to Improve Productivity will be an enormous boost in our drive to ensure solid and lasting economic recovery," Reagan said. "Our overall productivity is improving and, with your encouragement, I am confident we can send it soaring."

Reagan thanked the private sector initiatives for promoting high standards of integrity and journalistic ethics. He concluded by saying, "This Administration remains committed to relieving unnecessary regulation of your industry and to standing firmly behind the guarantees of freedom of speech and press in the First Amendment."

Wasilewski: Distinguished Service Award recipient

Before a packed house of friends and colleagues, Vincent T. Wasilewski, former NAB president, received the NAB's Distinguished Service Award, the industry's highest honor.

Before he was presented with the award, Wasilewski watched a 10-minute slide-tape presentation, *This is Your Life*, which covered his life from infancy through his years as president of the NAB. Industry members saw the personal side of his life, and relived the guidance he provided the NAB for 33 years, the last 17 as president.

After receiving the award, Wasilewski gave an acceptance speech in which he put to rest rumors of his retirement.

Wasilewski said the ceremonies at NAB seemed to be a lot of fuss. "I have just moved across the street and down one floor," he said, referring to his partnership with Dow, Lohnes & Albertson.

"We keep busy with broadcast licenses secured or resecured; petitions to deny; competing applications dealt with summarily and satisfactory; FCC commissioners importuned but never suborned; and congressmen and senators made aware of egregious

and outrageous applications of laws to broadcasters."

Wasilewski later paid tribute to his successor, Edward Fritts. He said Fritts was an able, experienced broadcaster whose goals were action-oriented. "He will, I am confident," Wasilewski said, "provide the strong leadership that the broadcasting industry of the future will require."

In summarizing his years of service with the NAB, Wasilewski said that fortune had smiled upon him. He said he had no regrets for roads not taken, and that his many friends in broadcasting had crowded the years with fascinating and satisfying experiences. As a non-traditional measure of his career, he said he could stop at almost any station or tower in the United States and be among friends.

In closing, Wasilewski warned broadcasters about complacency in broadcasting, and gave advice about handling future technologies. These comments are contained in this issue's guest editorial.



Fritts (left) presents Wasilewski with the 1983 NAB Distinguished Service Award.

Wasilewski: "A healthy skepticism and unity is necessary for the future of broadcasting."



Rosenthal receives Cobb Award

Jack Rosenthal, president, Broadcast Division, Harriscop Broadcasting Corporation, received the Eighth Annual Grover C. Cobb Memorial Award at NAB '83.

In addition to receiving a bronze plaque, Rosenthal was awarded \$5000 through a grant from RKO General Broadcasting. He plans to donate \$2500 to the University of Wyoming, Laramie, and \$2500 to the Radio and Television News Directors Association's scholarship fund.

The Cobb Memorial Award was created in 1975 by the NAB Television and Radio Political Education Committee (TARPAC) to honor Cobb, former NAB senior vice president for government relations. It is given annually to a broadcaster or public servant who demonstrates unusual dedication to improving broadcasting's relationship with the federal government.

Rosenthal was a charter member of TARPAC's Board of Trustees when it was founded in 1972. He became chairman in 1973 and held the post for three years. He also was chairman of NAB's Wyoming Legislative Liaison Committee.

Rosenthal entered broadcasting in 1957 when he purchased an interest in radio station KBBS, Buffalo, WY. He later purchased Wyoming stations KASL, Newcastle, and KRAL, Rawlins. His family also operated KROE, Sheridan, WY. In 1964, he became vice president and general manager, KTWO radio and television, Casper, WY. He was named Harriscop's executive vice president in charge of broadcast operations in 1969 and took his present position in 1977. The company owns radio and TV stations in California, Illinois, Montana, New Mexico and Wyoming.

Previous winners of the Cobb award were former Senators Sam Ervin of North Carolina and John Pastore of Rhode Island; Senator Robert Packwood (R-OR); the late Thad Sandstrom, prominent Kansas broadcaster; David C. Adams, former NBC board chairman; Everitt H. Erlick, senior vice president and general counsel, American Broadcasting Companies; and the late William Carlisle, long-time NAB vice president.

Continued on page 38

AMPEX 196 ONE-IT'S NOT JUST ANO

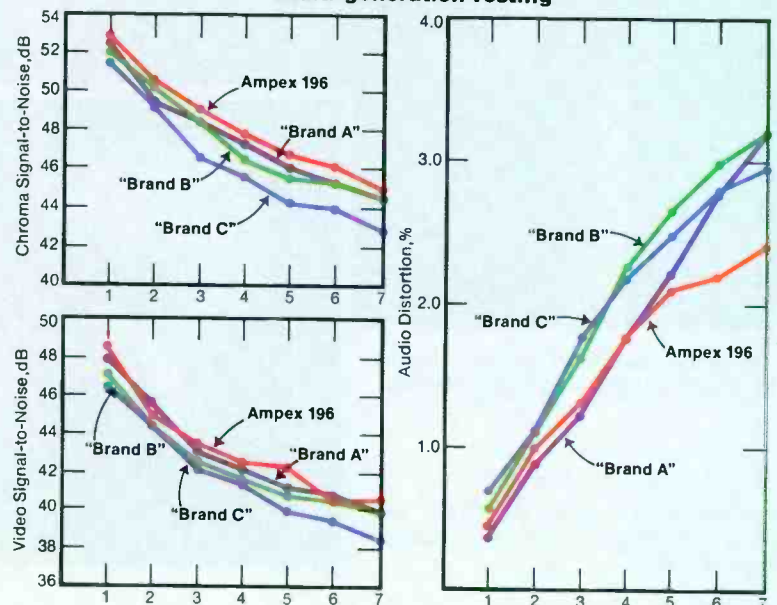


Beautiful pictures generation after generation.

The high energy formulation of Ampex 196 has been designed to give you pictures of perfection time after time. With clarity and color rendering that's truly amazing even after many generations.

Recent laboratory tests comparing signal loss after multiple generations demonstrated Ampex 196 is measurably superior in chroma signal-to-noise, audio distortion and video signal-to-noise. These tests put Ampex directly against all other leading brands in multi-generation uses.

Multi-generation Testing



INCH VIDEO TAPE. THEIR PRETTY TAPE.



Even troublesome shades of red hold up brilliantly after seven generations with Ampex 196. And audio distortion is insignificant.

But don't take our word for it. Check the charts that show the test results. Better yet, give Ampex 196 your own test. You'll quickly realize why so many video professionals use Ampex 196 for mastering, editing and duplication.

To find out more about how Ampex 196 One-Inch Video Tape can make your productions look brilliant over and over again, call your Ampex representative.



AMPEX

Ampex Corporation • One of The Signal Companies

QUALITY WORTH BROADCASTING.

AMPEX CORPORATION, MAGNETIC TAPE DIVISION
401 Broadway, Redwood City, California 94063 (415) 367-3809
Circle (12) on Reply Card

Flaherty receives Engineering Achievement Award

"If broadcasters are not to be dominated by new technologies, then they must move to direct them," Joseph A. Flaherty, vice president of engineering and development, CBS/Broadcast Group, said at the NAB-'83 awards luncheon. Flaherty had just received the 1983 NAB Engineering Achievement Award, the association's highest award for technical achievements.

In accepting the award, Flaherty acknowledged the services of his colleagues. He also urged broadcast leaders to take command of, rather than be driven by, new technologies.

The following are excerpts of Flaherty's acceptance speech, reproduced here, with permission, so that his views may be shared with those who could not attend.

A challenge to guide the future

It is almost impossible to say how much I am honored by this award. Yet, while this personal recognition is deeply felt, I am also aware that, in a larger sense, this award honors CBS for its support of my work. It recognizes the dedication and en-

thusiasm of my engineering colleagues at CBS, and throughout the industry, who got the job done.

This award is particularly meaningful to me because it comes from the NAB. I am one of those lucky few who did not come to broadcasting, but was *born into it*. My father, Joseph Flaherty, Sr., came to broadcasting as an amateur radio operator in 1921; first as an engineer, later as chief engineer for the Kansas City Star's radio station, WDAF, in Kansas City, MO. He initiated Kansas City's TV service with pre-freeze TV station WDAF-TV in 1949 and was one of the industry's technical leaders until he retired 12 years ago.

I remember watching the production of national radio programs, through my father's control room window. Television began for me in 1945 when my dad and I built a 525-line TV station operating in the amateur band at 432MHz. He took me to my first NAB convention in 1947—the year the sound barrier was broken for the first time, and the year Bernard Baruch labeled US-Soviet relations as "a cold war."

Broadcasters and TV equipment

manufacturers were an inspiration to me then, and I can only hope that in some way we can provide similar inspiration to today's young people who must take this industry into the 21st century.

It is a credit to technologists to realize that we have designed and built the most significant communication system ever. Today, live worldwide TV communications are taken for granted. More people on this globe watch television than can read or write. And we have only begun.

The rate at which technology is advancing will change the face of television by the turn of the century. The technological limitations of the past have almost disappeared. The development of solid-state electronics and microelectronics, coupled with the development of rocketry and communication satellites, offer almost limitless potential for invention and growth in telecommunications.

These opportunities bring with them added responsibilities to guide and mold new technologies to useful purposes, expand telecommunications horizons, improve quality and lower costs.

With such diverse technology, we must *select* and *direct* its growth, for we cannot deter it.

We must remember that while our audiences do not view technology *per se*, our total creative and programming effort is delivered through this technical pipeline. Future technical improvements in program quality, flexibility and diversity, produced and delivered at a reasonable cost, depend on channeling technology to specific needs.

As we try to cope with a technology that moves so fast that equipment is almost obsolete before it is installed, we must also do so in a changing regulatory and standards environment. The old order, or disorder, for establishing technical standards must be adapted to the need. There is no longer time for the endless debates that have characterized the agonized groping for standards in industry organizations, while the FCC seems to have abdicated responsibility for *directed* standards. We face the chaos of AM stereo, small format videotape recorders and teletext. TV stereo stan-

Continued on page 42



Tom Keller (left), NAB senior vice president for Science and Technology, presented the 1983 Engineering Achievement Award to Flaherty.

Acclaimed as the new industry leader...



AGFA

BROADCAST U-MATIC VIDEOCASSETTE

In less than twelve months since its introduction, the Agfa "Professional Performance" U-Matic Videocassette has become the industry's leader in high quality performance. Television networks, producers, engineers and performing artists now regularly specify Agfa U-Matic Cassettes because they deliver a new dimension of color brilliance and definition to their masters.

Technical superiority of Agfa U-Matic Cassettes can be measured by 3dB more video signal-to-noise, 3dB more color signal-to-noise and 2dB more RF output. Drop-out rate is exceptionally and consistently lower when compared to conventional U-Matic cassettes.

In addition to superior video characteristics, Agfa U-Matic Cassettes feature a black

anti-static backcoating for better tape transport and winding properties. Agfa-Gevaert's unique proprietary formulation delivers unsurpassed durability. Even with constant editing, repeated playbacks and conditions unfit for other videocassettes, Agfa U-Matic's perform flawlessly.

It all adds up to unsurpassed professional mastering performance.

AGFA-GEVAERT



MAGNETIC TAPE DIVISION
275 North St., Teterboro, NJ 07608
(201) 288-4100

If you're ready to move up to a specialized mixer, you're ready for Ramsa.

The Sound Reinforcement Specialist: Ramsa WR-8716

When your sound says you're professional but your mixer doesn't. When you're wasting your subtlety and style on "make-do" boards. When you're creating compromises instead of clear-cut distinctions. Then you're ready for Ramsa—the mixers that are specialized so you won't have to compromise.

The WR-8716 is a fully modular sound reinforcement console with 16 input

modules, 4 group modules, and 2 masters. It features 16 input pre-fader solo buttons, 4 group modules with pre-fader insertion patch points, and lockable post-fader solo buttons. There are 6 illuminated VU meters with peak LED's for easy outdoor

reading and a separate stereo variable frequency EQ for monitor sends. Pan pot controls allow panning to the left or right masters while level controls permit 16 x 6 board operation. The left and right direct channel assign function lets you bypass the group modules for individual sources. Portable operation is a snap with easy access connectors.

And the WR-8716 features plastic conductive faders for greater reliability and smooth, low-noise operation; external power supply for light weight, and switchable 48V DC phantom power for condenser mics.



RAMSA

The Recording Specialist: Ramsa WR-8816

The WR-8816 recording console includes the same modular construction, input modules, power supplies, and faders as the WR-8716 plus many important recording advantages. Like direct outputs for 4, 8, or 16 track recording and peak-reading LED meters that let you monitor any 4 out of 24 signals with clear, quick response.

You'll command a variable frequency EQ section with 3 frequency settings for the high and low frequencies plus continuously variable

midrange. Stereo echo send replaces the separate mono controls you'll find on competitive boards. And you get two independent stereo monitor controls—one for musician's headphones, one for control room monitors—a special feature for any mixer in this class. And there are other important features

like low noise electronically balanced mic inputs with high-speed IC's, 16 switchable post-fader solo controls and XLR-type mic connectors.

Ramsa offers a full line of specialty mixers including the more compact WR-8210 recording mixer and WR-130 sound reinforcement mixer. So don't hold down your professional sound, call (201) 348-7470, because you're ready for Ramsa.



Panasonic[®]
PROFESSIONAL AUDIO DIVISION

Circle (14) on Reply Card

Continued from page 38

dards are still with the jury, and we have yet to face analog component standards, digital sound transmission, component digital videotape, direct broadcasting satellite standards and high definition television.

Standards

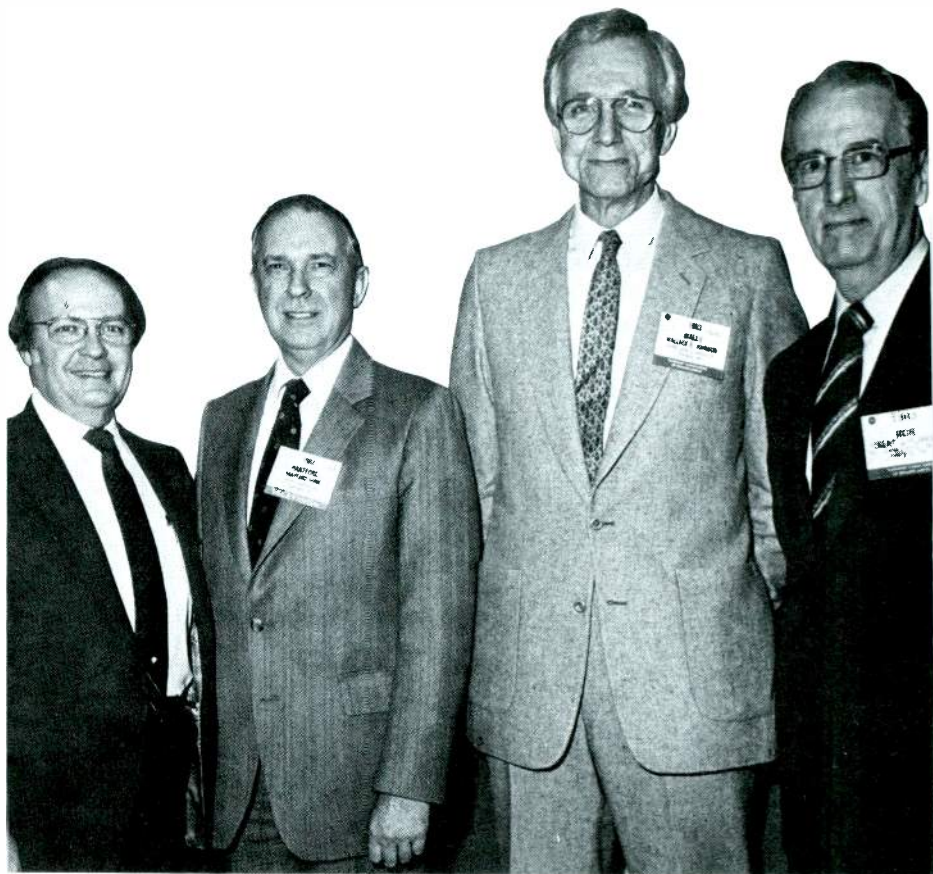
Within the next decade we will see the digitalization of our present analog TV stations.

A great start was made last year when the International Telecommunications Union adopted worldwide uniform digital TV studio standards, which are a milestone in the evolution of TV technique. These standards specified the use of component coding based on the luminance signal and the 2-color difference signals.

The standards were chosen to allow for the evolution of compatible digital coding standards. The 4:2:2 is the family member recommended for use at interfaces between main digital studio equipment and for international program exchange. The sampling frequency is 13.5MHz for the luminance signal and 6.75MHz for each of the 2-color difference signals.

These standards need to be implemented in particular pieces of equipment, especially videotape recorders, in time to secure an orderly transition from the analog to the digital world of the future.

The changeover to enhanced and high definition television is also approaching.



Joining Flaherty (left) at the award reception were (from left): Hartford Gunn of Satellite Technology Corporation, guest speaker at the 1982 NAB awards luncheon; Wallace Johnson of Moffet, Larson & Johnson, recipient of the 1981 Engineering Award; and Robert Flanders of McGraw Hill Broadcasting, recipient of the 1979 Engineering Award.

High definition television is a dramatic advance in the technical quality and creative impact of television. Its feasibility has been established and its development is inevitable.

If broadcasters do not establish a standard for HDTV production and later, broadcasting, I believe, that other channels to the home—such as cable, videocassette recorders and videodiscs—will develop their own HDTV standards and deliver services to the viewer that may not be broadcastable at all.

So, new mechanisms must be found to direct these technologies in a timely and effective way. Much of the responsibility for future technologies rests on the shoulders of broadcasters. If you are not to be dominated by these technologies, then you must move to direct them.

A forum for expressing your needs and requirements must be established soon. I suggest that an appropriate forum is the NAB, and I challenge this

Flaherty: "If you are not to be dominated by new technologies, then you must move to direct them. And the time is now."

association to begin implementing effective machinery to ensure that the broadcasters' needs are voiced and that an effective relationship with standards organizations, regulatory bodies and TV equipment manufacturers is established.

We know where we have come from, and we sense the enormity of future technological changes.

We cannot act in the past, and we cannot act in the future. But by acting now, we are able to affect our future.

We can no longer afford the luxury of simply running our day-to-day business. We must organize the future for ourselves and for the public we serve.

It was Brutus who, when drawing a dagger for immediate action to change the destiny of Rome, reminded the cautious Cassius:

*There is a tide in the affairs of men,
Which, taken at the flood, leads on
to fortune; omitted, all the voyage of
their life is bound in shallows and in
miseries. On such a full sea we are
now afloat, And we must take the
current when it serves, or
lose our ventures.*





WE JUST BROUGHT SMPTE CONTROLLED AUDIO EDITING UP TO SPEED.

End slow audio interlock with our Series 50 compact recorder/reproducers. They're designed for demanding production applications like SMPTE control. Built smarter and stronger, with better electronics to make interlock and editing faster.

All three motors—the strongest we've ever put into a compact unit—are included in the microprocessor-controlled servo system for faster and smoother tape handling. Input from five independent photo interrupters and multiple tachs provide a more accurate detection of tension, tape speed and direction, improving external computer control. A single connector delivers all status and remote signals for editor/synchronizer interface and eliminates complicated wiring.

For non-sync recording, two built-in auto locators find critical cues with a single command. Tape location is presented in minutes and seconds, positive or negative.

For easy maintenance and service, all electrical and mechanical adjustments are made from the front and each audio channel is built on its own glass epoxy PCB.

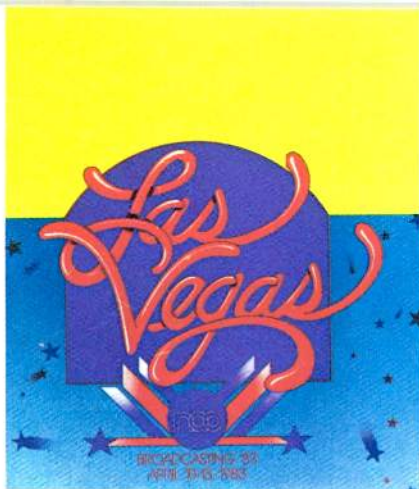
The Series 50 recorder/reproducers are tougher and work harder than any compact machines we've ever produced. Tough enough to bring your audio editing up to speed.

For more information see your TASCAM dealer or write us at 7733 Telegraph Road, Montebello, CA 90640, (213) 726-0303.

TASCAM
TEAC Production Products

DESIGNED BY POPULAR COMPLAINT.

Circle (15) on Reply Card



More new test equipment: A convention update

By Carl Bentz, technical editor

The NAB equipment exhibition always holds surprises. Pre-convention information furnished by companies to the press lists new items expected to be introduced. This information is not necessarily complete, however. Sometimes a last minute breakthrough results in a new system, or a problem develops in a design project and an announced product does not make it to the show. And, some manufacturers like to keep a few of their cards hidden.

For these reasons, when our April 1983 issue went to press, "New Test Equipment at NAB-'83" did not contain every new test item at the exhibition. In working through the material from the convention, many of the unlisted products have come to light. This product review covers those new test systems. Reader Service Numbers have been included so that you may request further details on products of interest.

ANRITSU AMERICA



Anritsu ML83A

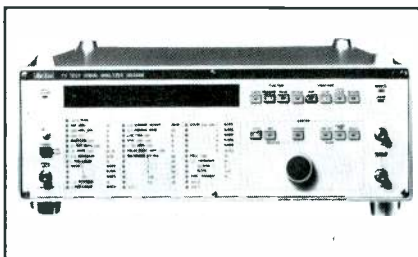
ML83A power meter. An integral microprocessor assists in measurements of RF signal levels from 10MHz-140GHz. For signals to 18GHz, levels as low as -60dBm may be used. Features include autoranging, averaging, auto zero adjust, relative power, a recorder output and an optional GPIB interface. The

system may be operated portably with a battery pack.

Circle (1000) on Reply Card

MS420A network/spectrum analyzer. A frequency range of 10Hz-30MHz is covered by the combined network and spectrum analysis capabilities. A number of peripherals include a bubble memory cassette, an interpreter for the test language, the cassette interface and the GPIB/IEEE-488 interface.

Circle (1001) on Reply Card



Anritsu MS349A

MS349A TV test signal analyzer. Insertion test signals and full-field signal measurements may be automatically analyzed for distortions. Test signals are placed on vertical interval lines for use in broadcast, microwave, coaxial and satellite network operations. Full-field tests add measurement capabilities such as checking long-distance networks or making adjustments/performance checks on VTRs.

Circle (1002) on Reply Card

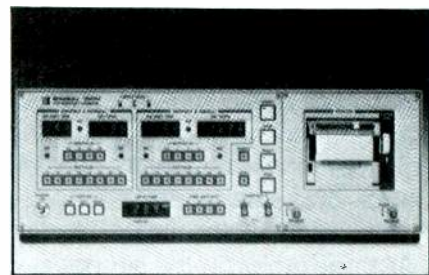
MF76A microwave frequency counter. Measurement of microwave frequencies covers a spectrum of 10Hz-18GHz with a resolution to 0.001Hz. A stable internal heterodyne converter system is used for frequency checks above 200MHz. A sensitivity to 50mV rms, maximum input signal of 10V rms and an acquisition time of less than 600ms are featured.

Circle (1003) on Reply Card

ASACA

High resolution monitors. I/Q color demodulation in these monitors provides wider bandwidth displays on delta CRTs than R-Y/B-Y decoding can do. For 14-inch and 20-inch sizes, dynamic focus and special feedback circuitry alleviates color performance degradation with temperature and age. Active convergence (with 40 controls), comb filtering, aperture correction and multistandard decoding make these monitors valuable for the maintenance shop or production department.

Circle (1004) on Reply Card



Asaca VH01BZ

VH01BZ dropout counter. FM signals from a VTR are detected for total accumulated and per-unit time displays on front-panel indicators, along with a hard copy printout of all detected dropouts. *Normal* and *small* modes provide eight dropout width selections, from 0.5-50μs, and variable depth from -10dB to -24dB.

Circle (1005) on Reply Card

BELAR ELECTRONICS LABORATORY

FMM-2 modulation monitor. An ultralinear digital discriminator ensures low intermodulation distortion for monitoring of stereo FM broadcast signals. AM and FM noise measurements are made on the integral voltmeter with front-panel mode selection. Suitable for ATS operation,

INDUSTRY STANDARD

CHAPTER II

The New Otari 1/4" Two Channel 5050B-II

The best selling professional two track audio recorder has finally been improved. We've added the refinements you asked for: The inputs and outputs of the new B-II are transformerless, balanced. The elapsed time indicator is a real-time hours/minutes/seconds L.E.D. display—tape accurate at all speeds. The built-in oscillator provides both 1kHz and 10kHz calibration tones. And we added a low frequency adjustment to the reproduce equalizers.

Behind the clean, new look of the B-II are the same features, performance and reliability you expect from our famous 5050B. We didn't change the rugged quarter-inch thick deckplate or the cast aluminum frame. We kept the switch selectable NAB/IEC equalization, +4dBm/-10dBv output levels, half-track and quarter-track playback heads and three standard reference fluxivity levels. And, of course, the B-II still features three tape speeds, XL type connectors, front panel record equalization and bias adjustments, variable speed, "dump edit" function, and an integral splicing block.

The 5050B-II has been engineered like no other tape machine in the world. When you check out the specifications you'll know why we say it's the best \$5,000.00 tape recorder available for under \$2,500.00. When you work with it, you'll know that we've just raised the industry standard.

OTARI Technology You Can Touch.

Otari Corporation, 2 Davis Drive, Belmont, CA 94002

Tel: (415) 592-8311 Telex: 910-376-4890

Circle (17) on Reply Card



the equipment includes a digitally set peak indicator covering from 1% to 199%, in 1% intervals.

Circle (1006) on Reply Card

FMS-2 modulation monitor. Designed for stereo broadcasts in the FM band, this stereo modulation monitoring system uses independent peak meters to simultaneously indicate L + R and L - R or left and right. Other capabilities include total

modulation, pilot, pilot phase and 38kHz suppression.

Circle (1007) on Reply Card

BRUEL & KJAER

#4129, 4130 measuring microphones. Precision sound measurements in the 7Hz-8kHz audio spectrum involve dynamic ranges from 16-132dB (4129) and 26-146dB (4130).

Circle (1008) on Reply Card

Integrating sound level meters. Precision measurements for assessment of occupational and community noise environments are possible for high peak amplitude, short-duration sounds. Various modes include short- and long-term intervals.

Circle (1009) on Reply Card

Type 4418 acoustics analyzer. Building acoustics analysis includes noise, reverb time and sound insulation measurements. Only a microphone and a sound source need be added to the analyzer for totally portable, microprocessor-based operation. Outputs are available for an alphanumeric printer and a digital cassette recorder for hard copy and reference records.

Circle (1010) on Reply Card

#4224 sound source. A battery-operated sound source can deliver 118dB sound power from 100Hz-4kHz. For reverb time, absorption and sound insulation measurement, the unit includes a pink noise generator, power amp and loudspeaker.

Circle (1011) on Reply Card

Type 2118 test station. A sine generator, analyzer and graphic recorder are combined in the audio test station for swept frequency response, second- and third-harmonic distortion and intermodulation distortion measurements.

Circle (1012) on Reply Card

HITACHI DENSHI

Digital multimeters. Three multimeter models, VR-3510, VR-3525 and VR-3550, use a 3½-digit LCD display format for ac/dc current or voltage, resistance, diode testing and continuity test measurements. Two AA alkaline cells operate the meters up to 500 hours. An aural alarm indicates a blown-fuse condition.

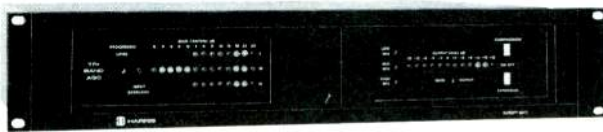
Circle (1013) on Reply Card

LEADER INSTRUMENTS

LBO-51M-V vector display. As a direct replacement for the TEK 602A, the vector display uses R-Y and B-Y inputs from precision decoders for an X and Y 3MHz bandwidth and a 4MHz response in the Z-channel. Ac or dc coupling may be selected with a standard sensitivity value of 100mV/cm for both axes, adjustable by ± 50%.

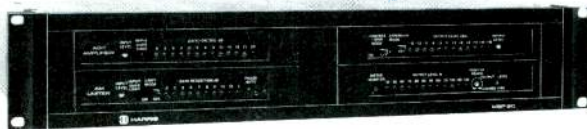
Circle (1014) on Reply Card

Harris MSP-90 Audio Processors . .



MSP-90
TRI BAND AGC

MSP-90*



Build listener loyalty with a stand-out signal

Listener fatigue is an audience killer. The "dirtier" the signal, the higher the tune-out rate—no matter how loud you are.

Harris MSP-90 Audio Processors deliver superior performance and consistently cleaner, louder signals. And today's highly selective listeners can tell the difference!

The MSP-90s are easily field adjustable. Positive switch settings allow for critical performance standards—with any desired format. Harris'

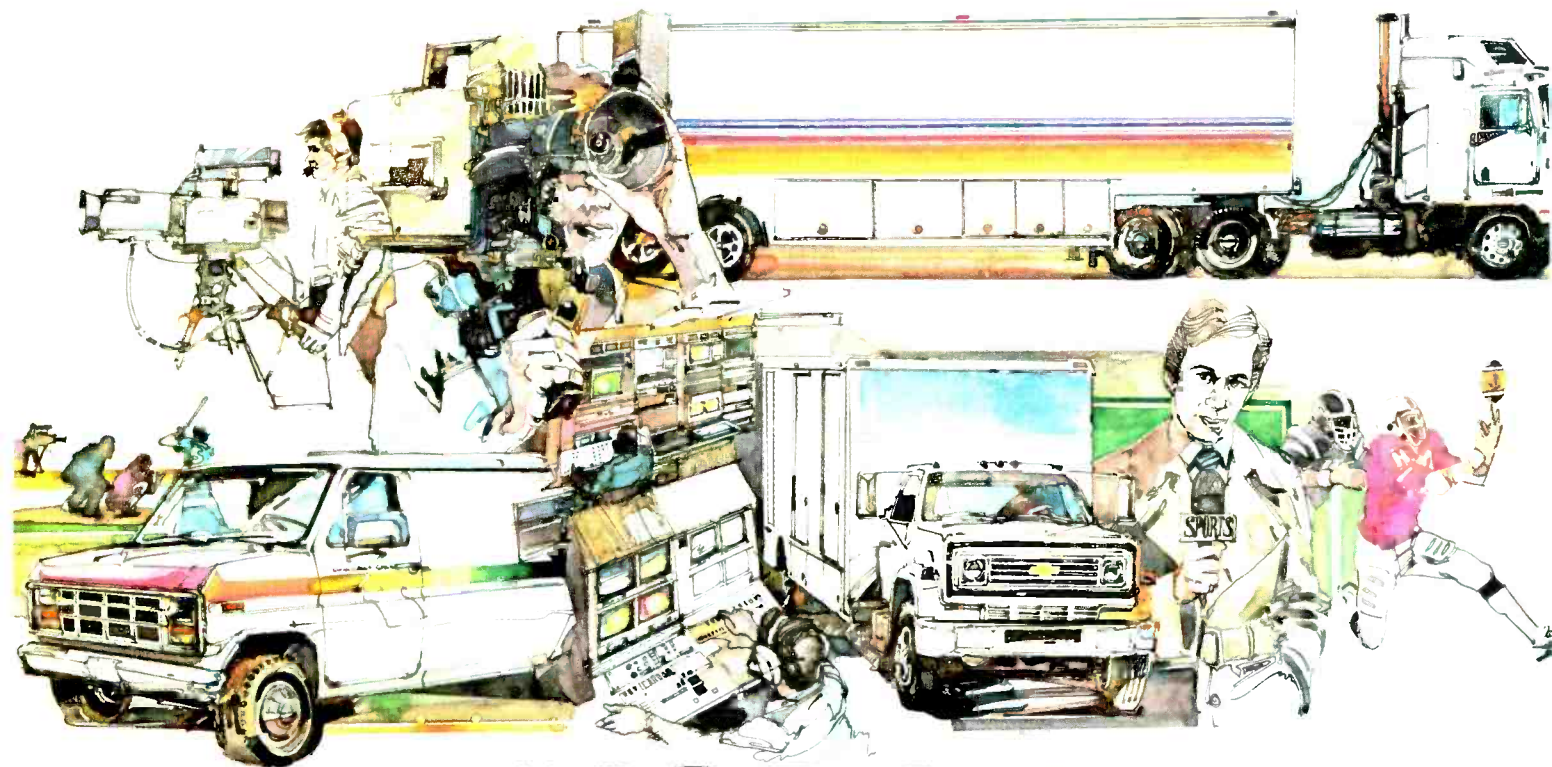
modular concept permits location at both studio and transmitter for typical AM installations, or convenient grouping for FM-TV-multiplex systems.

That audience can be yours for a song—if the song is loud and clean. For more information about the Harris family of MSP-90 Audio Processors, write Harris Corporation, Broadcast Products Division, P.O. Box 4290, Quincy, Illinois 62305-4290. 217-222-8200.

*AGC amplifier, AM and FM limiter combinations available.



Circle (16) on Reply Card



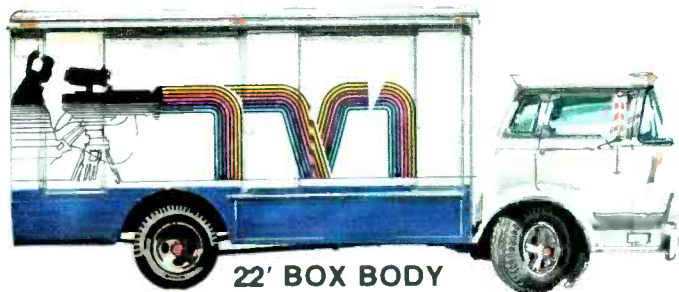
MOBILE TELEVISION UNITS



14' CUBE VAN

\$189,000

Leasing Plans Available



22' BOX BODY

\$312,600

- Hitachi 3-FP 22 3 tube cameras with microprocessor for automatic set-up, 10:1 lens and all equipment for studio or ENG use • 3 O'Connor Fluid Heads • Tripods, spreaders and dollies • 3 Christie Reflex 20 batteries and 1 charger
- 16001-AN Grass Valley Production Switcher
- Character Generator System with Chyron VP-1 and Sony SMC 70 Microcomputer • Sony 3/4" VTRs 5850/5800 • HVS516/16L TBC • Tektronix Test Equipment • Yamaha 12 Input Audio Board • Fully monitored — B&W and color • Full audio and video patching
- On board power and air conditioning

- Hitachi 3-SK91 3 tube color cameras
- 10:1 lens, Plumbicons or Saticons and all equipment for studio or ENG use • 3 O'Connor Fluid Heads • Tripods, spreaders and dollies • 3 Christie Reflex 20 batteries with 1 charger • 16001-AN Grass Valley Production Switcher
- Character Generator System with Chyron VP-1 and Sony SMC 70 Microcomputer • Sony 3/4" VTRs 5850/5800
- Quantel DFS 1750 B TBC/Synchronizer • Tektronix Test Equipment • Yamaha 16 Input Audio Board • Fully monitored — B&W and color • Full audio and video patching
- On board power and air conditioning

DESIGNED TO ACCOMMODATE 1" HITACHI VTRs - TRIAX ADAPTORS ALSO AVAILABLE



LERRO

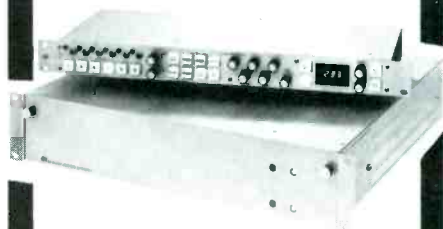
ELECTRICAL CORPORATION

3125 N. Broad Street, Philadelphia, Pa. 19132

For more information, call Bob McTamney at (215) 223-8200

MOBILE UNITS ENGINEERED AND BUILT TO YOUR REQUIREMENTS

How to Get the Keying You need Without Replacing the Switcher You Already Have



The NEW 1231 DOWNSTREAM KEYER Can Give You:

- 6 Simultaneous Keys
- Key Bordering
- Key Masking
- Key Dissolve In and Out
- Fade to Black
- Post Production Editor Interface



**GRAHAM-PATTEN
SYSTEMS, INC.**

P. O. BOX 1960
GRASS VALLEY, CA 95945
[916] 273-8412

Circle (18) on Reply Card



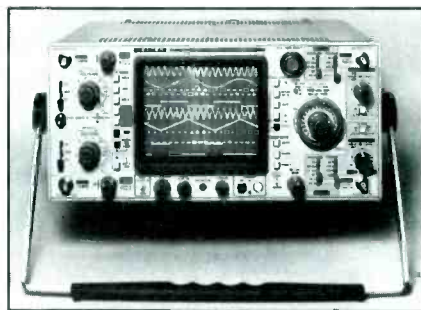
Leader LVS-5850A

LVS-5850 vectorscopes. Electronically generated targets represent error limits of $\pm 2.5^\circ$ and ± 2.5 IRE in the LVS-5850. A standard internally etched graticule is used in the LVS-5850A. Both models feature looping inputs, a subcarrier-looped input, Z-axis blanking input and selectable test circle pattern. A PAL LVS-5851 is available.

Circle (1015) on Reply Card

LBO-5860 waveform monitor. Standard waveform monitor characteristics are complemented by a line-selector function for observation of VITS and VIRS Lines 14-21 of either video field. A blanking output allows a companion vectorscope to show the signals vectorially. For PAL facilities, the LBO-5861 waveform monitor is available.

Circle (1016) on Reply Card



Leader LBO-518

LBO-518 oscilloscope. A dome mesh PDA CRT displays up to four channels simultaneously, each capable of 100MHz resolution. Separate, independent time bases allow main and alternate channel triggering for auto, normal and single-sweep modes.

Circle (1017) on Reply Card

KING INSTRUMENTS

Model 101 dropout varifier. VHS, Beta and U-matic VTRs connected to the dropout varifier aid in finding videotape dropout faults. Depths from 16-20dB and widths of 5ms, 10ms and 15ms may be selected. An LED

display shows total count, last time period count, test time and other data. Dual input/output capabilities enable record/playback functions from two recorder units.

Circle (1018) on Reply Card

Chroma audio quality monitor. Model 102 performs all audio measurements using rms detection circuits for audio sensitivity, noise and variation in uniformity of the tape. Chroma tests use a gray field or stepped wedge with red field at various saturations. Models 101 and 102 may be operated together for printed results of all measured tape conditions.

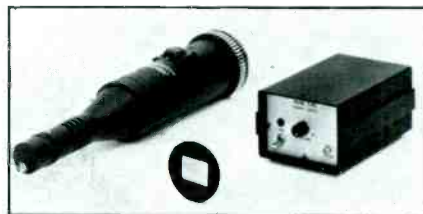
Circle (1019) on Reply Card

MARCONI INSTRUMENTS

Model 2019 test generator. The GPIB-programmable control feature of the generator allows an automated test setup using AM and FM signals on carrier frequencies from 80kHz-1040MHz. Signals up to 2V RF are available over the entire frequency generator range.

Circle (1020) on Reply Card

OPTICAL INSTRUMENTS



Optical Instruments Mini TVO

Mini TVO optoliner. High quality target projection on 1-inch and 3/8-inch camera tubes in CCTV and surveillance installations aids in tube and circuitry adjustment and checkout. Other mounted target slides may be inserted within seconds. Illumination levels are variable and an optional ND filter is available.

Circle (1021) on Reply Card

PORTA-PATTERN

Magna-Chip charts. The 4 1/2'x6' size of Magna-Charts simplifies the process of setting up cameras in large production areas, such as auditoriums, arenas and stadiums. Computer control of the stripe-coating process makes these large test charts equivalent or better than smaller format chip charts.

Circle (1022) on Reply Card

There's only one reason to call Calvert first.

You'll get exactly what you want at
the lowest price in America.

TRANSMITTING TUBES

3CX1000A7	520.00	4CX1500A	660.00	807	5.50	ML7507A	3370.00
3CX1500A7	460.00	4CX1500B	460.00	810	68.00	7527	99.00
3CX2500A3	426.00	4CX3000A	862.00	811A	11.00	7527A	159.00
3CX2500F3	430.00	4CX5000A	1060.00	813	35.00	8008	25.00
3CX3000A1	445.00	4CX5000J	1550.00	828	80.00	8122	110.00
3CX3000A7	575.00	4CX10000D	1225.00	829B	16.00	8773	5000.00
3CX3000F1	495.00	4CX15000A	1490.00	833A	80.00	8791	460.00
3CX3000F7	645.00	4CX20000A	1460.00	866A	6.50	8791V1	460.00
3CX10000A3	1220.00	4CX35000C	6250.00	872A	24.00	8792	822.00
3CX10000A7	1420.00	4CX40000G	7100.00	889RA	1925.00	8792 V1	793.00
3CX10000U7	2175.00	4X150A	58.00	892R	2385.00	8806	3145.00
3CX15000A3	1350.00	4-65A	59.00	4055V1	105.00	8807	2954.00
3CX15000A7	1470.00	4-125A	69.00	5671	6500.00	8873	190.00
3CX20000A7	1850.00	4-250A	80.00	5762	670.00	8874	185.00
3-400Z	80.00	4-400A	85.00	5867A	170.00	8875	190.00
3-500Z	88.00	4-400AX	159.00	5894A	55.00	8890	3053.00
3-1000Z	367.00	4-400B	99.00	6076	685.00	8891	3456.00
4CX250B	57.00	4-400C	85.00	6076A	625.00	8916	3570.00
4CX250BC	68.00	4-500A	218.00	6146A	7.00	8976	3064.00
4CX250K	120.00	4-1000A	425.00	6146B	7.00	8977	2776.00
4CX250R	105.00	5CX1500A	655.00	6155	75.00	8984	7082.00
4CX300A	177.00	5CX3000A	1135.00	6156	85.00	8985	1790.00
4CX300Y	214.00	5-500A	255.00	6166A(7107)	2890.00	8986	1600.00
4CX350A	110.00	9C25	10,500.00	6181	4396.00	8988	3200.00
4CX350F	115.00	12AX7/ECC83	1.75	6550A	6.25	8990	1460.00
4CX1000A	395.00	575A	27.00	6696A	2780.00	9007	4250.00
4CX1000K	485.00	8C5	50.00	6697A	replace with 8773	9011	1755.00

RCA CAMERA TUBES

PART NO.	PRICE	PART NO.	PRICE	PART NO.	PRICE	PART NO.	PRICE
BC4386 series	2500.00	BC4809	775.00	BC4993R	2400.00	BC7735	250.00
BC4390 series	1850.00	BC4809B	775.00	BC4994 series	2400.00	BC8134	850.00
BC4391 series	2160.00	BC4908 series	1850.00	5820A/L	3055.00	BC8134B	850.00
BC4532U	1235.00	BC4909	2145.00	7295C	2830.00	8480	1365.00
BC4592 series	2225.00	BC4992 series	2225.00	7389C	2850.00	BC848J	2105.00
BC4593R	2400.00					BC8507	295.00
BC4594 series	2400.00					BC854	395.00

NEW CUSTOMERS—we accept telephone orders. Inquire about our convenient Net 30 terms. Prices and terms subject to change or withdrawal without prior notice.

The Tortoise and the Tube.



Once upon a time power tubes were like tortoises, after a few years they were "shells" of their former self. Calvert Electronics is pleased to announce our new Eimac "SHELL" Program. This will enable you to earn equity even from your used tubes. Simply return your used tube to us, and get credit toward the purchase of a brand new tube. The "shell credit" is the value we will pass along to you.

TYPE	SHELL CREDIT	TYPE	SHELL CREDIT
3CX1000A7	\$ 12	3CX1500A7	\$ 88
4CX2500A3	24	3CX2000A7	96
4CX2500A3	24	4CX1500A	20
4CX3000A1	24	4CX3000A	36
4CX3000A7	24	4CX5000A	72
4CX3000F1	24	4CX10000D	80
4CX3000F7	24	4CX15000A	88
4CX10000A3/H3	64	4CX35000C	320
4CX10000A7	80	5CX1500A	24
4CX15000A3/H3	64	5CX3000A	36

You can apply these credits to any tube you purchase from Calvert.

This, of course, does not change the Eimac policy of selling new tubes. Your returned tubes must be in working order and should be packed in original Eimac carton or equivalent.

Don't be a slow tortoise. Call now.



TOLL FREE EAST COAST 800-526-6362
(Except New Jersey)

7 DAYS—24 HOUR EMERGENCY PHONE SERVICE

TOLL FREE WEST COAST 800-421-7549
(Except California)

CALVERT ELECTRONICS, INC.

ONE BRANCA ROAD, EAST RUTHERFORD, NJ 07073

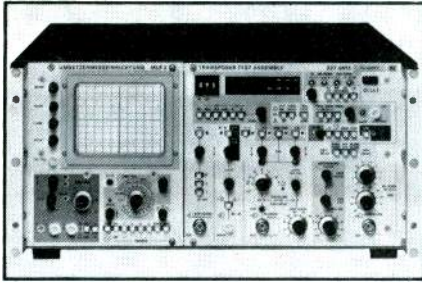
800-526-6362 • 201-460-8800 • TWX 710-989-0116/ERFD • TELEX 4990274

Circle (19) on Reply Card

West Coast: 1355 Redondo Avenue, Suite 6, Long Beach, CA 90804 • 213-498-3504

England: Imperial House, Victoria Rd., Chelmsford, Essex CM1 1NY • Telephone: 0245 358585 • Telex: 995849

ROHDE & SCHWARZ



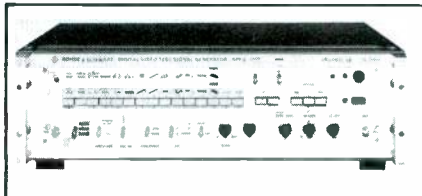
Rohde & Schwarz MUF2

MUF2 transcope. For measurement and checks of transmission characteristics of TV translators/transposers and CATV facilities, the transcope contains an oscilloscope, sweep generator, TV IF generator, selective receiver/analyzer, broadband demodulator and low frequency amplifier.

Circle (1023) on Reply Card

SBUF test transmitter. Continuous, variable tuning complements a variety of high frequency TV test signals. Applications include test and service shops, development and test labs, or receiver, amplifier and translator maintenance facilities.

Circle (1024) on Reply Card



Rohde & Schwarz SPF2

SPF2 digital video test generator. Thirty-two test signals and digital signal processing result from a video signal and noise generator and a signal text inserter. Automatic measurements aid in manufacture of VTRs, and checkout of VTRs, video switchers and ancillary equipment.

Circle (1025) on Reply Card

SOUND TECHNOLOGY

1510A tape recorder/audio test system. The CRT display of the 1510A test system shows the results of most maintenance, troubleshooting or general checkout tests necessary for a professional audio system. Tape recorders, film systems, audio consoles, equalizers and other audio products reveal harmonic distortions, noise factors and frequency response parameters to the autoranging and autotuning system in the 1510A. Left-

and right-channel capabilities take care of stereo systems. Measurements of ac voltage, phasing, wow-and-flutter and channel separations complement such optional features as a 1/3-octave spectrum analyzer, an IEEE-488 GPIB interface and audio dropouts.

Circle (1026) on Reply Card

TEKTRONIX



Tektronix SG 5010

Automated audio test system. A modular system for automated audio tests consists of an IEEE-488 GPIB computer/controller, such as the TEK 4041 or 4052A, the AA 5001 programmable distortion analyzer, the SG 5010 programmable oscillator and other TM 5000 modular instruments as desired. An MI 5010 multifunction interface unit may be added for signal routing, custom filtering cards and A/D conversion.

The SG 5010 oscillator uses state-variable designs to register a 0.001% or less residual distortion and synthesizer techniques for a 0.01% frequency accuracy to greater than 160kHz with up to 5-digit resolution. Clean square waves up to 16kHz aid in transient response and slew rate testing. A headroom test scheme uses the tone burst mode, which is also helpful in checking on dynamic performance of audio processing systems.

Microprocessors in the oscillator and analyzer modules simplify programming. A *delay until settled* mode in the analyzer will not allow data to

the controller until programmable limits of measurement consistency have been met.

Circle (1027) on Reply Card

VIDEOTEK



Videotek Delphi I

Delphi I monitor. Compact and portable, the Delphi I serves as a digital waveform monitor capable of quick, accurate measurements of sync amplitude, burst amplitude, peak luminance, setup level and VITS. Each measurement, selected from dedicated front-panel switches, is displayed on LCDs. The display is calibrated in IRE units from a standard 1Vp-p input signal.

Two 9Vdc rechargeable nicad batteries operate the unit for five hours. Alkaline batteries will provide 30-40 hours of continuous use. An ac adapter may also be used.

Delphi I weighs only 19 ounces and may be used with a shoulder strap or be clipped to the operator's belt. For use on the maintenance bench, a fold-down stand tilts the unit for a convenient viewing angle.

Circle (1028) on Reply Card

VISUAL INFORMATION INSTITUTE

Model 1200 test generators. Three models in the series generate CCTV test patterns. The pattern selection includes flat field, bars, dots, gray scale, window, resolution and color bars. Operation is simplified for the technical staff with limited TV experience.

Model 1201 fits the Vii adjustable format and includes space for an internal sync generator, if desired. Model 1211 includes the internal generator, based on the Vii proportional clocked scheme. Model 1221 offers a custom-clocked format for use in non-TV standard computer display work.

All three models are available in lab cabinets for bench-top uses or in equipment rack formats.

Circle (1029) on Reply Card

The best equalizer is no equalizer.

It's Belden fiber optic cable.

Now a video signal can go two miles on a Belden optical cable with 60dB SNR and no hint of high frequency roll-off. That means a cleaner picture without equalizers, and less maintenance than alternative transmission systems—coax or microwave.

For tower installations, Belden's high-strength all-dielectric optical cable design doesn't have the problems generally associated with coax, such as ground loops, lightning and other E.M.I. problems. Plus, it's rated for full performance from -40°C to $+60^{\circ}\text{C}$.



Belden optical fiber cable is also thinner and up to 30% lighter than conventional cable. That makes it easier to install on transmission towers, or through underground ducts. A recent installation of Belden cable on a 1500 ft. vertical tower was accomplished in less than one day.

For remote applications, Belden optical cable is much easier to carry around the golf course, or the metropolitan sports arena, its toughness has been proven in rapid deployment cables designed by Belden for military applications in desert terrain.

Put Belden optical fiber cables and experience to work for you. They'll put you ahead with cleaner signals, better reliability and total system economy. For information on our fiber optic line and application reports or system design guide, contact your local Belden distributor or write: Belden, Fiber Optics, 2000 S. Batavia Ave., Geneva, IL 60134. Phone: 312-232-8900.

Circle (20) on Reply Card



BELDEN



1/4-inch format emerges

By Bebe F. McClain, president, B. F. McClain Productions, Asheville, NC

One of the most promising technologies that surfaced at the 1983 NAB show was the 1/4-inch videotape equipment. The format was interesting to many attendees, including representatives of TV networks, affiliates, cable stations, independent producers and dealers.

Broadcasters filed into the Hitachi Denshi and Bosch-Fernseh exhibits to see this miniformat, which already meets broadcast standards. Although the two systems are not interchangeable, both manufacturers said they were working toward a compromise format.



Henri Zahn with the Bosch 1/4-inch field editor that works with two 1/4-inch recorders from the combined camera/1-inch recorder unit.

This was the second year that Hitachi displayed a working camera 1/4-inch VTR, but the first year that it displayed various 1/4-inch playback and edit systems. The company showed its SR-1, a 3-chip camera combined with a 1/4-inch VTR, and the new SR-3, a 3-tube camera using 2/3-inch Saticons with a 1/4-inch VTR.

The Hitachi and Bosch units differ in their recording methods. The camera recorder system that Hitachi showed uses a TDM (Time Division Multiplexing) scheme allowing you to record Y on one track and R-4 and B-4 on the other track. This type of system provides increased chrominance S/N ratio. Two playback units were also shown by Hitachi. One is a table-top model, and the other is a rack-mount unit, which allows stacking. Both units provide two audio channels, metering and a shuttle knob that allows viewing up to five times forward and reverse.

The units at the show do not have editing capabilities, but are capable of interfacing with existing 3/4-inch editors and editing systems, which eliminates the need to buy a new system. So, the user could buy one 1/4-inch player and interface it into a 3/4-inch or a 1-inch system with limited investment in new equipment. Later, Hitachi may offer editing equipment with a recorder player unit.

One Hitachi unit that was not shown was the portable playback adapter that is battery-operated or ac-powered. The user can separate the camera/recorder unit from the camera head and mount it onto a playback adapter. The unit has a built-in TBC, so its NTSC composite, fully stabilized, velocity-compensated, DOC-compensated signal can be uplinked or microwaved. The playback unit also includes TBCs built into both boxes.

Bernie Munzelle of Hitachi Denshi America said that prices had not been set, but that the 3-chip/VTR unit would cost approximately \$30,000, while the 3-tube camera/VTR combination would cost almost \$35,000.

The playback VTR with TBC (deck and field units) would cost about \$21,000; the playback unit with edit and TBC would be about \$23,000.

Hitachi has sold several hundred of its 3-chip camera 1/4-inch VTR units to NTV in Japan for use by its ENG operation. Delivery to NTV is scheduled for early this summer.

Bosch, which has dubbed its new 1/4-inch system Quartercam, was overwhelmed by the response to its products. The Quartercam uses a special system in the camera called Lineplex. This system has a feature for achieving better density of information on the tape. "The density of information on the tape is the same for luminance as for chrominance," Hans Groll of Bosch said. "Both signals have the same density because we time expand the luminous signal and time compress the chroma signal."

"It is a system in which we record R-Y and B-Y. We do not encode. We record the baseband signals R-Y and B-Y directly without any encoding. That gives us the advantage of having no color carrier to record, which makes the recording simpler and better. Furthermore, we separate the luminance and chrominance from one another."

At the show, Bosch demonstrated a



Julius Barnathan (left) of ABC Broadcast Operations and Engineering discusses the 1/4-inch format with Butch Fadely of Hitachi Denshi, at the convention.

The performance is
all you hear.



ENTIRELY
NEW

Introducing the Cetec Vega R-41 and R-42 PRO PLUS wireless-microphone receivers.

PRO PLUS is a new standard of performance in wireless microphone systems, exemplified by the R-42 diversity receiver with "infinite gain" technology and ultralow noise, and DYNEX II, an advanced new audio processing technique. PRO PLUS gives you every feature you should want in a wireless system, including:

- **DYNEX II, a new standard in audio processing.**
Can be switched in or out of the PRO PLUS system, to accommodate all requirements.
- **Measurably the highest signal-to-noise ratio and widest dynamic range.**
Quiet as a wire. 101 dB (108 dB, A-weighted) with DYNEX II. Even with DYNEX II switched out, the ULNR (ultralow-noise receiver) has an 85-dB SNR (92 dB, A-weighted). So good you may have difficulty measuring it, but you can definitely hear the difference.
- **"Infinite gain" receiver technology for highest performance.**
Developed for the demanding aerospace telemetry industry, "infinite gain" provides improved performance in the critical threshold region, superior accommodation of multipath conditions, better signal-to-noise ratio, and constant receiver audio level output.
- **Lowest distortion.**
0.25% maximum, 0.15% typical.
- **Professional audio circuits.**
Output is adjustable from +20 dBm to -60 dBm in four ranges. Also featured are selectable phasing, user-calibratable metering, and 0.2-watt independent headphone amplifier.
- **Diversity or single-channel models.**
The R-42 provides true dual-receiver diversity, and the R-41 nondiversity receiver has all of the other features of the R-42.

- **High-performance helical-filter front end.**
Plus all of the other standard features expected in Cetec Vega's professional wireless equipment, famous for quality and reliability.

PRO PLUS wireless microphone systems achieve the highest performance possible with today's advanced technology. Write or call for further information and location of your nearest dealer: Cetec Vega, P.O. Box 5348, El Monte, CA 91734. (213) 442-0782. TWX: 910-587-3539.

In Canada: A.C. Simmons & Sons Ltd.

 **Cetec Vega**

Division of Cetec Corporation

Circle (22) on Reply Card



Marty Solomon (left) of CBS goes over the operation of the Hitachi SR-3 3-tube/1/4-inch VTR combined unit at NAB '83.

variety of 1/4-inch equipment designed from a component concept, including a 3-tube (1/2-inch LOC-Plumbicon) camera that detaches from a 1/4-inch VTR. A separate adapter box can be added to the camera so that any VTR can be connected to it by a cable and used for recording. Conversely, an adapter box can be attached to the 1/4-inch recorder, converting the camera's output so that any camera can be used.

The image recorded on the 1/4-inch tape can be played back through the

camera viewfinder in black and white. Also, an adapter can be placed on the recorder to play back the signal through a color monitor. The recorded tape must be placed in a playback unit to deliver a normal signal that can be aired.

Also offered at the show was a playback-only deck and a

player/recorder with some built-in edit functions. Two of these units can edit in the field or the studio. Editing controllers such as the Convergence and Sony 500 and 800 series can be interfaced with these 1/4-inch deck recorders.

Groll said that two of the 1/4-inch VTRs used on the back of cameras as part of the camera/VTR system can be attached to the Bosch 1/4-inch field editing device, allowing on-location editing.

The price for the combined 1/4-inch VTR/camera is \$41,000, a \$4000 savings compared to buying the two components separately (1/4-inch VTR, \$16,000, and camera, \$29,000). The studio recorder with TBC will cost \$23,000; the playback-only unit will sell for \$19,000. The field editor will cost \$28,000. These are prototype units, and delivery will not start until the end of the year.

Aside from the differences in recording methods, the two 1/4-inch systems use different tape. The Bosch system records on a 20-minute chromium dioxide tape similar to consumer videotape. The Hitachi unit uses a 10-minute metal particle tape developed by Maxell.



Hitachi's ECR-5 1/4-inch editing recorder.

Continued on page 58

SERIES 9000V LIVE VIDEO IDENTIFIER AND SOURCE IDENTIFIED COLOR BAR GENERATORS

NEW!

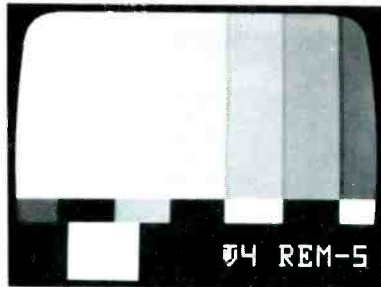


Photo by Stanley Forman
Courtesy Boston Herald American

The CB-9000V Series, in the color bar mode, allows you to test your audio and video links, and the split field identification indicates who is out there. When the color bar is dropped for the live feed, the identification is automatically transferred to the vertical interval of the live video.



QSI
systems, inc. ®

12 LINS COTT ROAD • P.O. BOX 2176, WOBURN MA, 01888 • (617) 938-1403

Circle (21) on Reply Card

THE HIGH RESOLUTION REVOLUTION

HIGH RESOLUTION TELEVISION RECEPTION IS HERE NOW

Full motion color high resolution is achieved from a standard NTSC or RGB signal. Operating at receive sites only, the DRGB-343 (when used with a display device capable of 1000 lines of resolution) will provide 1024 pixels horizontally and vertically.



DRGB-343 APPLICATIONS:

- Large screen projection systems
- Ad Hoc teleconferencing (receive only)
- Freeze frame teleconferencing systems
- Full motion analog teleconferencing
- Full motion digital teleconferencing
- Video production operations
- Special event broadcast (receive only)
- Medical applications requiring high resolution
- Military
- Seismographical analysis

THE NEW DRGB-343 HIGH RESOLUTION DIGITAL CONVERTER

DigiVision wants to show you more. Call us at (619) 481-9988 or write to:

DigiVision, Inc.
11722 Sorrento Valley Road
San Diego, CA 92121



Get the picture!

Circle (23) on Reply Card

In the past ten years,
computers have gotten smarter,
cameras have gotten simpler,
ovens have gotten quicker,
beer has gotten lighter,
bodies have gotten leaner,
athletes have gotten richer,
hi-fi has gotten higher,
radio has gotten stronger,
studios have gotten smaller,
towers have gotten taller,
movies have gotten longer,
cars have gotten shorter,
film has gotten faster,
outerspace has gotten closer
and blue jeans have gotten classier.

Now it's our turn.

In the past 10 years, the Premium Line from ITC has seen refinements, but no major changes. Frankly, it hasn't needed any. The Premium Line has been a dependable workhorse that's found its way into more studios than its next two competitors combined.

But we couldn't leave well enough alone. So this year, the Premium Line gives way to the Delta Series, a new generation of cartridge machines that offers you more than ten years worth of improvements.

It's mechanically better. The cart guides are improved. There's a crystal-referenced servo capstan motor with a vapor-honed non-magnetic shaft. Modular construction makes alignment and service convenient. High-speed recue is standard. And the Delta III gives you three

independently removable decks.

It's electronically better. There are new, high performance components, including NE5500 Series amplifiers. There's an exclusive ITC/3M playback head for smooth frequency response and improved signal-to-noise. We've added a toroidal power transformer with fully regulated and protected power supplies. And a digital cue tone detector controlled by a powerful microprocessor.

And it's physically better because it's smaller. The whole unit is only one-third rack width (5 $\frac{5}{8}$ ""). The enclosure is made of $\frac{1}{4}$ -inch milled or cast aluminum, for stability. And the panel inserts are made of Lexan[®].

Of course, we left in all the good things that made the

Premium Line so popular. The $\frac{1}{2}$ -inch tool plate aluminum deck. Durable, high quality switches. And a solenoid-actuated, chain-and-sprocket pressure roller assembly. All backed by our famous two-year warranty on parts and factory labor, plus a 30-day guarantee of satisfaction. If, for any reason, you're not completely satisfied, you can return the unit within 30 days of purchase and we'll refund your money in full.

The good things are still there. But what you'll notice are the improvements. We think they were worth the wait.

For more information, or to place an order, call us collect from Alaska, Hawaii or Illinois, at 1-309-828-1381. From the rest of the U.S., call the following.

Toll-free number:

1-800-447-0414.

1983

1973



INTERNATIONAL TAPETRONICS CORPORATION

STOP

Circle (24) on Reply Card

START

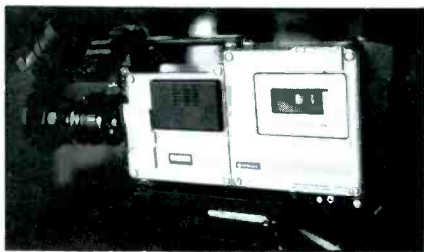
3M hears you...

3M

Continued from page 54

The 1/4-inch cassette tapes might cost a few dollars less than the 1/2-inch tapes, and about half the cost of 3/4-inch tapes. Another advantage of their use will be a combined camera/1/4-inch-VTR weight that is significantly less than other combined units.

Operations and engineering personnel from ABC, CBS, NBC, affiliated stations and cable operations saw the 1/4-inch systems at NAB and were excited about the portable 1/4-inch format. However, they said that a common standard must be decided upon at once—before more development is done. Julius Barnathan of ABC Broadcast Operations and Engineering said,



Hitachi SR-1 3-chip MOS camera/1/4-inch videotape recorder combined unit.

"It is imperative that we have a standard format in 1/4-inch tape as soon as possible so we avoid finding ourselves in the same situation that has developed around 1/2-inch (videotape systems)."

Hitachi and Bosch have said that they intend to work toward a common standard. At the show, Dr. S. Ishii of Hitachi Denshi Ltd., said on behalf of Hitachi, Bosch and Philips Television Systems (which also will manufacture 1/4-inch equipment) that they would support any working committee formed by the SMPTE to establish a 1/4-inch videotape TV standard.


Henri Zahn of Bosch, in a separate interview at the show, said, "Bosch has declared to make a change in the format if it is needed to conform to a common standard. This is our position: A committee will be formed, and one of the prerequisites for this committee is that the companies declare their willingness to change."

Using 1/4-inch as a broadcast ENG/EFP format is no longer a flight of engineering fancy. Suddenly it is a reality. Many chief engineers said that if the units manufactured are of the same quality as the prototypes shown at NAB-'83, they would bypass 1/2-inch, making the transition from 1-or 3/4-inch formats to 1/4-inch.

Philips adopts Bosch format

Philips Television Systems has completed negotiations with Bosch-Fernseh to adopt the 1/4-inch Lineplex recording format for a new Philips ENG recording camera with 2/3-inch pickup tubes.

Philips will offer a complete line of 1/4-inch playback and editing equipment, along with the new recording camera, on an international basis. The new Philips cameras will be on display at the NAB-'84.

Some speculated even more. Pat McLaughlin of WFLA, Tampa, FL, said that the 1/4-inch technology would be the next "air cart machine." Marty Solomon of CBS Operations may have summed up the general attitude of those viewing the 1/4-inch equipment at NAB-'83 when he said, "I have a feeling that this new 1/4-inch may be the wave of the future." 

Sound quality.

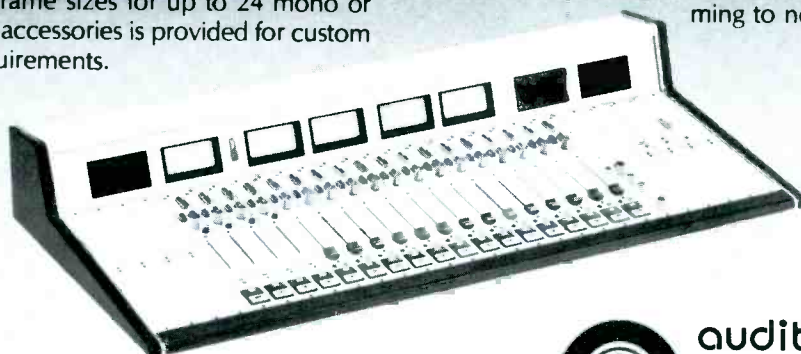
200 Series On-Air Broadcast Control Console

The Audiotronics 200 Series represents the culmination of latest technology applied for broadcast use. Standard features include Penny & Giles linear VCA controlling faders for reliability and precise tracking accuracy even on stereo channels, noiseless hall effect/CMOS on/off switching, local power regulation on every module to prevent mass failure, built-in Control Room Monitoring controls, a comprehensive logic system and headphone amplifier with local equalization. Available in 4 mainframe sizes for up to 24 mono or stereo inputs, a full line of accessories is provided for custom tailoring to individual requirements.

Telephone Interface Accessory: Enables complete handling, processing and recording of telephone calls without compromising other console functions.

The 200 Series, the logical choice for on-air operations from music programming to newsrooms.

- Monitoring and Communications for Two Studios
- Equalizers
- Compressor/Limiter/Noise Gates
- Remote Controls
- Redundant Powering
- Clock & Timer



Model 218



audiotronics. inc.

3750 Old Getwell Rd.
Memphis, TN 38118 USA
Tel: (901) 362-1350
Telex: 533356

Circle (25) on Reply Card

The definition of the best color camera tubes in the world.



No matter how you define your color camera needs, you will want to be certain you have chosen the best tube for the job. And no technical appraisal can be complete without EEV Leddicons.

Take lag or smearing. Because Leddicons incorporate a unique light bias arrangement, shading is minimal. So is differential lag. The result is that a football in flight will always look like a football — not a flying saucer!

As for color imagery, you simply cannot improve on Leddicons. Extended reds have a precisely-engineered response with an infra-red filter providing cut-off exactly where you want it.

Or compare the highlight image performance of Leddicons with other tubes. The difference is that the retention effect is minimised by a unique target manufacturing process — even in the very difficult extended red channel where other tubes are simply unable to cope.

You'll certainly want to avoid blemishes. That's why all Leddicons must satisfy the most exacting manufacturing, testing and quality control standards. And it shows — in the fact

that Leddicons average less spotting than other tubes!

Then there's geometry. The optimised electron optical design of Leddicons ensures the best possible geometry. Registration too is equally

distortion free — we can, in fact, supply



computer-matched sets for all three channels.

And what about microphony? With EEV's unique anti-microphonic mesh assembly, Leddicons provide the cleanest pictures — even from cameras

operating in areas of high ambient acoustic noise.

As for choice, there's simply none better than Leddicons. That's because the range covers fully-interchangeable sizes and types to suit virtually every type of studio, EFP and ENG camera used in the world today.

When you add up all the facts about Leddicons, there is only one conclusion — namely, the definition of the best tubes for your camera.

But don't leave it at that.

Next time specify Leddicons for your new equipment and as replacements and find out what that definition really means in practice.

LEDDICONS

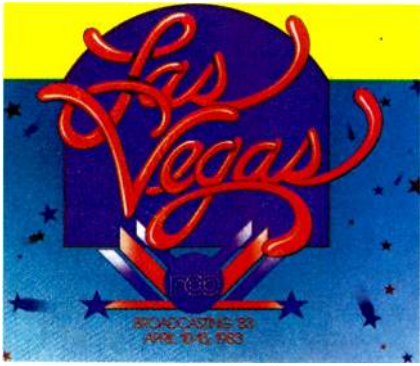
®Leddicon is the Registered Trademark of EEV Lead Oxide Camera Tubes



EEV Camera Tubes 

EEV Inc, 7 Westchester Plaza, Elmsford, NY 10523, USA. Tel: 914 592 6050. Telex: 6818096.
EEV Canada Ltd, 67 Westmore Drive, Rexdale, Ontario M9V 3Y6. Tel: 416 745 9494. Telex: 06 989 363.
EEV, Waterhouse Lane, Chelmsford, Essex CM1 2QU, England. Tel: 0245 61777. Telex: 99103.

Circle (26) on Reply Card



New products introduced at NAB - '83

As expected, exhibitors unveiled many new products for broadcasters at the show, on the exhibit floor and in hospitality suites.

Exhibitors also showed many standard, well-established products, which are listed under each exhibitor's entry in our March 1983 issue. Data for these products may be obtained by using the Reader Service Card in that issue before the July 1, 1983, expiration date.

In this section, we highlight new

By Carl Bentz, Bill Rhodes, Rhonda L. Wickham, Karen Arnhart Booth and Miguel Chivite of the BE staff

products exhibited at NAB-'83/Las Vegas. This year's show, with 580 exhibitors, hit the jackpot for new products for radio and TV broadcasters. We have attempted to in-

clude all new products at NAB-'83. If we have missed anyone, or any products, we will cover them in follow-up sections in our July and August issues.

ADC MAGNETIC CONTROLS

Pre-Patch/Ultra-Patch

Jackfield and interconnect panels use insulation displacement or punchdown for reliable circuit connections. Color-coded jackfield panels help identify appropriate circuits.

Circle (430) on Reply Card

see ad on page 63

ADM TECHNOLOGY

Series 9000 consoles

For TV production or on-air operations, the 9000 series incorporates computer-controlled routing to 128 microphone line inputs in 10 setup configurations.

Model 1603 console

Post-production and sweetening are the design intent of the 1603, 1203 and 803 consoles. Up to 16 inputs are possible in the off-line function.

Custom furniture

A line of furniture incorporates the ST series and companion equipment into custom installations.

Circle (431) on Reply Card

see ads on inside front cover and page 155

AF ASSOCIATES

AVS 6000 standards converter

NTSC 3.58 or 4.43 and PAL signals may be converted by the Applied Video Systems AVS 6000 standards converter with noise reduction, color retiming, detail enhancement and timing stabilization.

Mobile production facilities

Station wagons to 40-foot vans may serve as basic vehicles for AFA's customized mobile production systems.

Circle (432) on Reply Card

see ad on page 107

AT&T/THE BELL SYSTEM

Genesis board

A blackboard-type surface produces a video output signal for video conferencing and educational applications. The user may draw complete or partial line drawings (allowing the system to finish the drawing).

Videx Frame Creation Terminal

The FCT Frame Creation Terminal produces sophisticated graphics through the North American Presentation Level Protocol language. The system includes dual 8-inch floppy discs for local storage.

System 85 business system

An addition to the Dimension PBX line, System 85 offers high speed data, sensor-based energy/security management, and voice and networking capabilities with user-friendly terminals.

Circle (433) on Reply Card

AVC SYSTEMS

Broadcast equipment

A line of broadcast and production audio equipment, as well as microwave and transmitter systems, are handled by AVC Systems, distributors of Telefunken equipment.

Circle (713) on Reply Card

ABEKAS VIDEO SYSTEMS

VSP 42 slide system

A 5¼-inch Winchester disc holds 100 frames of on-line video storage in a VSP 42 video slide projector. An optional second channel and expandability are featured. Off-line storage is possible on ¼-inch digital tape.

Circle (434) on Reply Card

see ad on page 5

ACCU-WEATHER

Weather Graphics

Accu-Weather produces and distributes weather graphics data for hardware systems now marketed by the company.

Circle (435) on Reply Card

ACRODYNE INDUSTRIES

TT-3401U transmitter

The TT-3401U transmitter complements the TT-340 series with a 1kW UHF power level for LPTV installations.

Series TT-350U

The 10kW visual, 1kW aural UHF TT-350U features IF modulation and low-level diplexing. An input video processor provides adjustment for optimum performance.

TT-3510VH/VL

VHF Channels 2-6 and 7-13 are covered by the TT-3500VH or VL transmitters, featuring IF modulation and low level diplexing into a single TH371 tetrode final amplifier.

Upconverter

The model 83U01 upconverter unit interfaces to any Acrodyne transmitter/translator equipment. A modular design allows easy access to an internal channel conversion selection switch.

Circle (436) on Reply Card

ADAMS-SMITH

System 2600 time code equipment

System 2600 includes high speed VITC reader, translator interface, tape synchronizer and serial/parallel interface modules in the ChassisRod design for SMPTE and EBU timing applications.

Circle (437) on Reply Card

Nobody will ever duplicate the Service!



...and it's the service behind the product that keeps the Amperex Plumbicon* out front.

No TV station or production facility can ever shut down while "waiting for parts". Plumbicon tubes are instantly available through your local distributors.

We learned to build smaller and smaller Plumbicon tubes that provide performance standards similar to the original; and we have learned to produce tubes with higher resolution and sensitivity, tubes with extended-red response, reduced comet-tailing and minimum lag. We developed and introduced Diode Gun™ tubes, low output capacitance tubes and tubes for very high resolution applications.

Aware of the TV camera users concern about the over-all operation of their cameras, (not merely about the characteristics of our tubes), we provide them with expert information, in print and via our field engineers. Written by and for TV professionals, we publish and distribute free, "Optical Perceptions", a series of applications bulletins devoted to the advance of video technology. Typical topics covered include camera/tube technology and operating/maintenance techniques.

Plumbicon users in need of immediate assistance or advice need only call us and we'll

have an expert there to help with the problem.

An emergency hotline is available 24 hours a day, 7 days a week, to provide instant response to your requirements. We also maintain a complete, modernly equipped, expertly staffed color TV studio and an applications lab in Slatersville to which Plumbicon customers are invited to send their camera for trouble-shooting.

Our warranty is not only designed for the customer's maximum benefit but whenever possible is interpreted in the customer's favor. For example, a customer may return any Plumbicon tube for testing (even a tube that is technically out of warranty) and we'll subject it

to a complete technical evaluation at our own expense and furnish the customer with a detailed engineering report on the tube.

In TV broadcasting, it's the service behind the product that keeps the product out front. That's why Amperex Plumbicon tubes still offer the best all-around package of performance, price and reliability available.

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

Amperex®

... dedicated to product excellence

A NORTH AMERICAN PHILIPS COMPANY

*Registered trademark of N. V. Philips of the Netherlands

ADDA

AC 20A system

Two separate video channels are inputs to the AC20A for time base correction, field and frame synchronization and a selection of eight digital effects. A PAL version is planned for summer availability.

Circle (438) on Reply Card
see ad on page 169

ADVANCED MUSIC SYSTEMS

DMX 16E digital processor

Up to 21s of audio delay memory in the DMX 16E preview editing pro-

cessor captures pre- and post-edited material from two recorders, as well as SMPTE time code data from each. Optimum edit points may be selected for final editing tasks.

MSM-2 message storage module

Two channels of pre-recorded messages are stored in solid-state memory devices. No moving parts are involved.

A-V sync compensator

A difference in timing of up to 40ms of delay between audio and video in PAL TV signals has been compensated by this unit.

Circle (501) on Reply Card

AGFA-GEVAERT

Audiotape products

Longer 2-inch audio mastering tapes provide one hour (4800 feet) of PEM 468 magnetic material on a 12½-inch reel.

U-matic tape products

The KCS 10 and KCA 10 videocassettes are suggested for in-field and standard applications. Also for U-matic duplication activity are KCA cassettes in 5-, 10-, 15-, 20-, 30- and 60-minute lengths.

Storage cases

Agfa introduced a series of rugged, black storage cases for U-matic Broadcast Plus videocassettes.

PEM366 mastering tape

A 1-mil thickness allows longer length ½-, 1- and 2-inch tapes to fit into bin-type storage systems during mastering operations.

PE 612 bulk audiotape

Series 12 bulk audiotape, designed for cassette use, provides low noise, high output and high end response from Agfa Magnetite formulation materials.

Series 27 bulk audiotape

Pure chromium dioxide is optimized for 70µs chrome equalization with low noise properties.

Circle (439) on Reply Card
see ad on page 39

ALEXANDER MANUFACTURING

Replacement batteries

Continued design work provides a wider selection of replacement battery powering units for video camera and recorder applications.

Circle (440) on Reply Card

ALLEN AVIONICS

A wide selection of precision LC filters and electromagnetic delay lines are available.

Circle (441) on Reply Card

ALLIED BROADCAST

EQUIPMENT

Audio equipment distributor

Product lines handled include Bonneville, Telemix, Kustom Kraft, Auditronics, Otari, Elgin, Audiometrics and Modulation Associates.

Circle (442) on Reply Card
see ad on page 173

ALLIED TOWER

Tower services

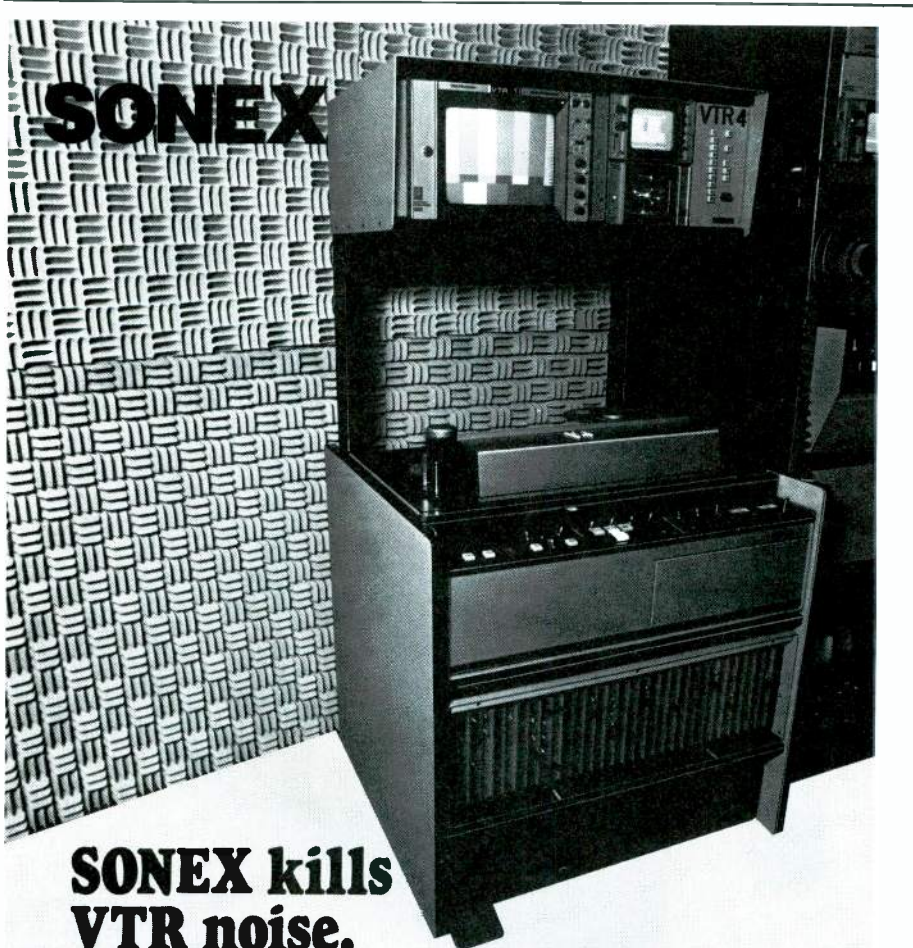
Complete tower requirements include design, construction, erection and maintenance of TV, AM, FM and microwave tower equipment.

Circle (443) on Reply Card

ALLSOP

Allsop 3 accessories

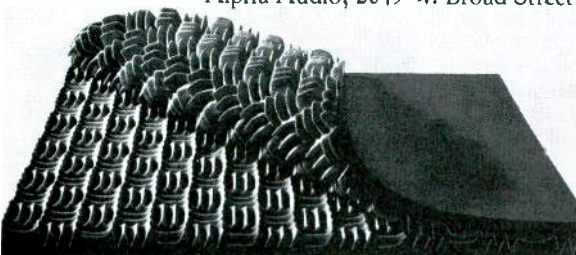
Tape care products include VHS and Beta VCR and audiocassette



SONEX kills VTR noise.

SONEX not only improves audio quality, inexpensively, but also quiets annoying background noise when you need to concentrate: noise from Quad VTR head blowers and head wheels; from mechanical tape transports; even from computer disk drives and fans. SONEX is the art of shaping sound...and the workhorse of killing noise.

Get the facts today. SONEX is manufactured by Illbruck/usa and distributed exclusively to the pro sound and A/V industries by Alpha Audio, 2049 W. Broad Street, Richmond, VA 23220.



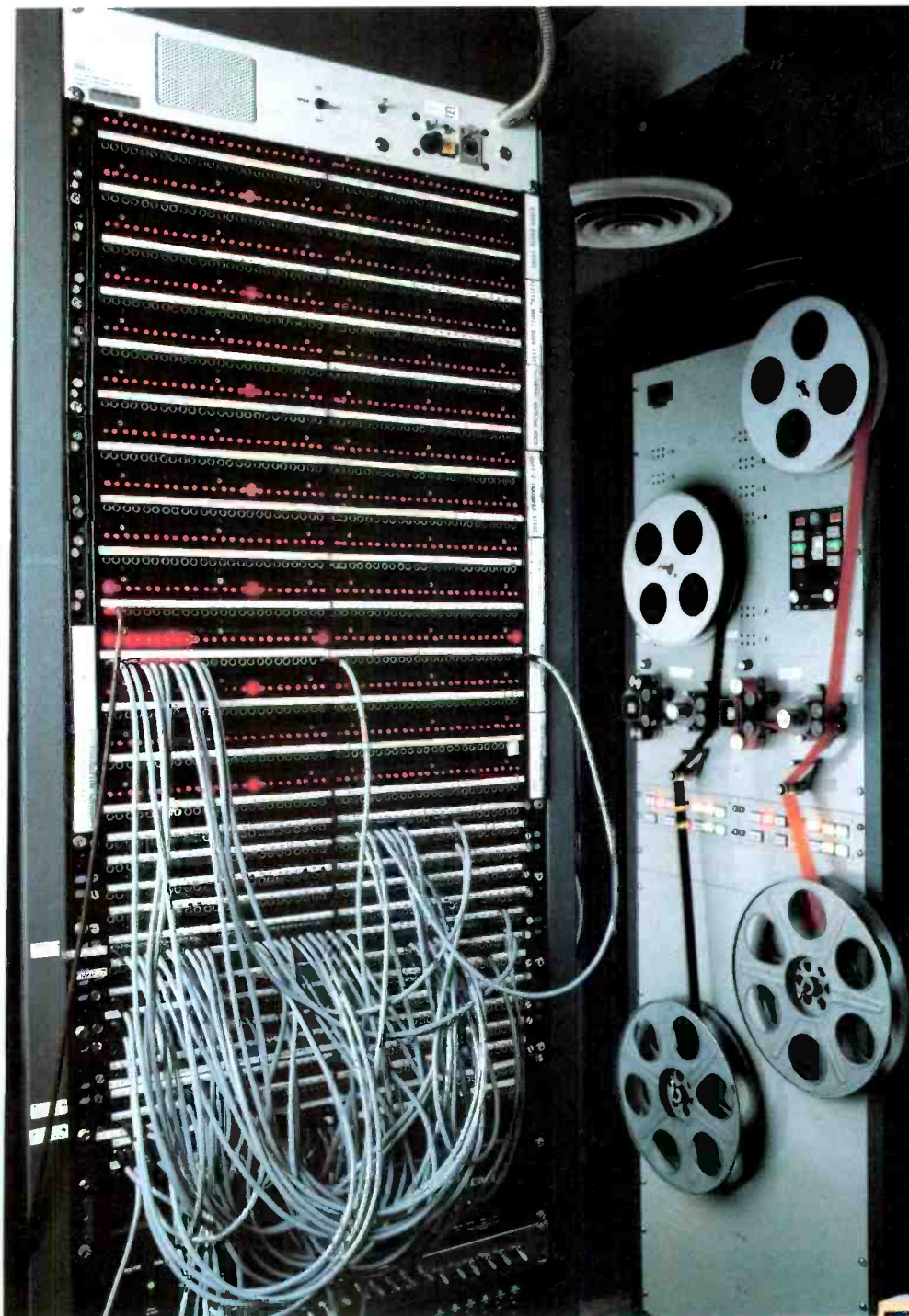
Circle (28) on Reply Card

Alpha Audio

804/358-3852

Acoustic Products
for the Audio Industry

With state-of-the-art technology in their recording studios, Lucasfilm Ltd. didn't settle for do it yourself jackfields.



Lucasfilm's special effects in sight and sound have become the hallmarks of the STAR WARS saga. To achieve those other-world sound effects takes a lot of patching, switching, and mixing.

When Lucasfilm's audio patching requirements called for a unique and complex design to provide high-quality audio throughout its complex, Chief Audio Engineer Tom Holman selected ADC to manufacture jackfields to fit those requirements. All Tom had to do was plug them in, and the jackfields were ready to go—guaranteed and pre-tested—eliminating the hours of wiring, testing, and correcting that do-it-yourself jackfields often require. ADC custom and standard jackfields can save as much as 50% of the cost of do-it-yourself jackfields.

In addition, we offer more than 240 configurations in 1/4" or Bantam jacks, wire wrap or solder terminations, variable cable lengths, plus a variety of normalizing configurations and types of terminations (including our revolutionary new "punch-down" connectors, introduced at this year's NAB). We inspect and computer-test every circuit to make sure it lives up to spec. That's why we can offer a five-year warranty on every unit.

Best of all, we can have any of our standard jackfields on their way to you in only two to four weeks. And that's a promise we can deliver. For information about ADC's standard or custom jackfields, write ADC, 490 West 78th Street, Minneapolis, MN 55435. Or call our toll-free hotline—1-800-328-6188. In Minnesota, call (612) 835-6800.



(Above) ADC custom jackfields form an integral part of Lucasfilm's state-of-the-art audio technology.

(Right) Tom Holman, Chief Audio Engineer for Lucasfilm Ltd., selected ADC for responsiveness, quality, and reliability.

Circle (29) on Reply Card



cleaning systems, as well as the Orbitrac record cleaning system.

Circle (444) on Reply Card

ALPHA AUDIO

Sonex acoustical foam

Sonex sheets or tiles provide effective sound control in studios or high volume noise-level environments.

Circle (445) on Reply Card

see ad on page 62

ALPHA VIDEO & ELECTRONICS

Alphatized U-matic VCRs

Increased shuttle speed, head-switching during vertical blanking, balanced audio, XLR connectors and +4dB audio levels are features of the VO-5800 and VO-5850 alphatized Sony U-matic VCRs.

Circle (446) on Reply Card

AMBER ELECTRO DESIGN

3501 distortion noise measuring system

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (447) on Reply Card

AMCO ENGINEERING

500-A series

Enclosure systems shipped within five work days.

CRFFX series

Enclosure systems to assist broadcasters in meeting the new FCC requirements.

Circle (710) on Reply Card

AMEK

Angela console

Recording, mobile and video production configurations of Angela consoles may take up to 50 inputs. The 24-bus system is automation-capable with VCAs, initially or as a retrofit item.

Circle (448) on Reply Card

see ad on page 171

AMPEREX ELECTRONIC

1-inch Plumbicon tubes

The XQ2170 Plumbicon provides 1-inch diode-gun features for beam control and reduced comet-tailing, while the XQ3170 Plumbicon incorporates a low capacitance output capability for reduced noise during operation.

Circle (449) on Reply Card

see ad on page 61

AMPEX

ESS-3 production system

A modular system, the ESS-3 may use up to five disc drives, including multiple access stations and frame

stores for still video image storage. One drive offers 400-frame capability.

TBC-80 time base corrector

Companion to the VPR-80, the TBC-80 time base corrector offers a 16-line digital memory and locked images from stop to 1.5X normal play speed for 1/2-, 3/4- and 1-inch VTR playbacks.

FPC-10 camera

The FPC-10 operates with any video recorder as a stand-alone unit or locks into an integrated VRC system with the FPR-10 M Format recorder to form the ARC-10 system.

VPR-5 recorder

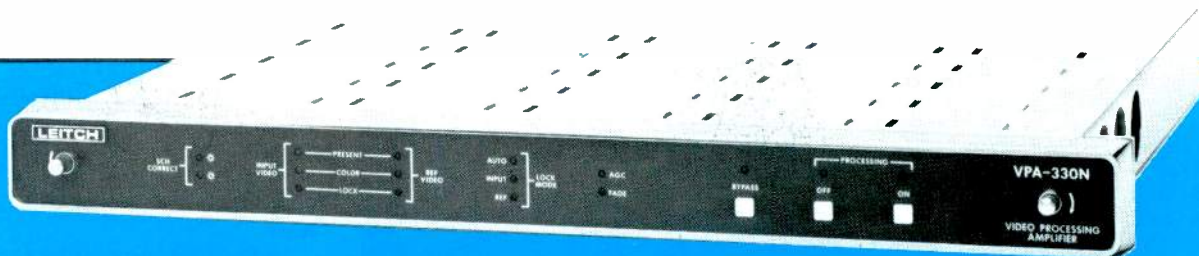
A combined project of Ampex and Nagra/Kudelski, the VPR-5 offers portable 1-inch production recording capability in the C Format.

VPR-3 VTR

Precision tape handling in the VPR-3 results from the pinch-rollerless, vacuum-capstan transport. The Type C, 1-inch VTR includes an SC/H-phased meter to indicate potential phasing errors. Combined with the TBC-3 and a second-order velocity compensator, the VPR-3 provides stable pictures over a wide speed range.

Type 197 cassettes

Ampex 197 3/4-inch videocassettes feature exceptional chrominance and



Video Processing Amplifier VPA-330N

- RS170A front panel SCH indication.
- H & V blanking width adjustable.
- Selectable VIT retention.
- Video gain control.
- Chroma gain control.
- Fade to black.
- Soft white clip.
- Hard white clip.
- Soft black clip.
- Hard or soft clamping.
- Input video lock.
- External reference lock.
- Video and/or chroma AGC.
- Total bypass.
- Differential input (optional).
- Equalizing (optional).
- Cue dot (optional).

LEITCH

Leitch Video of America, Inc.
825k Greenbrier Circle
Chesapeake, VA 23320
Tel: (804) 424-7920
Telex II: 710 882 4342

Leitch Video Limited
10 Dyas Road
Don Mills, Ontario M3B 1V5
Tel: (416) 445-9640
Telex: 06 986 241

Circle (30) on Reply Card

Take a close look at Harris SX Series solid-state AM transmitters...

When you add up all the benefits, the choice is clear.

Available in 1 kW, 2.5 kW and 5 kW, the field-proven Harris SX Series transmitter is packed with advanced technology to bring you the utmost in operational efficiency and performance. Compare overall specifications with any competitive transmitter.

MAXIMUM OVERALL EFFICIENCY

MOSFETs (Metal Oxide Semiconductor Field Effect



Transistors) in the modulator and PA stages give you significant benefits over older bipolar transistor and tube technology. For example, MOSFETs incorporated into the Harris design result in higher overall efficiency — typically 70% or better.

ENHANCED AUDIO QUALITY

P Harris' patented Polyphase Pulse Duration Modulation is a highly efficient 4-phase system. **P** The audio input is sampled four times during each PDM cycle. Your listeners will notice the marked improvement in audio quality.

PUSHBUTTON DIAGNOSTICS

Here is your centrally located monitoring point for a vast number of useful operating parameters — all right up front — all at fingertip command.



AM STEREO COMPATIBLE

Harris is the only transmitter manufacturer with extensive AM Stereo experience. That's a plus, as special consideration is given to incidental phase modulation...audio input to RF envelope output phase linearity...and RF channel phase response.

DIRECT POWER SAVINGS



SX Series transmitters save you up to 46% more power than other transmitters currently in use. A definite edge when there's a premium on every kilowatt consumed.

So add up all these benefits. Today you simply can't afford to be without a Harris SX transmitter. For more information, contact Harris Corporation, Broadcast Division, P.O. Box 4290, Quincy, Illinois 62305-4290. 217-222-8200.



 **HARRIS**

LIGHTING DESIGNERS DON'T
LEAVE HOME WITHOUT IT.

BLACKWRAP™ FLEXIBLE MATTE BLACK ALUMINUM

- HEAVY DUTY
- FORM HOLDING
- COATED TWO SIDES

Mask light leaks, shape
beams, cut glare, cover
up loose ends...

Convenient 12" x 50' roll.
Write or call for more info.

THE
GREAT  AMERICAN
MARKET®

POB 178 WOODLAND HILLS, CA 91365-0178
TELEPHONE 213/883-8182 TWX 910 494 1233

© 1983 The Great American Market.

Circle (32) on Reply Card

luminance characteristics with superior audio S/N and low distortion. The formulation optimizes performance with Sony BVUs.

For more information on Ampex products, see page 17.

Circle (450) on Reply Card
see ads on pages 17-32, 36 and 37

AMTEL SYSTEMS Evertz ECM4000

The ECM4000 edit code master combines generator, reader and character generator functions for VITC time code. SMPTE/EBU time code with color lock to RS-170 (4-field PAL) or RS-170A (8-field PAL) are switch-selected.

4300 VITC reader

The Evertz 4300 reads VITC code to 10X play speed and above, depending on the VTR. Six remote control switch outputs actuate equipment via program video path. NTSC and PAL models are available.

Circle (451) on Reply Card

AMTRON High resolution monitors

A new series of high resolution monitors includes 8-, 13- and 19-inch diagonal CRTs. I/Q axis decoding and adaptive comb-filter chroma separation achieve maximum bandwidth. PIL CRTs are used.

Reflection screen

Dark glass screens remove many reflective distractions.

Circle (452) on Reply Card

ANCHOR SYSTEMS Mini PA systems

The AN 100/150, 200/250 and 206/256 PA systems include a lectern configuration, as well as easily transportable encased systems with vinyl-covered plywood cabinets.

Circle (453) on Reply Card

see ad on page 102

ANDREW 9.3m earth station antenna

High efficiency (77.2% at 4GHz) and 2° spacing pattern compliance at 4GHz and 6GHz characterize this antenna.

ESC-200 controller

Microprocessors allow the ESC-200 earth station controller system to offer accurate and automatic antenna system control of azimuth, elevation, polarization and system/alarm panel status.

Rigid transmission lines

Teflon insulators are used in 6½-inch, 75Ω coaxial transmission line for TV broadcast applications.

LPTV antenna

Designed for LPTV applications, a 4-bay Trasar UHF antenna system may be side- or top-mounted. Stacking to eight bays increases gain of omni, peanut or cardioid patterns.

Circular waveguide

UHF waveguide in 13.5-, 15- and 17.5-inch diameters covers Channels 14-69. High power mode and axial ratio filters eliminate signal distortions.

3m earth station antenna

LPTV and private user applications may find the 3m all-metal, segmented reflector earth station antenna system valuable. Single/dual polarization and electronically switched polarization adjustments combine with a motorized mount.

Circle (454) on Reply Card

ANGENIEUX 42X enhancements

Optical improvements are incorporated into the 1- and 1¼-inch 42X studio lenses, with improved servo controls.

12X enhancements

Optical pattern improvements are included in the 1- and 1¼-inch lens systems for resolution-critical applications. The 12X lens features a 1.5X extender.

15x9 accessory

The 15x9 lens for ¾-inch ENG and EFP applications incorporates a new servo focus accessory, complementing the rugged, all-weather lens system.

Circle (455) on Reply Card

ANRITSU AMERICA MF76A frequency counter, MS349 analyzer, MS420A analyzer, and ML83A digital power meter

See the test equipment update on page 44.

Circle (456) on Reply Card

ANTENNA TECHNOLOGY Simulsat-7

This quasi-parabolic 7m antenna allows simultaneous pickup capability from several satellites. It is suggested for TV broadcast use.

Simulsat-3

Designed similar to other quasi-parabolic simulsat antennas, this 3.3m system is suggested for radio or less critical SMATV applications, allowing simultaneous multiple satellite reception.

Circle (1152) on Reply Card

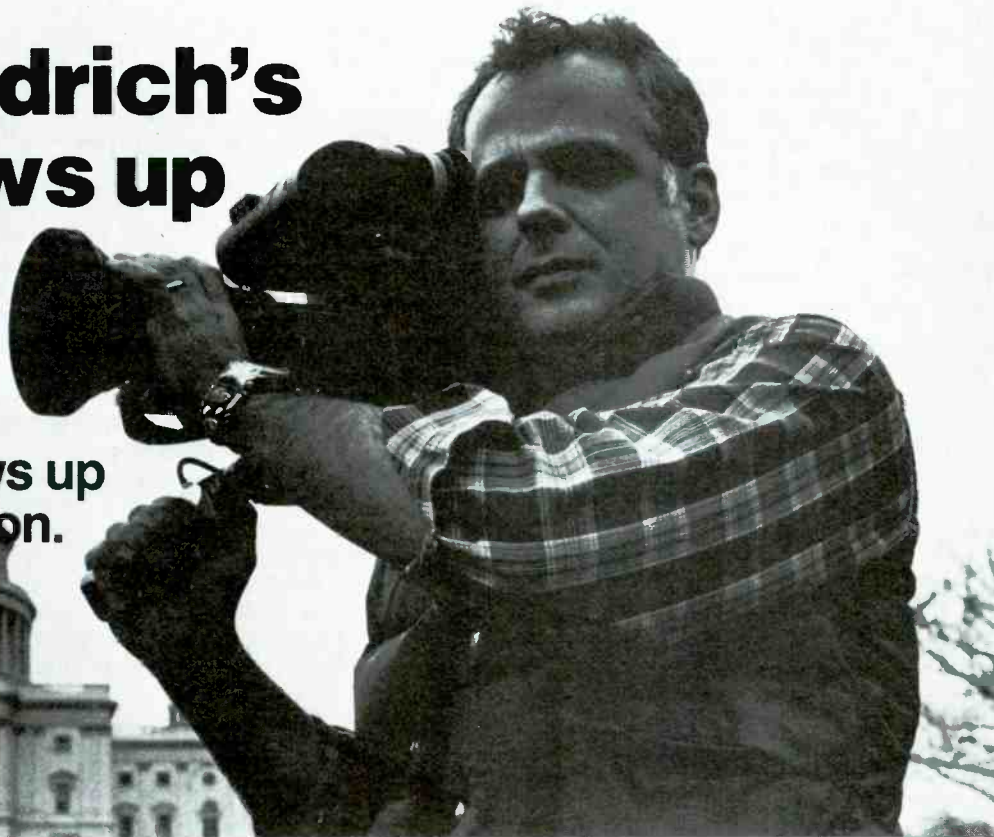
see ad on page 157

ANTON/BAUER MCV Microcontrol System

The microcontrol unit allows 12-function camera control over a single balanced mic pair for a variety of ENG/EFP cameras. The camera decoder section uses the Anton/Bauer Snap-On design for attachment to the camera.

George Fridrich's name shows up on a lot of awards.

Only one name shows up on his lenses—Fujinon.



Network news cameraman George Fridrich covers the nation's Capitol. Assignments also take him across the country. But wherever he goes, his work speaks with authority. The most prestigious awards confirm it.

The White House News Photographers Association named him "newsfilm photographer of the year" for 1982. (They did the same for 1981 and 1979.) And he received first place awards for spot and feature news in 1982 from the National Press Photographers Association.

Obviously, George Fridrich has his choice of lenses. For years, his choice has been Fujinon, exclusively. Here, in his words, are his reasons:

"Fujinon lenses deliver great performance and reliability. I use two of them, I abuse them and they hold up. They get knocked around and still perform often under the worst conditions. The fact is, you just can't go wrong with any Fujinon lens. On top of that, Fujinon's support and service are fantastic."

George's basic lens is a Fujinon 14X zoom with built-in 2X extender. When he can't get in close, the lens will and because its maximum F1.7 aperture stays flatter, farther, George can still get the brighter, higher contrast picture quality he demands. His second lens is Fujinon's exclusive 3.5x6.5 wide angle zoom. With an MOD under one foot, no assignment is ever missed because of tight quarters.

Incidentally, although George didn't receive the White House News Photographers' award for 1980, Pete Hakel (WJLA, Washington) did. He won with Fujinon, too. It's not a coincidence. According to Pete, "90% of the ENG work in D.C. is Fujinon."

Before you make any ENG/EFP lens decision, see how much more you get with Fujinon.

Fujinon provides it all—performance, quality, reliability and service. And to make it even better, Fujinon is also the value leader. For all the facts and figures to prove it, talk to your Fujinon representative or contact:

Introducing FUJINON'S third generation ENG lens...

THE NEW "WEATHERIZED" A14x9ERM

- Fast, light and compact—F1.7 speed, weighs only 1.48kg
- Wider angle, smoother zooms—9mm coverage, more precise servo control
- Built-in 2X extender
- Macro and adjustable back focus
- Servo zoom, auto iris standard
- Wide and tele converters optional
- Full range of studio conversion accessories including Fujinon's microprocessor shot box



The tradition of innovation continues.

Fujinon Inc.
672 White Plains Road
Scarsdale, New York 10583
(914) 472-9800
Telex: 131642

Fujinon Inc.
2101 Midway, Suite 350
Carrollton, Texas 75006
(214) 385-8902

West Coast Division
Fuji Optical Systems, Inc.
118 Savarona Way
Carson, California 90746
(213) 532-2861 Telex: 194978



FUJINON

30/13 battery belt

This battery belt is dual-voltage switchable 30V, 4Ah; 13V, 8Ah.

SPS-3 and SPS-5

Three and 5A, 12.5V power supply. The SPS-3 is 120Vac, while the SP-5 is 110/220Vac with 5-pin XLR connector.

Pro-Pac 90

Professional fast-charge VTR battery.

Circle (457) on Reply Card

ANVIL CASES

Case styles

Anvil Cases products provide transport containers for computers, computer disc packs and A-V equipment. Standard and lightweight styles are included.

Circle (458) on Reply Card

APERT/HERZOG

Model H TBC

The model H time base corrector handles heterodyne color playbacks and includes full-frame infinite window correction. It also serves as a frame synchronizer or freeze-frame device.

1x24 DA

Including 12 VBB-1 hybrid line drivers, the 1x24 video distribution amplifier system provides flat response to 10MHz, differential phase/gain of 0.15%/0.15% and occupies a 1.75-inch rack frame.

Circle (459) on Reply Card

APHEX SYSTEMS LTD.

EQF-2 equalizer

The EQF-2 3-band sweep equalizer includes high- and low-pass filter sections, with switched peak/shelf for EQ and reciprocal 12dB cut and boost on all sections. EQF-2S is for stereo.

CX-1S compressor/expander

"Soft Knee" compression/limiting includes a switched expander/gate (0-100dB expansion) with a no-click-or-pop guarantee. "S" designates stereo.

The Compellor

Complete dynamic control includes compression, leveling and peak limiting for broadcast, production, live performance and duplication/dubbing requirements.

Type B exciter

Dual channels of frequency/harmonic generation enhance stereo audio signals for production, live performance or home systems. Separate controls allow channels to be matched.

Circle (460) on Reply Card

ARRAKIS SYSTEMS

Series 2500 consoles

The 2000 series console line now includes the modular 2500 with 8-channel mainframe, P&G faders,

two or four outputs per channel, program/audition/utility/mono outputs and solid-oak cabinetry. On-air applications are suggested.

Circle (461) on Reply Card

ARRIFLEX

Cinejib crane

The Cinejib by Cinerent (Switzerland) holds one or two people, a film/video camera and accessories, for a maximum 673-pound load. Height range is 14.8 feet to 11.8 inches below floor level.

Mitchell geared head

Three speeds and neutral for pan and tilt are provided by the Mitchell geared head for film or video cameras. A special compartment holds a 12Vdc, 7Ah camera battery.

BTM616 film editor

The BTM616 film editing table includes a 6-plate configuration with fully electronic control. Impulse synchronization allows sync-coupling with videotape.

200W HMI Fresnel

The Report 200W light operates from 24Vdc battery packs or an ac source. The HMI Fresnel provides daylight-balanced lighting.

Coherent Communications products

Arriflex distributes the Coherent time code systems, wireless mic, mini mixer and accessories.

Circle (462) on Reply Card

ARTEL COMMUNICATIONS

SL-2000 fiber-optic modules

The T/R-2020 composite video-audio plug-in, as well as T/R-2013 RGB high resolution and T/R-2000L long distance transmission systems fit the S-1000 low profile/3-card frame for fiber-optics.

Circle (463) on Reply Card

ASACA/SHIBASOKU

ASW-50 production system

Two cameras input to the ASW-50 portable switcher system. The switcher allows remote control of a VCR, as well as cuts and fades between the cameras.

VM01A1/2A1 video memory

Digital techniques allow VMO1A1 (black-and-white) or 2A1 (color) video memory units to store single, 4x4 or 16x16 image format displays for inspection or further processing.

AAS-100 audio synchronizer

The AAS-100 audio synchronizer uses sound delay with digital memory to compensate for audio/video divergence and lip sync problems.

AVS-100 video synchronizer

A 2-field RAM in the AVS-100 video synchronizer, interfaced to the AAS-100 audio unit, compensates for remote or satellite-relayed audio/video signal divergence problems.

CD10A1 color decoder

NTSC-M TV signals are decoded on I/Q axes to produce RGB and R-Y/B-Y,

Y and drive signals.

ADS1000 still-store

The 8-inch Winchester disc drive stores up to 218 fields of still pictures per disc. Four drives, for 872 video fields, may be used. Digital techniques display 16 images on the screen for sorting and inspection or single pictures for production needs.

Circle (464) on Reply Card

see ads on pages 185 and 187

ATLAS TOWER

Complete tower services

All tower requirements, design, construction and maintenance for 3-face towers to 2000 feet.

Circle (1143) on Reply Card

AUBURN INSTRUMENTS

MC/1 control system

Only a 2-wire connection is needed to the MC/1 wire machine control system for eight commands, eight return tallies and dc power to VTRs, film chains and other remote broadcast equipment.

Circle (466) on Reply Card

AUDICO

751-V tape loader

Cassettes, carts and reels may be loaded from a bulk tape source with the 751-V tape loader. An outboard adapter works with VHS and Beta cassette housings as well.

Circle (467) on Reply Card

AUDIOCOM ELECTRONICS

Telecoupler

The TC-100S telecoupler interfaces a telephone line to the audio console for 2-way conversations in interviews, talk shows or on-the-spot news coverage. The design avoids hybrid circuit coloration and feedback problems.

Annual proof services

Audiocom will handle the paperwork for annual proof-of-performance reports for AM and FM stations. Microwave path printouts also can be performed.

Circle (924) on Reply Card

AUDI-CORD

S series cart machines

Recorder/reproducer and reproducer-only machines offer improved characteristics to deal with NAB cartridge stereo phase stability problems. Phase stability is spec'd $\pm 90^\circ$, long-term, at 12kHz.

Circle (468) on Reply Card

AUDIO + DESIGN RECORDING

S27 crossover/processor

Designed for use in the SCAMP modular system, the S27 crossover unit uses 4-band processing with 12dB/octave phase-compensated filters.

Image is Everything.



BARCO's CTVM Master Control Series lets you monitor your on-air look critically and confidently.

The look of perfection.

Something every chief engineer, station owner and manager strive to achieve. The best available studio and control room equipment makes the difference.

Television stations all over North America with BARCO CTVM monitors in their master control rooms more than make the grade. They set the standard.

With CTVM monitors you see the picture as it really is, down to its finest detail or defect.

The sophisticated electronic design pays particular attention to stability, linearity, geometry and color fidelity. It ensures an accurate reproduction of the picture with distortion reduced to the absolute minimum.

CTVM monitors offer features you've come to expect from the world leader in broadcast monitors: pulse cross; underscan standard, high or ultra high resolution CRT's; R minus Y, B minus Y outputs; RGB in and out. A choice of American standard or EBU phosphors assures color compatibility with other monitors. And the CTVM series is dependable and highly reliable, designed for continuous operation 24 out of 24 hours.

BARCO CTVM monitors are available in 14" or 20" models and feature modular PC boards for easy service and maintenance.

For the world's best engineered and most carefully built master control monitors, look to BARCO, where image is everything. Available in the U.S. only from ELECTOR.

ELECTOR USA, INC.

In The U.S., Elector USA, Inc., 5128 Calle del Sol, Santa Clara, CA 95050 Phone: 408/727-1506 30 Chapin Road, P.O. Box 699, Pine Brook, NJ 07058 Phone: 201/882-0584 In Canada, Electro & Optical Systems, Ltd., 31 Progress Court, Scarborough, Ontario M16 3V5 Phone: 416/439-9333

Circle (34) on Reply Card

Pro-Pak

A professional mono/stereo interface package for use with high quality domestic equipment. This unit provides balanced inputs and outputs at levels up to +24dBm.

Circle (469) on Reply Card

AUDIO DEVELOPMENTS

AD 145 pico mixer

There are two versions of the 145: 4- and 6-input. Each version can have single or double meter output panel, and a wooden desk mounting console is available for both sizes.

AD062 multimixer

The connector panel houses all the inputs and outputs for the mixer except the PFL, monitor jack and power input. The unit can be easily lifted out of its wooden case and used as a battery-powered portable mixer with a carrying handle.

Circle (711) on Reply Card

AUDIO KINETICS

Q.Link interface

An external computer accesses and controls functions of the Q.Lock system via RS232/RS422 serial data interfacing. A 5x5-machine control Q.Link mode through two Q.Lock frames is possible.

Q.Soft-SFX

Dedicated control of sound effects assembly in the Q.Lock system is simplified and automated by the Q.Soft computer software program.

Q.Soft-ADR

Automatic dialogue replacement, looping, with the Q.Lock control system uses Q.Soft-ADR software, providing 20 cue-point or 100 loop memories.

Q.Soft-VAPP

Dedicated control software for general video audio post-production is the purpose of Q.Soft-VAPP programs for the Q.Lock system.

Q.SCAN

Q.SCAN software includes off-line spotting with computerized list management and on-line auto assembly.

Circle (470) on Reply Card

AUDIO-TECHNICA US

AT835 short shotgun

The AT835 electret condenser line mic provides a unidirectional pattern from its 14.5-inch length. Frequency response characteristics cover 40Hz-20kHz.

Circle (471) on Reply Card

see ad on page 141

AUDIO TECHNOLOGIES

Modular Audio DA10000

Ten 1-in/6-out/DA10000 audio DA

modules fit in one rack with dual redundant power supplies. Five module types include metering and compressor enhancements.

Meter/monitor system VU1000

Any of eight inputs are selected by a touch-switch scan scheme for level displays on a red/yellow/green 12-segment LED bargraph. Inputs may run from -10dBm to +18dBm.

Circle (472) on Reply Card

AUDIOTECHNIQUES

Distributor

A line of professional quality audio products includes the MCI/Sony console and recorder equipment.

Circle (922) on Reply Card

see ad on page 168

AUDITRONICS

PPEQ-1 equalizer

Programmable parametric equalization in the PPEQ-1 puts four mono or stereo tracking equalizer units in a 19-inch rack. The 3-band EQ units include variable frequency, boost/cut, Q and more.

Series 300 production console

Up to 32 inputs with 2-, 4- or 8-channel output configurations combine with mono and/or stereo capability with or without equalization. Options include submastering, VCA grouping, signal processing and

Unmeasurable Performance

The SPECTRA SOUND Model 1500 is the only graphic equalizer available with unmeasurable distortion. The 1500 is also the quietest of all equalization devices. The result, a *measurable* improvement in audio system performance when varied equalization requirements exist.

DISTORTION
I.M. and T.H.D. below .0018%, 20Hz to 20kHz, +18dBv, test equipment residual.

SIGNAL TO NOISE RATIO
104dB, + 4dBv input, unweighted, 20Hz to 20kHz.



3750 Airport Road
Ogden, Utah 84403
(801) 392-7531

Spectra Sound is a wholly owned subsidiary of Spectra Sonics.

SPECTRA SOUND

MODEL 1500

GRAPHIC EQUALIZER



Circle (35) on Reply Card

Introducing the New Electro-Voice RE30 omni and RE34 cardioid ENG/EFP microphones

“Sophisticated microphones that simplify field production.”

Action doesn't wait. The constant deadlines faced by news gathering and field production crews demand equipment compatibility, fast set-ups, simple operation and absolute reliability.

Electro-Voice knows.

We've designed and built the broadcast microphones that have set performance and reliability standards, and we stand behind EV Professional Microphones with a warranty and service policy that's second to none.

And EV listens.

Properly designed broadcast products are the result of pooled efforts. That's why EV devoted years to research, by working with network and local broadcasters to engineer all of the desired features into a pair of rather revolutionary new microphones for ENG and EFP.

EV confirmed that field microphones should incorporate low handling noise, resistance to humidity and moisture problems, extreme durability, and the same reliability and level of performance that the industry has become accustomed to expect from EV microphones like the phenomenal 635A and RE20.

Introducing the RE30 and RE34.

Because remotes present a variety of acoustic environments, EV engineered the RE30 with an omnidirectional pickup pattern, and the RE34 with a cardioid pattern. Except for their polar patterns, each model has the same features.

Both the RE30 and RE34 have switchable outputs—either line level or microphone level. No longer will field crews



be stuck without the right signal level. A flick of the recessed switch adjusts the output level, producing instant compatibility without the need for extra equipment or cables. The low distortion line-level amplifier allows direct interface with line-level inputs such as those common on microwave and fiber optic transmitters.

Additionally, the RE30 and RE34 will drive and hold telephone lines*.

*F.C.C. approved interconnect may be required.

Each microphone includes a low-distortion limiter which functions at either output level.

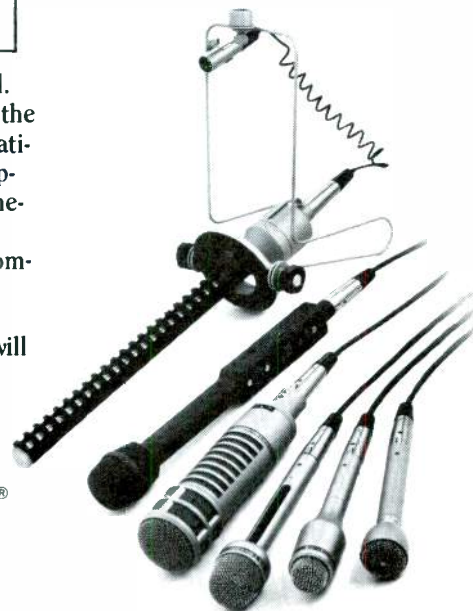
The RE30 and RE34 can be powered by either phantom power or a standard, available anywhere, 9-volt “transistor radio” battery. With both power sources present, the battery becomes a redundancy powering system that instantly and silently takes over if ever required.

An LED, mounted so as to be easily visible to the talent only, serves several important functions... it shows the presence of phantom power, monitors battery condition, and offers the world's first hand-held “tally light” to signal on-air personalities from off-camera.

Get the whole story.

No advertisement can hope to explain all of the features of these incredible new microphones. Complete engineering data sheets describing the many features and benefits of the RE30 and RE34 are available free upon request.

Many Electro-Voice Professional Microphone Dealers can arrange a hands-on trial at no cost to you. For more information please write to: Greg Silsby, Market Development Manager/Professional Markets, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.



a gulton company

EV Electro-Voice®
SOUND IN ACTION™

Circle (36) on Reply Card



THIS IS WHERE STICTION PROBLEMS BEGIN.

It takes a very tough tape to withstand edit after edit through today's VTR equipment and still deliver a crisp, clean playback image.

And tough is exactly what new Scotch® 480 one-inch video tape is.

A special coating formulation on Scotch 480

means you no longer have to worry about problems like stiction.

In fact, during computer editing, 3M lab tests have shown 480 is capable of delivering over *1,000 edits from the same preroll point*, with no significant reduction in playback quality.

"Scotch" is a registered trademark of 3M. © 3M, 1983.

Scotch®

480

**NEW
SCOTCH® 480
IS WHERE
THEY END.**

And in today's tough video production environment, that kind of durability can mean a lot.

Scotch 480 is further proof of why 3M is the leader in professional use video tape. And why we sell more one-inch tape for professional use than all other

manufacturers put together.

For a free brochure on new Scotch 480 call 1-800-328-1684 (1-800-792-1072 in Minnesota). And find out more about the tape that's as tough as today's editing equipment.

Magnetic Audio/Video Products Division/3M.



**NEW
SCOTCH 480
1" VIDEO TAPE.
LASER TESTED FOR
CONSISTENCY.**

3M hears you...

3M

metering types.

RTW processor set

A modified Sony PCM-F1 processor in the RTW studio processor set makes digital audio recording possible on any EIAJ standard video-cassette recorder.

Circle (473) on Reply Card

see ad on page 58

AURORA SYSTEMS

Graphics prototype

For use with Aurora systems, the prototype displayed offers improved resolution with full-color frame buffer.

Circle (474) on Reply Card

AUTOGRAM

Microgram console

Microprocessor control of the Microgram handles three stereo audio buses simultaneously, or runs separated automation systems on AM and FM, with a bus remaining open for production.

Circle (475) on Reply Card

AUTOMATED STUDIO TECHNOLOGIES

Editing system

SMPTE time code controls A-V post-production with up to 12 tape recorders, a 999-event list and a library function retaining locations for sound effects, themes, etc.

Circle (476) on Reply Card

AUDIO-VIDEO ENGINEERING HSC-1

Video hum stop coils may be used to stop 60Hz and 120Hz interference in video.

Circle (712) on Reply Card

BGW SYSTEMS

2242

The 2242 distribution amplifier was shown.

Circle (718) on Reply Card

BIW CABLE SYSTEMS

Duraguide fiber-optics

Duraguide and more rugged Duraguide HS fiber-optic materials provide bandwidths to 200MHz, typically, with a 5dB/km signal loss. By special order, a 2dB/km loss at 1000MHz is available.

Circle (477) on Reply Card

B&K/BRUEL & KJAER

For information on measuring microphones, sound level meters, acoustics analyzers, sound sources and the 2118 audio test station, see the test equipment update on page 44.

Low noise microphone

The type 4006 low noise studio microphone covers a dynamic range from 17-135dB in the 20Hz-20kHz audio spectrum. The phantom-powered unit has a sensitivity rating of

12.5mV/Pa.

4004 microphone

High intensity sound to 148dB peak suffers less than 1% distortion in the 4004 microphone for a spectrum from 20Hz-40kHz. Suggested applications include brass and percussion section micing. The microphone requires the use of a 2812 power supply.

Circle (950) on Reply Card

BSM SYSTEMS

Rack-mount mixer

Five inputs mix down to a program output with a separate cue system and selectable headphone output. Features include an integral phone reference generator, master output gain and high-/low-cut switching.

Remote control system

Front-panel touch pad buttons control nine channels of remote control capability. FSK techniques allow control of the transmitter with a 7-segment display and analog meter to check on parameters and status.

Other new products include mono and stereo routing switchers, an audio tone generator and an audio monitor unit.

Circle (951) on Reply Card

BTX

Softouch controller

The Softouch transport controller gives SMPTE time code and multimachine operation. The controller interfaces to BTX Shadow and Cypher equipment and includes a 16-production-sequence memory.

Circle (478) on Reply Card

B-W LIGHTING SYSTEMS

CH series lighting control

LMJ Lighting Methods' CH series light control consoles offer single-, dual- or multiple-scene control configurations. Faders provide independent scene, grand master and dipless crossfade. The control output is linear from 0-12Vdc.

SD lighting dimmers

SD-12, SD-24 and SD-36 modular dimmer systems handle 1.2kW, 2.4kW or 3.6kW per channel lighting loads with six channels per portable case. Pulse width or dcV modulated control signals are used.

Circle (479) on Reply Card

WILLIAM BAL

Shipping cases

Molded and fabricated cases from the Road Case series provide ATA-approved designs for equipment protection. Various cushioning materials are cut to the customer's needs.

Circle (480) on Reply Card

BASYS

Roll Fury prompting

For addition to the News Fury computer newsroom system, Roll Fury adds teleprompter control to com-

puter terminals.

Circle (481) on Reply Card

BAYLY ENGINEERING

Model CCS100 change-over system

The unit has 10 to 100W output with four channels and remote facilities.

Bayly Engineering represents the AEG-Telefunken line and handles products for FM broadcast and 2-way VHF and UHF communications.

Circle (719) on Reply Card

BEAVERONICS

Downstream keyers

Particularly suited to use with character generators, the DSK-6-DL and DSK-4-DLB keyer systems accept six or four inputs, respectively. Multiple keys are enhanced by an integral colorizer for matte and bordering. The DSK-4-DLB includes fade to/from black.

Circle (953) on Reply Card

BELAR ELECTRONICS

LABORATORY

FMS-2 stereo mod monitor,

FMM-2 modulation monitor

See the test equipment update on page 44.

Circle (482) on Reply Card

see ad on page 174

BELDEN COMMUNICATIONS

Lee camera filters

These filters are made of a resin material to retain desirable properties. Ideal for many optical effects.

Circle (483) on Reply Card

see ad on page 51

BELL HELICOPTER

Long Ranger III

A useful load of 1925 pounds and a range of 344 nautical miles is typical for the 7-place Long Ranger III helicopters. The 650hp rating is developed from an Allison 250-C30P engine.

Pre-owned equipment

Bell Helicopter provides a written warranty, factory training, competitive financing and worldwide support services for used helicopters.

Circle (484) on Reply Card

BENEFICIAL COMMERCIAL

Financial services

This company is a NYSE-listed, multibillion dollar diversified financial services holding company.

The company consists of the Equipment Leasing and Financing Division, the Commercial Finance/Small Business Loan Division and the Industrial Leasing/Lending Division.

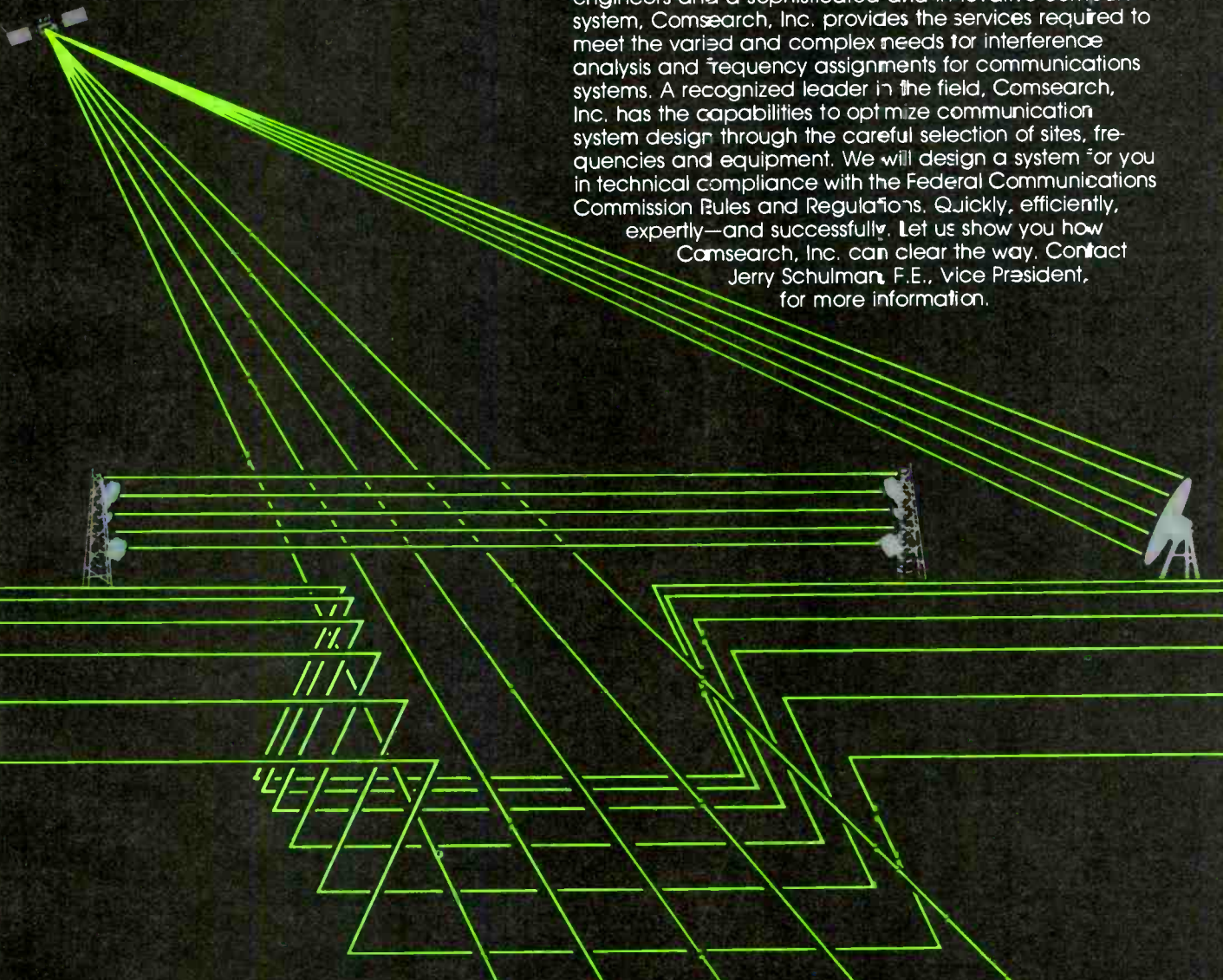
Circle (720) on Reply Card

BESTON ELECTRONICS INC./BEI

DataNews

An electronic news system allows quick editing of news, disc storage,

Comsearch™ opens new channels in communications systems.



With a staff of nationally recognized and highly respected engineers and a sophisticated and innovative computer system, Comsearch, Inc. provides the services required to meet the varied and complex needs for interference analysis and frequency assignments for communications systems. A recognized leader in the field, Comsearch, Inc. has the capabilities to optimize communication system design through the careful selection of sites, frequencies and equipment. We will design a system for you in technical compliance with the Federal Communications Commission Rules and Regulations. Quickly, efficiently, expertly—and successfully. Let us show you how Comsearch, Inc. can clear the way. Contact Jerry Schulman, F.E., Vice President, for more information.

COMSEARCH™
INCORPORATED

11503 Sunrise Valley Drive/Reston Virginia 22091
703/620-6300

Services include: ■ Satellite earth station interference studies and site selection ■ Terrestrial frequency planning (for common carrier, private, CARS and STL microwave) ■ Microwave path surveys ■ Cellular radio engineering services ■ MDS, OFS, and ITFS engineering exhibits ■ Frequency protection for communications systems ■ 900 MHz paging engineering services ■ Low Power and Full Power TV engineering services ■ Digital Termination Systems (DTS) frequency coordination ■ RFI measurements ■ Radiation hazard testing ■ RF MIL-STD testing ■ Aeronautical frequency interference studies ■ Computer time-sharing for interference analysis studies ■ Data base listings and more.

Circle (38) on Reply Card

©1983 Comsearch, Inc.

talent prompting, hard copy printout and vertical interval captioning for the hearing impaired.

Circle (485) on Reply Card

BEYER DYNAMIC M600 Soundstar Mk III

The hypercardioid characteristic of the M600 N(C)S microphone provides a side attenuation at 120° and 1kHz of greater than 24dB. Integral hum-bucking filters reduce electromagnetic hum.

Circle (486) on Reply Card

BIRD ELECTRONIC 8572 Termaline Load

The 25kW-rated model 8572 RF load resistor presents a 50Ω load for transmitter test and alignment from dc to 250MHz. Cooling is provided by forced air.

Circle (487) on Reply Card

BLAUPUNKT

The Car Radio Division of Robert Bosch Corporation has introduced its Automatic Radio Information (ARI) System in the New York metropolitan area. Developed by Blaupunkt to improve traffic flow, ARI provides timely traffic information to motorists via a special broadcast signal.

Circle (954) on Reply Card

BLONDER-TONGUE LABORATORIES

The BTV DBS addressable video decoder is designed for STV applications with LPTV, SMATV and CATV systems. Multiple channel control and pay-per-view are possible.

Circle (488) on Reply Card

BOGEN PHOTO Auto-Pole/Expan

Auto-Pole support poles combine with the Expan drive system for flexible handling of background paper rolls for photo or TV studios.

Circle (489) on Reply Card

BOGNER BROADCAST EQUIPMENT

Cellular radio antenna systems BMR10/BCR10 consist of an array of side-fed dipoles in fiber-glass cylinder radomes. Covering the 806-890MHz band, a minimum gain of 10dBd is given for the omnidirectional units.

Circle (490) on Reply Card

BOSCH-FERNSEH Quarterm system

The Lineplex recording format uses ¼-inch CVC cassettes in a VRC system that includes the KBF-1 recorder, KCF-1 detachable camera, BCF-10 studio recorder and BCF-20 field editor.

RME production switchers

Three RME models, the 51, 61 and 102, are compact, microprocessor-controlled switching systems. Communications between control and electronics use a serial data line. Optional memories allow 30-take-command storage.

FPS-1000 graphics

From a palette of 65,000 colors, up to 16 are displayed in five brush sizes and styles. The 640x480 pixel resolution display follows auto color fill and auto graphics routines at a low cost.

FGS-4000 graphics

For real time 3-D animation displays, the FGS-4000 system combines character generation with graphic arts. The operator has manipulation control through pre-programmed or manually selected object moves.

TVS/TAS-2000 switcher

Based on 10x10 matrix cards, numerous routing schemes are derived from the TVS-TAS-2000 distribution switcher system. Various control configurations, including RS-422 computer control are possible. The Bosch TCS-1 machine control will interface.

Other new products include the KCA-110 ENG camera.

Circle (491) on Reply Card

see ad on page 123

BOWEN BROADCAST SERVICE TELEHO service

A terminal at your engineering location accesses the TELEHO system via telephone lines for instant answers to your questions. A hard-copy printout of answers reduces errors from handwritten or voice-transmitted methods.

Refurbish Program

For TCR-100 users, the Refurbish Program provides the minimum required parts with a 2-week program of refurbish, update and general maintenance.

Circle (979) on Reply Card

BRITISH VIDEOTEX & TELETEXT

See World System Teletext

BROADCAST AUDIO System R console

Rotary plastic faders control VCAs for tracking between channels, while dc audio switching/muting offers quiet control. An 8-mixer format is standard.

Series II retrofit kits

Slider faders may retrofit to the Series II consoles.

System 14A console

System 14A incorporates analog controls into a mixer otherwise similar to the System 14 digitally controlled 14-mixer unit.

ProCraft furniture

ProCraft is a line of custom modular studio furniture incorporating BAC consoles into an integrated system.

Circle (493) on Reply Card

see ad on page 172

BROADCAST CARTRIDGE SERVICE

Videocassette reloading

Old, damaged and abused videocassettes may be reloaded with new tape stock at less than the cost of complete new cassettes.

Audio heads

Direct replacement heads for Ampex recorders, manufactured by International Magnetics, are precision-designed. Heads are available for the AG series 350, 440, 440B, 440C, 300 and 354 Ampex machines.

Circle (494) on Reply Card

BROADCAST ELECTRONICS FM transmitters

A 1-tube design is common to the FM-1.5A, FM-3.5A and FM-5 transmitters. The FX-30 exciter with optional stereo or SCA generators and a solid-state IPA drive the final tube to 1.5kW, 3.5kW or 5kW power levels.

AM stereo equipment

Under license agreements with Motorola, Broadcast Electronics manufactures exciter and monitor equipment for the Motorola AM stereo system.

Circle (495) on Reply Card

BROADCAST MICROWAVE SERVICES

Gyro-controlled antenna

The GCA-1 antenna system stabilizes pointing of a high gain antenna array (16dBi) for an airborne installation. Gyro-control maintains the proper antenna direction. A directional bearing gauge eases adjustment for alternate receiving sites.

TBR-50A receiver

Up to 21 channels at 2GHz, or nine channels at 2.5GHz, are tuned with the frequency-agile TBR-50A video receiver. At just less than 2 pounds, the receiver handles video, audio and two aural subcarriers.

Circle (496) on Reply Card

BROADCAST SYSTEMS

**VTM-1000 monitoring system,
VTC-1 studio/video test system,
Prewired audio jack panels, and
TM-100 transmitter input monitor**

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (497) on Reply Card

see ads on pages 149 and 175

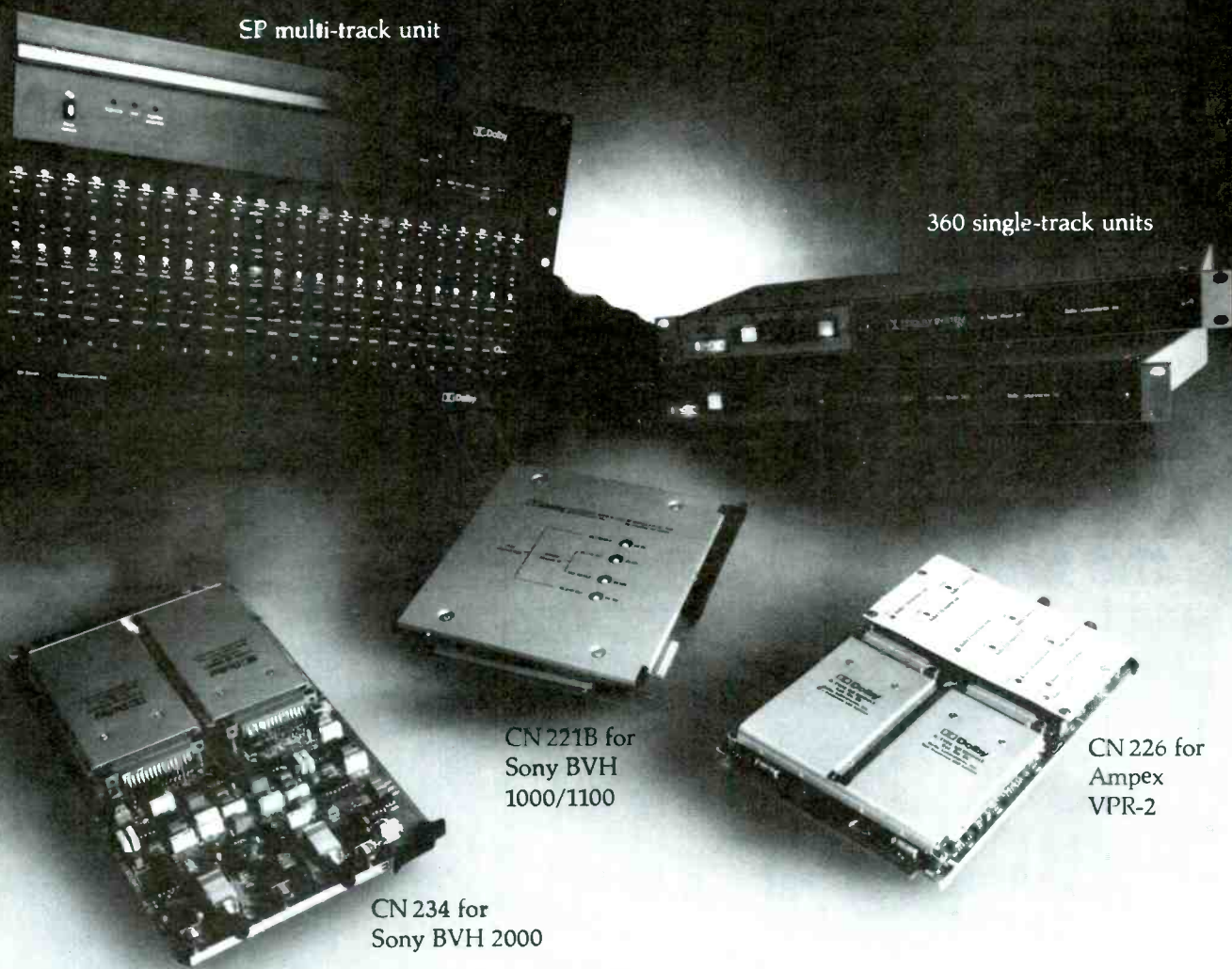
BROADCAST TECHNOLOGY SP9510 signal processor

Dc control allows static and dynamic control of the ISO-octave centered 10-band SP9510 graphic equalizer. Manual, dynamic equalization and parametric bounding modes are available.

Interrupter system

Nine interruptible cue send outputs are available from a PI2320 program

DOLBY® NOISE REDUCTION FOR THE 1980'S



Dolby noise reduction is keeping pace with today's demand for high-quality sound — everywhere. With the introduction of such products as plug-in modules for VTRs and the SP multi-track unit, it is easier than ever before to protect *all* your irreplaceable audio tracks from hiss, hum, and print-through. From broadcasting to music recording, from video sweetening to motion picture dubbing, Dolby A-type NR reliably continues to fulfill its original promise: effective noise reduction combined with complete signal integrity.

Dolby Laboratories Inc., 731 Sansome St., San Francisco, CA 94111.
Telephone 415-392-0300. Telex 34400, 346 Clapham Road, London SW9,
Telephone 01-720-1111. Telex 919109. "Dolby" and the double-D symbol
are trademarks of Dolby Laboratories Licensing Corp. 583/9050

 **Dolby®**

interrupt unit, a director's communications units for remotes.

HA1290 amplifier

Powered by a 9Vdc battery, the HA1290 headphone amplifier unit also serves as an emergency line driver or an isolation amplifier.

Audio DA

BTI 0A-400 op amp units form the 1-in/10-out DA7111 audio distribution amplifier. Transformer isolation is provided on inputs and outputs.

VU3721/3722 level indicators

Ten LEDs show VU ballistics, while a second group gives peaks from 4-17dB over 0VU in the VU3721. The VU3722 offers dual 20-LED displays.

Line amp modules

Transformers give a shielded input and up to three outputs for low noise, low distortion operation in the AL3102 line amplifier.

AB3104 quad amplifier module

Four low noise buffer amplifiers couple high impedance balanced or single-ended sources to single-ended low impedance inputs.

Circle (498) on Reply Card

BROADCAST VIDEO SYSTEMS

EV4040A WFM

Improved performance is offered by the EV4040A 1/2-rack-wide waveform monitor manufactured by Electronic Visuals.

EV4020A vector monitor

Improved performance and stability may be expected from the EV4020A vector display from Electronic Visuals.

SA-101 safe area generator

Currently in prototype, the SA-101 includes five independent inputs and outputs. Individual controls for each output inserts a cross at picture center and markers for legal blanking limits.

VIC-900 ID/control system

Pre-programmed alphanumeric messages are carried in the vertical interval for controlling up to 32 contact closures. Up to 128 decoders may be addressed from a single data encoder.

600/600J color correctors

The Michael Cox 600 and 600J color correctors provide gray, white, peak white and black level color correction. For NTSC or PAL signals, corrections affect encoded video. Time code may control corrections.

Circle (499) on Reply Card

see ad on page 154

BRYSTON MFG. LTD.

1B preamplifier

Presenting the optimal interface between source and power amplifiers, the 1B preamp unit covers 20Hz-20kHz. The system is designed for high quality sound systems.

Circle (500) on Reply Card

BUSH & MILLIMAKI

BVM-231M

A new device that allows you to back-focus on video camera optically to 1/10,000 of an inch.

Circle (721) on Reply Card

CMC TECHNOLOGY

TD-800 bulk eraser

Effective demagnetization of any recording tape results from this bulk tape demagnetizer. Erasure level for 2-inch tape with a 310 oersted coercivity is -60dB.

Circle (502) on Reply Card

CMX/ORROX

The EDGE

The EDGE editing controller system may be updated and expanded to become a full-featured, 3-machine system, with CMX edit decisions.

CMX 3400 edit controller

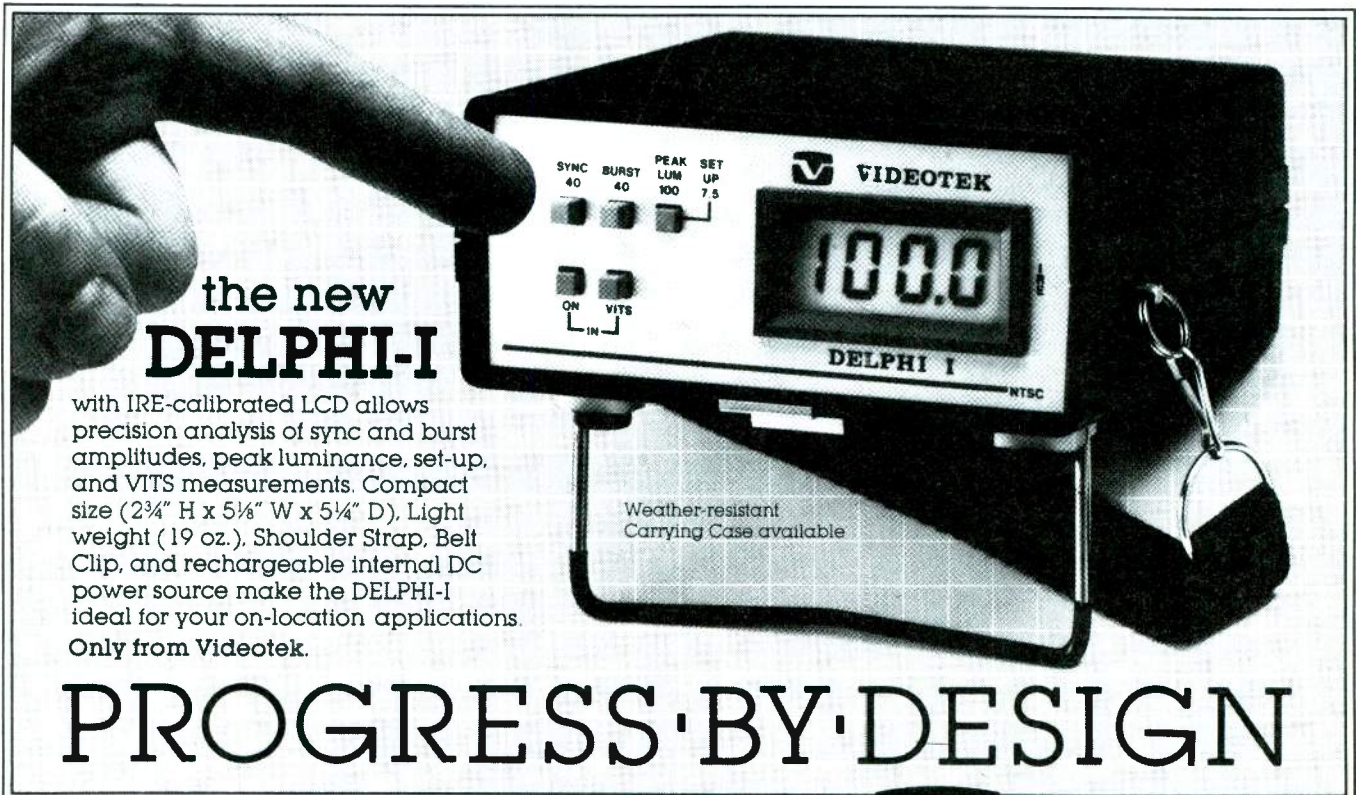
User-programmable function keys, improved list management, expanded edit decision listing, look-ahead preview and mark file increase editing flexibility.

CMX 3400 + edit controller

A user-configured keyboard, user-programmable keys, touch screen control, voice command editing in any language and program content editing let the editor operate with the support of advanced technology.

Circle (503) on Reply Card

the first portable Digital Waveform Monitor...



the new DELPHI-I

with IRE-calibrated LCD allows precision analysis of sync and burst amplitudes, peak luminance, set-up, and VITS measurements. Compact size (2 3/4" H x 5 1/8" W x 5 1/4" D), Light weight (19 oz.). Shoulder Strap, Belt Clip, and rechargeable internal DC power source make the DELPHI-I ideal for your on-location applications.

Only from Videotek.

Weather-resistant Carrying Case available

PROGRESS·BY·DESIGN

125 North York Street, Pottstown, PA 19464. (215) 327-2292, TWX: 710-653-0125
9625 North 21st Drive, Phoenix, AZ 85021. (602) 997-7523, TWX: 910-951-0621



VIDEOTEK INC

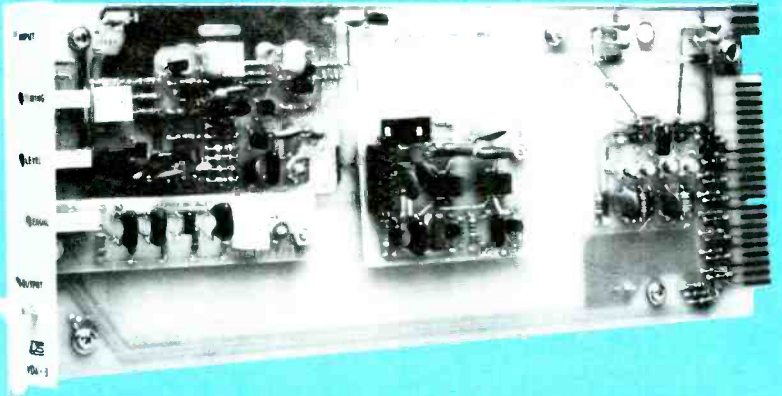
Circle (40) on Reply Card

NEW FROM UTAH SCIENTIFIC -- VIDEO AND AUDIO DA'S

These new DA's feature 8-outputs and are built to the same standards that have brought Utah Scientific to the No. 1 position in routing switcher sales. As with the switchers, they are covered by a 5-year parts and labor warranty.

VDA-8 VIDEO DISTRIBUTION AMPLIFIER

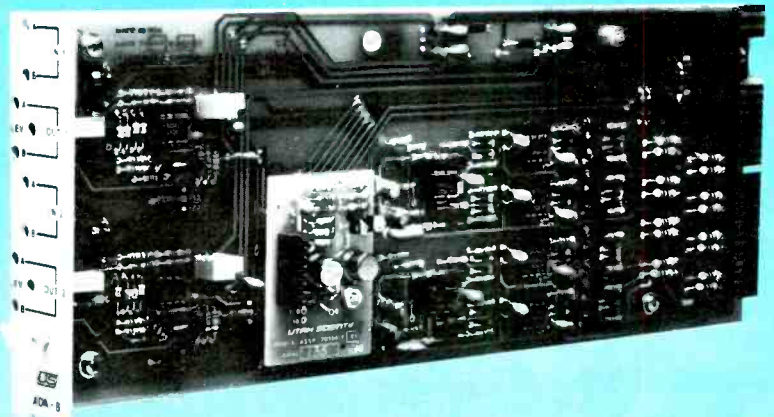
- 8-outputs per DA, 80 per rack frame
- Optional feedback clamp and cable equalization
- Adjustable path length
- 0.1%/0.1° diff. gain/phase
- Differential input
- On-card regulators for failure isolation
- Front panel test points and user adjustment
- Field installation with just two screws



VDA-8 Video DA shown with equalizer and clamp options installed.

ADA-8 AUDIO DISTRIBUTION AMPLIFIER

- 1-in/8-out or dual 1-in/4-out
- -6 dB to +30 dB gain control
- Outputs short circuit protected
- +24 dBm input and output level
- 0.5%/±.05 dB distortion and flatness
- Optional remotely controlled gain or mix
- Input over-voltage protected



ADA-8 Audio DA shown with remote gain/mix option installed.

Please call the factory or your nearest video systems distributor and learn how to get top specifications at competitive prices — and the bonus of eight outputs instead of six — all from Utah Scientific DA's.



RF-50 Rack Frame shown with five ADA-8 Audio DA's, five VDA-8 Video DA's and redundant PS-50 Power Supplies installed.

US UTAH SCIENTIFIC, INC.
a DYNATECH company

1685 West 2200 South, Salt Lake City, Utah 84119 U.S.A.

Phone: (801) 973-6840

Toll Free: (800) 453-8782

TWX: 910-925-4037



DYNATECH BROADCAST GROUP

—Building Better Broadcasting—

Circle (41) on Reply Card

CSI ELECTRONICS

T-100-A1 transmitter

Rated for 100kW AM, the T-100-A1 AM broadcast transmitter is designed around proven RF and modulation circuits. Fusing, metering, tuning and loading are all located on the front panel for easy accessibility.

T-50-A transmitter

Nearly every control or adjustment required for normal operation is located on the front panel of the 50kW rated T-50-A broadcast transmitter.

Circle (504) on Reply Card

CABLEWAVE SYSTEMS

FLC Wellflex cable

A low loss, low density foam dielectric is used in FLC 12-50J (½-inch) and FL 78-50J (¾-inch) coaxial cable. Velocity of propagation is spec'd at 88%. The ½-inch cable is usable to 8GHz, the ¾-inch to 5GHz.

Other new products

Self-flaring connectors.

Circle (505) on Reply Card

CALIFORNIA MICROWAVE

Product line includes the SAT10 radio program receive-only earth station and the AD2A dual-frequency downconverter.

Circle (980) on Reply Card

CALVERT ELECTRONICS

Planar triode

Along with a wide variety of tube types for all radio/TV needs, Calvert offers the Eimac Y730 planar triode. The ceramic/metal device may operate to 1.5GHz, and is suggested for 100W peak sync TV translator service applications.

Circle (506) on Reply Card

see ad on page 49

CALZONE CASE

Convoy II series

These durable, lightweight cases allow travel around town.

Circle (1153) on Reply Card

THE CAMERA MART

Rental program

Camera Mart provides equipment on a rental basis for video production requirements. The line includes equipment for motion picture applications as well.

Circle (507) on Reply Card

CAMERA HOUSINGS UNLIMITED

SCEAM system

Self-Contained Electronic Aqua Media (SCEAM) includes an aluminum housing to fit most video cameras with a corrective dome port for 6.5-23mm Fujinon zoom lenses. The waterproof camera enclosure, usable to 330-foot depths, allows full external camera controls.

Circle (956) on Reply Card

CANARE ELECTRIC LTD.

Audio cables

In addition to a wide selection of bulk audio cable, pre-made audio cables and cable reel products, Canare offers a 5-conductor mic cable, available in 10 colors.

Circle (508) on Reply Card

CANON USA

Wide-angle adapter

Focal length increases to 20% are possible with the Canon 0.8X adapter on the J13X series and J15x19 lenses. The adapter allows the full zoom range to be used without typical vignetting at telephoto.

ENG-to-EFP conversions

25X and 20X zoom ratio lenses allow use of ENG cameras in EFP applications. Built-in 2X extenders in both systems provide extra range.

Circle (509) on Reply Card

see ad on page 163

CAPITOL MAGNETICS

Audiopak cartridges

HOLN Q17 tape material in the AA-3 cartridge includes a premium ferric oxide for studio mastering. Lengths to 10½ minutes are available.

Circle (510) on Reply Card

CAT SYSTEMS

Model 5200 uplink controller

The 5200 satellite uplink control



McMartin broadcast

"Our transmitters are so good we want you to try our other products."

We not only manufacture a complete line of AM and FM transmitters, but also produce audio consoles, monitors and amplifiers, FM/SCA equipment and satellite receivers. We have over 300 products.

We have 27 years of experience, and in broadcast, experience counts!"

Ray B. McMartin
President
McMartin Industries, Inc.

McMartin Industries, Inc. • 4500 South 76th St. • Omaha, NE 68127 • (402) 331-2000 • Telex 484485

Circle (42) on Reply Card

P I C T U R E P O W E R

The POWER of INNOVATION... The exclusive extra in every Fortel product since 1973.

INNOVATION that delivered the world's first CCD Time Base Corrector — the first TBC to offer the power of component processing.

INNOVATION that, two years ago, created the Y-688³² Total Error Corrector...the first "dub" TBC, and the most powerful multi-processor for heterodyne VTRs in the world. Today THE STANDARD by which all others are judged.

INNOVATION that, last year, produced the world's first and only YIQ TBC to utilize the power of the new 1/2" Type "M" VTR's.

Now, Fortel introduces the power of the latest microprocessor and RAM technology in its DIGIBLOC Series of Frame Synchronizers, Audio Synchronizers, and Time Base Correctors. Innovation that creates new standards in performance, price and compactness.

The power of innovation. Power to bring you better pictures and better performance at better prices. Power that has delivered more than 2,000 systems around the world. Power to make us the fastest growing Company in the industry. Today and tomorrow, only Fortel gives you the POWER of INNOVATION for better pictures.

The Fortel logo consists of a red parallelogram shape pointing to the right, with the word "FORTEL" written in white, bold, sans-serif capital letters across its center.

FORTEL



**POWERFUL
PARTNERS**

The Challenge: POWER to produce pictures from heterodyne VTR's that look like pictures from full bandwidth formats; and make third generation U-Matic playback look like that from a 1" VTR, at a fraction of the cost.

The INNOVATION: The Y-688³² Total Error Corrector™...the first "dub" TBC and the most powerful multi-processor in the world.

The power of the Y-688³² TEC delivers the best possible picture quality from any heterodyne VTR. In only one year the Y-688³² TEC has become the fastest selling multi-processor in the world. THE STANDARD by which all other TBC's, noise reducers and multi-processors are judged.

The Y-688³² TEC's innovations include:

Component (Y-688) Signal Processing — The Y-688³² TEC is the only NTSC corrector to use Y-688 "dub" component signals. Heterodyne processing is eliminated, and with it the major cause of multi-generation quality loss defeated.

DYNA-TRAC™ — Dynamic tracking for new slow motion VTR's — better than OEM's. The Y-688³² TEC uses high quality Y-688 "dub" signals from the Sony BVU-820 VTR for flawless reverse to 3X forward play speed, including stop action.

Phase Comp™ — Fortel's exclusive look-ahead chroma phase noise correction circuit provides up to 18dB of chroma phase noise reduction with no color smearing.

32 Line, Dual Channel Digital TBC — The Y-688³² TEC uses two separate 32 line digital memories (one for luma and one chroma), for more headroom, for better signal performance, for greatly reduced luma/chroma crosstalk. The 32 line memories also allow perfect slow motion and shuttle performance.

Adaptive Digital Combs — Two 3-line adaptive digital comb filters separate luma and chroma information and reduce chroma phase and amplitude noise by 4.2dB. Switchable combing below 2.5MHz eliminates vertical smear. Drop out compensation is standard.

High Speed Shuttle — An optional Shuttle Search accessory provides up to 40X normal speed for reverse and forward viewing.

Color Correction — Fortel CC-1 Color Corrector uses high quality Y-688 "dub" signals to produce highest quality color corrected pictures. The CC-1 can balance color out of blacks and whites, and independently correct the color saturation, hue and luma level of the six color vectors. It also compresses and stretches blacks and whites. The CC-1, a must for the professional teleproducer or broadcaster.

Automatic Image Correction — The Y-688³² TEC incorporates patented advanced image correction circuits for reducing luma and chroma noise, sharpening chroma transitions, and correcting luma/chroma timing errors. Use of Fortel's RECORD 1™ and RECORD 2™ pre-record processors — developed by **FAROUJIA** Laboratories prevent detail loss and automatically control image correction functions. Manual control is also available.



Remote Control — Provides full function remote control of the Y-688³² TEC.

The Y-688³² Total Error Corrector. The POWERFUL PARTNER for today's professional series 3/4" or 1/2" VTR's. Call or write Fortel today for more information.

Y-688³²
Total Error Corrector

FORTEL



PICTURE POWER

FORTEL

The Challenge: POWER to meet the changing needs of the 80's, and help the professional teleproducer make the transition from analog to digital video.

The INNOVATION: The DIGIBLOC™ Series — Digital video building blocks with the most advanced digital micro-circuits and software flexibility to provide an efficient, low cost, compact system for professional video and audio requirements.

FS-1 Frame Synchronizer™ — The industry's most advanced frame synchronizer features:

- Dual microprocessor memory and function controls.
- Automatic, direct or heterodyne operation.
- 14.3 MHz digital sampling rate with optional 8 or 9 bit quantizing.
- Direct and heterodyne time base correction.
- Advanced 64K RAM's provide 4 times the memory in the same space as the 16K RAM's used in most synchronizers for lower power consumption.
- User programmable hot switching to meet individual requirements.
- RS 170A video output.
- 3.58 subcarrier operation for full bandwidth processing with heterodyne VTR's.
- Phase Comp™ look ahead circuits for the most advanced velocity compensation in the industry.
- Low cost comb filter for hot switching and production freezes, or optional 3 line adaptive digital comb filter for the highest quality production freezes and noise reduction.
- Single coax cable RS432 interface to DIGIBLOC AS-1 Audio Synchronizer and DIGILINK Remote Engineering Station.
- Optional **FAROUDJA** automatic image improvement.

FS-2 Frame Synchronizer™ — The FS-2 includes all of the FS-1 features plus:

- 2 frame synchronization for perfect automatic color framing without horizontal picture shift.
- Multi-freeze for up to 4 fields of still store capacity.

AS-1 Audio Synchronizer™ — The AS-1 is a digital audio synchronizer that can be used with the FS-1 and FS-2 Frame Synchronizers for automatic compensation of audio-to-video path delay. It can be controlled manually or by SMPTE time code in any audio timing path correction application, as well as through the DIGILINK interface by DIGIBLOC Series frame synchronizers.

AS-1 features include:

- Microprocessor control and single coax cable RS432

interface to DIGIBLOC FS-1, and FS-2 for automatic compensation of audio-to-digital delay, commonly referred to as "lip-sync" error.

- Multiple parallel audio channel control by slaving any number of AS-1's to a master.
- Manual fixed audio delay using the front panel bias control.
- SMPTE time code channel for automatic control of transmission path delays or conventional synchronizers.

DIGILINK Remote Engineering Station™ — A single coax cable RS423 interface provides remote engineering control of DIGIBLOC FS-1 and FS-2 synchronizer functions, including:

- Input video mode (direct, heterodyne or automatic).
- Monitor viewing (input video, output video or split screen).
- Full proc amp level adjustment.
- 1 field, 1 frame or 2 frame synchronization.
- Multi-freeze selection and control.

TBC³² Time Base Corrector™ — A powerful innovation in performance, cost, size and weight — state of the art direct or heterodyne digital time base correction on a single printed circuit board. Unparalleled performance, unequalled compactness, unmatched light weight, at a new, low price. Another Fortel exclusive.

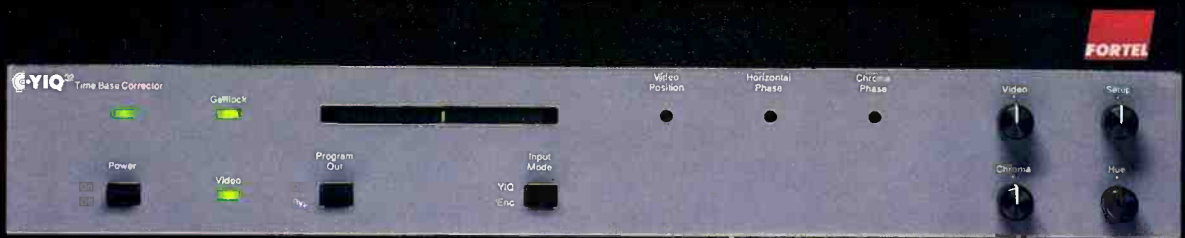
The compact power of the TBC³² delivers:

- Time base correction meeting or exceeding the performance of any 1" type "C" format or 3/4" U-Matic TBC.
- A single channel TBC in only one rack unit (1 3/4").
- A dual channel TBC in only two rack units (3 1/2").
- Optional 8 or 9 bit quantizing at 14.3MHz sampling rate.
- A super wide 32 line window of correction.
- Phase Comp™ with first and second order velocity compensation.
- Drop out compensation based on previous and following line averaging.
- Dynamic tracking in the direct or heterodyne mode from 2X reverse to 4X forward play speed, including stop action.
- Shuttle mode viewing of ± 45X play speed.

The DIGIBLOC Series of Frame Synchronizers, Audio Synchronizers, Time Base Correctors and DIGILINK Remote Engineering Stations are available today. DIGIFECTS™ Digital Special Effects, and more new digital video products are coming soon. The DIGIBLOC Series...digital building blocks for the 80's.

Innovation gives you PICTURE POWER, only from Fortel. Call or write today for more information.

DIGIBLOC Series
Frame Synchronizers Time Base Correctors Audio Synchronizers



**PURE
POWER**

The Challenge: POWER to time base correct new 1/2" Type "M" VTR's pure YIQ signals without conversion to composite NTSC or PAL video.

The INNOVATION: The C-YIQ³² Time Base Corrector™; another result of Fortel's ongoing research in component signal processing. The C-YIQ³² is the only TBC that uses pure YIQ signals to work with the new Type "M" format, high speed 1/2" VTR's offered by RCA, Ampex and other world leaders in video — powerful evidence of Fortel's leadership. Because of its superior picture quality, the C-YIQ³² TBC was selected over all other TBC's for the first major Type "M" installation at WNEV-TV in Boston.

The C-YIQ³² power provides:

YIQ Component Processing — The C-YIQ³² is the only stand alone TBC that time base corrects full bandwidth, pure baseband YIQ component video signals. YIQ processing eliminates picture quality loss due to heterodyne processing or composite NTSC encoding and decoding.

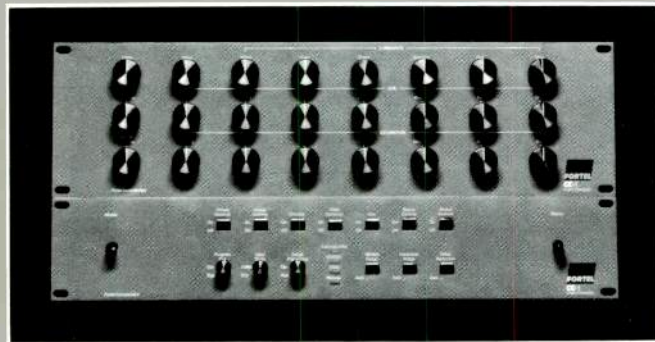
Y-688 Output — The C-YIQ³² provides a 2 wire Y-688 "dub" output for dubbing to 3/4" U-Matic VTR's. Using Y-688 signals for dubbing produces pictures of better quality than a live encoded feed.

32 Line TBC — Field trials have shown that a 32 line window of correction is necessary to correct the large gyroscopic errors produced by the high speed, shoulder mounted Type "M" VTR's. The C-YIQ³² has two 32 line digital memories for separate time base correction of the luma (Y) and chroma (I, Q) components of the color video signal. Time base correcting the luma and chroma separately reduces luma/chroma crosstalk.

Search Mode Viewing — The TBC control input from a 1/2" Type "M" VTR to the C-YIQ³² TBC permits viewing in the search (jog) mode.

3.58 Feedback Operation — The C-YIQ³² can be used to time base correct 1/2" VHS and 3/4" U-Matic video with 3.58 Feedback for full bandwidth operation.

Color Correction — Fortel's CC-1 Color Corrector can use high quality Y-688 "dub" video from the C-YIQ³² to produce the optimum in color corrected pictures. The CC-1 has RGB output, full remote control and joy stick control of individual vectors. Use the CC-1 to balance color out of blacks and whites and correct the color saturation, hue and luma level of the six color bar colors. The CC-1 also compresses and stretches blacks and whites.



Unleash the PURE POWER of the YIQ format with the C-YIQ³² Time Base Corrector. Call or write Fortel today.

C-YIQ³²

Time Base Corrector

FORTEL



PRICE POWER

The Challenge: POWER to produce the highest performance time base corrector for heterodyne VTR's, at the lowest price.

The INNOVATION: The CCDHP Time Base Corrector, a low cost third generation CCD TBC that uses Y, R-Y and B-Y component processing.

Fortel pioneered the use of digitally controlled CCD's (charge coupled devices) for time base correction in 1978. The new CCDHP is a full function TBC that meets all FCC requirements. It corrects time base error to RS170A specifications and can be used to do A-B rolls and special effects. It gives the most powerful performance of any heterodyne TBC in the world.

Features and specifications include:

- A new Y/C separator developed by **FAROUDJA** Laboratories
- Full proc amp control
- Noise reduction and horizontal enhancement control
- 60dB signal to noise ratio

- Differential phase and gain of 0.5° and 1.5%, 2% K factor
- Corrects wrong field edits automatically
- Wide bandwidth matches newest U-Matic VTR's.
- NTSC and PAL models

But the most outstanding feature is the price. At \$5,995, the CCDHP is the lowest priced heterodyne TBC on the market.

The low PRICE high POWER of the CCDHP Time Base Corrector is available to you only from Fortel. Call or write today for more information.

CCDHP

Time Base Corrector

TMRECORD 1 and RECORD 2 are trademarks of Faroudja Laboratories.

TM-68B32 Total Error Corrector, C-YIQ32 Time Base Corrector, CCDHP, DIGIBLCC, DIGILINK, DIGIFECTS, FS-1, FS-2, AS-1, CC-1 and TBC32 are trademarks of Fortel Incorporated.

Fortel Incorporated
6649 Peachtree Industrial Boulevard
Norcross, Georgia 30092
Telephone 404-447-4422
Telex 804822



system includes computerized control of antenna positioning, polarization, RF switching, exciters and HPAs. System status is displayed on a CRT through color graphics.

Model 5250 uplink controller

The 5250 satellite uplink remote control system provides control functions for LNA, exciter, receiver, HPA, microwave, polarization and RF switching with system conditions displayed on a color graphics CRT.

Broadcast transmitter remote control

Model 6200 shows the status of the transmitter system on a color graphic CRT display. Computer technology provides control and monitoring.

System 4000 graphics system

A digitizer pad and font generator combine with various brush sizes and types to provide colorful graphics for video production.

Circle (511) on Reply Card

CeCO COMMUNICATIONS

Distributor

A wide variety of transmitter and camera tubes may be obtained from CeCo. A new video department handles camera operator equipment such as microphones and headset. A line of CRTs is available.

Circle (714) on Reply Card

CENTRAL DYNAMICS/ AMERICAN DATA

CD series 80 switchers

Dual masking and dual matte generators for key levels 1 and 2, split screen key borders and new spin wipe modes are a few features of the series 80 line, which includes the CD 480, CD 680 and CD 180. DSC Flexikey provides low cost digital effects.

VMK3700 video mixer keyer

Two backgrounds and four title sources may be input to the VMK3700 video mixer keyer for a variety of mix, wipe, title and fade effects in conjunction with series 80 switchers.

VA2300 DAs

Video and pulse DAs include differential inputs, flat response and back porch clamp compatible with sound-in-sync signals in NTSC, PAL and SECAM. Seven modules handle any requirement.

SDS-2 distribution system

A basic 32x32 array in the SDS-2 routing/distribution system may be expanded to 512x512 for a variety of control formats. MicroPatch, a CRT status display, shows how audio, data and video signals have been switched by the computer control system.

MC-4000 master control switcher

A compact control console based microprocessors may deal with up to 32 inputs for AFV switching as well as eight audio-only inputs. Two film islands, four audio-only starts and 10 VTRs may be controlled in a system available in NTSC, PAL and PAL-M.

Circle (43) on Reply Card

VAS 1010 switcher

Four configurations of the 10x1 VAS 1010 utility switcher include video only, audio only, audio follow and audio/video breakaway. The switching systems are stackable to 10 high.

DSK 864 downstream keyer

Production and master control switchers may be upgraded with the stand-alone DSK 864. The unit provides title keying and master fade-to-black capabilities. NTSC and PAL versions of the keyer include four inputs and program material derived from gen-lock.

Circle (512) on Reply Card

CENTRO

C-1000 EFP vehicle

An ultracompact teleproduction vehicle, the C-1000 is designed to provide budget-priced, quality remote production facilities for ENG broadcast and CATV franchise requirements. These custom systems, constructed on a Ford truck chassis, offer optimum working environments for up to five operators.

Mobile production vans

A 40-foot teleproduction trailer, constructed for KWGN-TV 2, Denver, features Ikegami 357 cameras with computer setup, triax operated HL-79 cameras, GVG switching ADDA digital effects, Chyron font generation, Neotek audio console, Ampex and Sony VTRs, Ampex and Teac ATRs and other features.

Teleconferencing facilities

Complete custom teleconferencing systems may be requested from the Centro Corporation design staff.

Circle (513) on Reply Card

CENTURY PRECISION OPTICS

Lens services

A variety of repair and custom modification services are available from the company.

Lens system products

A wide line of lens adapters, filter adapters, zoom lens accessories, lens mounts and lens conversion services are provided for film and video.

Circle (514) on Reply Card

CETEC ANTENNAS

JSP spiral antennas

Power levels to 50kW per panel are suggested for the JSP CP FM spiral panel antennas designed for multiple station operation. A VSWR of 1.1:1 across the 88-108MHz band is specified.

Wideband panel antennas

A newly designed wideband panel antenna provides high power levels with a controlled bandwidth to provide better effective coverage of the area of license.

Circle (515) on Reply Card

see ad on page 135

CETEC BROADCAST

VIC control system

Voice Information Control is a synthesized voice device that attaches to automation systems to verbally announce the operational or alarm status of the equipment. VIC may be retrofitted to existing 7000 automation systems.

Centaur business system

Centered on an IBM System/23 Data Master computer, with dual floppy discs, the Centaur may be expanded to a 15Mbyte Winchester computer. Full billing and traffic includes accounts receivable.

SatTak commercial automation

A signal from satellite reception starts the first cart in the SatTak commercial automation system. Each carted message will be played sequentially until an open tray is sensed. The open tray causes the network programming to be returned to air.

Circle (957) on Reply Card

CETEC VEGA

T-80 series wireless mics

Three T-80 mics incorporate Dynex II audio processing with AKG and Shure cartridges. An internal dipole antenna improves operation.

R-31 PRO receiver

Infinite gain receiver technology, switch-selectable audio processing, low distortion and ac/dc powering options are features. Optional Dynex II processing makes the unit compatible with T series transmitters.

PRO PLUS receivers

Single-channel (R-41) or dual-diversity (R-42) receivers include switch-selected Dynex II processing and infinite gain designs for low noise and distortion with flat audio.

C-466 quad case

Four model 66 receivers plug into a case with a multicoupler, allowing up to 4-channel operation from one antenna. The lid includes space to house four model 77 transmitters and extra 9Vdc batteries.

Model 77 Dynex II transmitter

A pocket-size package, operating in the 150-216MHz spectrum, provides a 10k Ω input impedance to allow use of several favorite mics. Weighing about 5 ounces, the model 77 Dynex II produces a 50mW RF output.

Circle (516) on Reply Card

see ad on page 53

CHASE MEDIA/

BRINER CHASE GROUP

Phoenix system

Broadcast station automation combines with the station's business requirements in the Phoenix System. Accounting, music format control and multiple machine control are featured.

Circle (517) on Reply Card

JOHN CHILES

The company's product line includes lights and lighting accessories; battery packs, chargers and belts; fiber-optic systems; and camera accessories.

Circle (987) on Reply Card

CHRISTIE ELECTRIC MaxERASE-16 degausser

All types of magnetic recording materials, from 2.6"x16" diameter reels, cartridges, cassettes and discs may be bulk-erased by the MaxERASE-16 degausser. Erasure levels to -95dB are possible.

Nicad warranty

Nicad batteries manufactured by Christie Electric after April 1, 1983, carry a 12-month warranty for repair or replacement. These batteries now include mounting arrangements for almost all cameras.

TC-1 slow charger

Regulated current from the TC-1 slow battery charger is constant regardless of the charging load up to 12 cells. A solid-state timer avoids overcharging.

SMT charger

Model SMT is a rapid-charge unit compatible with nearly all Christie battery packs. Operating from 115Vac or 230Vac, the system uses the Christie "burp" concept for charge times of 20 minutes or less.

Low power warning

A warning light on nicad batteries indicates reduced power capacity, helping to avoid dead-battery problems in the field.

Circle (518) on Reply Card

CHYRON

VP-2 character/graphics generator

A low-cost, high resolution graphics generator, the VP-2 system includes a complete keyboard and micro disc drive. A menu/cursor operation accesses 6-font capability, 512 colors and 35ns resolution.

Digifex

The Digifex system provides digital video effects generation to enhance capabilities of the Chyron IV. Many effects and patterns include matrix wipes and split images.

SB-1 scoreboard unit

Interfacing to the Chyron IV or RGU generators, the SB-1 provides four 3-digit thumbwheel switches to enter sports scores or other similar data.

Camera font composer

Creation of additional fonts or logos is possible on the RGU generator by the interfacing of a camera font compose unit.

Circle (519) on Reply Card

see ad on page 119

CINE 60

Cool chargers

Three models of cool battery chargers handle most battery requirements. One is a universal system, for 1.2-20Ah and 6-30V batteries. The second is a pocket-size unit for 2.5-7Ah, 12-14.4V systems. The third is a dual-channel, table-top version of the pocket-size unit.

Fast charger

Universal battery charging may be accomplished with the updated 9400 fast charger for 6-30V batteries rated 4-20Ah.

"Communicator" battery

The S-1200 battery is compatible with the Swintek Communicator, providing 12 hours of operation per charge.

Sun-Gun belt

Two models of the 8304FC fast charge Sun-Gun battery belt are switchable to offer versatility. Each provides 14.4V and 30V levels.

Sun-gun lamp

A 14.4V, 70W lamp operates for about 45 minutes on a 4Ah battery. It is a special version of the FAV, FBV, FBT and FBW series lamps.

Canon lens battery

Model CSFJ 13/15 designates a nicad battery for use with Canon's J13x9B and J15x9.5 lenses for remote servo focus operation.

Fujinon lens battery

The OBZ-76 battery, currently used with TK76 cameras, powers the Fu-



10 ways to solve your most common microphone problems.

- Input Overload A15AS Microphone Attenuator—inserts 15, 20 or 25 dB loss to prevent overload.
- Phasing A15PRS Switchable Phase Reverser for balanced lines.
- Low-Frequency Noise... A15HP High Pass Filter—reduces low-frequency noise and proximity effect.
- High-Frequency Noise ... A15LP Low Pass Filter—reduces objectionable high-frequency noise.
- Lack of Presence A15PA Presence Adapter—adds intelligibility and brilliance.
- Excessive Sibilance A15RS Response Shaper—sibilance filtering, plus flattened response.
- Adapting Line Level to Mic Input A15LA Line Input Adapter—converts balanced low-impedance mic input to line level input.
- Matching/Bridging/ Isolating A15BT Bridging Transformer—matches balanced or unbalanced devices of different impedances.
- Troubleshooting A15TG Tone Generator—700 Hz signal helps check levels, connections, mixer inputs, and cables.
- Microphone Impedance Matching A95 and A97 Series Line Transformers—make it possible to connect low impedance lines to mid and high impedance inputs (or vice-versa).

Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204, (312) 866-2555.

SHURE®

THE SOUND OF THE PROFESSIONALS®... WORLDWIDE

Circle (45) on Reply Card

**WE'VE DEVELOPED
A WAY TO
ELIMINATE
HORIZONTAL SHIFT.
AUTOMATICALLY.**

Grumman has solved the problem of horizontal shift caused by improper SCH timing. And solved it in a way that's not only economical, it's automatic. With our SYNC PROC™ unit you won't waste time, people and test equipment establishing SCH. And editors won't have to use trial and error to get the correct matched frame edit between two video signal sources.

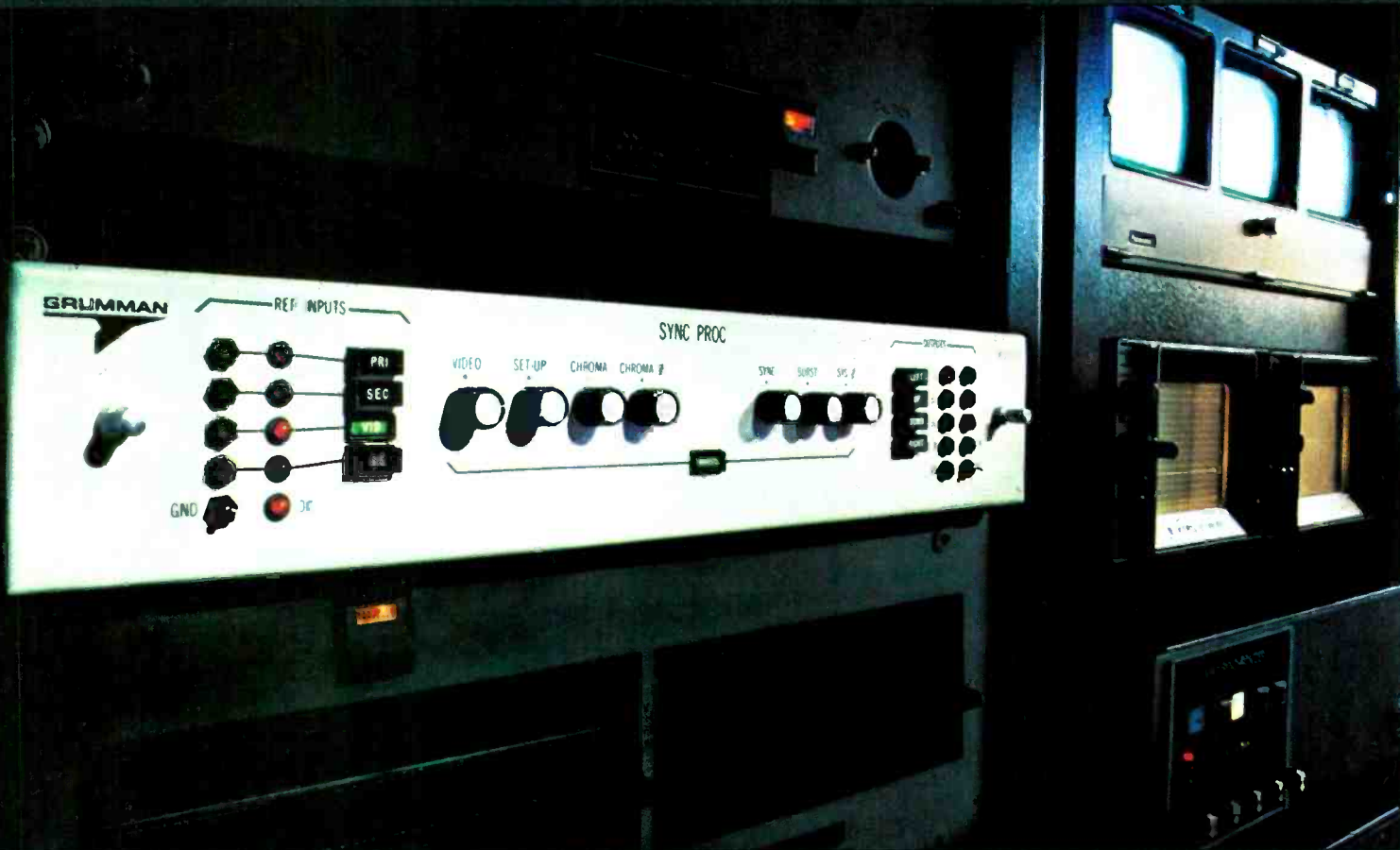
SYNC PROC™ solves the problem in a simple way. It generates a color field identification signal that's positioned on the "front porch" of the TV signal. The ambiguity with RS-170A is thereby ended; you get positive identification for one field of the four-color field sequence. With color field identification, the SYNC PROC™ automatically maintains proper SCH timing, eliminating horizontal shift.

SYNC PROC™ provides the

most economical method of maintaining an SCH timed plant.

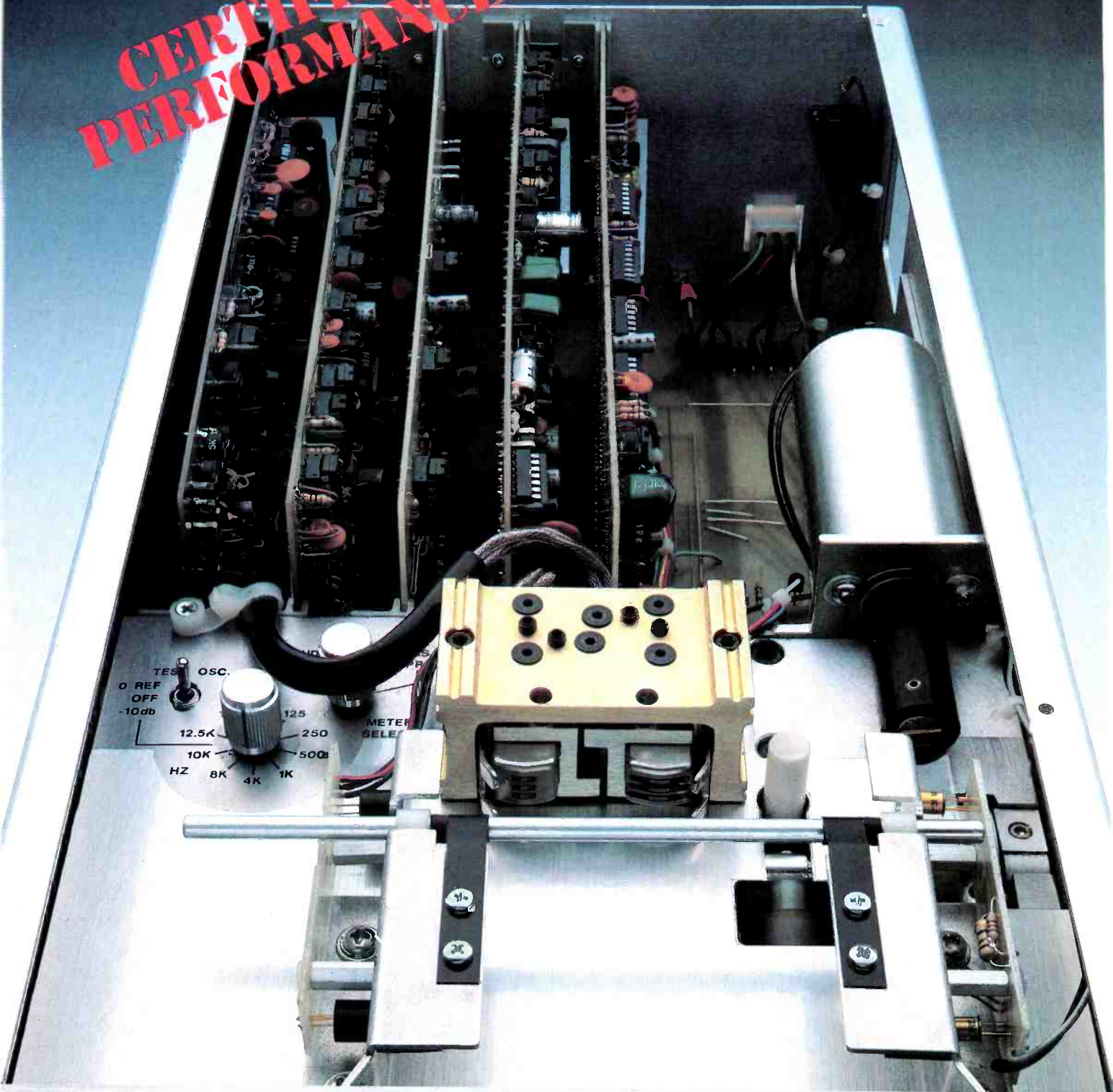
And it comes packaged with normally required features: a processing amplifier and sync generator and other optional features. Our expanding line of unique process and control products for the broadcast industry include color encoding, satellite transmission processing, machine control and many other state-of-the-art developments, and beyond.

For more information, write Business Development, Mail Stop A24-43, Grumman Aerospace Corporation, Great River, NY 11739, or call (516) 435-6001.



Circle (46) on Reply Card


**CERTIFIED
PERFORMANCE**



TAKE A CLOSE LOOK AT THE NEW PRIMUS™ CART MACHINES.

Introducing the PRIMUS (pree-mūs) cartridge recording/reproduction system from Ramko Research.

These new cart machines are engineered to be demonstrably and dramatically better than any other cart machines in the industry. They deliver signal-to-noise, distortion and frequency response specifications that are unrivaled. They set a new standard for the lowest wow and flutter. They're built rugged throughout to guarantee adherence to specifications.

COMPARE THESE SPECIFICATIONS: YOU BE THE JUDGE.

roller is engaged by an adjustable air-dampened solenoid with a Teflon-coated plunger for friction-free, quiet operation. Optical sensors start the motor when a cart is inserted. This not only eliminated start-up wow, but it means there are no mechanical switches to break or jam. Bearings have a longer life too because the motor doesn't need to run continuously. A crystal-controlled, brushless D.C. servo motor insures timing accuracy to within 0.05%. The minimal motor heat is kept away from your tapes by a high traction, ceramic capstan. Tape speeds (7.5 & 15 ips) are field selectable.

With PRIMUS, you have three cue tones with sharp, error-free digital sensing. Solidstate bar graph meters and dynamic noise reduction are standard. An

sistently repeatable, accurate electronic phase alignment. A front panel phase meter and internal diagnostics are added for operating ease.

PhaseMaster works flawlessly with any cartridge and eliminates the compromise of unreliable and inconsistent electromechanical schemes. The trade-offs imposed by noise-inducing and non-compatible matrixing approaches are now history. Complex, inexact cross-correlation techniques have been discarded. With PhaseMaster you're positively guaranteed compatibility with all your previously recorded carts. Here's a cart machine truly ready for superior FM & AM Stereo applications — a machine that rivals the performance of an open reel recorder.

	PRIMUS™	ITC RP SERIES	AUDICORD #128	BE SERIES 3200	PhaseMaster	TOMCAT	ITC SERIES 99 B	ATR-800* (Reel-to-Reel)
Signal-to-Noise Ratio:	-60 dB	-50 dB	-47 dB	-52 dB	-65 dB	-59 dB	-56 dB	-60 dB
Distortion (System):	0.9%	2.0%	1.0%	2.0%	0.9%	0.9%	0.8%	0.3%
Frequency Response: 50 Hz - 16 kHz	±1.5 dB	±2.0 dB	±2.0 dB	±2.0 dB	40 Hz - 16 kHz ±1.5 dB	40 Hz - 16 kHz +5 -10 dB	31.5 Hz - 16 kHz ±1.0 dB	40 Hz - 16 kHz ±2.0 dB
Wow & Flutter:	0.095%	0.2%	0.15%	0.15%	0.06%	0.09%	0.15%	0.06%
Real-time Phase Correction:					locks to 5° @ 16 kHz	none	none	none
Price:	\$2,550	\$2,810	\$1,979	\$2,450	\$3,850	\$5,280	\$5,330	\$6,230

All measurements referenced to 150 nWb/m, distortion is THD @ 1 kHz.
All models are R/P stereo, priced with three cue tones.
All prices are based on latest available manufacturers' information 3/83.

All measurements referenced to 250 nWb/m, distortion is THD @ 1 kHz.
All models are R/P stereo, priced with three cue tones (excepting ATR-800)
*measurements referenced to 370 nWb/m.

A CLOSER LOOK AT BETTER ENGINEERING

Mono or Stereo, R/P or playback, here are more reasons why the PRIMUS cart machines are the industry's most advanced.

The PRIMUS transport deck is 3/8" thick cast alloy for superior stability. It's covered with stainless steel for wear resistance and EMI shielding. The machined headmount allows easy and precise adjustments. In addition, the heads are internally illuminated for cleaning and inspection. For smoother insertion and withdrawal and to prevent distortion, carts are securely held at the edges by spring-loaded rollers, rather than friction springs. To prevent tape skew, pinchroller parallelism is adjustable with the motor running. The pinch

automatic 1/2 digit timer is optional. All electronics are on plug-in modules and rear panel connectors are quick disconnect type.

In summary, the PRIMUS cart machines have been engineered to be the most sophisticated broadcast reproduction system you can buy for under \$3,000.

COMPARE THE PHASEMASTER™ YOU'RE THE JUDGE AGAIN.

If you're in the market for the ultimate Stereo phase-correcting cart machine, look to our PhaseMaster, the broadcaster's premier phase-correcting, stereo cart machine.

The PhaseMaster has all the features as PRIMUS plus, the advantages of con-

THE CERTIFIED PERFORMANCE GUARANTEE

Whether you invest in PRIMUS or PhaseMaster, you'll receive a two year warranty* and a *Certified Performance Gold Card* that instantly puts you in contact with our Technical Assistance Department over our toll-free hotline.

To put PRIMUS or PhaseMaster to task call (800) 821-2545 or contact your nearest Ramko Research sales representative or distributor. Ask about our two week free trial.

Take a close look at how the Certified Performance of PRIMUS or PhaseMaster can make your job a whole lot easier.

PRIMUS

PRIMUS is a division of Ramko Research, Inc.

Ramko Research, 11355-A Folsom Blvd., Rancho Cordova, CA 95670 (916) 635-3600 Telex: 176493 RAMKOSAC *Heads are warranted for one year.

Circle (47) on Reply Card

© 1983 Ramko Research

jinon A10x140 lens system.

Circle (520) on Reply Card
see ad on page 161

CINEMA PRODUCTS

Steadicam III

For greater operator flexibility and freedom of movement, the Steadicam Universal Model III includes modular design features, such as the camera mounting assembly and compensating angle scales.

J-6 joystick zoom

A hand-held control unit includes an internal battery and solid-state circuitry with 2-second to 30-minute zoom ranges. Operation is possible with the rechargeable 12Vdc battery or 10-35Vdc from the camera head.

Universal studio matte box

The extra wide format of the Universal Studio Matte Box allows use of widescreen lenses on many 35mm and EFP video cameras without vignetting. Two 4"x5.65" filters mount in a fully rotatable stage.

Optixx Mark XX screens

The Optixx Mark XX screens by Phoenix Communications are designed for rear-screen projection applications in high ambient light and wide viewing angle situations.

For more information, contact: Cinema Products Corporation, 2037 Granville Ave., Los Angeles, CA 90025.

CINEMILLS

Soft-Lights

Cinemills Corporation provides a wide selection of incandescent portable lighting equipment, color correction and camera filters, DMI lights, Cine 60 battery products, dimmer systems and Soft-Lights.

Circle (522) on Reply Card

CIPHER DIGITAL

710A time code reader

SMPTE/EBU codes and user data are read and displayed on an 8-digit readout. The internal character generator/insertor allows 1-line or 2-line video displays.

Series 735 readers

SMPTE/EBU information read by the 735L is shown on the front panel 8-digit display. An internal generator/insertor in the 735V provides a monitor display of data, while the 735CD includes a coincidence detector. All have RS-422 interfacing.

700 multikeyer

A character generator in the 700 multikeyer allows time data to be shown in four different video sources. An independent display delete mode of each keyer is useful for multiple iso-camera production.

760 reader

Longitudinal and VITC code formats may be read with VITC data regenerated from longitudinal format for editing environments. An RS-422 output and internal character genera-

tion are featured.

766 generator

Both VITC and longitudinal codes are generated from an internal clock. Jam sync modes are selectable for both formats and a high quality keyer for VITC data is integral.

9010 generator/translator

Longitudinal time code is translated into VITC format by the 9010. The modular system includes jam modes and a VITC keyer.

9050 reader/translator

VITC time code is translated to longitudinal format with auto code format selection. VITC data is decoded from still frame to 45X play speed.

Circle (523) on Reply Card

CIRCUIT RESEARCH LABS

SCA-2 processor/SCA generator

The SCA-2 offers main-channel interference protection with maximum quality and loudness. The SCA-2 will be available for delivery in the fall.

SG-800 stereo generator

This digitally controlled generator for use with CRL audio processing offers state-of-the-art specifications at a price substantially less than most stereo generators. A prototype was shown, and it will be in production this fall.

Circle (708) on Reply Card

CLEAR-COM

INTERCOM SYSTEMS

DLC series intercom

Digital Logic Control (DLC) provides for future microprocessor control. Systems offer 4-16 channels of point-to-point, "squawk" and party-line communications. The MS-800 mainframe accommodates two CH-4 modules, each having four separate 2-way channel capability.

Wireless intercoms

The WRS-1 system operates with 49MHz transceivers and hardwired intercoms for 2-way simplex operations. A WRS-3 base station/interface allows full duplex with one transceiver, partial full duplex with one transceiver and partial full duplex with others.

PRC transceivers

Simplex VHF transceiving (PRC-1X) and full duplex operation (PRC-3) are designed into single-muff headphone units, complete with microphones and antennas.

Remote speaker stations

Two-channel operation is available with the KB-111A remote intercom station, which includes a built-in speaker, headset jacks and a visual call signal. The KB-112 is a single-channel unit, using a push-to-talk switch on an integral electret microphone.

Circle (524) on Reply Card

CLYDE ELECTRONICS

Alpha series consoles

These modular mixing consoles vary in size and complexity. Off-the-shelf customizing is offered.

Delta series mixers

These logic-controlled push-button audio mixers feature auto level control and built-in peak limiters.

Cedub dubbing unit

A 2-channel mixer, the Cedub allows each channel to be connected to a 10-way input selector. These units may be used in the production of broadcast cartridges.

Talkback unit

The model CETB1 is an easily interfaced 10- or 20-station system.

Circle (715) on Reply Card

COLORADO VIDEO

285-C color digital transceiver

Still video images are transferred at rates to 200kbits/s using a narrow bandwidth scheme, suitable for FM, TV or satellite subcarriers. A second video memory option allows a slide-show effect. The 930 disc system incorporates multiple image storage with Apple II computer image manipulation.

Circle (525) on Reply Card

COLORGRAPHICS WEATHER SYSTEMS

NewStar

The NewStar is a complete electronic news editing and archiving system featuring full graphics for news and sports.

LiveLine

This system features videodigitizer capability and sports displays from a national sports ticker. It offers high speed animation.

Circle (716) on Reply Card

COLORTRAN

Pole-operated Fresnels

Lighting fixtures for 1kW, 2kW and 5kW operation include Fresnel optics with adjustments configured for manual or pole operation. The optical systems are newly designed for maximum photometric output.

Patchman control systems

Ten-scene capability, each with sub-mastering assignments, is a feature of the 168-703 Patchman portable lighting control system.

Dimension Five console

The memory control system of Dimension Five uses endless wheel controls for faders, bargraph displays for active fade time, a disc drive for data retention and a visual CRT display of channel intensities and controller entries.

Circle (526) on Reply Card

COLUMBINE SYSTEMS

Broadcast business systems

On-site IBM computer systems pro-

The Comark "S" Series

We just made every other UHF transmitter obsolete.

Broadcast engineers and managers agree. Without a doubt, Comark's new "S" Series UHF television transmitters—from 10kW through 220kW—represent a world class product. Integrating high efficiency, reliability and low cost, each model incorporates state-of-the-art technology to achieve a unique combination of unparalleled features:

- Broadband (no tuning), high power, field proven, exciter system featuring dual channel (redundant) operation as well as Comark's CM-100S Broadcast Modulator with IF S.A.W. filter.
- External cavity, full-band, klystron power amplifiers, combining highest efficiency and compact size.
- Space efficient, mechanical and electrical layouts, fully engineered for maximum EMI/RFI isolation and overall operator convenience.

- Fiber optic telemetry for all floating high voltage metering functions, incorporated into a complete latched fault and status display system.
- Clean, fully isolated, high voltage compartments, with double-filtered air cooling and front access. (No exposed high voltage in klystron areas.)

All Comark "S" Series models are available with advanced system options, including beam current pulsers, motorized RF switching systems, E.D. and ICPM correction systems, and the services of Comark's 24-hour field operations group.

Contact Comark's Sales Office for detailed specifications and further information.



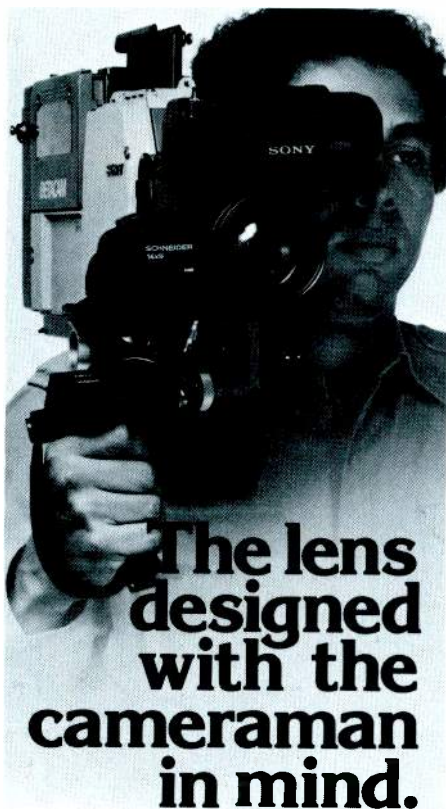
10kW/30kW/55kW
model shown

COMARK

Engineering and Sales Offices
Rt. 309 and Advance Lane
Colmar, PA 18915
(215) 822-0777
Telex: 846075

International Headquarters
Rt. 57, Feeding Hills Road
Southwick, MA 01077
(413) 569-5939

Circle (48) on Reply Card



The lens designed with the cameraman in mind.

The Schneider 14X ENG/EPF lens is economical, light-weight, and has all the features it should have. It brings out the best in the best cameras available today.

This lens is packed with conveniences that help the cameraman get the most out of every situation. It has a pistol-grip with built-in iris control that has all controls available within a thumb's touch. It has a generously sized rocker control that makes it easier to control the zoom. And because the iris and zoom electronics are in a weather-resistant housing, there are no shorts from moisture in the field.

The lens can power zoom from 9mm to 126mm. Or with the 2X built-in extender from 18 to 252mm. With the low distortion 6.3mm, to 9mm aspheric lens attachment, it can power zoom on the super wide angle shots. Schneider broadcast lenses are available throughout the United States and Canada from:

Tele-Cine Corp.
400 Crossways Park Drive
Woodbury, NY 11797
(516) 496-8500

Schneider
14X ENG/EPF
Tele-Cine Corp. is a subsidiary of
Schneider Corporation of America
Circle (49) on Reply Card

vide radio and TV broadcasters with complete station business systems for logging, invoicing, financial, etc.

Circle (527) on Reply Card

COMARK

CTT-3-30/60-S transmitters

The S series UHF transmitter line includes 30kW and 60kW systems, using broadband designs, ultrahigh efficiency and compact size. Water or vapor-phase cooling options complement NTSC (Channels 14-69) and CCIR (Channels E21-69) installations.

CTE-20 exciter

A broadband design of the CTE-20 exciter covers all UHF channels with an output of 20W. Aural and visual channels permit remotely controlled emergency multiplexing in case of failure.

CTP-20 mod anode pulser

Fiber-optic isolation and control of the CTP-20 allows a pulsing capability to 10kV pulse amplitudes. Adaptations for IF or on-channel phase correction include independent delay adjustments.

CM-100S TV modulator

The IF modulation scheme of the CM-100S includes a SAW VSB filter with bypassing. IF amplitude linearity and quadrature ICPM correction circuits reduce distortions. The modulator provides compatibility to STV and multichannel sound systems.

CCP-145 IF corrector

Four-band envelope delay correction improves signal transient response and color ghosting. And ICPM corrector circuit reduces sync pulse spiking and sync buzz.

Circle (528) on Reply Card

see ad on page 97

COMEX CORPORATION

Equipment distributors

Comex distributes several lines of products, including the JVC and Texscan lines. Among products shown were the JVC 3-inch color monitor with sound, which fits in a briefcase, and the Texscan SpectraGen III microprocessor-based character generator that provides up to 150 pages of random access memory. Also shown was the Real World Technologies UniVUer electronic display, which provides the electronic equivalent of a VU meter on a TV screen.

Circle (791) on Reply Card

COMPACT VIDEO SALES/ RTS SYSTEMS

RTS model 802 intercom system

This microprocessor-assisted master station intercom system allows up to 12 channels of 2-wire conference line intercom. It has front-panel programmability.

Circle (709) on Reply Card

COMPREHENSIVE VIDEO

QB lighting fixtures

Additions to the quartz-beam lighting fixture line include the QB-650, QB-1000 and QB-2000 models, with 650kW, 1kW and 2kW lamp specifications. Each offers variable focus capability.

FL lighting fixtures

The MFL-650 mini flood and FL-1000 flood lighting fixtures provide quartz-beam fill lighting.

Circle (529) on Reply Card

COMPUCON

Service contour protection

As more TV stations begin operation, a new service from Compucon will assess potential service contour infringements and possible sources of interference to translator operations.

Circle (530) on Reply Card

COMPUTER CONCEPTS

Coop management software

WordMaster word processing software by Computer Concepts can generate scripts to include with billing documents for cooperative advertising. The programming package complements the Broadcast System business computer.

Circle (531) on Reply Card

COMPUTER GRAPHICS LAB

TWEEN

Computer-assisted in-betweening, TWEEN, assists the animator by creating animation sequences between a start and end drawing. The artist may review and adjust errors or timing in sequences.

TWEEP

TWEEN-created characters take on life with computer-assisted painting of the animation by TWEEP software. TWEEP includes colored line painting and detail touchup functions.

SCAN digitizing

The SCAN function allows inputting of conventional reflective artwork to be digitized for subsequent graphics manipulation with TWEEP or BIGPAINT functions.

BIGPAINT backgrounds

BIGPAINT aids creation of mural-type backgrounds or overlays and allows background pans and continuous zooms.

RECORD animation

The CGL graphics systems functions come together in the RECORD system to produce a final video or film-animated product. Camera moves, special effects and multiple animation levels offer flexibility.

Circle (532) on Reply Card

COMREX

PLX II extender

Shure M67 or similar remote mixers feed the PLX II frequency extender. The unit includes modular phone connections to interface to telephone

THE NEW KAMAN BROADCASTING SYSTEMS. THE MOST ADVANCED, MOST COMPREHENSIVE SOFTWARE SYSTEMS EVER DEVELOPED FOR THE BROADCASTING INDUSTRY.



As a broadcaster, you already know how complicated your business has become. You know the importance of timely, accurate information. As each day your needs are becoming more and more complex, you need systems as up-to-date as your requirements.

KAMAN BROADCASTING SYSTEMS have all the advantages you need. Kaman's Traffic System, as an example, has been designed with every operation in the system. More impor-

tantly, it provides information **now** for operating your business. It is the system developed with your need for timely and accurate information in mind.

All the new KAMAN BROADCASTING SYSTEMS were developed for the IBM System/38 hardware, and are completely on-line, interactive and in-house. Information input anywhere is interfaced and updated everywhere. You'll never again have to wait

long hours to find out how a change in one department will affect others. Kaman puts the data you need at your disposal immediately!

Call us for information about the all new KAMAN BROADCASTING SYSTEMS.
303-599-1450.

**TAKE KAMAN.
NOW.**

 Kaman Broadcasting Systems,
a product of
KAMAN SCIENCES CORPORATION

1500 Garden of the Gods Rd. • Tel (303) 599-1500 • Telex 452412
Mailing Address: P. O. Box 7463 • Colorado Springs, CO 80933-7463

Circle (50) on Reply Card

June 1983 *Broadcast Engineering* 99

lines for improved low frequency response.

SLX remote package

Inputs for the SLX frequency extender encoder include 2-mic/2-line or 4-line facilities with faders. The console feeds two program loops and two dial lines. A third dial interface adds communications.

2X extenders

Five-band companding improves delivered signal-to-noise ratios in the 2X system. The transmitter (TBC/TLX/TNX units) compresses, up-shifts and equalizes signals to two phone lines. The receiver (RLX/RHX/TBX units) returns the 2-line signals to a program output. PTLX designates a portable 2-line transmitter.

Wireless mics

Model 450RA/TA references a transmitter, operating at 150mW in the 450MHz region. A 0.5 μ V sensitivity receiver provides a 12dB SINAD rating. Alkaline or nicad batteries operate the 9Vdc units.

CRA TV monitor

ENG cueing needs are filled with the CRA TV monitor receiver. Fixed-tuned units are ordered for any single channel (Channels 2-13) and come with a belt pouch.

CUE system

The CTA transmitter outputs 1W RF in the 26.1-26.48MHz spectrum for IFB cue and program audio. A belt-worn LPQRA receiver detects the FM signals and provides 500mW into 8 Ω earphones.

202 Talkshow system

Four items are involved in the complete system for talkshow operation. The heart is the 202 composite mixer. Receiving outputs from two hybrids, two 4-wire terminating sets and the station console, the mixer creates mix-minus signals for air and caller use. A control box includes level, seize, release, mute and phone line select.

Circle (533) on Reply Card

COMSEARCH

Added engineering services

Satellite earth station interference studies for digital audio and TV networks, LPTV and full-power applications preparation, frequency protection services and radiation hazard testing enhance the engineering service package.

Circle (534) on Reply Card

see ad on page 75

COMTECH DATA

Model 250 AU/AD converters

Uplinking (6GHz) and downlinking (4GHz) converters satisfy video, SCPC, TDMA and FM/FDM data transmission requirements. These C-Band systems may include 1:1 or 1:8 backup switching and INTELSAT equalization.

Series 300 RO terminal

This receive-only terminal meets

reception requirements of SCPC, MCPC, digital data, composite video baseband and subcarrier audio with a G/T performance rating of 21dB.

RCV 360 receiver

Local or remote 6-transponder selection with a signal level output for antenna positioning complements SCPC, MCPC and data reception.

Series 900 uplink terminal

Series 900 terminals include uplink electronics, downlink electronics and a 5m antenna. Uplinking capabilities allow five program channels of SCPC, MCPC and digital data materials.

CDM 1120 modulator

SCPC, MCPC and data modulation of channel carriers between 52MHz and 88MHz may involve a choice of companding ratios, bandwidths and carrier FM deviations.

CDM-1160 A/V modulator

Baseband audio and video drive the CDM-1160 modulator to provide an RF output on CATV and MATV system Channels 2-13 or F-I.

7.3m dual-axis antenna

Featuring a dual-axis polar mount to see the complete satellite arc, the 7.3m antenna system may be driven by EC7 and ECR7 microprocessors and motor drives.

Circle (535) on Reply Card

see ad on page 4

CONNECT-AIR INT'L/

BRAND-REX

Cable assemblies

Brand-Rex and Connect-Air produce many camera cable types, as well as a variety of specialized cable assemblies for telecommunications, data transmission and broadcast.

Circle (536) on Reply Card

CONNECTRONICS

(Formerly Canford Audio)

ACCESSIT

The ACCESSIT line of audio signal processors includes compressors, equalizers, reverbs, preamps, noise gates and stereo power amps.

Circle (985) on Reply Card

CONRAC

Model 6200

The 6200 color monitor places a precision in-line CRT display into a master control unit in RGB and NTSC standards. Colormatch phosphors and comb-filter color separation are two options.

Model 2400

Those with critical monitoring functions may find valuable the model 2400 high resolution monochrome monitor with its 19-inch CRT driven by wideband circuitry.

Circle (537) on Reply Card

CONTINENTAL ELECTRONICS

802A exciter

As a low power transmitter or a

540W into 50 Ω exciter, the modular 802A solid-state FM exciter accepts composite baseband signals from a stereo generator STL system or SCA source. The unit is wideband, requiring no tuning adjustment.

Circle (538) on Reply Card

see ad on page 16

CONTINENTAL MICROWAVE LTD.

200W translator

A modular 200W translator/transposer system uses linearity pre-correction and a switched mode power supply to drive the UHF solid-state output. An optional single tetrode final increases the power output to 1kW.

"Silver Streak"

Developed by the BBC, the "Silver Streak" translator/transposer design uses universal modules that provide up to four UHF TV channels. Each includes a 2W power amp, IF amp with frequency conversion and a dual-frequency synthesizer.

Circle (539) on Reply Card

CONTROL VIDEO

Lightfinger Plus LF 2500

Features enhancing the Lightfinger Plus series of editing controllers include a floppy disc memory storage and advanced list management capabilities.

Spot editor

For production of spot reels, the SABER system uses time code to assist the operator. Once the operator enters spot numbers for each break, SABER formats the tape and assembles the required reel.

Auto front panel

New software for the Intelligent Controller from CVC handles editing and pre-programmed single-event playbacks.

Circle (540) on Reply Card

CONVERGENCE

Series 200 controllers

The ECS-200 series editing systems provide enhanced list management features with four systems offering 50-850 lines of edit material.

Circle (541) on Reply Card

see ad on page 129

COOL LIGHT

Tri-Lites

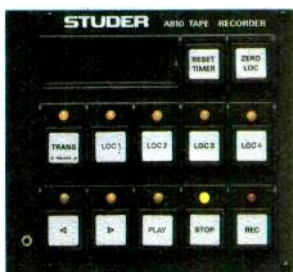
Modules contain three lamps, reflectors and lenses in a single fixture, for use alone or as combined multiple light systems.

Cool Kits

Conveniently packaged kits include 1-, 2- or 3-light sets in a durable fiber-board case. A variety of accessories include barn-door light framers and the new 75W, 12Vdc lamp, capable of 4000 hours of operation.

Circle (542) on Reply Card

Studer Re-States the Art



With the new A810, Studer makes a quantum leap forward in audio recorder technology. Quite simply, it re-states the art of analog audio recording.

By combining traditional Swiss craftsmanship with the latest microprocessor control systems, Studer has engineered an audio recorder with unprecedented capabilities. All transport functions are totally microprocessor controlled, and all four tape speeds (3.75 to 30 ips) are front-panel selectable. The digital readout gives real time indication (+ or - in hrs, min, and sec) at all speeds, including vari-speed. A zero locate and one autolocate position are always at hand.

That's only the beginning. The A810 also provides three "soft keys" which may be user programmed for a variety of operating features. It's your choice. Three more locate positions. Start locate. Pause. Fader start. Tape dump. Remote ready. Time code enable. You can program your A810 for one specialized application, then re-program it later for another use.

There's more. Electronic alignment of audio parameters (bias, level, EQ) is accomplished via digital pad networks. (Trimpots have been eliminated.) After programming alignments into the A810's memory, you simply push a button to re-align when switching tape formulations.

The A810 also introduces a new generation of audio electronics, with your choice of either transformerless or transformer-balanced in/out cards. Both offer advanced phase compensation circuits for unprecedented phase linearity. The new transport control servo system responds quickly, runs cool, and offers four spooling speeds.

Everything so far is standard. As an option, the A810 offers time-coincident SMPTE code on a center track between stereo audio channels. Separate time code heads ensure audio/code crosstalk rejection of better than 90 dB, while an internal digital delay automatically compensates for the time offset at all speeds. Code and audio always come out together, just like on your 4-track. Except you only pay for 1/4" tape.

If you'd like computer control of all these functions, simply order the optional serial interface. It's compatible with RS232, RS422, and RS422-modified busses.

More features, standard and optional, are available. We suggest you contact your Studer representative for details. Granted, we've packed a lot into one small package, but ultimately you'll find that the Studer A810 is the most versatile, most practical, most useable audio recorder you can buy.

The Swiss wouldn't have it any other way.



STUDER REVOX
PRECISION FROM SWITZERLAND

Studer Revox America, Inc. • 1425 Elm Hill Pike, Nashville, TN 37210 (615) 254-5651
 Offices: Los Angeles (213) 780-4234 • New York (212) 255-4462 • Dallas (214) 760-8647 • Canada: Studer Revox Canada, Ltd.
 Circle (51) on Reply Card

CORPORATE COMMUNICATIONS CONSULTANTS

System 60XL B2

For film-to-tape and tape-to-tape transfers, the 60XL B2 provides scene-by-scene color correction with vertical interval correction switching, luminance correction for six color vectors and other features.

System 60C2

Transfers from film-to-tape or tape-to-tape with the 60C2 offer vertical interval coherent color correction switching and optional anamorphic PAN controls, enhancement contour control and a floppy disc archiving system.

Circle (543) on Reply Card

COX DATA SERVICES

Broadcast operating system

An IBM Series/1 computer, the One System, aids station personnel in handling station business needs.

Circle (544) on Reply Card

CROSSPOINT LATCH

Model 6109 switcher

Eight inputs feed a small-format, 3-bus production switcher with editor interfacing. Variable borders on 24 patterns, soft edges, RGB keyer and auto preview highlight featured capabilities.

Model 6139 series switchers

Two models of the 6139 series switcher provide a 16-input or 24-input system. These 6-bus production video switchers include three mix/effects amplifiers.

Model 6179 switcher

The new model 6179 switcher provides 24-input capability and computer-controlled flexibility.

Circle (545) on Reply Card

see ad on page 194

COUNTRYMAN ASSOCIATES

ISOMAX TV microphones

The ISOMAX TV directional lavalier microphone series provides up to 20dB rejection of room reverberation and unwanted sound. In all standard directional patterns, these microphones allow rejection to be optimized for each application.

Circle (717) on Reply Card

CUSTOM BUSINESS SYSTEMS

Broadcast business computers

Additional capabilities of the CBSI system include the sales management program for tracking sales calls, purchases, coops and avails; the payroll package; an improved general ledger system; and radio traffic.

Circle (958) on Reply Card

dbx

Series 321 NR cards

The dbx 321 compandor system incorporates a 3:1 compressor and complementary 1:3 expander. Pre-emphasis and de-emphasis of 20dB aid in a 35dB improvement of S/N on satellite, microwave and cable links.

Model 700 processor

Companded predictive delta modulation in the 700 digital audio processor can handle a 110dB dynamic range through 700kbit/s sampling rate.

Circle (546) on Reply Card

PETER W. DAHL COMPANY

Custom transformers

Nearly any transformer requirement finds a solution through custom transformer manufacturing. Specialties include plate, power, filament and modulation transformers and reactors. All products carry a 12-month warranty, including replacement units for many major manufacturers.

Circle (547) on Reply Card

see ad on page 180

DATA COMMUNICATIONS

Newsroom management system

This system offers the news department an automated means to manage resources of the newsgathering process. The plan includes future/features filing, parts/supplies inven-

HERE'S WHAT THE ABC NEWS TEAM HAS TO SAY ABOUT THE ANCHOR SYSTEM.

20/20 EDITING ROOM

"Anchor monitors are more convenient than headphones. There is no requirement for a separate power amp to drive them."

"The sound is an accurate representation of what an editor can expect the viewer to hear in his home."

"The Anchor connects directly to the Convergence audio monitor output."

ABC WORLD NEWS TONIGHT

"We like it because no amplifier is required. Direct line feed from editor to speaker. Installation is easy, simple and less costly."

"We prefer the Anchor speaker system for audio monitoring. Providing quality sound is a fundamental requirement. Using an Anchor, we can easily detect excessive tape hiss, level shifts or other problems. The speaker inside the editor is sufficient for track identifications, but supplemental audio monitoring is required to maintain consistently good sound."

ANCHOR 



Now You Can Take Pro Audio Anywhere, Too!

5097 Santa Fe Street / San Diego, CA 92109 / (619) 262-9901

Circle (52) on Reply Card

THEY WERE AFRAID WE'D COME OUT WITH AN EDITING SYSTEM LIKE THIS.



**EECO
INTRODUCES
IVES**

WE DID OUR HOMEWORK.

That's why the competition finds EECO's new Intelligent Video Editing System—IVES so unsettling. And you'll find it so amazing. No where else will you find an editing system with so much performance for the price.

NO ADD-ONS, NO EXTRAS.

The IVES is not just an editor, it's a complete post-production system. It not only gives you precision single-source/single-record SMPTE time code or control track editing, but performs all the necessary pre- and post-edit functions. All in one easy-to-operate, self contained package available for substantially less than the competition's "add-on option" pricing. And look at these features:

AUTO-DUB. For safety copies of your source tapes or edited masters, all you need is IVES' one-button Auto-Dub command. A direct dub from the play VTR to the record VTR, or vice versa, is that simple, and both VTRs automatically rewind before dubbing.

PRE-STRIP. IVES automatically stripes the record tape with continuous SMPTE time code, control track pulses and video black with this one-button command. The command also automatically rewinds the record or source tape and resets the internal time code generators to zero.

INTERNAL ROUTING SWITCHER. All video, audio and SMPTE time code signal routing is performed automatically in response to VTR selections, so no signal cable reconnections are necessary.

INTERNAL AUDIO MIXER. Audio mixing for voiceovers or background soundtrack is a cinch with IVES. Its internal audio mixer can blend audio inputs from microphone or auxiliary audio with the audio track of the play VTR, while front panel controls provide programmable fade and allow adjustment of mix ratio and input level.

SINGLE SHUTTLE KNOB.
An entire edited master can be

built using only IVES' shuttle knob and the PERFORM key. All the functions necessary to search at variable or selected cruise speeds, mark edit points and initiate previews are at your "fingertips".

In addition to all this, the IVES contains its own internal NTSC sync and video black generators and dual internal SMPTE time code generator/reader for the record and play VTRs. And IVES offers variable rate video fade to/from black, split audio/video edit capability, output to a printer and a non-volatile memory.

IVES, the Intelligent Video Editing System from EECO. It has no competition. For more information write or call, Video Products Marketing Group, EECO Incorporated, 1601 E. Chestnut Avenue, P.O. Box 659, Santa Ana, CA 92702-0659, 714/835-6000.

EECO
Incorporated

Computer Controls for Video Production

Authorized Distributors: BOSTON: Cramer Video, 617/449-2100; CHICAGO: Swiderski Electronics, 312/364-1900; DALLAS: MZB and Assoc., 214/233-5535; LOS ANGELES: Hoffman Video, 213/749-3311; NEW YORK: Harvey Professional Products, 212/921-5920; PHILADELPHIA: Lerro Corp., 215/223-8200; SEATTLE: Custom Video, 206/365-5400; WORLDWIDE: Ampex Corp.

tory, equipment maintenance histories, etc.

Circle (548) on Reply Card

see ad on page 105

DATATEK

D-630A video sweep generator

The D-630A self-contained video sweep generator offers a wide sweep range from 10-0-20MHz or 20-0-10MHz with internal or external sync and blanking. Companion model D-631 provides a detector and attenuator in addition.

D-663 video DA

D-663 VDA modules have 10 outputs with gain and equalizing adjustments on the front panel. An improved dc restoration scheme maintains blanking level within 20mV for an APL shift of 10% to 90%.

D-605 subcarrier DA

Each D-605 SCDA offers three outputs from each of two individually adjustable channels. More than 360° of control results from the coarse phase switch and multiturn pot. The cards are compatible with other Datatek VDA and ADA systems.

D-518 time code/cue DA

A flat frequency response to 8MHz makes the D-518 time code/cue track DA module useful for SMPTE code distribution even at fast rewind speeds. Impedances and levels are compatible with tape editing equipment.

Circle (549) on Reply Card

DATATRON

Level Six software

Features in Level Six include user-definable keys, Backtrac (edited masters become future edit sources), Auto Syne Point in-point calculations, match search through the edit list as the edited master is played, and a comments-only list display.

Interfaces

New equipment interfacing handles Sony BVH 2000 and Betacam; Ampex VPR 80; RCA Hawkeye and TR-800; GVG 300 with audio E-MEM; Cox T-16 switchers; and Otari MX audio decks.

Interactive Video division

Laser videodisc with flexible microprocessor control and intelligent peripherals operates as an electronic salesman for home education and game software programs.

Circle (550) on Reply Card

DATATRONIX

Telepath technology

An 8x8 matrix format uses multiple microprocessors and solid-state switching in an expandable communications/audio routing system.

8318 DA system

Up to 16 channels and dual power supply modules allow eight splits per audio channel. Distortion is typically

0.01%; crosstalk, -80dB at 20kHz.

API 300 series modules

API 350 VCA provides remote-controlled gains from -100 to +20dB; API 325 line amp forms three transformer-coupled outputs at levels to +30dBm; API 312 preamp offers 15-65dB gain adjustment with an EIN rating of -129dBm.

500 VPR enclosure

Dual power supplies redundantly power up to 10 API audio function modules in a 5¼"x19" rack.

Circle (551) on Reply Card

DATUM/TIMING DIV.

Source ID reader

Model 9200-402 SID reader searches for/reads 48-bit NRZ SID code from vertical interval Lines 10-21. Output signals include source, time, signal line number, etc., for various display formats.

Data reader/encoder

The 9200-401 reader and 9550-689 encoder accepts, formats, encodes and inserts a 97-bit serial digital code on a selected line between 10 and 262.

Circle (552) on Reply Card

DAVIS & SANFORD

Model 808BV head

Fluid action accommodates video cameras to 12 pounds with positive tilt lock, a flat-top or ball/cavity leveling system and AutoSlip self-adjusting, auto breakaway panning.

Model 12 fluid head

For cameras to 25 pounds, the model 12 fluid action head provides tilt tension control, flexible leveling adjustment and AutoSlip panning.

FM-25 fluid head

Fluid action improves camera motion control with positive tilt lock and pan lock. Cameras to 25 pounds may be used on flat-top tripods.

Circle (553) on Reply Card

DELCOM

Equipment/systems

Delcom provides a wide variety of equipment items as well as custom-designed systems for studio or remote applications.

Circle (554) on Reply Card

DELTA ELECTRONICS

Stereo controller system

An updated version of the AMC-1 amplitude modulation controller equipment uses digital sampling and control for maintaining modulation levels of AM stereo operations.

Circle (555) on Reply Card

DELTAMOD

Noise reduction

Noise reduction, using Dolby C techniques, is intended for use with broadcast cart machines. The CNR-6 is useful with telco lines, microwave

links and video recorders.

Circle (1035) on Reply Card

DEZTEK

Series 4000 consoles

Mono and stereo configuration of the 5-, 8- and 12-input 4000 consoles use VCA circuitry with rotary or slider controls. Channel tracking is within 0.5dB with all inputs/outputs transformerless-balanced.

BC-164 console

Dual redundant power supplies serve mono, stereo or simultaneous mode consoles with IC op amps and FET switching. Transformerless-balanced line inputs include EQ.

Circle (556) on Reply Card

DICTAPHONE

Loggers

Veritrac systems offer multiple audio channel, recording/reproducing, slow-speed logging equipment.

Circle (557) on Reply Card

DIELECTRIC COMMUNICATIONS

Model 3500 expediter

The Expediter power computer uses analog and digital modes for forward and reflected power ranges from 100mW-500kW. VSWR, return loss and dBm levels may be selected.

Circle (558) on Reply Card

see ad on page 118

DIGITAL VIDEO SYSTEMS

DPS-103 component TBC

A single-clock operation in the DPS-103 TBC allows picture lock to 40X normal play speed in forward or reverse for heterodyne VTRs. Component processing includes line-by-line velocity compensation, a 16-line window and RS-170A outputs. Color bars and calibration signals are integral.

DPS-106 component TBC/framestore

Heterodyne VTR video remains locked to 40X play speeds with color lock to 10X. The single clock system uses 14.3MHz sampling and component processing, allows hot switching of non-synchronous sources, and outputs RS-170A video.

MAC component transmission equipment

The Multiplexed Analog Components (MAC) concept, based on developments by IBA Research Labs (United Kingdom), transmits luminance and chrominance data separately, without the 3.58MHz sub-carrier. The digital approach removes color dot crawl, reduces noise, allows multilevel scrambling, offers dual-channel audio with 16-bit dynamics at 44kHz sampling and carries a 2Mbit/s data channel, in a hard-encrypted format.

Circle (559) on Reply Card

DIGIVISION

DRGB-343 digital converter

High resolution to 1000 lines results

"I believe in what works. And DCC works for us."

"For example, the DCC financial packages enable us to pull and consolidate financials from each station quickly, and save manpower both at the stations and here at headquarters."

Leroy Paul, Chief Operating Officer
American Family Broadcast Group
Group Headquarters, Columbus, Georgia

Stations:
WAFF-TV, Huntsville-Decatur, Alabama
KFVS-TV, Cape Girardeau, Missouri
WTOG-TV, Savannah, Georgia
KWWL-TV, Waterloo-Cedar Rapids, Iowa
KTIV-TV, Sioux City, Iowa

American Family Broadcast Group has used DCC broadcast systems since 1978. One reason for their choice was the belief that DCC would expand to cover the whole spectrum of broadcast operations. Today DCC offers independent yet fully-integrated systems for everything from sales and master control to accounting and electronic mail.

MASTER CONTROL AUTOMATION automatically receives the daily program log and allows automation of on-air switching, streamlining your station's operations.

BUY LINE generates avails quickly and accurately. Demographics and research materials are instantly available to local and national sales reps.

FEATURE FILM manages film inventory, scheduling, amortization, and contract information easily, accurately.

NEWSROOM MANAGEMENT SYSTEM keeps up-to-date with the resources of newsgathering and program preparation.

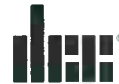
BIAS TRAFFIC is the undisputed leader for sales, traffic, and accounting automation for any station.

FINANCIAL PACKAGES enhance standard accounting methods with cash flows, foldups, and more.

WORD PROCESSING can be added to your DCC system for a fraction of the cost of other available products.

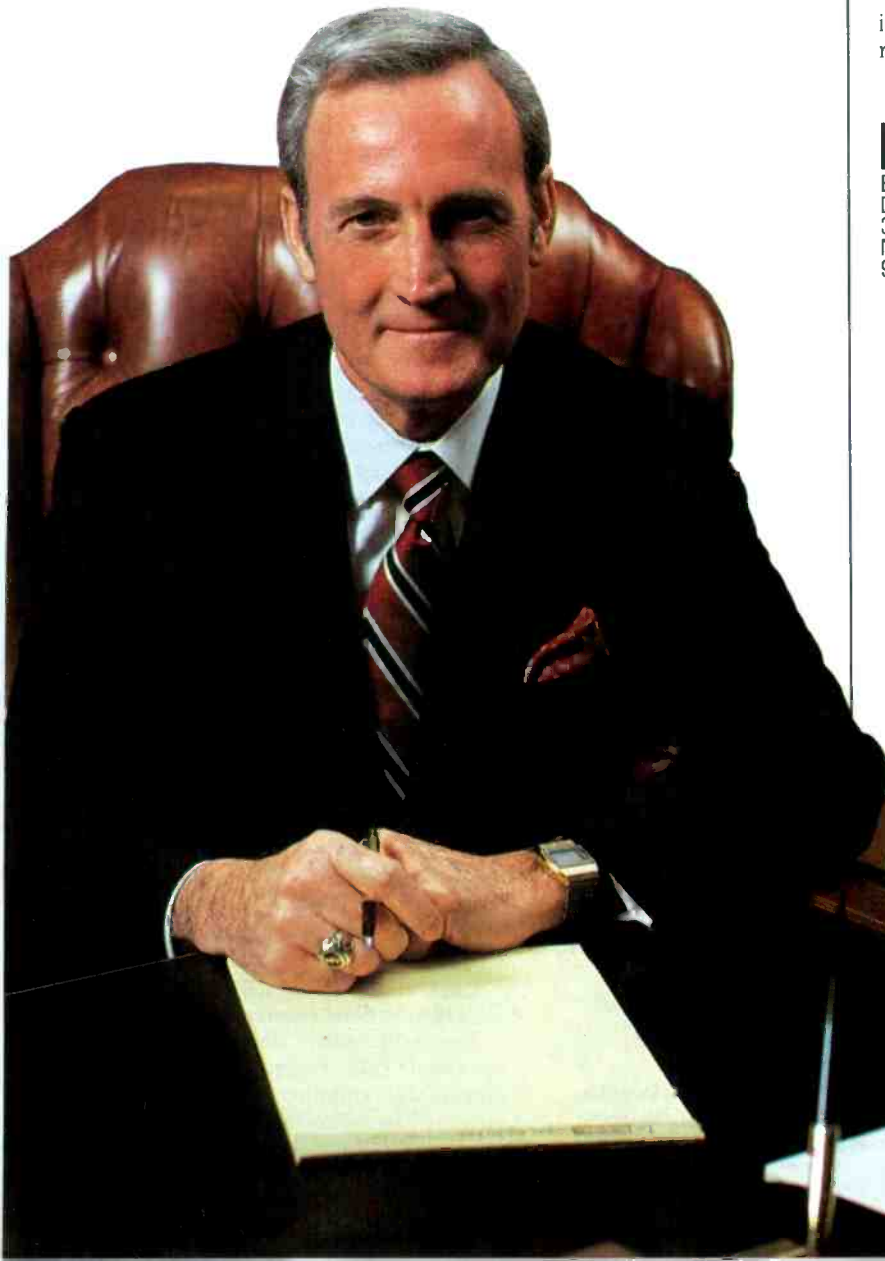
ELECTRONIC MAIL saves telex costs and allows immediate communications with sister stations, national reps, and headquarters.

DCC—The integrated broadcast management system.



Broadcast Division
Data Communications Corporation
5000 Directors Row
Memphis, TN 38137
501-345-3544

Circle (54) on Reply Card



from a 1024x1024 pixel format and improved noise reduction of 20dB. Input signals in RGB or NTSC are outputted in EIA RS-343A RGB format for full-motion or freeze-frame applications with 40MHz bandwidth possible.

Circle (560) on Reply Card
see ad on page 55

DIRECT BDCT. SATELLITE CORP. DBS services

Now holding FCC authorization, DBSC plans to provide direct-to-home satellite programming and HDTV transmissions, requiring 2½-foot antennas for 12GHz reception.

Circle (561) on Reply Card

DI-TECH

Series 5840 enhancements

The 5840-2 AFV routing switcher modules provide two channels of audio per video input with independent control on audio 1 and audio 2. The new approach offers greater flexibility of operation with easier system integration.

Circle (562) on Reply Card

DOLBY LABORATORIES CN 234 module

The Dolby CN 234 module incorporates two channels of Dolby-A noise reduction for use in the Sony BVH 2000 Type C VTR. The module, a direct replacement for the Sony AU-27 audio board, requires no modifications.

Model 372 A-type unit

Portable operation of the compact Model 372 noise reduction unit allows Dolby A noise reduction for VTRs, mobile recording applications and radio/TV outside broadcasts. Two-channel capability is incorporated.

Circle (563) on Reply Card
see ad on page 77

DORROUGH ELECTRONICS DAP-610 processor

The 610 Discriminate Audio Processor (DAP) is a digital triband audio processing unit. Digital control

signals, 4-position equalizer, combined hard and soft clipping and LED metering are featured.

40-A loudness monitor

The 40-LED display arc covers -25 to +14dBm in normal persistence and peak ranges. Left- and right-channel inputs provide stereo operation use of this non-VU ballistic-based display.

Circle (564) on Reply Card

DRUMMEX

The company displayed mobile shelving units.

Circle (988) on Reply Card

DUBNER COMPUTER SYSTEMS Expanded color/fader option

Increasing the color data bits from three to four in this option for the CBG-2 expands the usable graphics color palette to 4096 with a 16-step gray scale. The fader allows creative mixing of the two CBG output planes into a single image.

Weather graphics

A modem connects the CBG system to ESD receive weather data and pictures from the GOES satellite. An "ESD" command instructs the Dubner system to interconnect with the ESD service for image access.

Circle (565) on Reply Card

DYNACOM

Digicode scrambling

The Digicode scheme removes all horizontal pulses and moves color burst into video. Audio scrambling uses a subcarrier. Addressability provides computer control for 524,288 decoders.

SAM system

SAM, for MDS STV systems, requires Digicode decoders controlled by either of two central computers. Option 1 addresses 15,000; Option 2 controls 524,288. Multichannel and tiering capabilities also include a global-on command.

DSC downconverters

Two MDS converters, DSC-6xC and -4xC, offer 6dB and 4dB noise figures,

respectively. The crystal-controlled units typically use low VHF outputs.

Circle (566) on Reply Card

DYNAIR ELECTRONICS

Series 1600 switchers

Three types of switching modules may be stacked for larger systems. A 16x1 video, 16x1 audio or 3x5x1 RGB video module, each with looping inputs, use vertical interval switching in a 1¼"x19" rack panel.

Series 25 routing switchers

A single rack of the series 25 vertical interval, remotable switching modules may include a 20x20 video/audio format, a 20x40 video-only or a 20x40 audio-only capability.

Series 5300 additions

Adding to the standard 5300 distribution amplifier line, two new module types provide 1x5 distribution of audio and pulse.

Series 1500 DAs

An addition to the series 1500 distribution amplifier line includes the 1x4 pulse module. These systems may be in a 2"x6"x9" desk-top or rack-mount format.

Circle (959) on Reply Card

DYNAMIC TECHNOLOGY LTD.

Datalite controller

From 120-1000 channel modules communicate with a control panel through a digital data link for automated or manual lighting control facilities. Solid-state or floppy disc memories retain lighting cues.

2450/2450PB video switcher

Vertical interval switching in the 2450 routing switcher may interface with optional audio switchers. A remote control panel or push-buttons allow selection of one of 16 inputs.

VPA 2646 equalizing DA

The compact format of VPA 2646 equalizing DA modules place nine units in two vertical rack units. With a response to 8MHz, these modules equalize for up to 1500 feet of cable, as well as operating as video or pulse DAs.

S.T.A.T.E.

ID or message information with the vertical interval results from the Source Transmitter and Teletext Encoder system. Encoded data, compatible with VIMACS, SAMS and VIPS systems may be decoded optionally on a TV monitor.

Circle (567) on Reply Card

E.A.R.

EMERGENCY ALERT RECEIVER Emergency alert receivers

The solid-state designed, ac/dc-operated EBS receivers use crystal control for stability with a 3µV sensitivity. The AF output is rated at 1W.

Circle (568) on Reply Card

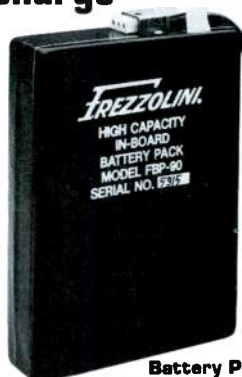
Frezza™ "High-Tech" fast-charge all-purpose battery.

Full 4aH capacity provides longer run-times for VTRs, cameras & lights. Direct replacement for your old BP-90s.

For information call (201) 427-1160

 Frezzolini Electronics Inc.

7 Valley St. Hawthorne, N.J. 07506 • TWX: 710-988-4142



NEW
exclusive

Extra
output
connector
for
portable
lights.

Made in U.S.A.

Battery Pack Model FBP-90FC

Circle (104) on Reply Card

THE WORLD'S ONLY FULLY DIGITAL TELECINE IS NOW IN AMERICA!

It's the MARCONI LINE ARRAY TELECINE B3410—the telecine that not only delivers a new standard of quality for film-to-tape transfers but can appreciably add to your productivity and profits!

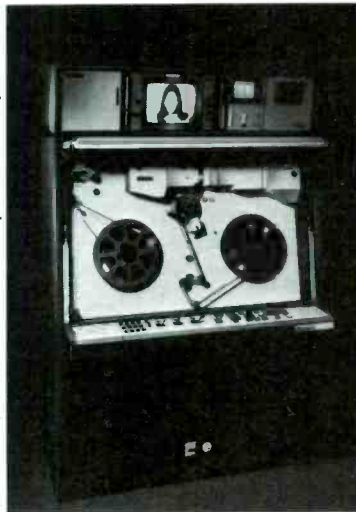
The reasons are simple. The Marconi B3410's fully digital processing and CCD image sensors deliver an extraordinarily true video picture. And the Marconi B3410 does not require time-consuming tweaking, day-to-day adjustments and set-up arrangements that rob you of valuable hours of productive work.

The Marconi B3410 delivers full performance within two minutes from the time you switch on. Moreover, there is no registration

drift and no tubes to replace. It interfaces with all available color correctors, converts into all international standards and—by its very digital nature—is designed to have an exceptionally long life.

And, because the Marconi B3410 is distributed and supported by A.F. Associates—America's largest designers and builders of video systems—there is no lack of engineering backup and spares on both the East and West coasts!

Call us today for prices, availability, delivery: Richard Lunniss or Marc Bressack in New Jersey (201) 767-1000 or Noel Parente in California (213) 466-5066.



THE MARCONI LINE ARRAY TELECINE B3410



AFA PRODUCTS DIVISION

A DIVISION OF A.F. ASSOCIATES, INC.

100 OAK STREET, NORWOOD NJ 07648
1438 NORTH GOWER STREET, HOLLYWOOD, CA 90028

Circle (56) on Reply Card

EECO

IVES-I edit control

Integral routing switching and audio mixing, pre-stripping, a single shuttle knob and longitudinal time code readers and generators are standard features on this editing system.

PTG-560 generator

The battery-operated, portable PTG-560 SMPTE/EBU time code generator weighs 1 pound. User bits, a lighted LCD display, and input or crystal lock are featured.

STC-100 controller

Editing tasks are simplified by the STC-100 multipoint search-to-cue control system.

Circle (569) on Reply Card

see ad on page 103

EEG ENTERPRISES

DE201 decoder

Transmission quality output results from the DE201 vertical interval data decoder. In the Line 21 data format, data provides addressable control and may be displayed in various ways.

EDAC-1 processor

The EDAC-1 information processor prepares material for insertion by the EN230 Line 21 smart encoder. Two floppy discs hold 640kbytes of on-line storage for text or captioning applications, while an RS-232 input converts newswire data.

TE-510 teletext data bridge

Teletext data from one video signal is transferred to a second signal. Double-buffered transferring of NABTS code combines with input and output line selection.

EN232 dual-line encoder

The EN232 encoder provides NTSC Line 21 captioning and text service along with private network communications and control in the vertical interval when used with the DE201 decoder. A SMPTE time code reader is integrated.

Circle (570) on Reply Card

EEV

P4225 camera tube tester

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

K4235 Klystron Gas Tester

See the test equipment update on page 44.

P8440 series Leddicons

The 30mm P8440 series use a diode-gun design with separate mesh and magnetic focus/deflection for luminance, red, blue and green sensitivities. 8441AF/RF include extended red materials. The P8442 and 8443AF/RF tubes provide low output capacitance and rear-loading.

P8470 Leddicon

The 13mm P8470 tube answers ½-inch VRC system needs with an integral yoke to better match the tube for minimum distortion and shading error.

P8166 Leddicon

This ¾-inch tube offers high resolution with HOP/ACT capabilities.

P4310 monochrome camera

This CCD camera is based on P8600 series frame-transfer CCDs. A variety of sensors include the P8603 for cryogenic temperature applications, P8604 for elevated temperatures and P8650 image intensifier for low lighting.

Klystrons

K3270BCD, K3271BCD and K3272 klystrons serve the 15kW, 25kW and 55kW UHF power levels. Each covers the UHF spectrum from 470-860MHz. K3230 and K3231 units allow 32kW with water or vapor cooling. All are wideband and high efficiency, without poisonous beryllium oxide ceramics.

Circle (571) on Reply Card

see ad on page 59

EG&G ELECTRO OPTICS

Obstruction lighting

StrobeGuard obstruction lighting is FAA-approved for airway navigation. System LS-161 includes a beacon with 20,000cd or 4000cd output, and the SS-118 power supply for 110Vac operation. System LS-159 operates from 110Vac, 220Vac or 480Vac.

Circle (572) on Reply Card

EMCEE

Translators

An addition to the wide variety of translator systems is the TUA1000C power amplifier. The 1kW unit combines high gain, efficiency and reliability in a single cabinet with a slide-out RF cavity, LED status indicators and solid-state control circuitry.

Systems Group

The EMCEE Systems Group (ESG) provides a complete design and construction service to deal with new LPTV installations including towers, earth stations and powering.

Circle (960) on Reply Card

E-N-G

Production vehicles/equipment

Van and station wagon format vehicles are equipped to customers' requirements. New products include a remote control unit for the mobile unit microwave equipment and the K-82 personal backpack system.

Circle (961) on Reply Card

ESE

ES 256 reader

The ES 256 smart SMPTE time code reader uses an 8-digit display of data from bidirectional, multispeed operation. The system is capable of reading from tape between 1/20th and 20X normal play speeds.

Impulse driver

For use with ES 168 impulse clocks, the ES 165 impulse driver may be used

in systems with up to 50 clocks and keeps them accurate through as much as 12 hours of power failure. The driver locks to any 1pps source and provides an 8pps output to ES 168 clock units.

ES 232 time calculator

An 8-digit display on the ES 232 unit provides 24-hour up/down timing and time calculation of hours, minutes, seconds and frames (30/s). Data may be stored or recalled from 10 memory locations.

ES 207 video DA

A looping input to the ES 207 VDA drives four outputs with common dc levels and gain controls. The frequency response is 0.5dB over 10MHz, and equalization for up to 1000 feet of cable is possible.

Circle (962) on Reply Card

see ad on page 183

EASTMAN KODAK

Datkode surface film

The Datkode magnetic oxide coating on motion picture film allows recording of machine-readable time code within a functionally transparent surface layer.

TAF analysis film

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Color monitor analyzer

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (573) on Reply Card

ECHOLAB

SE/3 switcher

Computer control of all switching/effects in the SE/3 production switcher includes 10 sources plus black and backgrounds. A z-80 microcomputer allows up to 5000 steps of use programming.

Circle (963) on Reply Card

EIGEN VIDEO

FP image processors

Images stored in solid-state RAM may be transferred to floppy discs (FP-1), Winchester discs (FP-2) or either (FP-3), while noise reduction, subtraction, and windowing are applied to the digitized images.

Circle (574) on Reply Card

ELCOM-BAUER

The company's line includes AM and FM transmitters, audio processors, AGC systems, audio consoles and 10W and 250W solid-state exciters.

Circle (989) on Reply Card

ELECTOR USA/

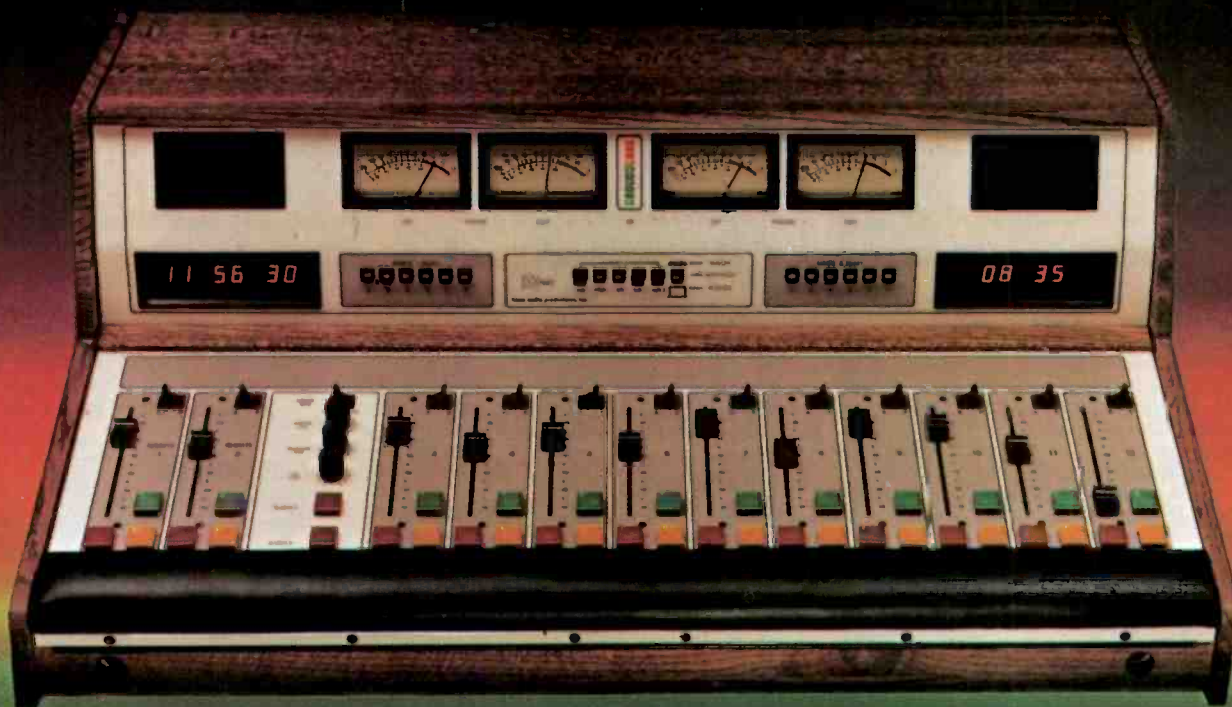
BARCO INDUSTRIES

CM22 NTSC monitor

This color monitor uses an in-line CRT with a 0.31mm dot pitch for 490-line resolution. RGB, TTL, pulse cross and underscan features are included in the 9-inch monitor. An audio system is integral to the

Howe Audio 7500 Stereo Consoles

the Sound Solution



the Howe Audio 7500's
unfold themselves

Howe...

- Sheer Operating Pleasure
- Unmatched Sound Quality
- Digital Logic Control
- Top of the Line Specifications
- Exceptional Ease of Installation
- Priced Under \$10,000

The same simple design that Howe Audio has used for years is now combined with High Quality Slide Faders and totally digital Remote Start/Stop Controls; giving you the "Sound Solution." Still Simply Reliable, and less than \$10,000.

... to Improve Audio!!



howe audio productions, inc.

3085 A Bluff Street
Boulder, Colorado 80301
303/444-4693

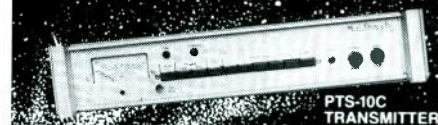
For more information: 800/525-7520

Circle (57) on Reply Card

WIDEBAND COMPOSITE/
NARROWBAND
SINGLE & DUAL CHANNEL
950 MHz

STL

INTER CITY RELAY



PTS-10C
TRANSMITTER



PRS-10C
RECEIVER

\$5750

from

Micro Controls, Inc.

Deliver the purest sound possible with MCI's Wideband Composite/Narrowband Single and Dual Channel, Studio Transmitter Link. With superior phase response over the entire baseband and faithful performance even in congested and intense RF fields, MCI sets the industry standards for quality broadcasting. Ask about our 5 year pro-rated warranty.

**REMOTE
CONTROL
SYSTEMS**



\$2450
Analog Display

• Digital Readout Available on
Studio Unit

Call or write today for more
information.

mci

Micro Controls, Inc.

P.O. Box 728
Burleson, Texas 76028
(817) 295-0965

Circle (140) on Reply Card

CM33 HRC monitor

The CM33 HRC high resolution color monitor may display either composite video with sound or an RGB input on the 14-inch dot/black matrix CRT. NTSC, PAL and SECAM models are available.

CM51 HRC monitor

Front-panel or remote selection enables video Inputs 1, 2 or RGB displays. The 19-inch CRT allows a 710-line display for NTSC, PAL or SECAM models with a 0.43mm dot pitch and non-glare black matrix.

CVTM D monitors

The CVTM D master control color monitors include decoders for NTSC, PAL and SECAM signals. Additional display functions provided are VITC ID, time code and user bit data. All functions are front-panel selectable.

Circle (575) on Reply Card

see ad on page 69

ELECTRO CONTROLS

Celebrity console

The modular Celebrity lighting control console provides an expandable format from 24-512 channels. Master controls include bump, scene, independent and grand faders. Options include a data cassette tape memory, effects and a wireless hand-held control.

QD dimmers

In dimmer-per-circuit applications, the QD dimmers use LEDs to indicate data going to the dimmer, verify gate signals to SCRs and neon lamps to verify line/load connections and SCR operation.

Circle (576) on Reply Card

ELECTRO IMPULSE

RF loading systems

Electro Impulse offers a wide line of RF load systems handling power levels from 150W-400kW and for frequencies from dc to 40GHz. The air and water-cooled unit may include calorimetry for manual and automatic applications.

Circle (577) on Reply Card

ELECTROHOME ELECTRONICS

Projector system

The EDP-57 monochrome projection monitor focuses from 4-10 feet for high resolution P1 phosphor displays. Wide adjustments in H and V scan rates allow adaptation to many uses.

ECM 1301 monitor

A self-converging, in-line 90° CRT displays 720x512 pixel RGB data. The 0.31mm dot pitch tube is driven by 25MHz bandwidth circuitry with 14.5-25kHz H-scan adjustability.

Circle (578) on Reply Card

ELECTRO-VOICE

Model 370 barrier plate

Use of a 370 barrier plate adapter with the C094 electret lavalier

microphone aids in receiving sound without getting direct and reflected sound phase cancellation distortions.

Sentry 505 monitor

A 110° dispersion of the full reproduced sound spectrum results from use of Sentry 505 monitor systems. The cabinet is designed to allow the unit to be mounted at the ceiling/wall intersection for greater sound coverage.

RE34 microphone

The cardioid pattern of the RE34 microphone makes it valuable for interviewing. An electret system, the RE34 provides a mic or line-level output, for battery or phantom powering and an LED indicator for battery condition or tally.

EVT5212 mixer

Two LED VU meters switch for left/right or main/monitor level indicators in the 5212 mixer. Other features include Efx Send and Return, pan pots, peak LEDs, 3-band equalization and internal reverb system. Twelve mixing channels are provided.

Windscreens

A new application of Acoustifoam finds use as colored, acoustically transparent wind screens.

Circle (964) on Reply Card

see ad on page 71

ELLIS TOWER

Towers and services

Using materials provided by UNR-ROHN and other manufacturers, built to exacting specifications, Ellis Tower Company constructs towers from the footings up. Service and maintenance programs are available.

Circle (579) on Reply Card

EMCOR PRODUCTS

Equipment cabinets

Series 10 rack-based equipment cabinets include many accessories for flexibility. Many configurations are available.

EMI/RFI shielding

Shielded cabinetry from Emcor complies with the requirements of FCC Docket 20780 on EMI/RFI radiation and shielding. A building-block approach uses frames for signal attenuation, while retaining attractive appearances.

ESQ cabinets

Six popular color selections are available for the ESQ line of equipment cabinets.

Circle (580) on Reply Card

ENSTROM HELICOPTER

The company's product line includes helicopters and related equipment.

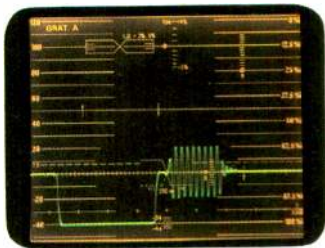
Circle (990) on Reply Card

ENTERPRISE ELECTRONICS

Doppler weather radar

Five dimensions of weather information presented by the WSR-82D

JVC engineers another breakthrough in video cameras.



JVC, a world leader in miniaturization of electronic components, brings you a new option at the highest level of production quality cameras.

ProCam™ Video Cameras!

They're available in two models: ProCam 950 with LOC diode gun Plumbicon* tubes, and ProCam 900 with LOC diode gun Saticon** tubes.

Never before has so much been put into cameras this size. One look at the double-sided circuit boards will give you an idea of how packed with features they are. And you'll see the great results every time you use them.

You'll see great picture quality: Better than 600 Lines Resolution...Signal-to-Noise Ratio of 58dB.

You'll see great performance features: Auto-Shift Registration... Automatic White and

Black Balance...Corner Registration Correction...Matrix Masking...Auto Centering...Flare Compensation...Focus Wobbling...Auto Black Level Stabilization...Zebra Stripe Video Level Indicators in Viewfinder...2H Vertical Contour Correction...Split Field Color Bar Generation...f/1.4 Prism Optics With Built-In Quartz Filter...Stable RS-170A Sync Output with Color Frame.

You'll see great convenience features: Light Weight...A Pickup Tube Protection Circuit...Compact, Solid Aluminum-Diecast Body...Memory Back-Up...Preheating Circuit...Video Recorder Power Save Circuit...LED Viewfinder Indicators...Digital H/V Variable Blanking. You'll see traditional JVC value...traditional JVC



reliability...traditional JVC flexibility. And you'll see them in distinctly untraditional cameras... but cameras whose advanced circuitry is in the unique JVC tradition.

ProCam™

For more information, call toll-free ext. 36

1-800-222-0437

(In New Jersey, 1-800-225-0452.)

Or write: JVC COMPANY OF AMERICA
Professional Video Division, Dept. BE 6/83
41 Slaters Drive, Elmwood Park, NJ 07407
JVC CANADA, Scarborough, ONT

**Someday
others will build
3-tube color
cameras like JVC.
Not yet!**

©1983 JVC COMPANY OF AMERICA

ProCam is a trademark of US JVC CORP.

*"Plumbicon" is a registered trademark of North American Philips Corp.
**"Saticon" is a registered trademark of Hitachi Densetsu, Ltd.

JVC®

JVC COMPANY OF AMERICA
Professional Video Division

Circle (58) on Reply Card

C-Band and S-Band systems include intensity, velocity and 3-D space. The color graphic display improves understanding.

Circle (581) on Reply Card

ENVIRONMENTAL CONTAINER SYSTEMS

The company's product line includes rack-mount enclosures and cases for video and broadcast equipment, and cases to protect A-V, video and broadcast equipment.

Circle (991) on Reply Card

ENVIRONMENTAL SATELLITE DATA

PMT-100 terminal

More than 100 images, displaying any 16 of 4096 colors, are available for instant recall. Joystick pan and zoom capability and sequence looping aid in explaining weather data.

Circle (582) on Reply Card

EVENTIDE CLOCKWORKS

APX252 spectrum analyzer

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

SPECSYSTEM2.0 Software

See "New Test Equipment at NAB-'83" BE April 1983, page 34.

SP2016 effects processor

Programmable signal processing is accomplished through the use of plug-in software modules for a variety of

reverb, chorus, delay, flanging and phasing effects. The stereo system uses digital technology.

Circle (583) on Reply Card

see ads on pages 144 and 145

EXCALIBUR INDUSTRIES

VTR cases/systems

VTR in-case operation increases equipment protection and reduces recording setup time. Standard units are fiber-glass with customized Ethafoam linings.

Circle (584) on Reply Card

FAROUDJA LABORATORIES

CFD-N-1 decoder

This NTSC decoder produces RGB signals with active comb filtering for high resolution applications and with suppression of color subcarrier dot crawl artifacts.

CRX-N Colorex

Chroma noise reduction and enhancement eliminates chroma ringing, chroma/luminance delay errors and apparent loss of bandwidth associated with U-matic VCRs.

Circle (585) on Reply Card

FARRTRONICS

M-83-PHB beltpack units

These passive units interface to P/L systems for one or two channels. Listen, Volume and Mic On/Off controls are conveniently located, along with a 3-circuit phone jack and the

XLR input plug.

Model 525 packaging

This intercom packaging retains the M81 system facilities in a smaller modular package format.

Model 175 systems

Interlinked by 25-pair cable, the standard and deluxe model 175 units allow 18 separate intercom connections with volume control and choice of carbon or dynamic mic.

Circle (586) on Reply Card

see ad on page 170

FELDMAR WATCH & CLOCK CENTER

Timers/stopwatches

Felmar distributes Accusplit, Canon, Cronus and Heuer timer and stopwatch products.

Circle (587) on Reply Card

FIDELIPAC

Model 400 tape eraser

A magnetic rating to more than 2000G erases any audio, video or computer tape material up to 1-inch reels. Erasure level is equivalent to that of virgin tape.

Model 65-390 wow/flutter meter

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (588) on Reply Card

see ad on page 140

FILM/VIDEO EQUIPMENT

Production accessories



The machine of the 80's.

THE GARNER 1100

It's no secret that one-inch will be the videotape of the 80's. If you're planning to convert to one-inch, invest in the Garner 1100 degausser to get the maximum use of your one inch tape. With Garner's one-pass, endless belt operation, you get complete erasures at the rate of 13 reels per minute.

Put the Garner 1100 to the test yourself. Use the 1100 for 30 days. If it doesn't live up to your standards, just return it to us.

We're convinced that you'll agree that the Garner 1100 is the machine to handle one-inch degaussing. It's the machine of the 80's.

garner

Dependability... Guaranteed

GARNER INDUSTRIES 4200 North 48th Street, Lincoln, NE 68504 Phone (402) 464-5911

Circle (37) on Reply Card

TOWNSEND

The Television Transmission Specialists

Running a straight course keeps Townsend a step or two ahead of the competition.

The many opportunities in television have attracted several of today's largest corporations into our industry from a variety of backgrounds. Since the beginning, Townsend Associates has been dedicated to the design, development, and manufac-

ture of television transmission equipment exclusively. It's not a sideline with us. And we're not someone else's subsidiary. From transmitters to components, everything we develop and produce is mainstream to the transmission of television.

INNOVATIONS THROUGH SPECIALIZED R&D

High Power UHF & VHF Television Transmission

FIRST solid state exciter.

FIRST to employ emergency klystron multiplex circuitry for UHF.

Low Power UHF And VHF Transmission Systems

FIRST manufacturer of High Power transmitters for L.P.T.V.

FIRST integrated antenna and amplifier transmission system for low power UHF.

Satellite Rebroadcast Systems

FIRST transmitter manufacturer to introduce satellite system concept through a cooperative effort with a TVRO manufacturer.

FIRST to have a complete line of transmitters for satellite rebroadcast systems. We design and build rebroadcasting systems for UHF and VHF and each is available in either low or high power configurations.

Multipoint Distribution Service (MDS) And ITFS

FIRST 100% solid state transmitters in both 10 watt and 100 watt.

FIRST with intermod free external duplexing of the aural and visual carriers.

Custom Engineering

FIRST and only manufacturer with hardware and the know-how to up-power all major brands of T.V. transmitters.

Major Components

FIRST solid state pulser.

FIRST to introduce external cavity klystrons.

FIRST to provide a regulated and adjustable power supply...PERVEAC.

FIRST to manufacture and employ plug in vacuum contactors for T.V. transmitters.



The R & D Group Our "FIRST" Team,

The many transmission innovations developed by the Townsend R & D group have often involved technologies borrowed from other fields. Their singular purpose is to find ways to measurably raise the state-of-the-art in just one field...television transmission.

TOWNSEND

ASSOCIATES, INC.

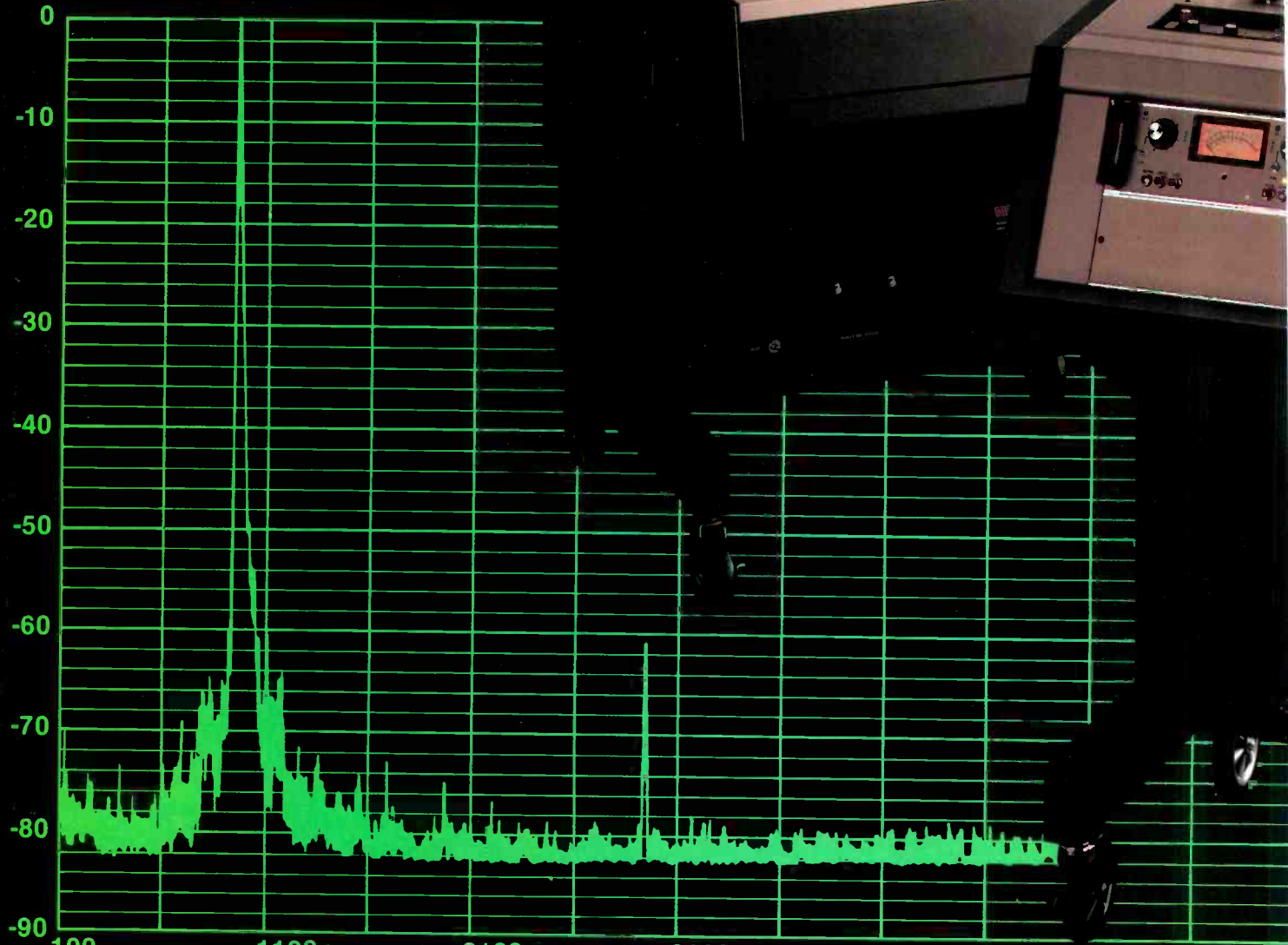
79 Mainline Dr., Westfield, MA 01085 Tel. 413-568-9581 TWX #710-356-1521 • West Coast: 1080 Los Molinos Way, Sacramento, CA 95825 • Bangkok: Box 11-1240, Nana, Thailand 10112 • Canada: Comad Comm., 91 Kelfield St., Rexdale, Ontario M9W 5A3 • Australia: TBC PTY. Ltd., 6 Chilvers Rd., Thornleigh, N.S.W. 2120

Circle (59) on Reply Card



JH-110B-2-HP


Amplitude in dBm



Frequency in Hz

DISTORTION/PURITY OF SIGNAL

DOES MCI REALLY OUTPERFORM THE REST?



In a world filled with claims and counter claims for high performance audio products, sometimes it's hard to separate opinion from fact. That's why MCI has provided complete graphic proof of all important tape recorder/reproducer performance characteristics. Now available in a handy Engineering Notebook, these curves and their accompanying methodology form the standard by which all other tape recorders must be judged.

If performance matters in your broadcast or teleproduction application, don't be fooled by "simple specmanship." And if you want to decide for yourself how the JH-110 Series measures up to comparable units, just ask Sony Broadcast to arrange for a demonstration.

Does MCI really outperform the rest? We'll let you decide. For your free copy of the Engineering Notebook and more information about our demonstrator program, call Tony Dean, Eastern Regional Sales Manager, Audio Products, (305) 771-3997, or Holmes Ives, Western Regional Sales Manager, Audio Products, (213) 841-8711.

SONY
Broadcast

JH-110B-2-VP

© 1983 Sony Corp. of America. Sony is a registered trademark of the Sony Corp.

Circle (60) on Reply Card

As well as the Wide Eye I and II wide-angle ENG/EFP lens attachments, Film/Video Equipment Service handles a variety of camera and recorder cases from Kangaroo Products. Services include complete optical repair for ENG and studio lens systems and battery products.

Circle (965) on Reply Card
see ad on page 164

FINNTEK

The company's product line includes consoles and test signal generators.

Circle (992) on Reply Card

FITZCO SOUND Distributor

FitzCo Sound handles a line of audio products including microphones, recording tape, recorders, consoles, cabling and audio processing equipment.

Circle (589) on Reply Card

FLASH TECHNOLOGY

Upgraded ElectroFlash beacons

The FAA-approved white flashing aviation obstruction beacons are accepted by CSA (Canadian) specifications.

Circle (590) on Reply Card

FOR-A

FA-430P TBC/processor

Color correction, enhancement and

noise reduction functions operate on Y, R-Y and B-Y component video signals from 3/4- and 1/2-inch VTRs. The 16-line correction range system applies to PAL standard signals.

TCR-3500 TV reader

SMPTE and EBU time coder and user bits, stored in two memories, allow push-button retrieval of any location on the tape. An integral generator/keyer inserts time and user information into video.

FVW-300 video writer

Using a light pen, the artist draws pictures on a monitor screen. The images, 384x224 pixel (NTSC) or 384x256 pixel (PAL) may be stored on an optional MU-600 floppy disc memory.

VTW-210 video typewriter

The 16x20 dot matrix letters form 32-character lines, with up to eight lines per page. A standard 4-page memory expands with optional floppy disc, magnetic card or the MU-250 39-page memory units.

CI-10 color interface

The CI-10 interface adds color for title/information displays over colored backgrounds or input video.

TKY-4600 title keyer

Title, edge and background colors combine with edge mode and width selections for downstream keying applications with the TKY-4600 keyer. Auto or manual transitions may be

performed between an A and B bus titling condition.

FM-60 memory

Integral 64k dynamic RAM provides frame- or field-freeze operations for monochrome video pictures.

The Stringer van

Built around a Nissan Prairie vehicle, this van incorporates the VM-10 portable video switcher for up to four video inputs and the AM-10 4-channel audio mixer with other production equipment.

A/B control components

The AD-P100 control unit, SW-70 signal switcher and EC-P70 digital counter displays may operate with editing systems, such as the JVC Tape Handler series, to develop a low cost A/B roll-type editing configuration.

Circle (591) on Reply Card

FOROX

Film recording system

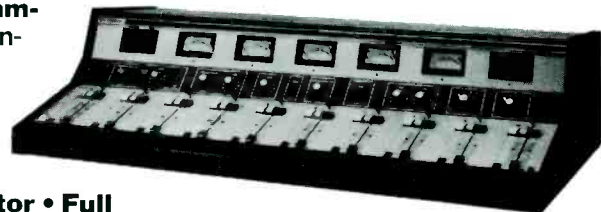
Images from the 1400-line resolution flat-face CRT produce high quality color graphic slides with the SD camera head and microprocessor-controlled panel. Exposure is based on color separation principles.

Animation system

Combining the model SS camera, copy stand and animation compound with the SSA800 computer controller provides a complete video animation system with a 3/4-inch VTR.

Circle (592) on Reply Card

4 Models—8 and 10 mixer dual stereo with rotary or linear faders • Transformer Balanced Inputs and Outputs • 3 Inputs Per Mixer—internal pads allows mic/line selection on the same mixer • Two 4-Input Auxiliary Input Selectors—may be assigned to any mixer • Pre-fader Pushbutton Cue—in addition to normal CCW fader cue position • LED Status Indicators—color coded to aid in instant identification of function selectors • Momentary or Continuous Remote Control Contacts—internally selectable, also controls optional digital timer reset/start • Full Metering Capability—two meters standard, up to four meters and/or digital clocks and timers optionally available, all meters provided with LED peak indicators • Gain Selectable Microphone Preamps—provided with center tap access for phantom condenser microphone power, processor input/output port with buffer amplifier for outboard compressors, limiters, etc. • Programmable Muting Logic—internal pin-programmed matrix allows any selection of monitor and cue muting for the first five mixer positions • Pushbutton Aural Phase Test • Announcer's Microphone Intercom-Air Selector • Full Dual Channel Operation— independent program and audition assignment push-buttons • Five Monitor Driver Outputs—four muted, one non-muted • All Mixers Switch-Selectable to Mono or Stereo • Ground-Plane Techniques Used Throughout for Increased RF Immunity • Selectable Internal or External Master Level Controls • Accessories and Options—mono mixdown, high impedance (cassette) line input plug-ins, reference oscillator/line input plug-in, additional microphone input plug-ins, digital clock, digital timer, linear faders.



LPB® **citation series** Everything you want in an audio console
LPB Inc. • 28 Bacton Hill Road • Frazer, PA 19355 • (215) 644-1123
Manufacturers and Distributors of Broadcast Equipment since 1960
© 1981 LPB Inc.



Varian GEN II KPA. Pushing earth terminal technology through the 80's.

Designed specifically for today's modern world of earth terminal communications, the new Varian GEN II KPA simplifies complex communications problems with its advanced computer interface options. Easily adaptable, GEN II can be programmed to IEEE 488, RS-232 and RS-422 data busses.

Smaller, more modern design. Modular construction includes a proprietary,* digitally-controlled, all solid-state, low noise regulated power supply.

Integrated in the RF section is a digitally-controlled PIN diode attenuator to provide precise setting of the RF output.

Controls/Monitors/Logic section circuits use C-MOS high

noise immunity digital techniques to energize, protect, control and monitor KPA performance. The modern front panel features all-LED indicators and digital meter displays.

Enhanced Varian klystron for high efficiency.

GEN II utilizes the original, field-proven Varian VA-936 series klystron, with enhanced specification including 24-channels for top performance.

GEN II provides high efficiency with only 12 kVA for a full 3.35 kW tube, less than 1 kVA in standby and automatic 10% reduction of heater voltage for extended klystron life.

* Patent applied

More information on the new GEN II KPA for the 30's is available from Varian Microwave Components and Subsystems Division. Or the nearest Electron Device Group sales office. Call or write today.

Electron Device Group
Microwave Components and
Subsystems Division
3200 Patrick Henry Drive
Santa Clara, California 95050
Telephone: 408-496-6273



varian

FORT WORTH TOWER Tower services

This company continues to provide towers, earth stations and prefabricated equipment buildings for any broadcaster's needs. Pre-construction design to post-construction maintenance packages are available.

Circle (593) on Reply Card

FORTEL DIGIBLOC synchronizer/TBC

The 64k RAM memory of the DIGIBLOC programmable synchronizer/TBC works with direct or heterodyne color. Expandable to two TV frames, the system uses 8-bit or 9-bit quantizing at 14.3MHz with a coax RS-423 interface to DIGILINK peripherals.

DYNA-TRAC accessory

With the Y-633³² total error corrector, the DYNA-TRAC allows reverse play speed to 3X forward images with the Sony BVU-820 slow-motion U-matic VTR. The system uses the wider bandwidth dub output signal.

CCDHPS TBC

Incorporating the Faroudja Labs Y/C separator, the CCDHPS TBC offers improved performance with U-matic VTRs. Specifications list a 60dB S/N rating with 0.5°/1.5% differential phase/gain.

CC-1 color corrector

Color in black and white, as well as saturation, hue and luminance level, are processed from Y-688 dub signals of U-matic VTRs for improved images.

Component video TBC

The C-YIQ³² TBC performs full-bandwidth correction on baseband Y, I/Q signals from M Format 1/2-inch VTRs by RCA, Ampex and others. The output from the system is a Y-688 dub signal for recording on 3/4-inch recorders.

Circle (594) on Reply Card

see ads on pages 81-90

FOSTEX

B-16 recorder

For 16-track capability on 1/2-inch audiotape, the B-16 recorder/reproducer includes Dolby C noise reduction and SMPTE interlock. The 15ips tape speed allows ±15% variability in coarse and fine adjustments.

3070 compressor

Dual-channel compression with variable slope, attack and release times complement a noise gate function with independent threshold setting, for PA, recording and mixing applications.

3180 reverb

Stereo-from-mono or strictly 2-channel functions take advantage of

a multiple spring design of the 3180 reverb system. Pre-delay of 24ms results in natural sound.

Circle (595) on Reply Card

FREZZOLINI ELECTRONICS

RPS-2 power supply

Two 35W ENG cameras or VTRs receive power simultaneously from the RPS-2 power supply. Alternatively, the unit can fast charge two battery packs.

VC-1 charger

The VC-1 fast charges one battery pack and slow charges up to five others from 12Vdc or 115Vac.

CR-1 charger

BP-90 or other 12V On-Board battery units charge overnight with the CR-1 charger unit.

EC-30 battery pack

With an integral charger, the EC-30 provides power for 30V Frezzi-Lites. An external fast charge unit is also available.

Battery brackets

The RM6000 bracket offers direct electrical and mechanical connections for BP-90 batteries to Sony's DVC-6000/DXC-1800 cameras. The RM110 interface accepts a Frezzi HM-90 holder, allowing use of BP90 batteries on the BVP-110 camera.

FLAH-101 accessory holder

Rotating barn doors and slide-on

Rely on Dielectric

The networks do

... for assured continuous operation and proofing.



The U.S. Navy does

... for their communications, radar and fire control systems.



NASA does

... for the Space Shuttle Program and Columbia flights.



You, too, can be confident with Dielectric's RF instrumentation and components. For more than 40 years, our products have been respected by the communications industry for their exceptional reliability and accuracy.

Today, Dielectric is in the vanguard of advanced RF technology, supplying a wide variety of devices from meters and loads to waveguide for electron beam accelerators, the space shuttle program, military communications, fusion power generation, radio astronomy, and deep space satellite tracking radar. This same quality is common to all our products.

Integrity and craftsmanship . . . a New England Tradition

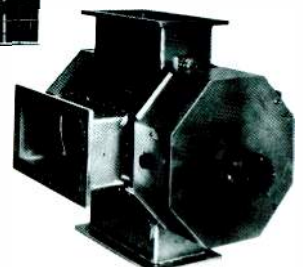
DIELECTRIC COMMUNICATIONS

A UNIT OF GENERAL SIGNAL

RAYMOND, MAINE 04071, USA

202-855-4555 / 800-341-9678 / TWX: 710-229-6890

A FORTUNE 250 COMPANY



Thanks for seeing us at NAB

Circle (62) on Reply Card



Julius Barnathan, President
Broadcast Operations and Engineering
American Broadcasting Company

CHYRON® IV

PARTNERS IN PRODUCTION

The CHYRON® IV is a vital member of the ABC production team. For most of the leading TV stations and production houses, CHYRON has become their indispensable 'canvas, brush and palette.'

And, like Picasso, with these tools they create some of the most memorable graphics in the world...

Follow the Leaders with

CHYRON

TELESYSTEMS

A DIVISION OF CHYRON CORPORATION
265 Spagnoli Rd., Melville, N.Y. 11747
516-249-3296 • Telex: 144522 Chyron Melv
Ampex International is exclusive distributor for
Chyron Graphics Systems outside the U.S.A.

Circle (63) on Reply Card

scrims mount to Frezzi-Lite Super-650 units with the FLAH-101 holder.

RPS-3 adapter

The On-Board configured ac power adapter mounts to battery brackets of most ENG/EFP cameras.

On-Cam VTR

The model OC-1 1/2-inch VCR mounts instantly on many portable video cameras for VHS-C Format recording.

Circle (596) on Reply Card

see ad on page 106

FUJI PHOTO FILM USA, MAGNETIC TAPE DIV.

Tape products for 1/2-inch

The H321 for Betacam and H421 (for M Format) offer "Duroback" coating on magnetic tape materials including the Super Fine Beridox formulation. Ten- and 20-minute lengths are available in both 1/2-inch formats.

U-matic products

Five KCA 3/4-inch and two KCS 3/4-inch lengths of H521 tape material employ the Fuji backcoating technology for added durability. The tape formulation includes Beridox materials for enhanced color and noise performance.

Circle (597) on Reply Card

see ad on page 125

FUJINON OPTICAL 28X lens

The R28x11ESM studio lens provides an MOD of 0.95m with a zoom range of 11-310mm. Other features for 1-inch cameras include the test pattern projector, manual servo modules, programmable shot box and a 1.7X extender.

R17x12.5ESM lens

The maximum aperture of f/1.6 and a 17X zoom ratio for 12.5-165mm combine for 1-inch studio camera versatility. 1.5X and 2X extenders are standard.

7X lens

The A7x7RM zoom lens includes an MOD range of 0.3m for 3/8-inch format cameras. Maximum aperture is f/1.7, with servo zoom and auto iris, in a 3.5-pound assembly.

Long focal lengths

The R44x13.5ESM 1-inch zoom lens assembly covers 13.5-600mm with a maximum aperture of f/1.8. Features include 2X extender, test pattern projector, servo zoom/focus and shotbox. For 1 1/4-inch cameras, request the P44x18ESM.

Weatherization

The A14x9ERM assembly includes weatherizing for reliability and performance in adverse conditions. Internal and external gasketing keeps water out.

ENG zoom

The A12x9ERM weighs only 3.3 pounds with auto iris, servo zoom and a 2X extender. The maximum aperture of f/1.7 is flat for most of the 9-108mm range.

3/8-inch studio lens

Use of a 2X extender in the A14x8ESM doubles the zoom range for 16-224mm. The MOD is a short 0.7m, with a maximum aperture of f/1.5. A variety of accessories include the microprocessor shot box and interchangeable modular servo zoom and focus.

Circle (598) on Reply Card

see ad on page 67

GEC McMICHAEL

Clock/logo generator

A high resolution image matrix produces an analog clock face and stationery logos from solid-state memories. The two visual components may be used separately or combined.

Grade 1 monitors

Two sizes, 14- and 20-inch, use self-converted in-line picture tubes with five pitch phosphor dot trios. RGB-, single-, double- and triple-standard MCA 37/BQ and MCA 51/BQ units have interchangeable electronics.

ACE standards converter

NTSC, PAL, SECAM or RGB video inputs are converted to any of the four formats as outputs. Four-field storage and the unique interpolation algorithm provide transparent conversions.

Series 2000 optical fibers

Full duplex operation is possible at a 38.4kbit/s maximum input channel rate. Inputs and outputs to the master unit interface with RS-232C equipment.

Circle (599) on Reply Card

GAGNON LAFOREST

Theater rigging equipment

Vertilift units handle up to 1500 pounds dead weight with infinitely variable speeds. Set piece position repeatability is within 1/16-inch.

Circle (600) on Reply Card

GARNER INDUSTRIES

1400 degausser

A peak erasure field of 2600 oersteds, horizontal flux, erases up to 14-inch reels of tape. Little heating of reel flanges occurs as the belt moves at 2 3/4 ips.

Circle (601) on Reply Card

see ad on page 112

GENERAL ELECTRIC/ LAMP DIVISION

FEX Quartzline lamps

FEX-Q2000T8/4CL lamps are available in 220V and 240V types. The 2000W units last approximately 500 hours. The initial light output is rated at 50,000lm.

FEP lamps

Two versions of the FEP-Q1000/4CL Quartzline lamps offer 1kW ratings with an output of 25,500lm initially for 220V and 240V. Suggested life is 300 hours.

FKK mogul bipost lamps

2kW Quartzline mogul bipost base lamps for 220V and 240V carry the designation of FKK-Q2000T10/4CL. The 400-hour life begins with 54,000lm.

Multimirror Quartzline

The EXV, EXS and EXX multimirror Quartzline flood lamps provide 100W, 200W and 250W ratings from 12V, 30V and 120V power.

Circle (602) on Reply Card

GENERIC COMPUTER SYSTEMS

Applelog software

For Apple II+ computer systems, Applelog provides scheduling, billing sales and management data processing. System requires 64k computer, 5 1/4-inch floppy disc, 5Mbyte hard disc, monitor and printer.

Circle (603) on Reply Card

GENTNER ENGINEERING

Telephone interface

The Electric Hybrid SPH-4 interface has pre-mix and post-mix equalization for improved audio quality. "Call Conquer" extends dynamic hybrid performance.

Pre-wired patch panels

Custom and standard patch panels with up to 8-foot cabling to various types of terminations provide from 24-96 T-R-S or T-R type jacks.

Telephone system

The SPH-3 phone system interfaces broadcast equipment to telephone equipment. Caller and announcer can speak simultaneously on talk shows, interviews and newsroom feeds.

SW series input selectors

Ten-position rotary switches are pre-wired to punch block connectors through a 25-pair cable. SW-1 has 10 stereo sources; SW-2, 20 sources; SW-3, 21 sources, 3 per switch; SW-4, 10 stereo sources to two stereo outputs.

Console labels

Label kits include 10-point Helvetica in black or white on adhesive-backed mylar.

Circle (604) on Reply Card

GERSTENSLAGER

Production facilities

Gerstenslager constructs custom and standard ENG and EFP mobile facilities to customers' requirements.

Circle (966) on Reply Card

GLETRONIX

TO-9 message unit

The Torpey Controls TO-9 video message system provides a flexible source of message insertion. The integral keyer includes borderline edging for up to 16 2-line messages with 32 characters per line.

T 5010 time code generator

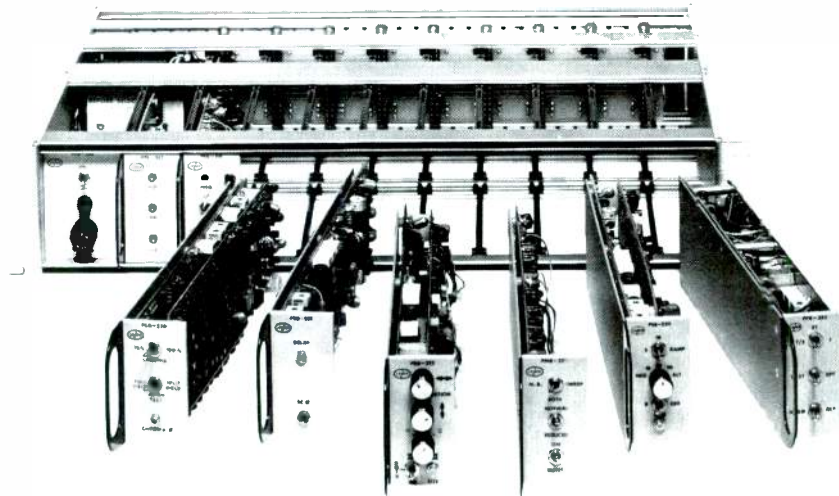
See Telcom Research.

RVS-524 video switcher

See Ross Video Ltd.

THE PROFESSIONAL'S VIDEO TEST SET CHOICE

**MORE STANDARD FEATURES TO BEGIN WITH
MORE OPTIONS TO GROW WITH**



This totally integrated modular video test set is designed for you, the discriminating professional. The Lenco 300 System lets **you** specify video test signals to meet **your** system requirements, rather than the manufacturer's requirements.

For versatility, use the Lenco PSG-310 Digital Color Sync Generator or the PMG-312 RS-170A Generator with any one or a combination of all the test modules. Mix them or match them any way that you can imagine. There are 29 test signals available to answer all of your system test specifications.

THE AFFORDABLES — You get a lot more for a lot less with the Lenco 300 System. For example, all of our test signal modules have

composite video delay. This allows you to **individually** time each test signal module to your system. Moreover, we are the first American manufacturer to supply a color bar generator with the SMPTE alignment test signal (reverse bars).

Join the many professionals now using the flexible Lenco 300 test system. We are so sure of your acceptance of Lenco equipment, that we offer a two-year warranty on all parts and labor. This warranty also includes freight to and from our factory.

Call or write for a demonstration today. You will find the Lenco 300 System to be your professional video test set **now** and as you grow.



LENCO, INC., ELECTRONICS DIVISION

300 N. Maryland St., Jackson, MO 63755, (314) 243-3147

The Professional's Choice

Circle (64) on Reply Card

Series 200 audio-follow

The Scantex AFD-200 series includes these modular audio-follow systems: model 200, audio editor switcher; models 201 and 202, audio-follow dissolver; model 203, adds stereo; model 204, 8-input mixer with computer-assist option.

Circle (605) on Reply Card

ALAN GORDON ENTERPRISES

Super Grip II

A 10-inch diameter gripper holds to any non-porous, flat surface with a load rating to 150 pounds. Attached to the gripper is a 2-way positive locking wedge plate for camera or light fixture mounting.

Alan Gordon Enterprises represents a number of manufacturers of film and video production equipment including Nagra, Zeppelin, Cool-Light, Pearson, Elemack, Bell & Howell and Goldtop.

Circle (606) on Reply Card

GORMAN-REDLICH

EBS encoder

Model CE with stereo option generates 960Hz and 853Hz tones from a 3.9MHz AT-cut crystal. The encoder is FCC type-accepted.

Circle (607) on Reply Card

GOTHAM AUDIO

M-21 Magnetophon

A product of AEG-Telefunken, the M-21 audiotape recorder handles 12.5-inch reels for 3.75ips, 7.5ips, 15ips and 30ips speeds. Features include R-T-Z locator, LCD display of functions and tape position and $\pm 10\%$ variable speed.

KMR8li microphone

The 9-inch-long KMR8li shotgun microphone combines hyper- and super-cardioid patterns. The Georg Neumann product uses a condenser capsule with a 40Hz-18kHz response.

EMT 938 turntable system

The EMT-Franz 938 disc reproducer gives 3-speed operation with quick-start capability. Integral equalizer amplifiers provide balanced studio outputs from an EMT TSD 15 dynamic cartridge.

Circle (608) on Reply Card

GRAHAM-PATTEN SYSTEMS

Model 612 mixer

The 12-input, dual-channel mixer system for post-production facilities has 5-frame to 255-frame, thumbwheel-selected auto transition rates. Interfacing is available for SMPTE, ISC or CMX, switcher AFV and direct external control systems.

Model 1231 keyer

Six different signals into the 1231 downstream keyer system may be used simultaneously on program input signals. Bordering and drop

shadow effects are included, as well as several editor-controlled features.

Circle (609) on Reply Card

see ad on page 48

GRASS VALLEY GROUP

3259 phase meter

See "New Test Equipment at NAB-'83," **BE** April 1983, page 34.

Component video switcher prototype

The XCS-1 experimental component switching system presents an 11-12MHz bandwidth to RGB or Y/R-Y/B-Y video components. The switcher is based on the GVG 1600-1L.

Horizon distribution switcher

Horizon represents a modular routing switcher system based on 8x16 crosspoint modules, allowing a maximum 128x128 size. Audio, video, or audio and video configurations are available.

Wavelink fiber-optics

Video with dual audio or data is transmitted on Wavelink fibers from an LED and frequency modulation techniques. An avalanche diode detects the optical signals.

Production switcher updates

Internal design changes have not altered switcher operations, but have improved performance and reliability of series 300 and 1600 switcher systems.

Circle (610) on Reply Card

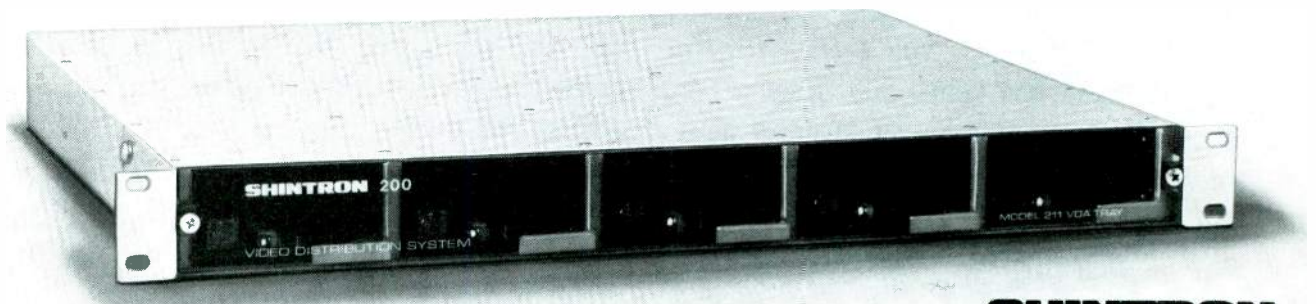
see ad on page 7

Shintron makes the DA you need to buy only once

You want two things from an audio or video distribution amplifier. You want the best performance obtainable from current technology. And you want long, trouble-free service life.

Shintron's 200 Series gives you both, with performance that exceeds most CE's expectations and operating life that delights the maintenance crew as well as the controller.

Other niceties include direct plug-in compatibility that lets you upgrade Grass Valley racks with Shintron 200 Series modules. When you're ready for the DA you buy only once, specify the Shintron 200 Series. For complete information, circle reader service number or contact:



SHINTRON

SHINTRON Company, Inc., 144 Rogers Street, Cambridge, MA 02142/(617) 491-8700/Telex: 921497
Shintron Europe, 198 Avenue Brugmann, 1180 Brussels Belgium/ Tel: 02-347-2629/Telex: 61202

Circle (65) on Reply Card

Have you called your switcher lately?

The new Bosch TVS/TAS-2000 video/audio distribution switcher is so advanced you can call it on the phone. And it can talk back to you.

If you're the station manager or chief engineer, you can control all your station's feeds directly from your desk—without affecting the program on-air. You don't even need a control panel. Just a touch-tone phone.

And if it makes you feel more comfortable, the TVS/TAS-2000 will confirm—verbally—what you've done.

Have it your way

Touch-tone control is just one of the sophisticated control options available with the TVS/TAS-2000 to let you fit your needs precisely.

And we know something about your needs because we've been a leading manufacturer of distribution switchers for years with our TVS/TAS-1000 and RKX models.

You can choose from standard control panels with leverwheel and button per crosspoint. Or customized panels for single bus to full matrix control. Or completely automated systems.

Our new 1400 and 1500 series control panels can handle multi-level breakaway—seven levels is standard.

Since the TVS/TAS-2000 is part of a family, you can add most of these control options to existing Bosch-Fernseh TVS/TAS-1000 and RKX switchers.

Outstanding specs.

As you'd expect in a state-of-the-art system, specifications are outstanding. Crosstalk is better than 60dB for video and 85dB for audio under worst conditions. Harmonic distortion is .02%. Impedance, 150 ohms.

We check our specs with the industry's most precise automatic test system, testing all possible signal

paths for each measurement. And we record all test data, with a copy to you and one for us.

Features for now. And into the future.

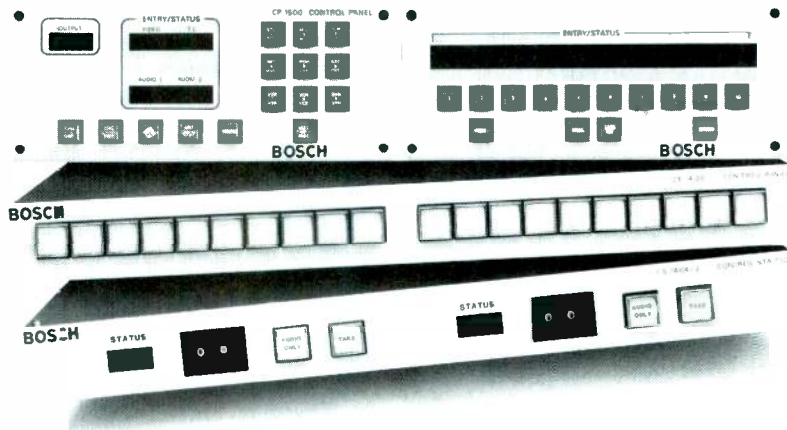
The TVS/TAS-2000 has standard and optional features you need today. And will need tomorrow. Such as redundant control card capability. Coax party line or RS-422 control. SMPTE RS-422 computer control. Vertical interval switching. Internal refresh memory. Local and remote alarms. Clamped video inputs. And many more.

Its compact 10 x 10 arrangement gives you a bigger matrix in an 8¾ inch card cage—60 x 10 audio and video or 130 x 10 audio or video.

You can expand in the field without rewire to virtually any size matrix you may ultimately need.

Call your local Bosch-Fernseh office for details on the new TVS/TAS-2000 and other members of the Bosch switcher family. Or write Fernseh Inc., P.O. Box 31816, Salt Lake City, Utah 84131, (801) 972-8000.

We won't give you any backtalk.



Circle (66) on Reply Card

BOSCH



GRAY COMMUNICATIONS CONSULTANTS

Consultant services

Gray Communications assists in planning design of turnkey studios to mobile production vehicles.

Circle (611) on Reply Card

GRAY ENGINEERING

VIE-224 translator

An edit suite can take advantage of longitudinal and vertical interval time code by using the VIE-224 time code translator. Longitudinal is converted to VITC for insertion into one or more video lines.

VID-225 decoder

Longitudinal and vertical interval time code may be input to the VID-225 decoder. The longitudinal output signal is at a rate proportional to either input signal.

Circle (967) on Reply Card

see ad on page 172

GREAT AMERICAN MARKET

Stik-up luminaire

The 100W Stik-up light, weighing only 9 ounces, mounts easily anywhere. A wire frame provides protection or holds color filters/diffusers. The 9-foot cord powers a Q100CL/DC 120V lamp.

Camralites

Camralite units offer variable intensity from "Obie" lights.

Circle (612) on Reply Card

see ad on page 66

DAVID GREEN BROADCAST CONSULTANTS

TC-100S TeleCoupler

From Audicom Electronics, the TC-100S telecoupler interfaces the telephone to an audio console for 2-way conversations on talk shows and new coverage.

Broadcaster's services

Audicom Electronics will perform the paperwork on AM and FM proofs-of-performance and will provide microwave path printouts.

Live-assist control

Programmer 3A live-assist controller handles up to four reel-to-reel decks for stations wishing to use automation formatted reel-recordings in a live-assist studio. Programmer 3A is manufactured by MW Persons & Associates.

Audio prism processor

From Texar, the Audio Prism applies digital technology to multiband audio processing for fewer processor artifacts in AM or FM broadcasting.

PhaseCube

The PhaseCube from Designer Electronics eliminates stereo phasing problems from stereo cartridge machines.

Turntable preamps

Peak Audio provides the Perfectionist and Economist phono

preamplifiers. Passive equalization aids in low noise, low distortion audio. Both preamps use separate power supplies.

Time readout

Peak Audio's Timesaver tape time readouts allow 2-speed operation, providing a tachometer output for connection to SMPTE controllers.

Circle (613) on Reply Card

GREGG LABORATORIES

AM audio processor

Model 2540 uses multiband processing to develop a high fidelity AM broadcast signal. The system may be used for AM stereo.

Model 2040 console

The 14 mixing channels accommodate 24 inputs for three stereo outputs and three mono output signals. Penny & Giles linear faders and Bourns rotary controls combine with Microswitch push-button switches for reliability.

Matchbox

Henry Engineering produces the Matchbox to interface hifi and semipro (IHF standard) equipment to professional studio equipment.

Circle (614) on Reply Card

THE GRIP COMPANY

Production accessories

The Grip Company offers a variety of reflectors, scrims, mounting equipment, lighting stands, gel frames and other accessories needed to simplify video and film production.

Circle (790) on Reply Card

GRUMMAN AEROSPACE

Earth station controller

The fault tolerant controller detects transmission errors at the bit level, notifies the operator, self-corrects and makes appropriate switch connections automatically.

STARCOMM machine control

Studio Telecommunications and Remote Control of Machines through a Computerized On-Line Message Matrix combines multipoint communications and automated remote control through six software-formulated modules.

Rainbow Sound

The Rainbow Sound system is a means to encode a second channel of audio into a video format, using the sync proc system. Decoded, the method provides an approach to stereo audio with video for TV transmission.

Circle (615) on Reply Card

see ad on page 93

HEDCO/HUGHES ELECTRONIC DEVICES CORPORATION

AVM-101 switchers

Miniature XLR audio connectors have replaced barrier strip connections on the 16x1 AVM-101 monitoring switchers. Parallel remote control

of the AFV switcher is available.

IRS routing switcher

A 48x48 audio or video routing switcher requires 20 rack units, including power supplies. The IRS system modules offer 12x12 arrays controlled by RS-422 serial code on twisted pairs or coax.

Circle (616) on Reply Card

HM ELECTRONICS

PAL Precision Audio Link

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

System 85

In highband VHF operation, the hand-held TX852 transmitter incorporates a Shure SM85 element working with the RX722 ac/dc-operated receiver.

Portable base station

MB-150 units permit continuous full-duplex communications with one MT-1000 transceiver or PTT with an unlimited number.

700 cabled intercoms

The series 700 system includes the BH710 beltpack headset station, the RP732 2-circuit control center and a choice of two power supplies for cabled intercom applications.

Circle (617) on Reply Card

HALLIKAINEN & FRIENDS

DRC-190 remote control

The DRC-190 digital remote control operates manually or with standard computer peripherals to monitor, display and print antenna system parameter measurements or other remote functions.

Circle (618) on Reply Card

HARRIS/BROADCAST DIV.

Delta Gain ES antenna

A 6.1m delta gain antenna achieves high gain with high sidelobe suppression. Compliance for 2° or 3° Ku-Band spacing is met. The Kingpost pedestal re-positions the antenna to any domestic satellite within 60 seconds.

Slotted waveguide UHF antenna

Wavestar antennas for UHF produce cardioid patterns (peanut and omni available soon) from a slotted waveguide with no center conductor, couplers or insulators.

Medalist audio console

The Medalist 10-channel dual-stereo audio console uses transformerless input and output circuits for on-air, production, CATV and sound distribution. Three inputs per channel and RFI/EMI immunity are featured.

DJ assist option

The MicroMac DJ assist option permits semiautomatic live-assist or fully unattended operation for up to 99 events, thus freeing the DJ for other duties.

TC-90 Smart Package

The TC-90 ENG camera Smart

**When you
absolutely,
positively,
unequivocally,
categorically
need to look
your best.**

FUJI
VIDEO TAPE
MADE IN JAPAN

Available in 2", 1", 3/4" and 1/2" Beta and VHS.



MAKE YOUR MOBILE 1 NUMBER ONE IN MOBILITY.



HANNAY REELS GET YOU IN AND OUT FAST.

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

It's the newest addition to our complete line of cable reels, for an even bigger selection of unlimited sizes, shapes and capacities to choose from.

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



Send Today
For A Free Catalog.

HANNAY REELS

CLIFFORD B. HANNAY & SON, INC., WESTERLO, NEW YORK 12183
TELEPHONE: (518) 797-3791

Circle (67) on Reply Card

Package adds auto-centering, SMPTE LTC and VITC time code with diagnostics displayed in the viewfinder.

PX-90 phono preamplifier

Two stage operation of the PX-90 phono preamp for mastering quality uses 3180 μ s and 318 μ s equalization with limited gain, then 75 μ s equalization and gain to reach nominal line levels.

MX-15 FM exciter

With a composite FM signal/noise rating of -80dB, the MX-15 FM exciter incorporates dynamic transient response, digitally synthesized modulation for stereo and auto compensation for SCA injection.

VHF antenna

Lowband VHF TV is served by custom-made 5-band circularly polarized antennas for use with 60kW transmitters. A direct replacement for batwing antennas, the system includes radome protection for feed points.

Circle (619) on Reply Card

see ads on pages 46 and 65

HARRIS/BROADCAST MICROWAVE DIV.

TV relay microwave

The 7FB broadband microwave equipment provides high performance operation in STL/TSL and multihop intercity systems.

Circle (620) on Reply Card

see ads on pages 46 and 65

HARRIS/VIDEO SYSTEMS DIV.

Digifont generator

Designed with Chyron, the Digifont character generator option to the IRIS II expands system capabilities with pre-formatted titling sequences. Italics, roll display, page store/recall and line/page centering are featured.

PAL/SECAM TBC

The HVS517 highband PAL/SECAM digital time base corrector is designed for use with expanded bandwidth VCRs.

Circle (621) on Reply Card

see ads on pages 46 and 65

HARRISON SYSTEMS

Series 4 consoles

Series 4 represents a new console design. The TV-4 or MR-4 models are available with stereo or 4- and 8-output configurations for any system requirement, including the ARMS master automation function.

Broadcast mixer

AIR-7 uses VCA circuitry, Hall-effect logic switching, mono/stereo inputs, dual-stereo/mono outputs or optional 4-stereo program outputs. Other features include built-in digital clock and timer, powered cueing system and talkback mic.

ES-7 edit suite console

The ES-7 console for editing suites

includes an interface for AFV operation with CMX, GVG, Sony and other editor controllers. Eight video switcher interface groups may be used.

Circle (622) on Reply Card

HARVEY PROFESSIONAL A-V

The company's product lines include audio and video editing systems.

Circle (993) on Reply Card

see ad on page 133

KARL HEITZ

ALPA Rotocamera

The Alpa Rotocamera produces greater than 360° panorama photographs on 70mm, 120mm or 220mm roll film.

GITZO products

These include the model 380 fluid head with 100% fluid front and rear tilt; the model 385 quick release that mounts on any fluid head; and the model 252 spring-balanced camera head and a tripod.

Circle (623) on Reply Card

HERO COMMUNICATIONS

ES antennas

Super Tennas include 3m, 3.8m, 5m, 6m and 7.56m expanded aluminum parabolic structures for the 4GHz spectrum. The mount includes a motor-driven horizon-to-horizon polar tracking system.

Circle (624) on Reply Card

HIPOTRONICS

Voltage regulators

Peschel voltage regulators are wye-connected, dry, convection-cooled ac line regulators for 240-480Vac, 2-, 3- and 4-wire applications. Regulation is specified to $\pm 1\%$.

Variable transformers

Peschel variable transformer units employ a toroidal winding. Two copper brushes contact corresponding odd and even windings (one brush on each) for lower brush- and winding-related energy loss.

Circle (625) on Reply Card

HITACHI

SR-1 VRC

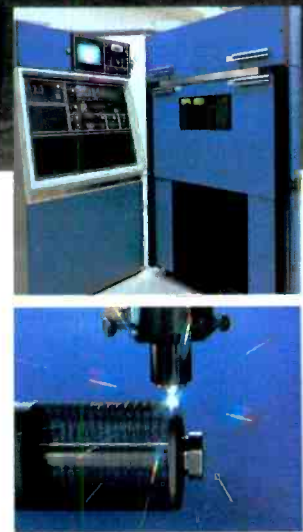
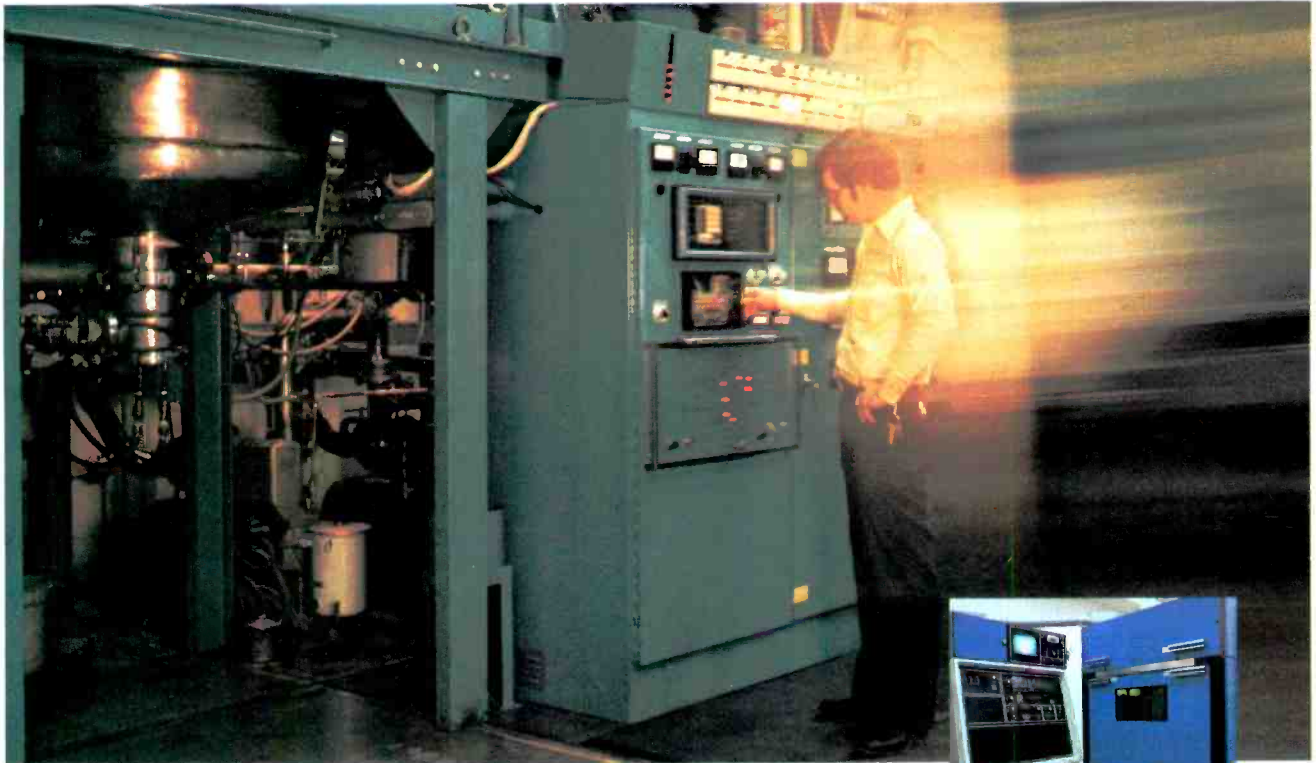
Three MOS devices attached to prism-optics develop Y and C component video signals for recording on 1/4-inch compact videocassettes. In addition to VRC-combined operation, the camera section detaches and provides NTSC video for other recording systems. A 1/2-inch recorder is also attachable.

ECR-5 video player

Serving as playback units for SR-1 and SR-3 recorded material, the ECR-5 includes an integral digital TBC, allows variable speed shuttling and connects into existing editing systems.

SR-3 VRC

Three 2/3-inch Saticons form the basis of the SR-3 VRC recording



EIMAC—moving toward higher frequency and performance in the 1980s.

Varian EIMAC, the world's leading power grid tube manufacturer, proves its expertise with almost 50 years of know-how in state-of-the-art manufacturing techniques.

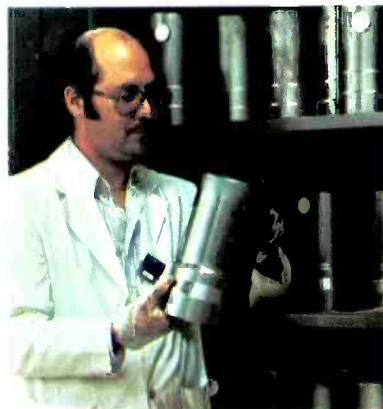
Continuing in its tradition of providing customers with maximum operating frequency and high gain, EIMAC designs and manufactures superior tubes for broadcast service.

Close tolerance control and modern manufacturing techniques provide improved life and uniform performance, tube after tube.

Consider the new EIMAC 4CX40,000G. This 40 kW tube is full-power rated to 220 MHz. The tube features laser-cut, high sta-

bility Pyrolytic graphite grids and a new internal structure combining low RF losses and high operating efficiency.

For more information on Varian EIMAC tubes and high power VHF cavity amplifiers, call or



write today. Or contact the nearest Varian Electron Device Group sales office.

Varian EIMAC
301 Industrial Way
San Carlos, California 94070
415 • 592-1221

Varian AG
Grienbachstrasse 17
Post Fach
CH-6300 Zug, Switzerland
Tel: (042) 31 66 55
Telex: 845-78789



camera system. The camera produces Y and C component signals for the 1/4-inch CVC Format recorder, as well as NTSC composite signals for other recording formats. A detachable 1/2-inch recorder may also be used with the SR-3.

FP-11 camera

Stand-alone or remote-controlled operation of the FP-11 camera provides RS-170A signals from a single 1-inch M Type trielectrode Saticon tube. A model is also available for PAL-B color.

FP-15 camera

NTSC or PAL-B models of the FP-15 camera use three 3/8-inch mixed field Saticons with precision registration yokes and automatic functions for ENG/EPF uses. The 11-pound weight includes a 1.5-inch viewfinder.

ECR-50 cassette player

The studio system, compatible with SR-1 and SR-3 cameras using a 1/2-inch video recorder unit, provides time-base-corrected video with variable speed shuttling and editing system interfacing.

EFP Computacam

The SK-97 camera includes a microprocessor in the camera to handle auto setup functions. Accessories for the three 3/8-inch tube camera include a remote control unit and base station or the digital command unit. In the studio, the SK-97 operates with

SK-970 and SK-110 setup systems.

SK-970 studio camera

Automatic setup of the three 3/8-inch SK-970 studio Computacam reduces setup time by using data file memories. Three of the memories recall registration error corrections for different lens systems. One option is a triaxial digital command system.

Digital multimeters

See the test equipment update on page 44.

Circle (626) on Reply Card
see ad on page 3

HOLIDAY INDUSTRIES

Field-strength meter

Four level ranges in the 0.5MHz-3GHz spectrum measure EMI/EMC RF and microwave radiation intensity. The HI-3004 isotropic broadband meter comes with a 7 1/2-inch probe ball and operates from 14C cells or rechargeable nicad battery.

Circle (627) on Reply Card

HOTRONIC

AD51 TBC

The AD51 provides time base correction for direct and heterodyne color VTRs using 14.3MHz, 8-bit processing.

Circle (628) on Reply Card

HOWE AUDIO PRODUCTIONS

2100 Phase Chaser

Model 2100 Phase Chaser includes a

built-in power supply to provide operating voltages as well as other enhancements.

Circle (629) on Reply Card
see ad on page 109

HUGHES HELICOPTERS

Model 500E helicopters

With 5-place capability, the single-turbine 500E helicopter includes features for passenger comfort, a slim-line external luggage compartment, a fuel management system and a 21-gallon auxiliary tank.

Model 530

The 530 helicopter uses a 650shp Allison engine to achieve a certified maximum speed of 175mph. The #250-C30 engine drives blades six inches longer than does the model 500E.

Circle (630) on Reply Card

IGM COMMUNICATIONS

MARC control

Manual Assist Remote Control (MARC) works for Instacart and Go-Cart installations for live studio and manual assist operation.

Design group

For broadcasters who need customized live assist or full automation, the Systems Design Group service may provide the answer to hardware and software.

Circle (968) on Reply Card



You don't need a special diversity receiver to solve your wireless microphone dropout problems

- Only Swintek offers multi-antenna RF switching diversity that can be used with any Swintek or most VHF/UHF receivers thus providing true RF switching diversity for much less than a dedicated diversity receiver.
- The Model RFSD switches RF instead of audio, thereby, virtually eliminating transients (clicks and pops) normally found in most conventional dual diversity receivers.
- Contains narrow band frequency modules that discriminate between adjacent channels allowing many closely spaced frequencies to be used on a set.
- Plug in module allows frequency to be changed in the field.

All Swintek Mark 1L, 2L and Q/AC receivers can be supplied with the RFSD as an internal option. Call or write for your free catalog that details the RFSD and Swintek antenna products.

Swintek—the proven performers.



1180 ASTER AVENUE, UNIT J / SUNNYVALE, CA 94086
(408) 249-5594 / TELEX 172-150 SWINTEK SUVL



Model RFSD
3 1/2" W x 1 3/4" H x 5 1/4" D

Circle (55) on Reply Card



New Tools of the Trade

The new 200 Series list management video editing systems are built to be hardworking tools of the trade you can depend on.

200 Series list management functions do all of the tedious record-keeping for you while you concentrate on creative, visual editing decisions. With only one or two keystrokes you can add, delete, or replace edits, and choose to ripple the edit list to reflect your changes. You can sort through your edit decisions by time code, by reel number, or by audio or video edits to locate material instantly, and you can move whole blocks of edits if you wish. Overlaps and inserts can be automatically cleaned after each edit, or the "409" program can clean the entire list at one time. On-board memory stores the list while you edit (up to 866 lines of memory in the 204 system).

The new modular design of the 200 Series editing systems includes keyboard, detached status display monitor, and separate rack-mountable control electronics for more elbow room and options in your editing suite configuration. Optional DD-200 Dual Disk Drive also available. Each of the four models in the 200 series is upgradeable, and can be interfaced to most editing VTR's in 1/2", 3/4", or 1" format.

For more information, call or write Convergence Corporation.

CONVERGENCE CORPORATION

1641 McGraw, Irvine, CA 92714 Tel: (714) 549-3145, Tlx: 277717 CONV UR
 3575 Cahuenga Blvd. West, Suite 255, Los Angeles, CA 91403 · 250 W. 57th Street, Fisk Building,
 Suite 815, New York City, NY 10019 · 1 Lochaline Street, London W6 9SJ U.K. Tel: 01-741 7211, Tlx: 263559 MICRO G

Circle (69) on Reply Card

Solid State Logic

In the Foreground of Television Audio

Audio for video is on a lot of minds these days. Advanced video formats and transmission methods make dramatic improvement possible. Producers' concerns over the initial impact and residual value of their programmes make it desirable. EFP, new competitive arenas and increased consumer awareness make it necessary. And now, the SSL Stereo Video System makes it practical.

The SL 6000 E Series places all of the signal processing, switching and machine control required for live and post-production stereo audio under the control of a single engineer. Fully distributed master logic and extensive local switching accommodate the immediacy of broadcast requirements with the versatility of multi-track technology. Exclusive SSL software and a unique mix bus system combine the creative flexibility of film sound technique with the efficiency and economy of electronic production.

The SL 6000 E Series lets you specify a system which will meet your current needs exactly. As those needs grow and change, SSL fills them with additional hardware and software modules which retrofit in the field. The Stereo Video System is designed and built to last. Your investment is further protected by performance specifications which exceed the challenge of the best 16 bit digital recorders.

And of course, the Solid State Logic Stereo Video System provides you with the ergonomic and sonic attributes which have made our companion SL 4000 E Series the leading choice of the world's great music studios.



Format Flexibility

The Stereo Video System's six bus mix matrix accommodates all audio-for-video formats. Along with standard mono, stereo and multi-track operations, each input may be panned between one of three stereo mix buses. This allows the engineer to freely divide the console into dialogue, music and effects sections as each project requires.



The Dialogue, Music and Effects mixes may be recorded in mono on a 3 stripe or 4 track, or in stereo on an 8 track or the multi-track master. Composite stereo and mono mixes of all 6 buses are derived from the master mix matrix for monitoring, transmission and/or simultaneous (first generation!) layback to the stereo video recorder. Alternatively, the six buses may be used for stereo mix and mix minus feeds during live coverage.

Comprehensive Signal Processing

Each I/O module contains an expander/gate, compressor/limiter, high and low pass filters, four band parametric equalisation, six cue/aux sends and tape electronics remotes. Master logic, pushbutton signal processor routing, patchfree audio subgrouping, and 8 VCA Group Masters ease complex productions, and always provide the minimum signal path.

Total Recall

Complete details of all I/O module control settings are stored on floppy disc by SSL's Total Recall System, enabling console setups to be restored within .25dB accuracy. Not only does Total Recall save time on each production, it allows greater scheduling flexibility with fewer headaches than ever before possible.

Computer Assistance. Live And In Post.

The SSL Primary Studio Computer is instructed with simple phrases entered via dedicated command keys and an alphanumeric keyboard at the console centre. A small video display advises the engineer of all activity. Above this display, controls for the SSL Video Switcher enable the mixer to call programme, preview or computer displays to the main video monitor.

The computer accepts entries in all timecode and foot/frames standards, and provides complete cue, edit, punch-in and mix list management. In post-production, it links multiple ATRs, VTRs or film chains with the Dynamic Mixing functions, providing fast and familiar rollback and pick-up recording, with every move automatically updated in the computer!



In live production, the SSL Real Time System enables complex sequences of all channel and group fades and cuts to be pre-programmed, and then manually executed with a single set of controls.

The SSL Events Controller provides up to 16 multi-repeatable contact closures under computer control. The SSL Effects Controller adds 40 A/D ports to link the computer with external signal processors.

The Solid State Logic Stereo Video System is available in studio and Outside Broadcast versions from 16 to 56 I/O modules, with up to 112 line and microphone inputs plus four stereo effects returns. Please call or write on your letterhead for complete details and prices.

Solid State Logic

Churchfields, Stonesfield
Oxford, England OX7 2PQ
Telephone (099 389) 8282
Telex 837400 SSL OX

Solid State Logic
Stereo Video Systems

Solid State Logic

2633 Fifteenth St. N.W.
Washington, D.C. 20009 U.S.A.

ITC/3M

Delta series cart machine

In a reduced size, the Delta series cartridge machines include a crystal-controlled servo capstan motor with ceramic capstan shaft, high speed recue as standard, an improved head and microprocessor control. Delta Three offers three independently removable decks.

Circle (631) on Reply Card
see ads on pages 56 and 57

IKEGAMI ELECTRONICS (USA)

HL-79E camera

With a reduced weight, the HL-79E camera includes fully automatic operation for ENG, EFP or studio configurations. ADC-79E auto setup

digital control and RDC-79 remote digital control combine with multicore or triax remote control options.

ML-83/79 microwave

Signals to the base at 2GHz and 950MHz returns keep HL-79 or HL-83 cameras in touch with the base station. Responses include video to 4.5MHz and audio from 50Hz-12kHz.

HDTV equipment

For 0.025% registration accuracy over the viewing area, the HDTV camera, built by Ikegami for NHK, samples 570 points. The 2:1 interlace system uses a 5:3 aspect ratio and 1125 scanning lines in a 30MHz video bandwidth.

Series 3H monitors

Video response from 60Hz-10MHz provides an 800TVL resolution on 9- and 14-inch monochrome monitors of the 3H series. Illuminant-D phosphor and pulse delays for cross pulse are available for both.

Series 9 color

An addition to the series 9 color monitor adds the 9-inch system to a 14- and 20-inch high resolution line. A 600TVL display of A or B inputs also provides crosspulse in a 1/2-rack size.

ITC-730 improvements

The three 2/3-inch ENG/EFP camera operates with a digital multiplex control system of 13.5mm cable. CCU power may be derived from the camera or from an ac source.

HK-322 automatic camera

Up to 24 HK-322 cameras may be set up and operated from a single master control panel using a third generation centralized digital control unit. Manual, fully automatic and quick auto-check modes of control produce less than 0.05% color misregistration.

Circle (632) on Reply Card

IMAGE VIDEO LTD.

7707 universal display

A 4-character display and on-air indicator are driven by a variety of switcher tally outputs to give a source indication of the monitor image. RS-232 interfacing is available.

9100 routing switchers

The modular construction of these switchers allows up to 256 inputs and unlimited outputs to be controlled via RS-232 and IEEE-488 control ports.

8200 master control switchers

Standard and Custom models of the 8200 switchers are available in NTSC and PAL standards. Thirty audio/video inputs may be switched with four transition rates, while 12 more separate audio inputs also allow audio over/under.

7001C mix amplifier

Two independent video mix amplifiers are housed within a single rack unit with remote control. A/B mix or downstream titling uses are suggested.

Other products include the 7800 routing switcher control panel and the 7300 voltage monitor panel.

Circle (633) on Reply Card

INDUSTRIAL ACOUSTICS

Noise control

Materials for use in studio noise control include Moduline panels, Noise Lock doors and windows, and Varitone modules.

Circle (634) on Reply Card

INDUSTRIAL SCIENCES INC./ISI

Downstream keyer

The 640 downstream keyer includes outline, drop-shadow and border key edging, as well as normal external

ORDER MCL

C-Band, Ku-Band High Power TWT AMPLIFIERS

Here is the ultimate in design and engineering for data and video earth satellite station use. Operating in C-Band (5.925-6.425GHz) at 50-3000 watt power level; Ku-Band (14.0-14.5GHz) at 50-2500 watt power levels.

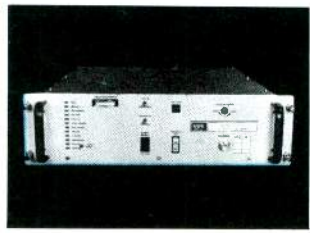
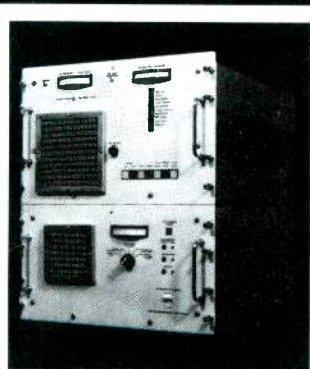
You get everything with MCL TWT AMPLIFIERS including great performance capabilities, ability to meet or exceed demands for highest efficiency, solid state circuitry reliability, and maximum signal purity. Self-sustaining performance under practically all conditions including unattended locations. Expandable into Redundant Systems with multiple switching and interface configurations available to satisfy every need.

MCL AMPLIFIERS come complete with technical manual package, easy operating and servicing instructions, and comprehensive replacement parts reference list. As always, MCL guarantees 24 hour parts access and provides 24 hour-7 day availability of MCL personnel for assistance in installation and servicing.

WRITE for complete, illustrated technical reference brochure today. ORDER "MCL"; you'll be glad you did.

MCL, INC. Ten North Beach, La Grange, Illinois 60525

(312) 354-4350 TWX 910-683-1899



Circle (70) on Reply Card

The only way to go.

AUDIO EDITING

Up to 12 audio or video machines may be controlled or synchronized.

As many as 999 frame accurate, automated punch in/punch outs may be recorded at a time.

The time code locations of your sound effects and theme music library can be stored in a computerized directory and easily recalled when needed.

Options include control of some of the most widely used outboard processors for time compression or scene-by-scene correction of reverb, equalization, etc.

VIDEO EDITING

Two machine record capability permits A/B roll video editing while recording basic tracks on a synchronized multi-track audio master.

Many switcher effects and audio sweetening decisions can be made on the off-line edit decision list.

Elaborate audio and video decision lists can be separately created and combined prior to final on-line assembly.

Edit lists may be alternately formatted to conform to proposed SMPTE standards.

Production switcher interfaces available to order.



Together.

Yesterday's editing systems just can't meet today's demand for high quality audio. Automated Studio Technologies solves this problem by introducing electronic audio editing techniques as sophisticated as those taken for granted in video production. Bridging the gap between these two industries allows us to provide the one editing system that is truly at home in either an audio or video post-production environment.

Audio sweetening has never been easier or more accurate. Recording an entire sequence of tightly timed sound effects, for example, becomes a simple matter of finding the cue points. Making changes is no problem either. We've even provided a way to put your entire music and effects library right at your fingertips! Combining this capability with frame accurate video editing means just three things: saving time, money and your nerves.

Distributed through Harvey Professional Audio/Video, 25 West 45th St., New York, N.Y. 10036 (212) 398-0995

Circle (71) on Reply Card

source keying. Four inputs may be assigned to the type of keying.

Model 901 updated

New features on the 901 series switcher include master fade-to-black with pulse processing, internal/external key with matte fill or A bus, prewiring for RGB or encoded chroma-key and DSK edger and complete tally.

903 production switcher

Model 903 includes a microprocessor in the control panel. The pattern generator includes 14 standard wipe patterns, as well as unique effects from sine modulation of two M/E amplifiers.

Circle (635) on Reply Card

INFLIGHT SERVICES

VSTAR4

Tape, videodisc, camera, cable and off-air signals are automatically sensed for NTSC-3.58, NTSC-4.43, PAL or SECAM, with capabilities of RGB inputs, on the VSTAR4 projection system. VSTAR4-C includes variable H and V scan rates for computer or teleconferencing applications.

Circle (636) on Reply Card

INFORMATION TRANSMISSION SYSTEMS

ITS-20 exciter

IF modulation with SAW filter sideband shaping is featured in the ITS-20 UHF exciter/modulator. Compatible with STV systems, optional linearity correctors may apply to aural signals as well as visual.

ITFS transmitter

Model ITS-610 designates a 10W transmission system for ITFS applications in the 2.5-2.686GHz spectrum. Low level multiplexing is used and SCA inputs are available for subcarriers.

MDS transmitter

Model ITS-510 provides 10W 2.15-2.162GHz MDS signals from low level diplexing into dual 5W solid-state amplifiers. STV operation is suggested with multichannel sound capability and ICPM correction.

Circle (637) on Reply Card

INNOVATIVE TV EQPT.

Camera support equipment

Equipment includes H400 camera head, for loads to 20 pounds; H100FD fluid drag head, for loads to 250 pounds; D8 dolly, for loads to 250 pounds with MT1, T10 and T14 tripods; MT6 elevation tripod, for 60- to 100-pound cameras, elevation range 38-56 inches; T2A studio/remote tripod, for loads to 60 pounds, 65-inch maximum height; T3 ENG tripod, for cameras to 25 pounds, elevation from 24-62 inches; T14 field tripod, for 60- to 100-pound cameras, elevation from 24-45 inches; T55

elevation tripod, for loads to 30 pounds, height range from 38-56 inches; and P1 pneumatic studio pedestal, for camera loads to 290 pounds, elevation from 29.5-51 inches, doorway clearance at 30 inches.

Circle (638) on Reply Card

INOVONICS

Model 250 processor

Remotely controlled for stereo, the 250 performs multiple control: gain-riding AGC, multiband compression, program equalization and peak limiting. The unit is programmable through an RS-232C serial interface.

The uniVuer

Visual displays of audio levels are presented as bar graphs keyed over program video on a video monitor screen.

Circle (639) on Reply Card

INTEGRATED SOUND SYSTEMS

Products include audio consoles, speakers, processing and equalizing equipment, and mics.

Circle (994) on Reply Card

INTEGRATED TECHNOLOGIES

NEWSTAR

The radio or TV station with a NEWSTAR electronic newsroom computer system includes management functions, auto teleprompter output, auto segment/show timing, library/filing, wire story reception, split screen editing, etc.

Circle (640) on Reply Card

INTERACTIVE MARKET

Radio spectrum

Software and a color graphics system presents media analysis, GraphPac color graphics and PicturePac, for producing color xerox or slides.

Circle (969) on Reply Card

INTERACTIVE SYSTEMS

Model 41 editor controller

The model 41 edit control system features 12 control ports for VTRs and switcher, a DEC 11/23 CPU, Jogger motion control, programmed motion and macro software, dual disc drives, edit list generation and more.

New features for systems include the RS 422 direct VTR control for Ampex VPR3, and Sony BVH2000/BVW10; Z80-based interfaces for VPR80, 5850, SLO 383 and M Format VTRs; and dual audio and 6-digit alphanumeric reel number capability in 409 and TRACE.

Circle (641) on Reply Card

INTERAND

Telestrator 440

Color graphics from the 440 system 1024x512 pixel displays for pre-/post-

production or real time use. Up to 256 colors are usable with automation of symbols and menu selection of customized symbols.

Circle (642) on Reply Card

INTERFACE DATA SYSTEMS

Products include digital computer systems and TV station and automation systems.

Circle (995) on Reply Card

INTERFACE ELECTRONICS

Modular 550 mixer

Systems to 48-input positions include six inputs/position, each stereo balanced. Slider controls, equalization, solo, phase reverse, pads and echo sends are features for radio and TV production facilities.

Circle (643) on Reply Card

INTERNATIONAL VIDEO

ABR-1 upgrade package

Owners of IVC ABR-1 editing systems may upgrade their equipment to ABR-1A compatibility.

JVC 8250 interface

Current JVC 8250 VCRs may be interfaced to IVC/Cezar edit controllers with a new software and cabling package.

Circle (644) on Reply Card

JBL

Model 4401 studio monitor

Symmetrical field geometry reduces second harmonic distortion in the 8 Ω model 4401, rated at 60W. A low frequency driver and high frequency dome radiator cover 70Hz-18kHz.

Auto mic mixer

The 7510A microphone mixer provides up to 24 program-actuated input channels. The output level is automatically adjusted for a constant margin of gain before feedback, regardless of the number of active mics.

Circle (645) on Reply Card

JVC

Studio monitor

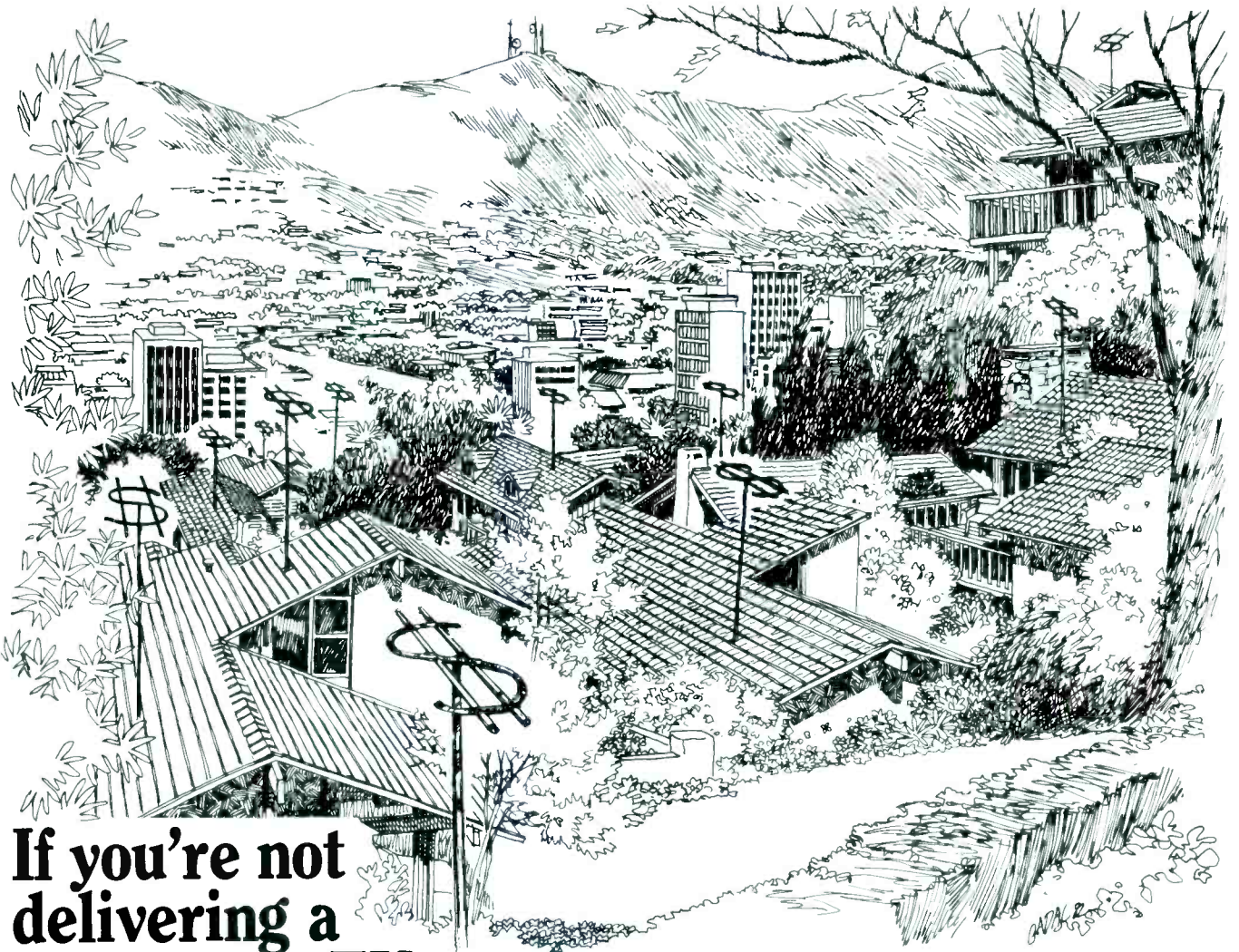
Pulse cross displays of H and V sync intervals, combined with the comb-filter design of the 9-inch TM-R9U color monitor's medium resolution picture, fits easily into the videotape editing suite.

KA-100 adapter

No modifications to the KY-1900U camera or HR-C3U recorder are required to use the KA-100 adapter to create an economical camera/recorder combination system for ENG.

VHS player

Four motors and a multihead video system in the BP-5100U VHS player allows 7X play speed shuttle search. Outputs include BNC video, 8-pin monitor, RCA audio and F-type RF connectors.



If you're not delivering a top-quality TV signal into every corner of your service area, you could be missing the picture.

CETEC CP/TV ANTENNAS PAY HANDSOME DIVIDENDS WHERE IT COUNTS: MARKET SHARE. By now there shouldn't be any argument about the superiority of CP/TV. In less than three years, nearly 100 stations have quietly converted their horizontal signals to CP. That's important to tens of millions of Americans who were receiving a second or third-rate TV picture. It's a critical fact-of-life to the broadcaster who recognizes the competitive advantages to delivering the highest quality video signal in his market. To all of his market.

IN CP/TV, CETEC IS THE LEADER. Nearly a decade has passed in the refinement of CP technology. Cetec Antennas has clearly become the recognized leader in this refinement.

- Starting in 1973, we pioneered the design in CP/TV.
 - Cetec's first Spiral design was on-the-air in 1976.
 - A Cetec CP/TV Spiral recently went on-the-air at superstation WLS-TV.
- And there's three patents that are

licensed to us from the world-renowned authority on CP/TV antenna design—Dr. Raymond DuHamel.

From channel 2 through 70, Cetec Antennas is the only company that covers the entire VHF/UHF spectrum in one design.

IN CP/TV, CETEC'S NUMBERS MEAN AUDIENCE NUMBERS.

Cetec's patented Spiral CP/TV antenna has a proven axial ratio: less than 2 dB; and real azimuth circularity: less than 1.5 dB.

If you haven't got the lowest axial ratio, you've missed the whole point of CP. These numbers mean that your numbers will be better in the cities where buildings cause interference

and ghosting, and in the hilly and mountainous areas where there are pockets of weak reception.

IN CP/TV, WE DELIVER—FAST.

We deliver our CP/TV antennas, customized for any service area, in about 150 days. That includes full-scale testing. By a wide margin, that's the shortest lead-time in the industry. We guarantee competitive pricing for a true CP/TV antenna, and we back every one with the best warranty—two full years, parts and labor.

GET THE PICTURE?

Get Cetec Antennas' experience in design and manufacture of CP/TV. You could be missing the picture if you're not delivering the best reception to every corner of your service area. It's more than a fringe benefit that's involved. It's a downright smart investment that will payoff handsomely to the broadcaster who sees more than just antennas in the sky.

Call Us For Further Details

Cetec Antennas *The Edge In Coverage!*
6939 Power Inn Road, Sacramento, California 95828 (916) 383-1177 Telex: 377321

KY-310U camera

Prism-optics with three 2/3-inch H4101 Saticons aid the KY-310U camera in producing RS-170A compatible NTSC video.

GZ-S3U camera

One 1/2-inch Saticon and a 6X zoom f/1.2 lens are capable of a 45dB S/N, 270TVL resolution picture. The camera pairs with the 1/2-inch VHS HR-C3U in an optional SF-P3U shoulder brace to form a VRC system weighing 8.25 pounds.

ProCam series

The KY-900 and KY-950 camera use autoshift registration without test patterns to produce 600TVL pictures with a 58dB S/N rating. The 900 uses Saticons, while the 950 incorporates 2/3-inch Plumbicons, both with prism-optics, for RS-170A video signals.

Circle (646) on Reply Card

see ad on page 111

JAMIESON & ASSOCIATES

Consultants/designers

Radio and TV production and broadcast studios and the included operating systems fall within the consultant and design services of Jamieson & Associates.

Circle (647) on Reply Card

JATEX

VSEC 62TMX interfaces

Parallel and serial interfaces for

Crosspoint Latch, Grass Valley and ISI are available for use with VSED 62TMX edit controllers. AD, CDL, EchoLab and Vital switcher interfaces, as well as quad and 1-inch VTR interfaces have been announced for the A/B roll editing system.

Circle (648) on Reply Card

JEFFERSON DATA SYSTEMS

Management software

Program management software handles complete inventory and control of syndicated program materials.

News processing

The Electronic News Processing (ENP) system handles wire services, story and script preparation, electronic teleprompting and archiving of new materials.

Circle (649) on Reply Card

JENEL

Consultant/design services

Jenel assists in design and planning of broadcast, cable, educational and corporate communications facilities. Systems may include interactive features for video, audio, data and telephony.

Circle (650) on Reply Card

JENSEN TOOLS

Tools and kits

Jensen Tools offers a wide selection of tools, tool kits and instruments for

broadcast technicians. Kits may be housed in catalog or briefcase formats.

Circle (651) on Reply Card

K&H PRODUCTS LTD.

Catamount cart

The steel 2-wheeler cart includes a tripod for on- or off-cart mounting. Porta-Brace cases hold recorders and accessories for easy access on the 16"x26" chassis. Twelve-inch semipneumatic wheels are used.

Quick-Draw cases

Die-cut polyester foam cushions your equipment in Quick-Draw cases. Designs are currently available for RCA, Hitachi, Panasonic, Ikegami, Sony, JVC and Sharp cameras.

Circle (652) on Reply Card

KAHN COMMUNICATIONS/ KAHN CONSUMER PRODUCTS

Radio tuner

The ST-R66 tuner is adapted to receive conventional FM stereo signals as well as AM stereo transmissions produced by the Kahn/Hazeltine AM stereo system.

Circle (653) on Reply Card

KAMAN SCIENCES

Broadcast data system

A computer database system built around the IBM System/38 controls two printers and up to 80 work sta-

VIDEO DELAY LINES

FOR TV BROADCASTING APPLICATIONS

Television Equipment

U.S. Distributor of

Matthey Video and Pulse Delays

Matthey Video Filters

Elcon Tape Cleaners and Evaluators for 2",
1" and 3/4" Tape

Racal Headsets for Intercom/ Sportscaster
Applications

V.G. Teletext

Racal Telephone System

Link Video DA-s

For further information, please contact:



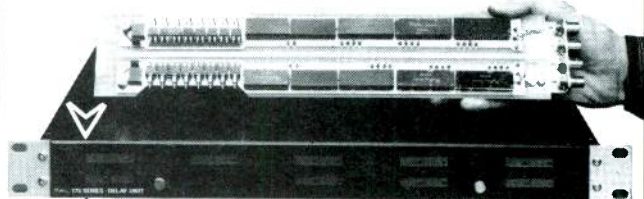
Television Equipment Associates, Inc.
Box 393, SOUTH SALEM, N.Y. 105900393
914-763-8893, in Calif. 213-271-9570
TWX 710-575-2600

NEW

Matthey

VIDEO DELAYS

- MUCH SMALLER
- MUCH BETTER
- AND COST LESS



ONLY 1 3/4" HIGH

Series 175 provide 20 channels of delay from 10 to 1830ns in a rack frame only 1 3/4" high. 50% improvement in amplitude ripple — 35% improvement in return loss.

ASK FOR DATA TODAY

Circle (73) on Reply Card

Satellite Radio Receiving Equipment. Microdyne has it all.



Whether you want to install a complete new system or simply expand your existing one — Microdyne can meet your needs with our complete line of standard and proven satellite radio equipment.

We start with a full line of electronics with conversion at the antenna or in your building. You can optimize the system to your needs and budget. SCPC program channel demodulators are fully tuneable to all radio channels with a front panel switch. Sub-carrier demultiplexers are available.

Microdyne offers a full line of satellite antennas — featuring the precision and lifetime durability of molded fiberglass construction; the simplicity and selectivity of a prime focus feed design.

Where parabolic antennas won't work — in areas of high microwave interference — we offer our highly selective conical horn antenna — an industry exclusive.

Microdyne products are characterized by exceptional standards of performance and reliability. We stand behind these products with our

exclusive 48 hour service policy. Our service depots provide 48 hour turn around on all returned equipment.

There is no company more qualified to meet your needs for satellite radio equipment. We provide both down-link and up-link equipment; complete turnkey installation or individual components. We have thousands of satellite terminals installed throughout the world. We have the experience, the hardware and an uncompromising commitment to excellence.

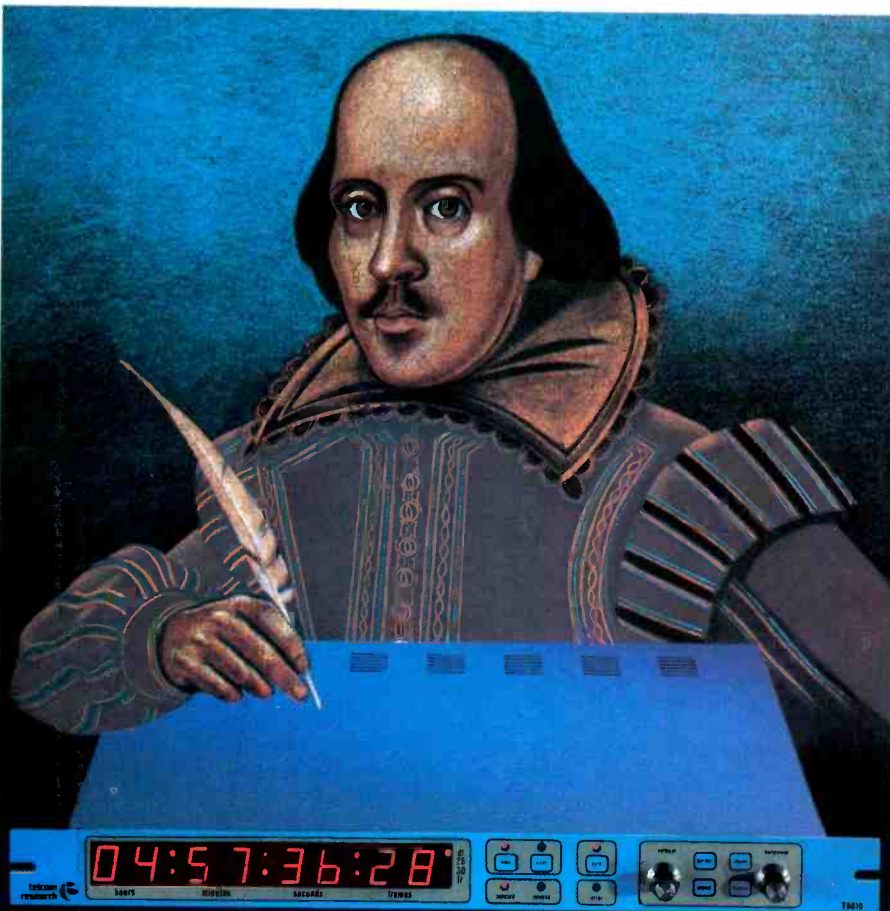
We have it all.



Microdyne Corporation

P.O. Box 7213 • Ocala, FL 32672 • (904) 687-4633 • TWX: 810-858-0307

Circle (74) on Reply Card



A dramatic character generator in a dramatically inexpensive time code reader

In Will's day \$2295 would have bought you all of Stratford. Right now it buys you the T6010 from Telcom Research. A Time Code Reader/Character Generator which reads *any* source recorded to SMPTE/EBU standards. *And it's backed with a 5 year warranty!*

The T6010 decodes time and user data and displays either on its read-at-a-glance .8" high LED's. Use it to insert data on the monitor as you view the master, and on the working dub for edit selection. 80 times play speed is fast enough for any VTR, and 1/10 play speed plus color framing indicator lets you be very picky!

Key data characters anywhere on the screen *with* or *without* box. Unique characters, bordered for easy reading, can be reversed or removed from the video. Fingertip control lets you

freeze front panel and video readings.

Microprocessor design means fewer parts, higher reliability and lower operating temperatures than traditional models. The result? A cool-running, thin unit you can mount immediately above or below other equipment. In control room or mobile. Plus features like parallel time output for edit controller and automation interface, or user data output for computer interface to control special effects.

Telcom Research designed those and other state-of-the-art features into the T6010 after 14 years' experience in meeting the hi-tech needs of major TV stations and production houses. Ask your nearest distributor for technical specs and a full list of features or contact us directly. Say Will sent you.



telcom research

1163 King Road Burlington, Ontario (416)681-2450

Circle (75) on Reply Card

tion/terminals with a more than 2.4-billion-character memory. The Traffic System and all other software are totally interactive for business, programming and engineering record needs.

Circle (654) on Reply Card

see ad on page 99

KAVCO

Smart Frame System

The Smart Frame controller uses 3-level vertical interval switching to handle multichannel and multi-VTR system configurations of commercial insertion. DTMF tones by satellite, manual control and programming by satellite may determine machine control and switching.

Kavcart systems

Kavcart is a videotape broadcast cart system for automatic hands-off programming needs. The controller system handles up to 96 machines with simplified touch entry and easy programmings from 1/2-inch and 3/4-inch videocassettes.

Circle (655) on Reply Card

KAVOURAS

Weather radar systems

RADAC C and S-band weather radar networks interface to RAM database equipment and to the Triton X weather console. A terminal, graphics tablet and touch panel access dial-up and satellite (GOES) weather information.

Circle (656) on Reply Card

KAY INDUSTRIES

Rotary phase converter

The Phasemaster T-Series rotary phase converter produces 3-phase power capability from a single-phase power line. Models are available for broadcast transmitters rated from 1-50kW.

Circle (860) on Reply Card

KEYLITE RENTAL/SALES

Production services

Keylite handles Keylite lighting equipment, Rosco lighting filter materials, Matthews grip equipment, mobile production facilities, and common and uncommon items for film and video production needs.

Circle (657) on Reply Card

KING ELECTRONICS COMPANY

KSK service kit

The KSK service kit includes crimp connectors, crimp tool with dies and cable preparation trim jigs and crimp contacts, housed in a durable carrying case.

Circle (658) on Reply Card

KING INSTRUMENT

Cassette loaders

Your choice of magnetic materials may be loaded into cassette housings

On November 29, 1982, LOOK, the over 2 million dollar baby of WNEV-TV, Boston, came to life. This innovative 2 hour daily program was to be produced entirely on the new 1/2" Type M format. This required an editing system that no one else had yet developed. A/B roll capability, time code, full special effects, great speed and ease of operation, and all at a price affordable enough to set up seven complete editing suites—enough editing capacity to produce 10 polished hours of new programming every week.

No wonder Karl Renwanz, Director of Engineering at Channel 7 called Dick Lipson at Lake Systems Corporation. The design problems of unique systems require people



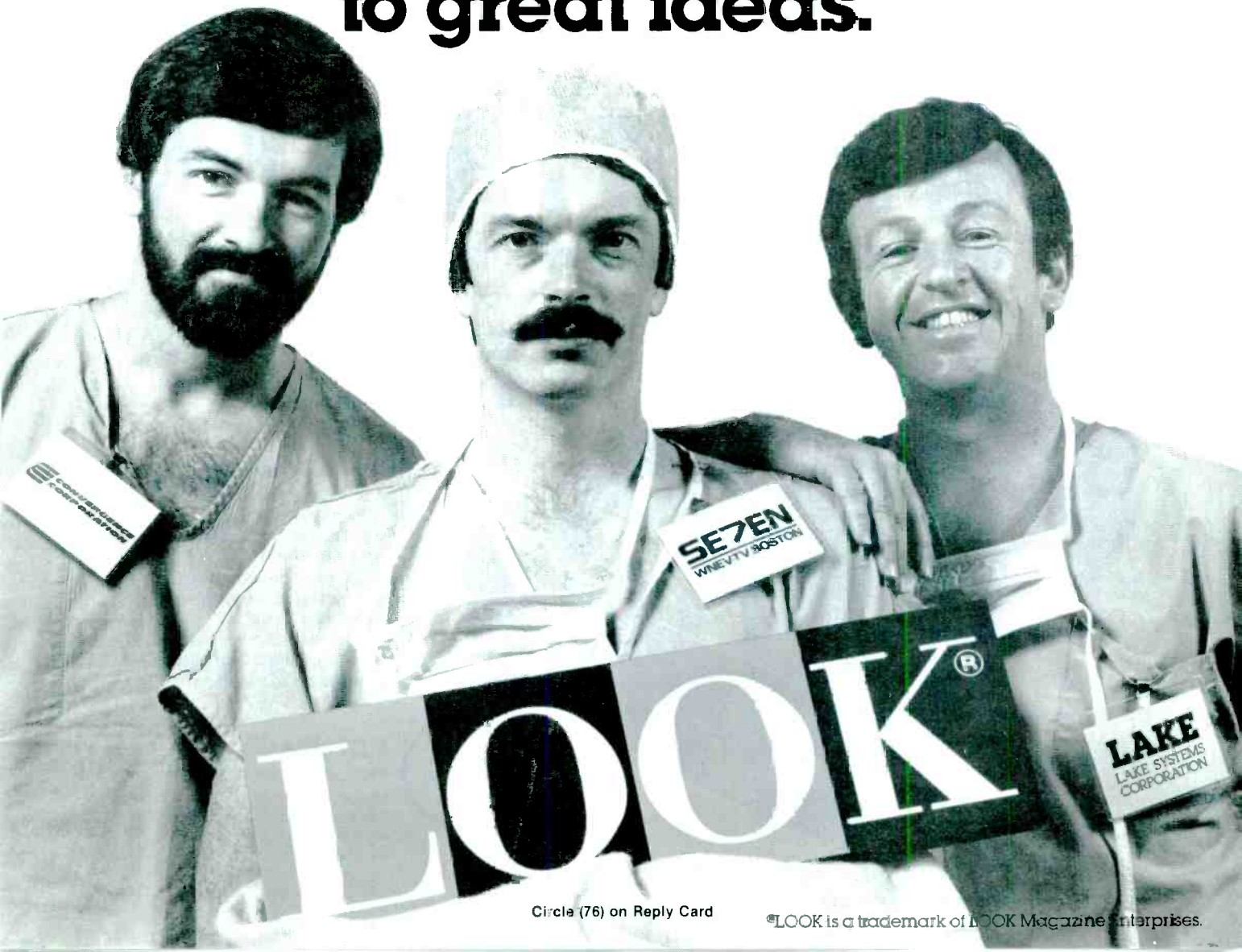
Lake is an authorized dealer for Convergence Editing Equipment.

with Dick's broadcast knowledge and expertise. He called upon Convergence Corporation, leaders in the field of video editing, to solve the problem. Thirty days later the first system was in operation. Your baby may not be as tough to deliver as Karl's was, but wouldn't you like this team of specialists working with you? CONTACT: Lake Systems Corporation, 55 Chapel Street Newton, Massachusetts 02160 (617) 244-6881

LAKE
LAKE SYSTEMS
CORPORATION

The Systems Company

We help our clients give birth to great ideas.



Circle (76) on Reply Card

LOOK is a trademark of LOOK Magazine Enterprises.

with the 582 loader for U-matic needs or the 590 loader for VHS and BETA 1/2-inch requirements.

VCT-101 dropout verifier

See the test equipment update on page 44.

VCT-102 chroma/audio verifier

See the test equipment update on page 44.

Circle (659) on Reply Card

KLIEGL BROTHERS PANCAN

Attaching to ellipsoidal reflector, Fresnel or PAR fixtures, PANCAN allows moving light without moving fixtures. A remote control unit provides pan, tilt, selected movement speeds and auto home, manually or automatically.

K96 SCR dimmers

As part of a multiplexed digital system, K96 SCR dimmers use no analog signal voltages. Operable with Entertainer or Performer III control consoles, the dimmer banks allow for 12, 24 or 48 dual 2.4kW or single 6kW dimmers.

Updated equipment

Kliegpac 9 portable dimming systems contain nine 2.4kW SCR dimmers with control consoles using 18 or 36 dimmer controllers arranged in 2-scene configurations.

Circle (660) on Reply Card

KOBOLD OF AMERICA DL-PAR fixtures

The DL 575 PAR (575W) and DL 1200 PAR (1200W) bright beam lamp systems produce more light than standard-lamped HMI Fresnel with twice the wattage rating.

DL 1200 PAR-Twin

Two 1200 bright beam lamps in the fixture are equivalent to a single standard 6000W HMI Fresnel light.

SubLight systems

SLB55 hand-held light operates to 300-foot depths under water with 250W halogen lamp. SLB75 helmet-mounted lamp uses 75W or 100W multimirror lamps for underwater use to 300 foot.

Circle (662) on Reply Card

LPB

Audio consoles

Signature, Monogram and Citation series consoles fulfill the requirements of production room and on-air functions for broadcasters.

Limited area broadcasting

Travelers' information services, motorist advisory systems and Radio-Aide systems for the hearing impaired in churches or other such uses are applications of LPB low power AM transmitters.

Circle (663) on Reply Card

see ad on page 116

LTM CORPORATION

Luxarc 6000

Using 55A, 120Vac, the Luxarc HMI light provides the same output as a carbon arc system. A microswitch safety lock inhibits use when the 24-inch convex Fresnel lens is removed.

A-97 LTM mixer

Two mic and one mic/line inputs mix audio for a video recorder. The unit, operating on 10 C cells, has a response rating of -2dB, 40Hz-20kHz with an EIN rating of -125dBm.

MSL micro-set lighting

MSL250 includes a power supply, light source box, connectors/cables and fiber-optic materials to solve small area lighting problems. Small Fresnel lens diffusers attach to the ends of the optical cables.

Circle (664) on Reply Card

L-W INTERNATIONAL/ATHENA Telecine projectors

The new Athena 4500, and updated 6000, are compatible with 24fps, 25fps or 30fps video scan rates. Auto phase-lock to NTSC, PAL or SECAM; slow or still-motion; and several forward/reverse projection rates are featured.

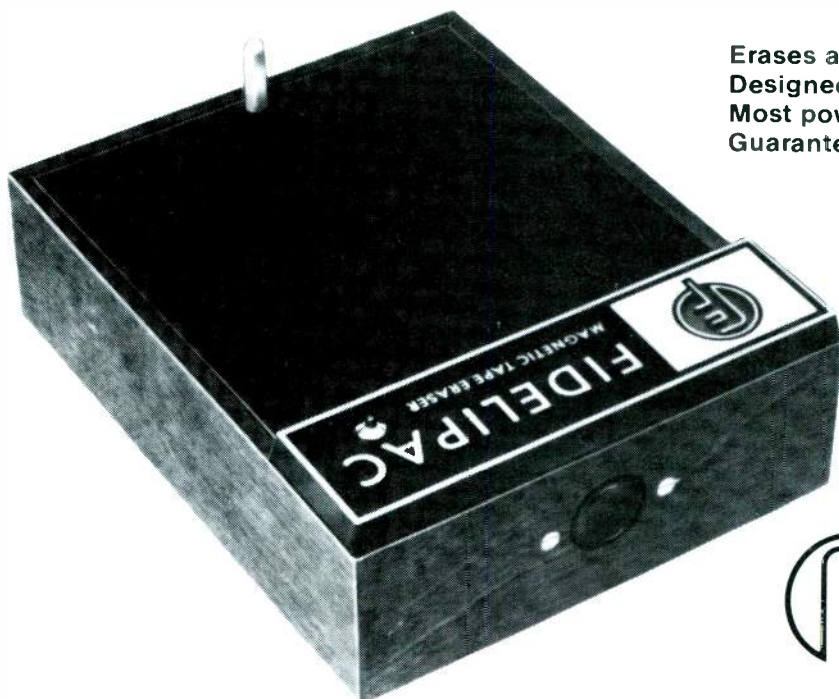
Circle (665) on Reply Card

LAIRD TELEMEDIA

4410 Telop projector

NEW FROM FIDELIPAC

MODEL 400 MAGNETIC TAPE ERASER



Erases audio and video tapes up to 1" x 11".
Designed for professional broadcasters.
Most powerful unit in its price range.
Guaranteed for 2 full years.

Check these Outstanding Features

- Thermally protected core—will not burn out.
- High current horsepower rated switch for long reliable life.
- Lifetime scuff-resistant top.
- Attractive and durable hand rubbed hardwood case.
- Removeable aluminum guide pin for erasing NAB type B and C cartridges.
- Erases to virgin tape level.



FIDELIPAC®

BROADCAST TAPE PRODUCTS

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

Circle (77) on Reply Card

Now your ENG units can afford the same "line" microphones bought by every major network!

You can pay as much as \$1,500 or more to get a good long-reach line microphone. Or you can put the new Audio-Technica AT815 in every production unit for under \$230 each, or the phantom-powered AT815R for under \$300 each.

What you'll hear is performance closely rivalling our more expensive brethren. So close, in fact, that every major network has tried and bought our line microphones. And you'll get some advantages which can be very important in the field.

For instance, the phantom-powered AT815R can interface with supply voltages from 9 to 52 volts without adapters or extra circuits. So you don't have to rebuild present equipment to put it on the air. We also have a neat 2-battery 9V power supply you can use. When one battery is in use, the other is on standby. For your peace of mind.

Our internal-battery AT815 uses a standard AA "penlite" cell available everywhere. And in intermittent use, a premium battery should last about 4,000

hours. That's over a year even if used eight hours every day! Just one less thing to worry about when time is short.

The AT815 and AT815R weigh barely over 3 ounces, to make them easy to "fishpole" or hand hold. And each comes with a foam windscreen which slips on in a second. Our optional shock mount can be added as well. And the AT815R has a bass roll-off switch if needed to control rumble.

Both models are designed to take the rough-and-tumble life of an ENG unit or remote film crew, and keep delivering excellent sound. With the narrow directivity which makes line microphones so useful in suppressing noise and "reaching out" beyond normal mike range.

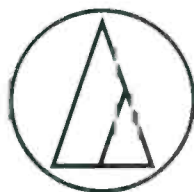
If you thought line microphones were out of reach of your budget, ask your Audio-Technica sound specialist to show you the AT815 or AT815R. We think you'll agree that the networks are onto something great!

**AT815R Phantom-Powered
Line + Gradient Microphone.
Under \$300.**

**AT815
Line + Gradient
Microphone.
Under \$230.
Optional
shock mount extra.**

**AT8410a Shock
Mount. Under \$40.**

**AT8501 9V Dual Battery
Power Supply. Under \$100.**



audio-technica®

AUDIO-TECHNICA U.S. INC., 1221 Commerce Dr., Stow OH 44224 216/686-2600

Circle (78) on Reply Card

The 4410 Telop projector forms an input to an optical multiplexer for use on opaque pictures, media clippings, Polaroid photos or notes on a card. The picture size is 4¼"x3½".

7200 Communicator

Shown as a prototype in 1982, the 7200 Communicator character generator is available with improved software, 35 fonts and font development software.

Model 1500 generator

Model 1500 character generators provide low cost, medium resolution (70ns), proportional spacing and true preview/program outputs. Keying with full edging and optional color are available.

Message generators

Model 3300 provides a 100ns resolution video display of time/date and a fixed message, with characters keyed into external video. Model 3302 adds an RS-232 interface to generate a 11-row by 31-character raster format under control of the user's computer.

Circle (666) on Reply Card

LAKE SYSTEMS

Matrix video switcher

This switcher accepts 10 Y/C video, audio 1 and 2 and RF DOC inputs. The selected source is routed to a Y/C component TBC and appropriate audio amplifiers.

Circle (667) on Reply Card

see ad on page 139

LANDY ASSOCIATES

M-400 machine control

The Interphase M-400 machine control system conforms to the multipoint operational configuration of SMPTE RP-13. The system allows up to eight control panels, controlling up to 250 machines with 24 functions and tallies per machine.

CB-1 slate/border generator

Numbers, 7-112 lines high, for countdowns from 10 to three, are timed by and keyed into input video. Reference 400Hz and beeps accompany the video for audio track use.

Remote-controlled switcher

Dual audio, audio breakaway, tally contacts and remote control by RS-422 are features of the 10x1 video/dual audio remote-controlled switcher by Interphase. Two units may be stacked for 19x1 operation.

VME-100 VDA

Each of four video outputs have individual ± 6 dB gain controls and equalization for up to 1000 feet of 8281 cable. Eight VME-100s and two power supply modules fit into one 5¼-inch rack frame.

VRG-100 remote VDA

A control voltage of 0-8Vdc or a 10k Ω pot provides remote gain and equalization of video signals. Each module includes six outputs with a 15MHz bandwidth.

Circle (668) on Reply Card

LANG VIDEO SYSTEMS

One Shot switcher

A compact audio mixer with limiting, video switcher and source identifier are included in the One Shot. Optional features include vertical interval switching, TV3-4 modulator, 1-inch CRT monitor and SMPTE color bars. Modular in design, the system operates from various voltages and works in NTSC or PAL.

VAX-700 automatic switcher

For NTSC and PAL installations, the VAX-700 senses the presence of video and audio on "A" input. If "A" input signals are not present, it automatically selects "B," if "B" is present.

VSI-820 source identifier

Joining the VSI-820 identifier in NTSC is a PAL-M model. Its output, in digital full-field NTSC, provides eight DIP switch-selected characters on a black or color bar background.

Local alarm monitor

Four groups of six TTL logic level inputs in the LAM-710 local alarm monitor use LEDs to show the location of the alarm. The system is suitable for microwave transmission/reception systems or other communications/surveillance systems.

Circle (669) on Reply Card

LARCAN

TTC12000FH transmitter

Filling in the 12kW highband VHF spectrum, this transmitter is rated at 1.2kW average aural. Low level IF modulation and solid-state amplifiers (except for the PAs) are featured.

Circle (670) on Reply Card

LAUMIC

Rental equipment

Laumic offers rental arrangements for recorders, cameras, monitors and editing equipment from CMX/Orron, JVC, ADDA, Sony and others.

Circle (671) on Reply Card

LEADER INSTRUMENTS

LBO-51M-V vector display,

LVS-5850A vector scope,

LBO-518 oscilloscope

See the new test equipment update on page 44.

Circle (672) on Reply Card

LeBLANC & ROYLE

Towers

AM and FM broadcast towers to 1700 feet are available from LeBlanc & Royle. Services include design, construction and tower service.

Circle (673) on Reply Card

LEE FILTERS LTD.

Resin photographic filters

For alternatives to glass, Lee Resin photographic filters are handmade special effects filters. The material is an optical resin, lighter than glass and

not easily broken.

Circle (674) on Reply Card

LEE RAY INDUSTRIES

Video equipment carrier

The Model 6000 is built to be sturdy without wobbling or wiggling. A tripod mount holds the camera. The carrier will fold up with equipment attached via nylon and padded straps.

Tele-Scroll

Even used computer paper works for the script on a Tele-Scroll system. Your old black-and-white camera and any monitor or TV provides a prompting system.

Circle (675) on Reply Card

LEITCH VIDEO

VIP-1101N processor

The VITS on Lines 10-21 of either field may be deleted, replaced or passed unchanged with the VIP-1101N vertical interval processor. Program sync and burst may be corrected to RS-170A signals.

IAD-750N adder/deleter

Test signals from Lines 16 to 19 of both fields may be deleted, retained or replaced by using the IAD-750N vertical interval adder/deleter with the DTG-1000N or DTG-1100N digital test generator.

DTS-2000N NTSC scrambler

Digital techniques create a high order of audio and video signal security for satellite transmission links. Random, time-varying algorithms handle video compatible with RS-170A, while three audio channels and 1200-baud data are encoded. The DTD-2100N descrambler offers addressable decoding.

Equalizing VDAs

The VEA-662 video DA modules allow long lengths of cable to be equalized for best response. The modules may be used in series 660 rack frames.

Other new products include the DTG 751N digital test signal generator and the AVS-481 audio-video switcher.

Circle (676) on Reply Card

see ad on page 64

LEMO

Connectors

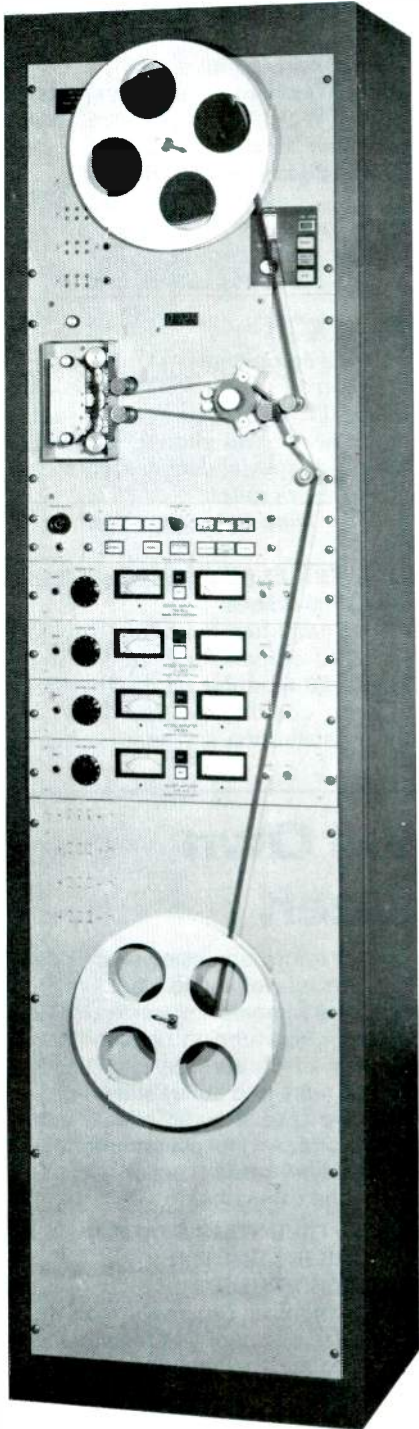
Established products shown include multicontact, coaxial, triaxial, thermo-couple, environmentally sealed and audio-patching connectors.

Circle (723) on Reply Card

LENCO

ICM-214 and ICM-219

The ICM-214 is a 14-inch color monitor; ICM-219 is a 19-inch model. The ICM-214 features a 0.62mm slot-mask CRT, while the ICM-219 features a 0.68mm CRT. In both models, high voltage is non-scan derived, with regulation within 1%.



MAGNA-TECH

THE SOUND HEARD AROUND THE WORLD

**Magnetic Film
Recorders and Reproducers
for Television and Film
Sound Post-Production**

HIGH SPEED

Telecine Magnetic Followers
Video Tape-Film Interlock
Electronic Looping
Dubbing Systems
16 and 35mm Electronic Projectors
Total Facility Engineering

WORLDWIDE SALES OFFICES

Paris
Hi-Fidelity Services
4 Rue Semard
75009 Paris, France

Sydney
Magna-Techtronics (Aust.)
PO Box 150
Crows Nest NSW 2064
Australia — Telex 24655

Johannesburg
General Optical Co., Ltd.
15 Hulbert Road
Johannesburg 2001,
South Africa

Rome
Alberto Sciarretta
Via Siria 24
Rome 00179
Telephone 7943618

Brussels
A.R.C.
Rue de Boisdé Linthout 45
1200 Brussels Belgium

Hong Kong
Paul Yang and Associates
901 Star House
3 Salisbury Road
Kowloon, Hong Kong

Bombay
Capt. P.K. Vishwanath
234/4 Rama Baug,
Deodhar Road
Bombay 400 019, India

Kehl West Germany
Zenon GMBH
Postfach 1743
Hauptstrasse 128
Kehl am Rhein
Tel: 07851/2991
Telex: 753537

London
Branch & Appleby
42 High Street
Harrow-on-the-Hill
Middlesex HA1 3LL,
England

Kuala Lumpur
Kinematronika Sdn. Bhd.
2852, Jalan Selangor/
Persekutuan,
Federal Hill
Kuala Lumpur, Malaysia

Caracas
Cine Materiales srl
Apartado Postal 61.098
Caracas 106 Venezuela

MAGNA-TECH ELECTRONIC CO., INC.

630 Ninth Avenue, New York, N.Y. 10036

Telephone (212) 586-7240

Telex 126191

Cables "Magtech"

Circle (79) on Reply Card

PSG-412T

This PAL sync pulse generator meets B, G and I PAL system standards. A stand-alone unit, the PSG-412T offers gen-lock, a full set of drive outputs and two blackburst outputs.

Routing switcher

Any of 24 inputs to the PSW-469 vertical interval switcher may be selected from the front panel or the PSR-469 remote-control unit.

PCM-519-4 monitor

The 19-inch PIL PCM-519-4 color monitor uses a 0.47mm dot matrix CRT for 850-line horizontal resolution. Two NTSC inputs or RGB, with pulse cross, underscan, comb filtering and blue-gun only test are features.

Circle (722) on Reply Card

see ad on page 121

LERRO

40-foot mobile trailer

The fully equipped Gerstenslager trailer includes six Hitachi SK-96s and two SK-91s; a Grass Valley switcher; Quantel, Chyron and Utah Scientific routing switchers; a Lenco dual-sync generator system; a Yamaha audio mixer; an 8-channel RTS intercom; three Sony 1100s and a Sony 3/4-inch VTR.

Circle (729) on Reply Card

see ad on page 47

LEXICON

224X remote control console

The alphanumeric remote console

for the 224X simplifies system operation. An alphanumeric display prompts and guides the operator through proper setup and use.

Model 200 reverb

From closet to concert hall, the model 200 digital reverberation system creates clear, bright sounds with the punch and body of the finest plate reverb systems. A 10kHz bandwidth is used.

Upgraded model 1200

Precision time control (better than 1s per hour accuracy) is included in the second generation model 1200 time compressor. RS-422 interfacing aids in on-air use.

Audio delay synchronizer

The Model 1300 synchronizer assures accurately synchronized audio and video. Full bandwidth operation with 16-bit stereo performance helps to eliminate lip-sync errors in programming involving processed video.

Circle (677) on Reply Card

LIGHTNING ELIMINATION ASSOCIATES

PP120-8-1 Perfect Power Source

Perfect Power Sources include line voltage regulation from -30% to +12% without distortion or load dependence. High efficiency is complementary with surge elimination and electronic filtering.

Circle (678) on Reply Card

LISTEC

Vinten Avocet tilthead

The Avocet is a lightweight ENG and EFP head with 180° tilt and 30-pound capacity.

Vinten EFP head

The EFP-90 features a 180° tilt range and 90-pound capacity.

Listec 2000 prompter system

The 2000 is a digital microprocessor-prompting generator.

Listec Word Box portable prompter

The Word Box is a lightweight prompter for ENG cameras.

Vinten digital remote control.

This camera system offers microprocessor storage of 99 shots with 6-camera control.

Circle (724) on Reply Card

LOGICA

Teletext equipment

Featured were CONTEXT and MicroTEXT teletext origination equipment. Also shown were scrambling and special decoder features for closed user groups.

Circle (725) on Reply Card

LOGITEK ELECTRONIC SYSTEMS

DAGC-60 system

Ten amplifier modules provide 60 isolated outputs per frame in the DAGC-60 modular audio distribution system, combining AGC, VCA control, distribution and monitoring in a

Why Your Radio Station Should Own An Eventide H949 Harmonizer.®

• IT'S A COMPLETE AUDIO TIME COMPRESSION SYSTEM AT A FRACTION OF THE PRICE

The \$3500* H949 gives you the same audio time compression and expansion capabilities of competitive single-purpose units costing well over twice as much. You get the power to control time itself...with no editing, no program material deleted and no abnormal pitch effects.

• IT'S A COMPLETE SPECIAL EFFECTS DEPARTMENT

The Eventide H949 Harmonizer® special effects unit gives you an almost endless variety of effects. There's variable delay, echo and reverb. Feedback level and equalization controls let you "custom-tune" the audio. Pitch change capability can create new voices. Mix input with pitch-changed output for chorus and harmony effects. Want the distinctive sound of flanging? The H949 offers the best flanging ever. There's time reversal and repeat too. For even more versatility, many more effects can be created from combinations of the basic effects.

WHAT CAN THIS MEAN FOR YOUR STATION?

• IT CAN HELP YOU MAKE MORE MONEY

Go after those co-op dollars! The H949 can easily compress an existing national spot to accommodate a local retailer tag. Local advertisers who deliver their own ad copy will love what the H949 can do. Endless retakes to correct

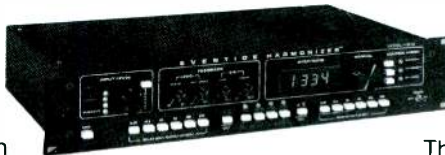
the non-professional's timing errors are eliminated. Use pitch-change to make that local retailer sound more like an announcer (He'll love that!) Time compression with the H949 can bring order out of chaos when running back-to-back religious or political programs which are often mistimed. And, you'll find yourself doing more and better station-produced local spots—with those special audio effects that

make for a more professional custom production. Your advertisers will notice and appreciate the difference.

• IT CAN GIVE YOUR STATION A MORE DISTINCTIVE, TIGHTER SOUND

The H949 Harmonizer can really make a difference. Use its special effects capabilities to produce really distinctive promos, intros and custom jingles. For a brighter, fast-paced sound, some stations choose to speed up their music by a few percent, utilizing the Harmonizer to maintain normal pitch. Using pitch-change, you can even create new voices to populate your air.

MOST EVENTIDE DEALERS HAVE EVALUATION UNITS AVAILABLE. CALL EVENTIDE TODAY FOR THE DEALER NEAREST YOU.



Eventide
the next step

265 West 54th Street
New York, N.Y. 10019
(212) 581-9290

*List price in domestic U.S.

Circle (80) on Reply Card

single 5¼-inch rack frame.

Pyramid speakers

MET-7 and MET-11 speaker systems from Pyramid incorporate coaxial tweeters for improved stereo imaging and presence. The systems are rated at 200W and 400W, respectively.

Circle (679) on Reply Card

LOWEL-LIGHT MFG. FRAME-UP

A 24"x34" frame to hold light control materials folds to 1¼"x34" for storage and travel. Clip-on attachment of filter materials speeds setup.

LOBO clamp

A 360° multi-axis manipulation capability permits use of a single stand for light and FrameUp attachments.

Circle (680) on Reply Card

LYON LAMB VIDEO ANIMATION Video animation systems

Recording directly onto tape speeds animation with the Lyon Lamb VAS equipment. Featuring multi-axis control, a professional animation stand and interfacing to 1- or ¾-inch VTRs, the VAS equipment uses vertical interval frame code.

Oxberry animation

The Innovator 1000 real time video stand combines joystick-driven operation with precision repeatability and

computer control.

Circle (681) on Reply Card

M/A-COM VIDEO SYSTEMS

SkyPod II

Slaved gyro steering tracks a preselected heading to maintain a microwave link. Usable range for the system approaches 200 miles line-of-sight. The SkyPod II system consists of radome/antenna, control panel and Super 2MX transmitter.

Super 2MX/2MR

The Super 2MX transmitter and Super 2MR receiver are self-contained packages for microwave operation in the 2GHz and 2.5GHz bands.

Central receiving antennas

The SkyScan autotrack system allows automatic target acquisition and tracking of 2GHz and 2.5GHz signals.

Superscan offers maximum antenna gain with manual or remote steering. Autotracking is optional. Choice of bands includes 2GHz, 2.5GHz and 7GHz.

Miniscan, a small-profile high gain antenna system, is remotely or manually steerable with an autotracking option. Models are available for 2GHz, 2.5GHz and 7GHz.

Disc-Array systems include standard DA-626 or DA-226 DM dual-mode models. A 23.5dB, forward gain serves the 2-2.5GHz spectrum.

OmniPole antennas provide 360° coverage for a range of about 50 miles. Omnidirectional and directional models cover the 2-2.5GHz bands.

Multiband portables

The combined weight of the MB-1 multiband portable transmitter and receiver is about 32 pounds. The design offered at NAB includes 30 2/2.5GHz, 42 7GHz and 36 13GHz channels. The new system awaits FCC type acceptance.

Circle (682) on Reply Card

MBB HELICOPTER

MBB BO 105 helicopter

This light, twin-engine helicopter seats a pilot, reporter, camera operator and engineer. The 4-blade rotor system provides a smooth ride for stable camera work. Flights for 3 hours and a 300-mile range are possible.

BK 117 Space Ship

The 200-cubic-foot cargo space, for a useful load of 2700 pounds, allows transporting of large bulky equipment. The BK 117 is powered by two 650shp Lycoming LTS engines, running a rotor of reinforced fiber-glass blades.

Circle (683) on Reply Card

MCI/QUANTEL

Cypher

Nearly 75% of all available type

Eventide's BD955 Broadcast Audio Delay Finally Has Some Serious Low-Priced Competition . . .



EVENTIDE'S BD931 (MONO) PRICED AS LOW AS \$1795

EVENTIDE'S BD932 (STEREO) PRICED AS LOW AS \$2595

Now there's a worthy low-cost alternative to Eventide's BD955 - the world's best-selling digital obscenity delay. Eventide's new BD931/932 series is priced to be cost-effective even for stations that air only limited talk programming. Available in mono or stereo, with 3.2 or 6.4 seconds of delay, these new units feature specs that far exceed the performance of other economy delays:

FREQUENCY RESPONSE: 40Hz to 16kHz ± 1dB.
DYNAMIC RANGE: Greater than 90dB.
DISTORTION: Less than 0.2% at 1kHz & 100Hz.

So now stations on a tight budget can say goodbye to the problems of trouble-prone tape loop delays without sacrificing audio quality. Eventide's BD931/BD932 series is the low-cost, high quality alternative.



OUR BD955 SERIES-NOW A GREATER VALUE THAN EVER.

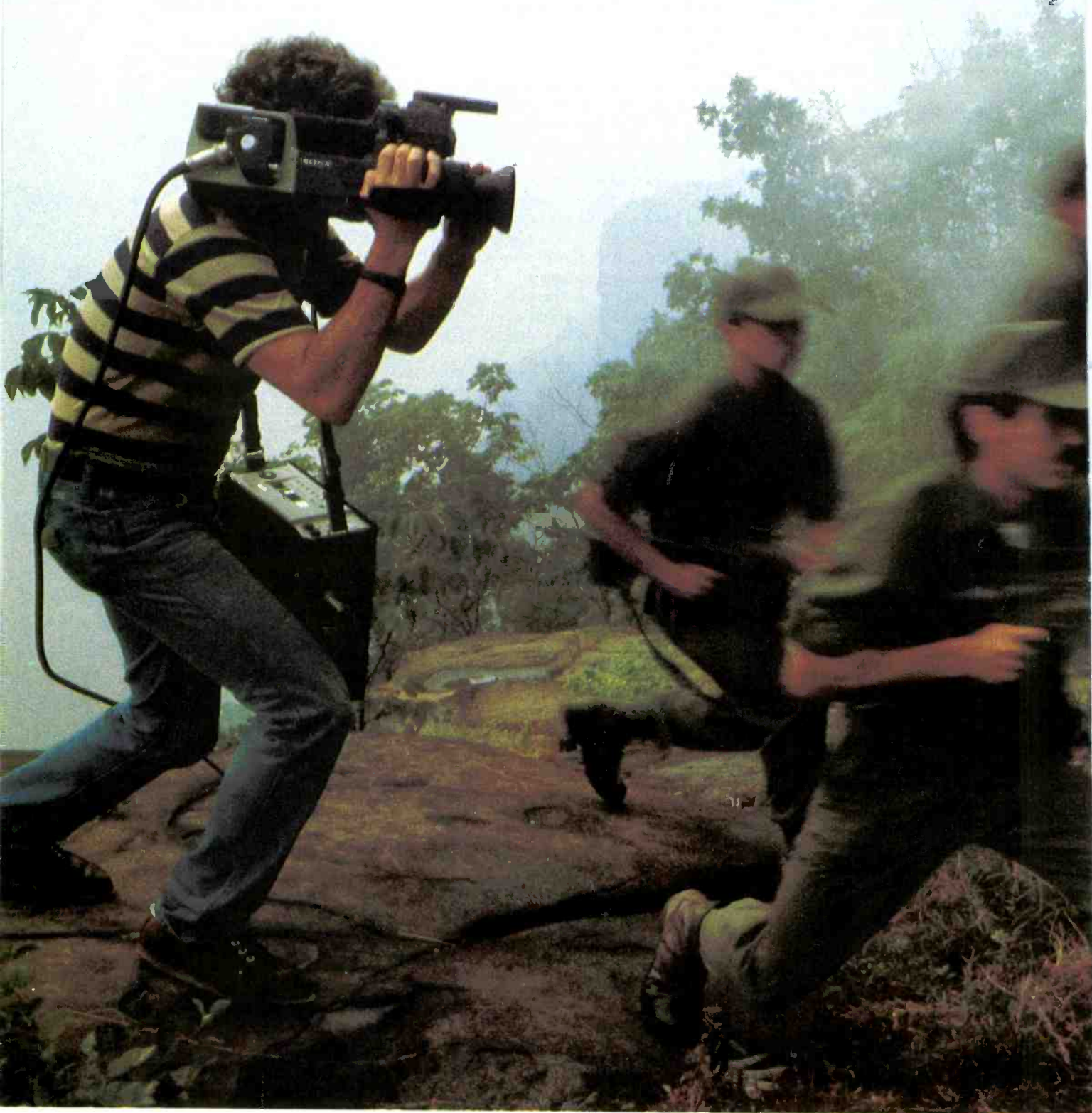
For the ultimate in operating convenience, Eventide's BD955 is still in a class by itself. Only the BD955 has the patented AUTO CATCH-UP feature that automatically rebuilds the delay after objectionable material is dumped. There's no need to fill the delay period. Now increased production and lower memory chip prices have enabled us to substantially reduce prices on all BD955 models - you save up to \$2400!

Eventide
the next step

265 West 54th Street
New York, N.Y. 10019
(212) 581-9290

Circle (81) on Reply Card

IF YOU CAN'T GET BIGGER CAMERAMEN, GET SMALLER CAMERAS.



If your cameramen don't mind packing 30 pounds on their shoulder, you can stop reading right now.

But if they're like most cameramen, mere mortals, they'd much prefer taking on the likes of El Salvador, Beirut or even downtown Topeka shouldering one-third the weight.

Which is precisely why Sony engineered the BVP-110.

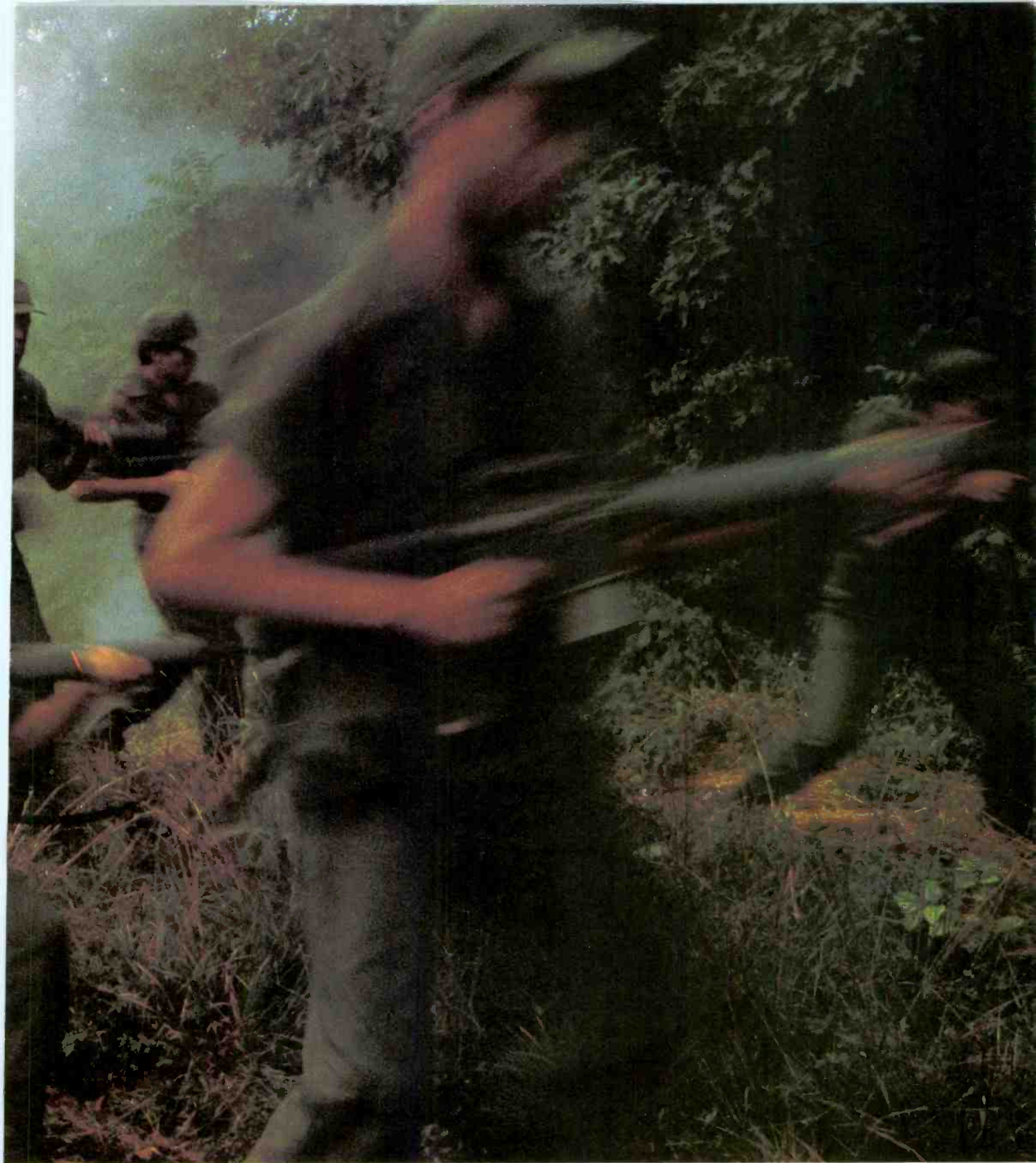
Weighing in at just 9½ pounds and measuring only 14" x 3½" x 5", the BVP-110 is the industry's smallest, lightest, most compact full-fledged video camera. (In fact, it's so small,

one network actually strapped it to a sky diver's helmet, while another fastened it to a snow skier traveling at 70 mph, with the results of both being super video.)

The Sony BVP-110 offers distinct advantages beyond compactness. Because it's a one-tube, you're free of the single most difficult and aggravating problem associated with three-tubes: registration error.

You're also free of color drift and black balance errors. And the Sony one-tube frees you of something else—

Sony is a registered trademark of the Sony Corp. ©1982 Sony Corp. of America, 9 W. 57th St., New York, N.Y. 10019.



toting around loads of extra batteries. This rugged, dependable camera has the lowest power consumption of any broadcast-quality camera in the industry. It'll operate for more than two hours on a single battery pack.

So if you're looking to stay out in front of the news, instead of behind it, and you can't get bigger cameramen, get the next best thing. The Sony BVP-110, at its new low price.

Sony makes a complete line of cameras as well as 1/2", 3/4" and 1" broadcast VTR's, editors, Digital Timebase Correc-

tors, and high-performance monitors.

For more information, call Sony Broadcast Company, in New York/New Jersey at (201) 368-5085; in Chicago at (312) 860-7800; in Los Angeles at (213) 537-4300; in Atlanta at (404) 451-7671; or in Dallas at (214) 659-3600.

SONY
Broadcast



faces or a user's own logo and type faces may be colored, edged, wrapped around geometric shapes or animated.

Mirage

Real time effects with live video surpass visual effects of optical techniques in the Mirage effects system. Nearly any conceivable manipulation or video is available for production or on-air use.

Paint Box enhancements

Animation with the digital Paint Box graphics system permits the artist to draw in normal fashion, then remove all palette/menu displays and have the picture re-created, as though it were being done live. Also available is the Font Factory library of type faces.

DLS 6000 library

The DLS 6000 Central Lending Library (CLL) accommodates up to seven work stations for storage or recall of more than 100,000 still images. DLS 6020 includes cut/dissolve features. DLS 6030 adds production effects.

DFS 1752 synchronizer

The DFS 1752 dual-framestore synchronizer stores the entire NTSC 4-field sequence to ensure that SC/H phasing is maintained at all times. Shifts in the output picture under any circumstances of asynchronism are eliminated.

SILK movements

SILK is a movement interpolation option to retrofit to existing DSC 4002 digital standards converters, yielding silky smooth movement of fast-moving objects.

Circle (684) on Reply Card

MCI/SONY

Audio production system

A specially packaged production system for broadcast, agency or teleproduction applications includes a JH-618 console, a JH-110C-8-HP 8-channel, 1-inch recorder with remote control and AutoLocator III and a JH-100B-2-HP stereo recorder.

JH-800 compact console

Twelve inputs for mic/line, four VCA groups, sends/echo returns and comprehensive filtering/equalization make the JH-800 console ideal for on-location recording. Outputs include individual channel lines and two independent stereo mix buses.

Other new products include the JH-110B-3-LB recorder/reproducer, DRE-2000 reverberator, PB-36 mic adapter and CDP-5000 disc player.

Circle (685) on Reply Card

see ads on pages 114 and 115

MZB & ASSOCIATES

MZB-14 production vehicle

Customized and user-oriented, this mobile production system includes accommodations for four production personnel.

Circle (687) on Reply Card

MAGNASYNC/MOVIOLA

Videola V-400 Compact

A single V-400 Compact system offers video transfers of 16mm films up to 3000 feet in length. An interconnected pair provides continuous video from multiple reels with clean switching between reels. A flickerless prism projection system is used.

Circle (689) on Reply Card

MAGNA-TECH ELECTRONIC

Series 600-B systems

An electronic lock for magnetic film recorders and reproducers and videotape is based on SMPTE or EBU codes. Multiples of sync speeds are also possible. A dc servo takeup system handles 16mm, 17.5mm and 35mm film.

Circle (690) on Reply Card

see ad on page 143

MAGNAVOX

AM stereo system

The Continental Electronics Type 302A AM stereo exciter, processing equipment by Circuit Research Laboratories and monitoring by Belar Electronics form the PMX stereo signal system from Magnavox. Prototype receivers are currently used for demonstrations. Magnavox supports the concept of 4-system receiver systems.

Circle (691) on Reply Card

MAGNUM TOWERS

Antenna services

Through Magnum Towers, Aries Antennas installs, measures and services FM and TV antennas and equipment.

Circle (692) on Reply Card

THE MANAGEMENT

SuperLog software

SuperLog programming for the Radio Shack TRS-80 computer systems combines the experience of three years with Electric Log software to offer programming, accounting and automation capabilities.

Circle (693) on Reply Card

MARCONI COMMUNICATION SYSTEMS

B3410 telecine

Three CCD linear array sensors require no routine registration adjustments on this system. Digital video processing operates on Y/R-Y/B-Y components, with dematrixing to R, G and B outputs for use with any standard signal encoder. PREFIX is a programmable color-correction system.

MR2B C Format VTR

Improved operation and performance characteristics in the MR2B 1-inch C Format VTR are based on developments from the MR2 VTR.

Eddystone receiver

A microcomputer in the Eddystone 1650 communications receiver offers

synthesized reception from 10kHz-30MHz. AM, SSB and CW reception is possible for more than 100 stored frequencies. Channel scanning is featured.

Circle (694) on Reply Card

MARCONI INSTRUMENTS

Model 2019 signal generator

See the test equipment update on page 44.

Model 2305 modulation meter

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (695) on Reply Card

MARTI ELECTRONICS

STL-10 link

Single (mono) or dual (stereo) STL-10 systems carry high quality audio for AM and FM monaural or stereo intercity relay applications. Additional subcarriers offer extra capabilities with STL-10 transmitters, R-10 receivers.

TSL-15/2 telemetry

In the 450MHz spectrum, the TSL-15/2 full backup automatic switching telemetry link provides redundant 15W transmitters and receivers to keep the telemetry system responsive to transmitter status.

ATS-15 switcher

The ATS-15 automatic transmitter switcher design uses PIN diodes to sense and switch transmitter outputs to the antenna. For 150-450MHz systems, the ATS-15 switches up to 50W RF power.

Circle (696) on Reply Card

see ad on page 175

MARSHALL ELECTRONICS

Distributor

Marshall Electronics supplies a wide range of quality video, TV and audio components for professional, industrial and consumer use.

Circle (697) on Reply Card

MATTHEWS STUDIO EQUIPMENT

Sky-Cam crane

An attachment to the standard Tulip Crane, the Sky-Cam allows a remotely operated camera to reach a maximum height of 27 feet. Horizontal reach of the system is 18.4 feet. Grip operates camera position; camera functions are handled by remote control panels.

Junior crane

For applications requiring only limited heights of elevation, the Junior crane achieves a maximum of 9 feet when attached to a standard crane. The load capacity of the system is 550 pounds.

Circle (698) on Reply Card

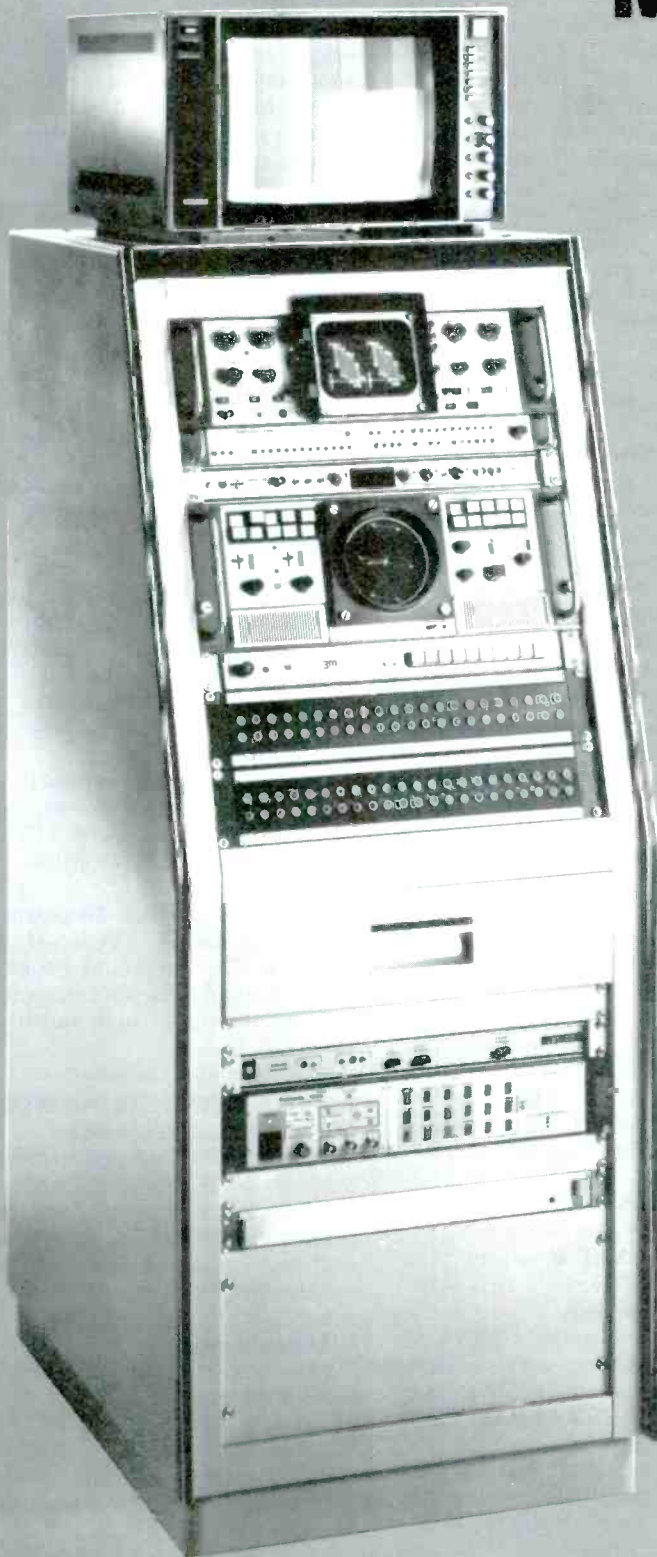
MAXELL CORPORATION OF AMERICA

HGX VHS Pro

PERFORMANCE!!

VTC-1

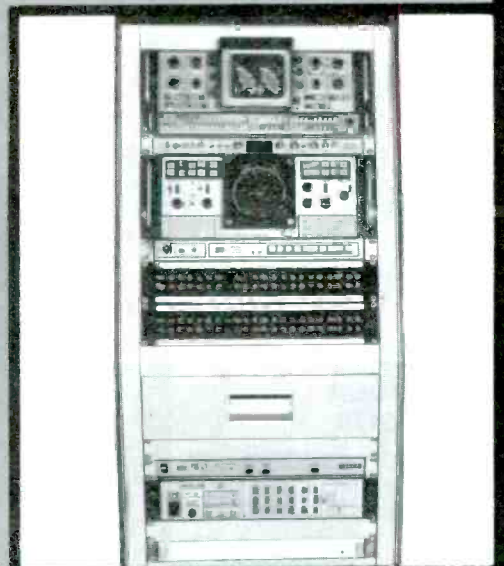
Video Test & Measurement System



Here is your chance to get that video test system you have planned to build, but just haven't had time to construct. Our VTC-1 provides you the high quality test equipment you need to perform all the video system measurements necessary to keep your studio functioning at peak performance levels. The VTC-1 is on wheels and comes with a 40 ft. auto-retracting power cord.

Standard equipment supplied in the VTC-1 includes: R520A Vectorscope, 5722 Color Monitor, 1480R with probe input option, R-900 NTSC Generator, Vectorscope, Utility Video Switcher and three Video Distribution Amplifiers. Every input and output (including loops) for each device is brought to the video patch panel. A large variety of tests can be set up using the patch panel to configure the test system.

The VTC-1 is offered completely wired and tested at \$45,000 including the equipment listed above. Custom configurations are available. Call us for a special quotation.



BROADCAST SYSTEMS INC.

8222 JAMESTOWN DR.
AUSTIN, TEXAS 78758

(512) 836-6011, 800/531-5232
800/252-9792 TX

Circle (82) on Reply Card

SAVE
\$310⁰⁰

DIGITAL AUDIO DELAY

BLEEPMATE™ 675/II

\$1315
~~\$1625~~

NAB Sale

Now you can buy this solid-state simplicity for hundreds less than many tape delays cost.



Comex's new Bleepmate-675/II a simple yet sophisticated, fixed, 6-second solid-state delay, has no moving parts (so technical and on-air talent aren't bothered by endless tape/head upkeep). And the 675/II has a broad \pm 1dB, 20Hz to 7.5KHz response. Its low price makes systems redundancy practical, too.

- Limited offer.
- Call or write now.
- Sale ends
6-30-83

Comex Systems
2 Columbia Drive
Amherst,
N.H. 03031
(603) 889-8564
Telex 953120

COMEX
SYSTEMS
A Division of the Successor Corporation

Circle (83) on Reply Card

Designed for new 1/2-inch ENG systems, HGX Pro 1/2-inch tape withstands rough handling and adverse conditions of heat and cold temperatures. A new carbon backing eliminates shedding.

KCS cassettes

For 3/4-inch U-matic, KCS videocassettes in 10- and 20-minute lengths complement Maxell KCA 20-, 30- and 60-minute cassettes.

KCA-5 cassettes

Duplication and post-production operations will find this U-matic cassette valuable for commercials. The short length saves costs.

Beta cassettes

L 430 1/2-inch Beta cassettes are designed for reproduction of full-length movie features. The 85-minute length is aimed at duplication and consumer applications.

Leaderless tape

Instant Start leaderless tape cassettes are designed for secretarial and court stenography applications.

Circle (699) on Reply Card

McCURDY

OL1930A telephone hybrid unit

This talkshow system overcomes problems of loudspeaking telephones for use in talkshows and audio teleconferencing.

CB1950 conference bridge

The CB1950 is designed to work with the OL1930A. It is a multiport unit allowing 1-4 parties to be conferenced for open-line talkshows. For use with more than four callers, two units can be used, providing up to eight isolated input ports.

EQ1810 equalizer

This dual-channel audio equalizer system offers a self-powered enclosure. It may be permanently wired to audio channels or used in a patching configuration.

EQ1820 telephone channel simulator

The EQ1820 video switcher-controlled simulator is a dual-channel equalizing system. Each equalizer may be inserted or bypassed independently from the front panel or remotely.

Circle (726) on Reply Card

see ad on inside back cover

McINNIS SKINNER & ASSOCIATES

Automated newsroom

The McInnis-Skinner NEWSKAN automated newsroom system includes library/archive search/retrieval functions, WIRE SERVICE with bulletin/flash status, ZEPHYR weather transmission services and weather graphics, VOTESCAN election returns and Graphics II for 640x480 pixel displays.

Circle (700) on Reply Card

McMARTIN

BSM-400 transmitter

This tube-driven FM transmitter,

rated at 50-450W, finds use as a standby unit or in educational or international broadcasting.

MS-115 amplifier

The MS-115 is a 15W universal amplifier with a soft power supply.

MS-130 amplifier

This 30W universal amplifier also has a soft power supply.

SCA system

This system enables FM broadcasters to use up to five music-quality subchannels in addition to the stereo main channel. For data uses, more subchannels are available. Also shown were an SCA generator and receiver for the system.

Circle (727) on Reply Card

see ad on page 80

MEDIA COMPUTING

Apple software

The Computer Assisted Broadcasting (CAB) system for Apple computers includes an automated newsroom capability with prompter-script processing, assignments/archives modules, personnel records and business accounts processing.

Circle (688) on Reply Card

MEDIA CONCEPTS

Attaché Video

The Attaché Video system includes an attaché case filled with the JVC VHS-C microcassette recorder/player with wired remote, the JVC CX-610 5-inch color monitor/receiver and a Marathon 4.5Ah nicad battery system.

Buhl optical equipment

Media Concepts provides the Buhl Optical Company mobile multiplexer III systems for cable and LPTV film chain multiplexer applications.

Enerlite products

Enerlite's Marathon 10 power pack equipment offers 12Vdc at 4.5Ah capacity. The 3.8-pound package includes a standard 5-pin connector and a flame retardant, high impact ABS case.

Circle (701) on Reply Card

MERLIN ENGINEERING WORKS

ME-288 standards converter

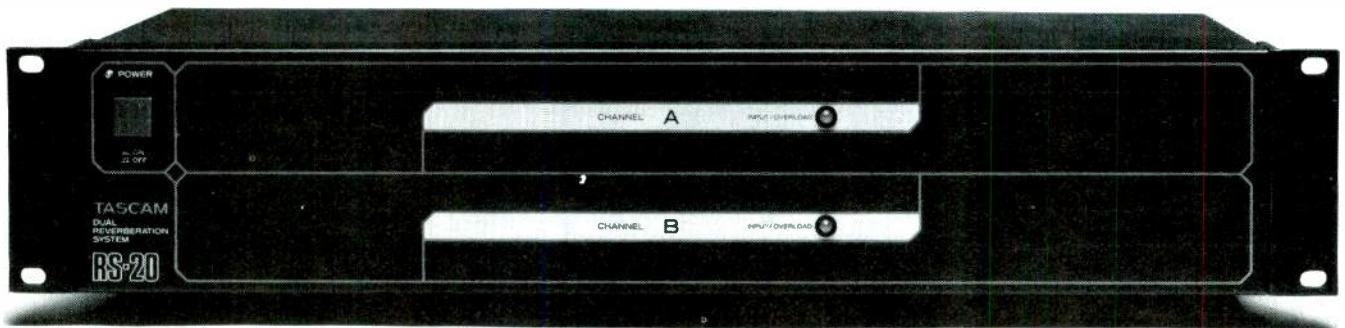
The ME-288 accepts stable or unstable NTSC or PAL inputs. The outputs in either standard benefit from noise reduction, time base correction, color correction, image enhancement and frame synchronization.

VDA equipment

The ME-298 video distributor system offers 0.15°/0.15% differential phase/gain figures to a 10MHz flat bandwidth response for standard and HDTV facilities. Hybrid line drivers create 24 outputs from one input.

Digital audio delay

An ME-278 digital frame audio delay unit reduces lip-sync restoration problems. Thumb-wheel delay selection includes up to nine frames delay for NTSC, eight frames for PAL. An



Many reverbs come with level controls, but not the RS-20—it's tweak free. After all, your mixer has echo send and return controls, so why pay twice for the same thing. Just set the rear panel sensitivity switch, and a pair of bi-color LEDs on the front panel help you set the mixer's send level. That's it.

Limiters ahead of the RS-20 drive amps then prevent overdrive or "twangy" spring sounds caused by high energy transients inherent in plucked guitar strings, etc., so the RS-20 remains "squeak free."

This exciting new unit incorporates a proprietary design with three different sized springs on each channel. Here's why: Most conventional single-spring reverbs have poor high frequency response, and those that don't usually compensate by "shunting" high frequencies directly through their reverb with a capacitor, a short-cut that cheats you of high frequency delay. The RS-20's multiple springs extend the frequency range at least an octave above conventional units (without a shunt). Also, three springs let us scale the decay time to the frequency for superbly natural sounding reverb.

You've got to hear it—sound that rivals high quality plates and digital systems, for a whole lot less. Even at twice the price, nothing beats the RS-20 Dual Reverb.

For additional information, see your TASCAM dealer, or write TASCAM Products, 7733 Telegraph Road, Montebello, CA 90640, (213) 726-0303.

Copyright 1983—TEAC Corporation of America

**TWEAK
FREE
REVERB.
REVERB.
REVERB.**

TASCAM
TEAC Production Products

DESIGNED BY POPULAR COMPLAINT.

MASTER CONTROL



MRC-2

- MICROPROCESSOR BASED DESIGN
- CLEAR ENGLISH DISPLAYS
- MULTI-CONTROL POINT CAPABILITY

The MRC-2 Microprocessor Remote Control delivers pre-eminent performance in remote control, telemetry and status acquisition. Automatically interfacing multiple remote sites to one or more control terminals in a pre-established control hierarchy, the MRC-2 gives the user remarkable versatility and fail-safe integrity.

System setup is very simple, with plain-English prompting and standardized parameter "menus" for command, telemetry, and status functions. The MRC-2 features multiple upper and lower level telemetry tolerance indications,

automatic muting, full fail-safe capabilities, status input indications on both rising and falling waveforms, and six ways to calibrate remote site telemetry inputs.

A full line of options gives the MRC-2 user almost unlimited flexibility. The Automatic Control option adds both time-oriented and feedback-oriented command functions to the system, capable of multiple steps with logic branching at many levels, permitting full automatic transmitter operation. The Automatic Logging option prints out a log of all telemetry and status channels from multiple sites, including any events and alarms. Adding the MRC-2 CRT option provides plain-English capabilities and allows display of all system functions in user-selected blocks. Multiple CRTs and/or Loggers may be used at either control or remote sites.

- UP TO 99 REMOTE SITES CAPABILITY
- EACH SITE EXPANDABLE TO:
255 COMMAND LINES
255 STATUS CHANNELS
255 TELEMETRY CHANNELS



For further information please contact our Marketing Department.

MOSELEY ASSOCIATES, INC.

A Flow General Company . Santa Barbara Research Park

111 Castilian Drive . . . Goleta, California 93117
(805) 968-9621 . Telex: 685-448 . Cable: MOSELEY

Circle (85) on Reply Card

LED bargraph indicator shows the output level.

ME-408 color film recorder

A regulated high voltage source for the 13-inch high resolution CRT maintains raster size for 16mm film recordings made by the ME-408 color film recorder.

Apert/Herzog systems

Merlin sells the Apert/Herzog model A digital frame synchronizer and model H time base corrector.

Circle (702) on Reply Card

METAL CASTING LABORATORY LTD./MCL

Non-ferrous metals

MCL specializes in investment casting of non-ferrous metals, such as aluminum or magnesium, as well as magnesium alloy.

Circle (686) on Reply Card

see ad on page 132

MICMIX AUDIO PRODUCTS

MC modular processors

An MC-F card cage accepts up to five processor modules. Modules may include the Dynafex MC-101 noise reduction system and the Master-Room MC-201 decay control/noise reduction equipment. They accept dbx 900 series modules.

DC-2 reverb/decay system

With dual channels for stereo or dual mono applications, the DC-2 Master-Room reverberation noise reduction and decay control system provides continuously variable decreases in delay time up to 75%.

XL-404 plate synthesizer

The Master-Room XL-404 plate synthesizer includes a 4-band equalizer to tailor the reverb sound, variable delay and two channels for stereo or dual mono control.

Circle (703) on Reply Card

MICRO COMMUNICATIONS

Transmission line products

The MCI product line now includes combiner equipment for use in MDS transmission systems, allowing multiple transmitters on a single antenna.

Antenna products

Series 95000 antennas serve multiple channel UHF LPTV operations. Four pattern types are capable of handling up to four 1kW channels with 4-channel spacing between signals.

Circle (704) on Reply Card

MICRO CONTROLS

PTS-10CD STL

This 3-channel STL interfaces with AM stereo and earth station satellite systems requiring left/right audio and a third channel for satellite keying or remote control capability.

Circle (705) on Reply Card

see ad on page 110

MICRODYNE

Model 1100PCDR(3)

The 1100PCDR(3) is a single-

channel-per-carrier demodulator. In conjunction with this product, Microdyne is offering complete SCPC network service for state and regional radio networks, including an SCPC uplink.

5m antenna

This is a motorized polar mount antenna with controller.

Circle (728) on Reply Card

see ad on page 137

MICROTIME

TBC/frame synchronizer

The S-230 TBC/synchronizer handles signals from ENG, microwave, satellite network and remote studios, but operates equally well with all 1/2-inch and U-matic VTR heterodyne formats with or without capstan servos.

T-100 digital TBC

For broadcast, industrial, cable and LPTV applications, the T-100 locks and corrects capstan servoed non-segmented 1/2- and 3/4-inch heterodyne VTRs that accept an external 3.58MHz subcarrier feedback signal.

TE-120 digital effects

A system consisting of two T-120D TBCs, an E-120 effects processor and an effects control unit provides corrected video for A/B rolls, dynamic tracking (on Sony BVU-820) and a variety of push, pull and wipe effects.

T-120D TBC

With 8-bit, 4X digital sampling, the T-120D digital TBC offers dynamic tracking for slow-motion and freeze-frame applications of the Sony BVU-820 VTR. The unit also works with non-segmented 1/2- and 3/4-inch heterodyne VTRs.

Circle (706) on Reply Card

MICRO-TRAK

Dual bus console

Model 6510 accepts 14 inputs into 10 channels for A and B bus outputs. Rotary faders control mono or stereo levels. Frequency response ratings on high level channels are ± 2 dB, 20Hz-20kHz.

Model 6509 console

For limited requirement applications, the 6509 dual bus broadcast console incorporates five mixing channels for mono or stereo from nine inputs. Rotary faders provide control.

Telefile II

Telefile II is a general purpose 4-channel audio mixer with special tape recorder and telephone line interfacing for flexibility in audio news-gathering. Battery operation on 9V alkaline cells to 15 hours is possible.

Circle (707) on Reply Card

MIDWEST

Communications systems

Teleproduction, control, transmis-

MAIN CONTROL



MRC-1

- SMART TERMINALS AT CONTROL AND REMOTE SITES
- SIMULTANEOUS DISPLAY OF 32 STATUS INPUTS
- KEYBOARD CALIBRATION OF TELEMETRY

Since its introduction in 1978, the MRC-1 has become the leading microprocessor based remote control system in the broadcast industry. The compact modular design delivers proven reliability and outstanding versatility, allowing up to 64 command outputs, 32 status, and 32 telemetry inputs, at each of up to nine remote terminals.

User-tailored system set-up of the MRC-1 assures each broadcaster of filling his exact command, status, and telemetry requirements. Telemetry channels may be keyboard calibrated for linear, indirect power or direct power scaling. Upper and lower telemetry limits may be set with automatic muting if desired. All status inputs from any site can be displayed simultaneously on a set of 32 LEDs at the control terminal. Command line outputs may be assigned to function as the raise or

- MULTIPLE REMOTE SITE CAPABILITY
- EACH SITE EXPANDABLE TO:
 - 64 COMMAND LINES
 - 32 STATUS CHANNELS
 - 32 TELEMETRY CHANNELS

For further information, please contact our Marketing Department

lower output of any specified telemetry channel. In short, the broadcaster customizes his system to his plant.

To further enhance the flexibility and convenience of the MRC-1, several options are available. The multiple direct command option provides 10 pre-selected command functions for quick control of key parameters at any site. In case of an extended shutdown, the Moseley Memory option stores data for up to ten years. Optionally available automatic loggers print a record of status and telemetry operations at time intervals selected by the user. The CRT option duplicates all the functions of the control terminal and displays all 32 channels of status and telemetry data at one time from any site.

With over 500 units in the field, the MRC-1 has proven itself to be the preferred remote control system for radio, television, earth satellite stations and a multitude of supervisory control requirements.



MOSELEY ASSOCIATES, INC.
A Flow General Company . Santa Barbara Research Park
111 Castilian Drive . Goleta, California 93117
(805) 968-9621 . Telex: 658-448 . Cable: MOSELEY

Circle (86) on Reply Card

sion and CATV systems from Midwest may include design, equipment specification and acquisition, installation and maintenance for video, audio and data.

Mobile production facilities

Production vehicles, such as the M20 and M30 mobile units, result from Midwest's strengthening/reinforcement designs and customized equipment packages.

M750-2 jackfields

Regular and normalled jackfields are two formats of the M750-2 product line. Unless specified otherwise, regular versions are shipped, but conversion to normalled is possible. Both formats include harnessing.

Circle (1141) on Reply Card

see ad on page 1

MINOLTA

Color Analyzer II

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Light metering

The Minolta line of light metering systems includes models for luminance, illuminance, chroma incidence and chroma reflectance measurement needs.

Circle (731) on Reply Card

MIRALITE

Ku-/C-Band antenna

Using a 2.4m reflector with prime focus provides an overall 78% efficiency rating on reception of both C- and Ku-Band satellite transmissions. Az/EI, polar and steerable polar mounts are available for the 4/12GHz antennas.

Circle (736) on Reply Card

MITOMO COMPANY LTD.

VHS cassette rewinders

All types of VHS cassettes are re-wound by the MWV-20E cassette re-winder system. Both ac and dc operation of the equipment may include erasure if desired.

U-matic rewinders

The MWU-20E handles rewind or fast-forward tape shuttling with erasure if desired.

Circle (732) on Reply Card

MODULAR DEVICES (MAP)

Model 4046 line/mix module

In bridging or summing applications, the 4046 line/mix module offers active balanced input/output connections. Feedback and front-panel gain controls provide levels to +22dBm into 600Ω outputs.

Aural monitor modules

A 10-position thumbwheel selects sources to the headset jack on the 4061 aural monitor module. Separate gain controls service the headset or a separate external speaker. An additional output drives the 4062 VU meter module, which has three sensitivity levels.

Model 2100 power supply

Providing 25Vdc, the bipolar 2A supply includes full regulation. It plugs into a 4950 rack frame with allowances for ventilation.

Circle (737) on Reply Card

MODULATION ASSOCIATES

Solid-state uplink

The SU-10 is a dual-channel earth station transmitter with two 10W solid-state HPAs, serving two independent SCPC channels or a stereo program channel. The SU-10 is available with audio processing and frequency agile modulators.

Circle (733) on Reply Card

MODULATION SCIENCES

Composite driver/receiver

The wired STL, or CLD-2500, system sends composite stereo base-band signals over inexpensive transmission lines up to 2500-foot (optional 10,000-foot) distances. On Belden 9463 cable, frequency response is ± 0.03 dB, dc to 53kHz.

Sidekick SCA generator

SCA generation with audio processing uses quartz-controlled frequency synthesizing, optimization for music or speech and compatibility with compandor, data or telemetry applications.

Circle (734) on Reply Card

MOLE-RICHARDSON

Lighting products

These include the 6221 1.2kW HMI Molepar, 2791 6kW Molepar quartz cyc-strip, 1kW or 2kW, 8-inch Solarspots, and 1kW Baby Solarspot, 2821 600W Tweenie-Mole Solarspot, 4711 600W 1-light Molecool, 5891 5.4kW 9-light Molecool, 2921 1kW Molequartz Nooklite, 8021 2kW Molelipso fixture, Mole Focal Spot for Mini-Mole fixture and Mole Focal Spot for 1kW #407 Baby Solarspot.

Circle (738) on Reply Card

KEITH MONKS AUDIO LTD.

Record cleaners

A 50-50 mixture of distilled water and ethanol removes grease, embedded grit and hardened sludge from records in the models CR-501 and CR-502 recorder cleaners. A special brush assembly and suction arm aid in the cleaning action.

Circle (739) on Reply Card

MOSELEY ASSOCIATES

MRC-1600 remote control

Microprocessors in the MRC-1600 system provide channel status, telemetry and separate raise/lower commands for up to 16 channels.

Auto control unit

The ACU automatic control unit was shown in use with the MRC-2 microprocessor-based remote control system for hands-off operation.

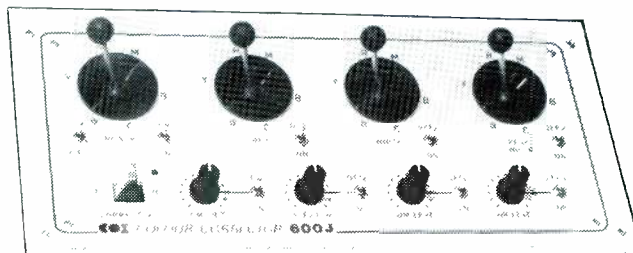
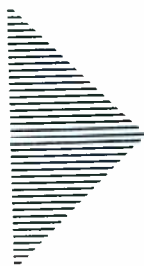
Circle (740) on Reply Card

see ads on pages 152 and 153



600J COLOR CORRECTOR

THE CURE FOR POST PRODUCTION BLUES (AND REDS & GREENS)



- accepts any NTSC encoded video
- full range of correction at all luminance levels
 - gamma correction (black stretch or compression)
 - no video degradation

broadcast video systems

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

Circle (87) on Reply Card

MASTERFUL PERFORMANCE



ADM's DA16B/CH20B Audio Distribution System

You are assured of one masterful performance after another because the DA16B/CH20B provides audio distribution of unquestioned reliability. It offers a unique combination of features for exceptional versatility.

- Each amplifier is a one-input, six-output plug-in card.
- The input, and each output is individually transformer coupled.
- Input levels up to +27 dBv; output levels up to +27 dBm before clipping.

- Output amplifiers have individual, front accessed gain adjustment, and a test point.
- Each CH20B will house up to six DA16B cards, and has a complete set of redundant power supplies with automatic changeover.

But probably the most important feature of all is ADM's unexcelled built-in quality—quality backed by a five-year unconditional warranty.

Contact us today for the complete story about the unique DA16B/CH20B system.

ADM[®] *The
Audio
Company*

ADM TECHNOLOGY, INC.

1626 E. Big Beaver Road Troy, MI 48084
Phone (313) 524-2100 TLX 23-1114

West Central Sales: (817) 467-2990

West Coast Sales: (415) 945-0181

East Coast Sales: (313) 524-2100

Rocky Mountain Sales: (801) 486-8822

MOTOROLA AM stereo

Compatible Quadrature, C-QUAM for short, presents L+R audio on an in-phase carrier with L-R audio on a 90°-shifted quadrature carrier. Chosen by GM for its 1984 automotive radios, the transmitting equipment manufacture is licensed to TFT, Broadcast Electronics and Belar.

Circle (741) on Reply Card

MULTI-TRACK MAGNETICS

Model 108/DCS

Microprocessor-controlled dc servo drives and torque motors in the 108/DCS ultrahigh speed recorder/reproducer systems allow film speeds to 30X normal play. Four film format sizes are compatible with Kodak DataKode and interlock to other equipment.

TD-106/DCS reproducers

Servo motor drives and torque motor systems operate in interlocked systems with VTRs, ATRs and telecine equipment. Five film format sizes offer remote synchronous operation with optional high speed functions for 16mm and 35mm film.

Circle (742) on Reply Card

NEC AMERICA

E-FLEX accessory

The EPR-400 add-on accessory pro-

vides picture rotation and perspective capabilities to the E-FLEX system. Horizontal, vertical and perpendicular axes allow 3-D effects.

Editing system

The EES-300 E-FLEX off-line effects editor incorporates an NEC personal computer for programming of complex effects sequences. Selected sequences, stored on disc or in bubble memory, later instruct the effects system.

Combiner/chroma-keyer

An option for the E-FLEX system combines the outputs of two effects units and allows digital chroma-keying from the E-FLEX outputs.

SPC-3 CCD camera

Three 2/3-inch CCD devices and an f/1.4 prism allow the SPC-3 camera to operate typically at 200fc, f/4. Outputs interface directly to 1/2-inch Beta or M Format and 3/4-inch U-matic VTRs.

TVL-800-7E ENG link

C-MOS and FET devices reduce power requirements in the TVL-800-7E ENG microwave link. The double heterodyne system provides 1W or optional 5W outputs in the 7GHz spectrum.

HPA-4536B exciter

Stereo generation with the HPA-4536B FM exciter requires only an additional plug-in card.

Circle (743) on Reply Card

see ad on page 9

NTI AMERICA

Digital still-store

Model DSS-11 combines 500-picture disc storage, an additional 500-picture storage in the DSK-1 disc unit and the DOP-11 operation panel. Read times of 0.35 seconds are typical. One-, 2- and 4-field mixed images are possible.

Circle (744) on Reply Card

NADY SYSTEMS

Personal communicator

The PRC-3 system offers wireless communications with full duplex capabilities. The body pack transmitter receiver unit attaches to the headset with boom microphone, operating on highband VHF frequencies.

PRC-2 communicator

VHF operation with the PRC-2 headset transmitter/receiver equipment frees the user from all wires. VOX, volume and on/off controls are readily accessible.

Circle (745) on Reply Card

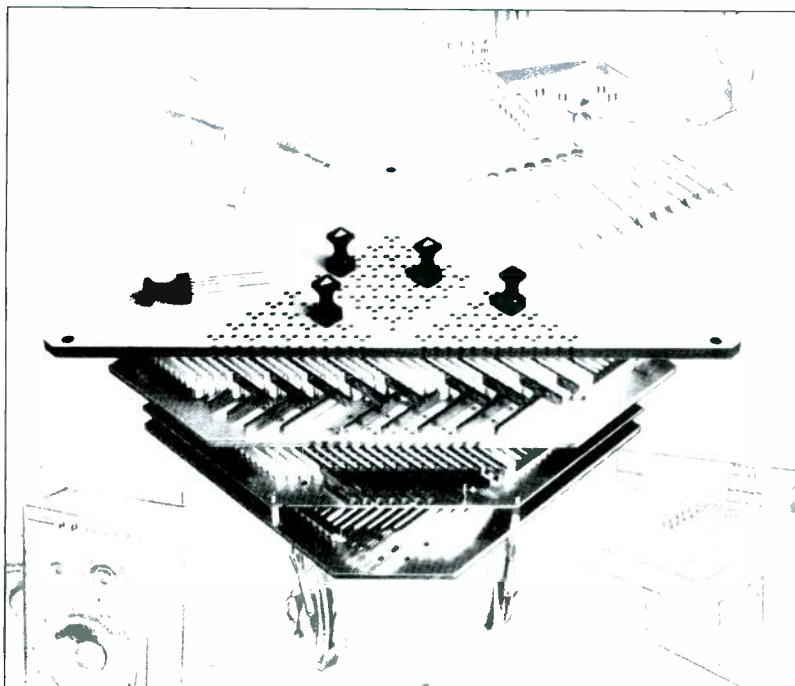
NAGRA MAGNETIC RECORDERS

T-Audio recorder

The T-Audio recorder series provides transportability in a studio machine with 11.8-inch reel capability for NAB, AEG or cinema hub types. Time code synchronizes the twin capstan transport.

Circle (746) on Reply Card

Audio-Matrix Program Board



Quick Cross Connection Clear Distribution Interference-Free Switching

With the Audio-Matrix Program Board by Ghilmetti, low voltage - LF lines can be switched. The various possibilities of shielding guarantee a high crosstalk attenuation.

Mono and Stereo applications as well as the use in 100V-installations make the Audio-Matrix Board versatile.

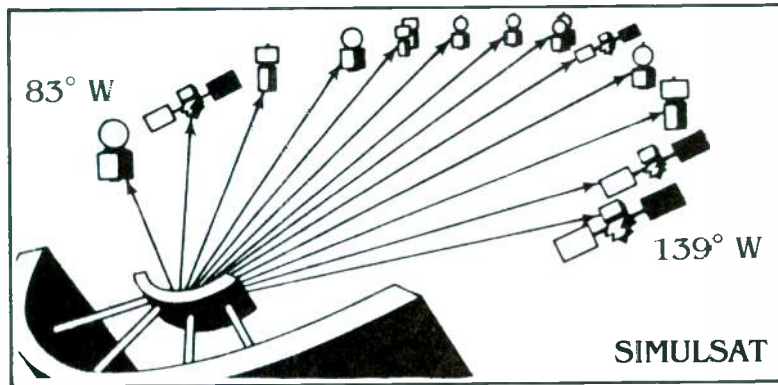
Please contact us for additional information and documentation.

GHIELMETTI

Ghilmetti Inc., Switches and data devices, 6290 Sunset Blvd., Suite 1126, Los Angeles CA 90028, (213) 463-5111, TWX 910 321 2903

Circle (88) on Reply Card

INCREASE YOUR MARKET SHARE WITH A MULTI-BEAM SIMULSAT



SIMULSAT-7 SEES ALL SATELLITES SIMULTANEOUSLY WITH 7 METER PERFORMANCE

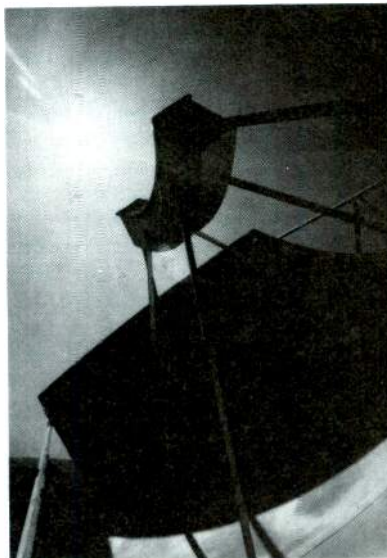
Simulsat can give you a new freedom in program selection and access. With Simulsat, your programming decisions are never affected by your hardware's limitations. This flexibility allows you to be more competitive in your market, more responsive to your customers needs.

SIMULSAT GIVES YOU FLEXIBILITY FOR TODAY AND TOMORROW.

As programs shift to different satellites and new satellites are launched, the need for your station to access any combination of satellites simultaneously, increases. Simulsat's technology gives you the flexibility to deal with these changes efficiently and economically. When it comes time to organize a teleconference or supply audio feeds for the radio station next door, Simulsat paves the way for these new profit opportunities.

SEVEN METER PERFORMANCE

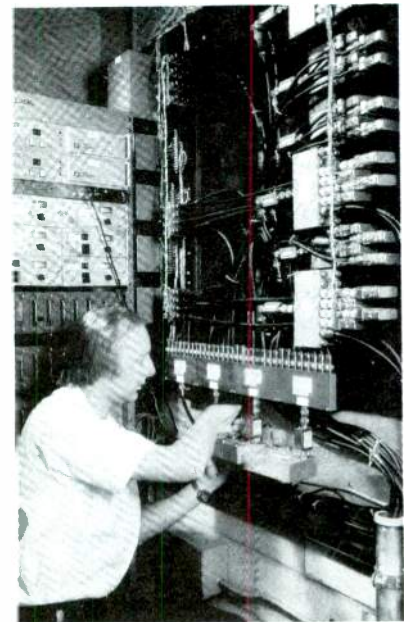
Our new Simulsat-7 will give you 7 meter performance on every satellite. Consider the equipment expense and maintenance headaches associated with conventional steerable antennas compared to one fixed Simulsat.



SIMULSAT-5

CHOOSE THE SIZE THAT'S RIGHT FOR YOU.

Simulsat-3	41 dBi gain
Simulsat-5	44 dBi gain
Simulsat-7	47 dBi gain



TURNKEY INSTALLATIONS

Antenna Technology can provide you with a completely installed and engineered system specifically designed for your unique situation. Whether you require a remote switching system from your antenna site to your studio or a standard electronics package with your Simulsat, our engineers can design a system to meet your needs. Let our Broadcast Specialists show you how we can save you time and money with a Simulsat installation.



8711 East Pinnacle Peak Road Suite C-103
Scottsdale, Arizona 85255
(602) 264-7275

Circle (89) on Reply Card

NAUTEL MAINE

AMPFET transmitters

Models of the AMPFET AM transmitters include 1kW, 2.5kW, 5kW and 10kW power levels with 70% to 74% efficiency. The 100% solid-state design uses power FET devices in PAs and modulator sections.

Circle (747) on Reply Card

NEILSON-HORDELL LTD.

Model NH 214 animation stand

A model 3565 interactive motion control computer system takes command of the NH 214 table for true perspective, artwork panning, zooming and 3-D movement.

Circle (748) on Reply Card

NETCOM/TES

Uplink services

In a joint venture with Transportable Earth Stations, Netcom provides a fleet of mobile earth stations.

Circle (749) on Reply Card

RUPERT NEVE

8128 console

Multi-track recording studio applications are simplified by digitally controlled routing through touch-sensitive panels. Alphanumeric displays show assignments, while solid-state storage retains complete track assignments for four programs, with immediate recall capability.

NECAM automation

Audio mixdown for TV or film post-production relieves engineering duties for creative efforts in laying down single effects tracks, handling a post-synchronized dialog balance or making the final mix.

Circle (750) on Reply Card

NORTRONICS

Professional degausser

The PF-208 degausser develops a highly focused magnetic field, preventing stray fields from damaging delicate metering. The hand-held unit develops a 1000-gauss field strength for 1/2- to 2-inch multi-track recorders.

Recorder products

Nortronics markets a wide range of degaussers, bulk erasers, alignment products and cleaning materials for use with tape recording equipment.

Circle (751) on Reply Card

NURAD MICROWAVE SYSTEMS

20PT1 portable transmitter

For 2GHz ENG operation, frequency synthesis selects one of 21 channels on the 20PT1 portable transmitter. A 1W output signal carries video and two audio channels. LEDs indicate phase-lock, reverse power, forward power, standby and on status.

20AR2 central receiver

The 20AR2 central receiver includes

21-channel frequency-synthesized selection in the 2GHz band. The receiver noise figure of 3dB complements an input RF range of -20 to -85dBm.

Silhouette antennas

Silhouette is a low profile version of the renowned SuperQuad II design. Single- and dual-band models include dual circularly polarized receive antennas GaAs FET preamplifier assemblies, dual speed pedestals and other accessories.

MC4 digital remote controllers

For Silhouette, Quad and SuperQuad II antennas, the MC-4 controllers provide polarization selection, receiver channel selection, receiver signal strength readouts, preamp/bypass and other features.

ITFS/MDS systems

Operating at 2.5-2.69GHz, the 26TC1 (10W) or 26TC1-1 (1W) transmitters feed a 10dB gain 26S01 MDS/ITFS antenna for reliable reception on the 26RC1 receiver.

Other new products include the 70PA2 7GHz, 2W power amplifier; 70PA5 7GHz, 5W power amplifier; 70AR2 7GHz, 30-channel receiver; 70FR2 7GHz receiver; and 70FT2 transmitter.

Circle (752) on Reply Card

NYTONE ELECTRONICS

Flying spot scanners

Several models of flying spot scanners provide 80-slide capacity operation. The broadcast quality reproduction includes 450TVL resolution, offers random access capability and may allow fades between slides.

Circle (753) on Reply Cards

OKI ELECTRIC OVERSEAS

LT 1210 standards converter

An internal sync generator or external sync drives allow the LT 1210 digital standards converter to accept NTSC, PAL or SECAM inputs and produce a signal on any of those formats.

Circle (754) on Reply Card

O'CONNOR ENGINEERING LABS

Metal tripods

Model 55 metal tripods include regular sizes (elevations from 40-65 inches) and baby sizes (from 19-24 inches). These claw ball design units accommodate model 30, model 50 and model 100 fluid camera heads and test to camera loads to 100 pounds.

Circle (755) on Reply Card

OLESEN

Lighting distributor

Olesen supplies a variety of equipment for lighting and illumination control, including the TTI HDDR dimmer system and Wizard lighting control system; automatic devices rigging

and stage hardware; GE stage and studio lamps; and lighting distribution equipment.

Circle (756) on Reply Card

OMICRON VIDEO

Model 200 universal DAs

Model 200 includes modular equipment for 1 in x 6 out distribution of video, pulse and subcarrier signals. Equalization, clamping and controlled delay options are available.

Pulse generators

Series 400 sync pulse generators provide RS-170A phasing, with all pulses and subcarrier signals based on a 14.318MHz clock.

Switching/processing

Series 500 audio/video utility switching and video mix/effects keying processors are based on a 5x2 matrix format.

Circle (757) on Reply Card

OMNIMOUNT SYSTEMS

Series 50 assemblies

The Omnimount series 50 products handle lighter loads to 40 pounds in a scaled down format of established series 100 mounting devices.

Series 200

Video monitors, speakers or other larger devices to 125 pounds may be mounted on the model 200WB heavy-duty mounting units.

Cable/mount system

Black wire rope cable avoids unsightly eye-bolts, cable clamps and turnbuckles by using a ball/socket/flange design construction.

Circle (758) on Reply Card

ORBAN ASSOCIATES

Studio Optimod

Models 422A/424A are multifunction systems with compressor, limiter and de-esser capabilities. The single- and dual-channel units provide metering for gain reduction and VCA level.

245F synthesizer

The 245F stereo synthesizer creates convincing pseudo-stereo from monaural sources. Dimension and separation controls add space and depth to flat sound.

ACC-5 limiter accessory

For operation with the Optimod-FM 8100A, the ACC-5 limiter accessory design consists of a 6-band limiter cascaded with distortion-cancelled multiband clipping. The result eliminates pumping and other processing artifacts.

TV Optimod

Model 8182A follows the 8180A with enhancements. New features include subtle multiband compression, intelligent gating, high frequency limiting, distortion-cancelled clipping, a 15kHz low-pass filter and bandlimited overshoot control, along with loudness control.

The new Philips LDK 6

The first "total"
automatic camera.

Only the LDK 6 provides 100% automatic control for all primary and secondary set up adjustments... plus it has multiple diagnostic systems and many other automatic and operating features.

The LDK 6's advanced design provides unprecedented reliability and flexibility. It launches a new era for broadcast and production.

If you are interested in the most advanced studio/field camera available today, and the best investment for the '80s... put yourself behind the LDK 6.

Call or write for details.
Philips Television Systems, Inc.
900 Corporate Drive
Mahwah, New Jersey 07430
201-529-1550

Circle (90) on Reply Card

PHILIPS

Circle (44) on Action Card





NEUTRIK®

**"The Swiss Connection"
PRECISION CRAFTED**

- Audio Connectors
 - XLR-type (chassis, cable)
 - 3, 4, 5 and 6 pins
 - Nickel or black finish
 - Silver or gold contacts
- PC mount XLR-types
- Wall Plates with XLR's
- 1-8 contacts circular connector system
- Chart Recorder

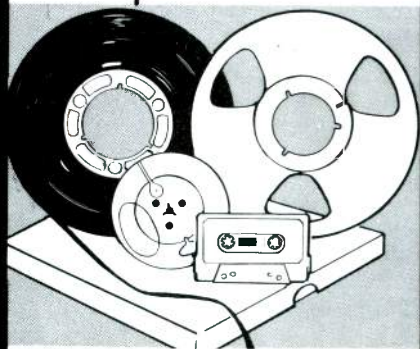


**77 Selleck St.
Stamford, CT 06902**

© Neutrik AG, Liechtenstein © Neutrik, 1983

Circle (91) on Reply Card

Audio Tape for professionals



REEL TO REEL TAPE

Ampex, 3M. All grades.
On reels or hubs.

CASSETTES, C-10—C-90

With Agfa, TDK tape.

LEADER & SPLICING TAPE

EMPTY REELS & BOXES

All widths, sizes.

**Competitive!
Shipped from Stock!**

Ask for our recording supplies catalog.

Polyline Corp. 312/298-5300
1233 Rand Rd. • Des Plaines, IL 60016

Circle (92) on Reply Card

Other new equipment includes the model 536A 2-channel de-esser system.

Circle (759) on Reply Card

J. OSAWA & CO. LTD.

FS-1000 frame sync/encoder

Non-standard RGB inputs may be corrected to standard RGB or NTSC/PAL composite video with the YEC/Photron FS-1000. An option allows mixing of encoded video with an external video input.

SG-1000 sync generator

Either sync generator system in the SG-1000 dual sync generator equipment meets RS-170A phasing with a subcarrier accuracy of ± 1 Hz. Manual switching selects which gen-locked generator is used.

VS-1000N/P sync/test signal generator

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Other new equipment includes DA-1000 video pulse DAs, ED-1000 color encoder/decoders and VS-2000 modular test pattern generators.

Circle (760) on Reply Card

see ad on page 181

ALLEN OSBORNE ASSOCIATES

NY series HiloMasts

Six models of the NY series pneumatically operated Hilomasts provide from 22- to 68-foot extended heights. The NY-21 may withstand a 66kph (kilometer-per-hour) wind, unguyed, based on a side surface area of 12.5ft² or up to 100kph if guyed. Vertical head load for the NY-21, extended to 68 feet, is about 88 pounds.

Circle (761) on Reply Card

OTARI CORPORATION

Model 5050 B-II recorder

The compact 1/4-inch 5050 B-II recorder includes three 2-channel heads with transformerless input and output circuitry. Servo-controlled speeds include pitch control. Test tones at 1kHz and 10kHz are integral in this dbx noise reduction compatible system.

5050 MARK III/2

The table-top console of the 5050 MARK III/2 recorder provides a 3-head, 2-channel, 1/4-inch recorder/reproducer system in a compact form. Metering and signal controls are located in an overhead bridge structure. Servo control of the capstan includes 3-speed operation.

Circle (762) on Reply Card

see ad on page 45

PACE

MT 1 system

Ac or dc operation of the MT 1 microportable solder/desolder system allows repair shop or field repairs in a 4-pound package. The spike-free system is MOS safe.

PRC 151 repair system

Bench-top repairs of printed circuit boards are simplified by the PRC 151 repair system, designed for rework, repair and modification in the factory or the field.

SX 301 system

Soldering/desoldering operations with the SX 301 repair system are based on a hot-air jet. Desoldering uses a vacuum pump. The corrosion-proof unit is shock-mounted.

Circle (1142) on Reply Card

PACIFIC RECORDERS & ENGR.

Studio equipment

Custom cabinetry is used to house the BMX audio consoles and other control room equipment, such as the Tomcat cartridge machines and distribution amplifier equipment.

Circle (930) on Reply Card

PANASONIC INDUSTRIAL COMPANY/AVSD

WR-500 portable audio console

The WR-500 operates from ac, 12Vdc or an internal battery for 8-in/2-out capabilities. Each input includes equalization and cue or echo send control. The system weighs about 22 pounds.

Studio color monitors

Two color monitors, BT-S1300N and BT-S1900N, incorporating 13- and 19-inch Quinrix II CRTs, allow underscan, pulse cross and separate H or V delay displays.

High resolution monitors

RGB or composite video inputs may be selected for display on the AT-H130G and AT-H190G 13- and 19-inch color, high resolution monitors. Delta-gun shadow-mask CRTs show cross pulse displays. AFC time constants select 2ms or 7ms.

CT-300VT monitor/receiver

A 2.6-inch color CRT in the CT-300VT and ac/dc operation make the unit useful for ENG/EFP video monitoring. The tuner covers VHF and UHF channels.

BT-S700 series monitors

Three 7-inch color monitors comprise the series. The BT-S700N is a single unit for ac/dc operation. BT-S701N is a single desk-top monitor package. BT-S702N provides two monitors in a rack-mount package.

Effects generator

Model WJ-5600 incorporates an RGB chroma-key system with two mix amps for 3-channel mixing. Eight inputs may be used with fades and nine wipe patterns. Independent color generators serve matte and background or DSK and border wipes.

Chroma-keyer

Using RGB inputs from a camera control unit, the WJ-1200 chroma-key generator includes a 360° hue control, video clipping level control and key delay control.

Portable 3/4-inch VCR

Color resolution of the NV-9450 VCR is more than 260 lines with a S/N ratio of 46dB. TBC and SMPTE time code interfacing complements video confidence heads in the 20-pound ac/dc operated unit.

Multifunction VTR

For random access spot insertion, program sequencing, multisource editing or group rolling, the MVP-100 9-deck player includes two TBCs and a central computer. The system operates with M Format 1/2-inch cassettes.

WV-555 camera

Providing Y/I/Q and NTSC video formats, the WV-555 3-tube, 3/4-inch color camera feeds 1/2-inch M Format or conventional VTRs in ENG/EPF production work. Prism-optics aid in operation with light as low as 8fc.

WV-888 camera

Three 3/4-inch mixed-field Saticons with prism-optics allow the WV-888 to handle typical light sensitivities of 200fc, f/4. Automatics include centering, black balance and white balance.

Portable M Format VTR

Flexibility in the AU-200 portable VTR allows M Format recording from NTSC, Y/I/Q and Y/C video signals, as well as assemble and insert editing. The AU-S200 incorporates interfacing for TBC operation as well.

Circle (763) on Reply Card
see ads on pages 40 and 41

PANAVISION ELECTRONICS/CEI Panacam Reflex

Internal optics in the Panacam Reflex allow 35mm T/stop lenses to match the 3/4-inch pickup tube format. Designed for electronic cinematography applications, the camera incorporates features familiar to film camera operators.

Circle (764) on Reply Card

PATCH BAY DESIGNATION Audio patch bay

The Special Projects Company PB-52 patch bay system uses 2-conductor, foil-shielded cable to connect 52 audio connectors to 104-pin multicontact connectors on the rear panel.

PatchPrints

Photographically created label strips for patch panels or other multiple label requirements are available with black lettering on white, white on black, or other custom color-coded requirements. Widths are variable to your specs.

Circle (765) on Reply Card

PEERLESS SALES COMPANY ETV 1540 cart

Pneumatic 8-inch wheels on the ETV 1540 equipment cart ease moving loads up to 300 pounds. Three shelves of 16 gauge steel are MIG-welded to uprights. The top shelf is 35"x23".

CINE 60 SUN-GUN

Beautifully Simple

Beautiful . . . because it's fresnel-soft and uniform — ideal for video. And simple because . . . if 250 Watts is too much, change to 150 Watts. Need more? Go to 350 Watts. Want to go really light? Use 100 Watts (12V.). Outdoors, swing-in the built-on Daylight Filter. You color correct instantly! Indoors, swing away the Filter and you have tungsten light! Never a need to readjust camera color controls here! For focus, vary the beam from 8 to 14 Ft. For power, choose from 20 Sun-Gun Powercells and Powerpaks. And, to make it beautifully simple . . . we put it all together for you in any one of 17 Portable Sun-Gun Kits. See your dealer or send for data, today.

CINE 60

INCORPORATED
630 Ninth Ave. New York, N.Y. 10036 (212) 586-8782
6430 Sunset Blvd. Hollywood, CA. 90028 (213) 461-3046



Circle (93) on Reply Card

In satellite communications, go with total systems engineering experience.

Spectrum Planning provides the full spectrum of services for planning reliable and interference-free satellite earth stations:

- Site selection/design
- Frequency coordination
- Frequency protection
- RFI measurements
- Site shielding design
- FCC filings

We believe no other frequency coordination company can match our experience. And in this rapidly changing field, experience is worth its weight in gold.

Call us now at (214) 699-3536 or write for more information.



SPECTRUM PLANNING INC.

P. O. Box 1360 • Richardson, Texas 75080

Circle (94) on Reply Card

Button head screws

Sheet metal and machine screw styles from 1/2- to 1 1/2-inch provide tamper-proof construction projects. Tools (#6-#10) for hand or power tool installation simplify use.

Circle (767) on Reply Card

PENNY & GILES

Series 3000 faders

Linear faders with strokes from 65mm to 104mm may be purchased with single or dual channels.

Rotary faders

Infinite resolution from smooth rotary action on rotary fader units control up to eight outputs per fader. Audio, linear and pan pot tapers may include optional detents and switches.

Circle (768) on Reply Card

see ad on page 176

PEP

PEP OC-1 VRC

A specialized adaptation of the JVC mini 1/2-inch video recorder allows the operator to snap the unit onto existing ENG cameras for unwired camera operator freedom.

Model 64/200 player

Playback of On-Cam 1/2-inch recordings is simplified by the model 64/200 playback unit for direct integration with most 3/4-inch editing systems.

Circle (766) on Reply Card

PERROTT ENGINEERING LABS

PRB series batteries

Red Barron Kwik-Klip belts provide 12V, 12Ah power capability from silver zinc cells. Models are available for Hitachi, NEC, Sharp and Toshiba cameras.

PE 52 power belt

The operator may choose between a 28.8V, 4Ah or 14.4V, 8Ah output from the PE 52 dual-output camera or lighting power belt, based on nicad cells.

Gemini series

Gemini units include the PE 200 14.4V and PE 201 12V nicad units with integral overnight chargers. The MP 114 13.5V and MP 115 12V silver zinc units include the overnight Cellmate charger. Both types belong to the Kwik-Klip line.

Circle (769) on Reply Card

see ad on page 181

PHELPS DODGE

COMMUNICATIONS

Transmission products

Phelps Dodge manufactures rigid coaxial materials for broadcast transmission systems in diameters from 7/8- to 6 1/8-inch sizes.

Antennas

Circularly and horizontally polarized antenna systems serve the FM broadcast spectrum.

Circle (770) on Reply Card

PHILADELPHIA RESINS

Socketfast Blue

To improve tower guy anchoring, Socketfast Blue potting material encases the ends of Phillystran HPTG cable materials within the anchoring basket. The resin material secures the aramid fiber rope material within the basket.

Circle (771) on Reply Card

PHILIPS TELEVISION SYSTEMS

LDK-6 camera

Setup and operation are simplified in the LDK-6 TV camera by the use of microprocessors in each section of the camera chain. Setup procedures for each of the four sections of the chain are retained by the local microcomputer.

LDK14S/SL cameras

Improved operation of the LDK14 cameras results from LOC diode-gun Plumbicon tubes, improved FET circuitry, new contour enhancement and improved auto functions. An optional RGB transmission system allows RGB outputs from the remote control unit.

LDK44 camera

Redesign of the LDK44 modular camera allows self-contained ENG operation or multiple camera setups. Features include gen-lock, RGB outputs and auto centering.

Color monitor

The LDH 6200 color monitor fits

POLAR RESEARCH, INC. M 1-A Rotating Antenna Mount

Which Provides —

- Independent antenna rotational control at any tower elevation without use of sidearms or conventional rotators.
- Reduced interference to antenna patterns from the mounting structure. 360 degree rotation without obstruction.
- Distributed loading forces to tower.
- Accessable yet rotatable antenna arrays anywhere on tower.

LET THIS SYSTEM
WORK FOR YOU!



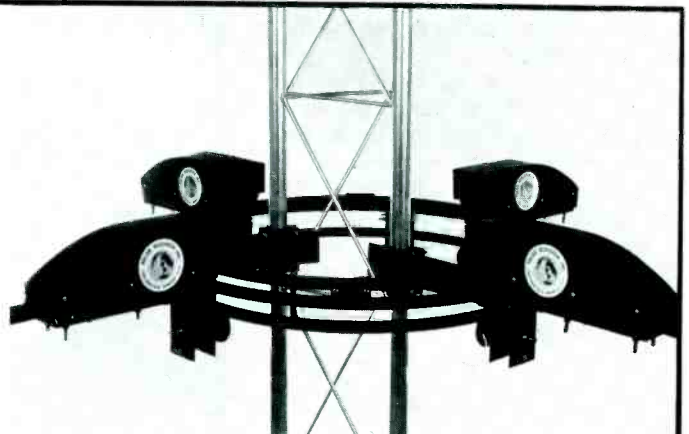
U.S. and Foreign Pat's. Pending

FOR ADDITIONAL INFORMATION CALL FACTORY **TOLL FREE 1-800-328 2041**

Polar Research, Inc.

P.O. Box 781

Thief River Falls, MN 56701; Phone (218) 681-7413



The M-1-A will —

- Universally bracket to towers or other supporting structures; even hot AM Towers
- Operate from 110 VAC/12 VDC
- Interface with all broadcast remote control systems.
- Accept antenna loads of up to 15 Sq. Ft. 150 Lbs.

Circle (95) on Reply Card

40 to 1

Canon PV40 x 13.5B IE: THE OLYMPIAN

Canon moves you a giant step forward with a 40X broadcast quality zoom lens. An incredible new lens that allows you to cover a stadium at wide angle or fill the frame with the quarterback's eyes.

Never before has a single lens provided this much flexibility and sensitivity, with remarkably little change in effective aperture throughout its entire 13.5mm-540mm* range. Built-in extenders let you go all the way to 1080mm and each lens is diascoped-equipped for modern microprocessor-



controlled cameras.

We call it The Olympian. Not only because it is ideally suited for sports coverage but also because of the dedication and team effort required of our optical and electronic engineers in making this lens a reality.

Enlarge a dollar bill forty times and it covers an area twenty feet long and eight feet wide. Now think about what you could do with the Canon PV 40 x 13.5B IE!

*1" cameras. Also available in 30mm plumbingcon.



Canon®

Optics Division

Canon USA, Inc., Head Office: One Canon Plaza, Lake Success, N.Y. 11042 (516) 488-6700

Dallas Office: 11311 Stemmen Freeway, Suite 1, Dallas, Texas 75229 (214) 620-2641 Chicago Office: 140 Industrial Drive, Elmhurst, Ill. 60126 (312) 833-3070

West Coast Office: 123 Paularino Avenue East, Costa Mesa, Ca. 92626 (714) 979-6000

Canon Canada, Inc., 3245 American Drive, Mississauga, Ontario L4V1B8, Canada (416) 678-2730

© 1982 Canon U.S.A., Inc.

Circle (96) on Reply Card

Wide eye I & II

Low-cost, lightweight,
wide-angle lens
attachments for your
ENG/EFP video zoom lenses.



- Front-mounted *Wide Eye I & II* readily convert most video zoom lenses into *ultra wide-angle* fixed focal-length lenses with no loss in light transmittance.
- Made of high-quality optical glass with multiple anti-reflective coatings.
- *Wide Eye I* increases the widest angle of the zoom lens by about 35% with minimal distortion. *Wide Eye II* increases it by about 50% for a "fish eye" effect.
- Easily attached to most professional ENG/EFP zoom lenses which feature macro and/or adjustable back-focus.
- Ruggedly constructed. Supplied with Naugahyde pouches featuring Velcro closure and belt loops.



Rental • Sales • Service



Film/Video
Equipment
Service Co.

1875 So. Pearl St., Denver, CO 80210 • 303/778-8616

Circle (97) on Reply Card

*Nobody but Nobody
matches these
PRICES*

**50% OR MORE
OFF LIST**

SP1-427 R-G-B equal to XQ1427 R-G-B
Reg. Price. \$1950 Temtron Price **\$1195⁰⁰**

SP1-070-R-G-B equal to XQ1070 R-G-B
Reg. Price \$2250 Temtron Price **\$1250⁰⁰**

SP1-020-R-G-B equal to XQ1020 R-G-B
Reg. Price \$2250 Temtron Price **\$1095⁰⁰**

SP4-000 R-G-B equal to XQ1410 R-G-B
Reg. Price \$2275 Temtron Price **\$1250⁰⁰**

SP4-010 R-G-B equal to P8400 R-G-B
Reg. Price \$2475 Temtron Price **\$1450⁰⁰**
Computer Testing

- Meets or exceeds manufacturers specifications for tubes
- 3000 hour warranty
- Fits all Broadcast cameras
- Original tubes manufactured
- No extra charge for extended Red or Green

In addition to lead-oxide tubes, we stock all VIDCONS, IMAGE ORTHCONS, NEWVCONS, CRT's and INDUSTRIAL TUBES.

In New York:
516-599-6400
Toll Free:
800-645-2300

Temtron
ELECTRONICS LTD.
15 MAIN STREET EAST ROCKAWAY, N.Y. 11518
Circle (98) on Reply Card

any Grade 2 application using a Hi-Bri CRT. A precision-in-line design displays pulse cross, horizontal split-screen and overscan/underscan presentations.

UHF transmitters

Rated at 25kW visual power on UHF, the LDM 1742 uses annular beam control (ABC) klystrons for improved operational efficiency. IF modulation complements a klystron design requiring only one tube type to cover the UHF spectrum.

LDM 1984 remote control/telemetry

Remote control systems with up to 99 remote and unattended transmission sites may be monitored and controlled from a central point using the LDM 1984 control equipment. Microprocessors and LSI devices drive color graphic displays of the system status.

Noise reduction

Adaptive digital noise reduction results from the LDM 3001 equipment. Fully automatic operation adapts to the needs of an incoming signal for optimum noise reduction, according to picture content and movement.

Other new equipment includes the enhanced LDK-25B camera, mobile TV production vehicles in custom designs and the LDK-4210 sync generator.

Circle (772) on Reply Card

see ad on page 159

PHILIPS TEST AND MEASURING INSTRUMENTS

PM5631 programmable color pattern generator,

PM5630 TV signal generator,

PM5634 sync test generator,

PM5651 VITS generator/insertor

See "New Test Equipment at NAB-'83, BE April 1983, page 34.

Modulators

Two modulators, PM5670 and PM5671, feature high carrier stability and tight amplitude/group delay tolerances. Output signals from the 5671 model are VHF or UHF RF. The 5670 outputs an IF frequency for composite or separate visual/aural operation. NTSC or PAL systems are available.

Circle (773) on Reply Card

PHOEBUS MANUFACTURING

Ultra Arc spotlights

Ultra Arc and Ultra Quartz follow-spot instruments include color booms, front and rear lens controls, color filter and lamp cooling fans and lamps comparable to carbon arc equipment.

Circle (849) on Reply Card

PINZONE COMM. PRODUCTS

Satellite receivers

Several receiving systems based on the 8250 satellite receiver vary according to the type of control system

used. 8250R is a wired remote control system; 8250D uses BCD data; and 8250T operates with an interface to uplink equipment.

RCD-100P diagnostic enhancement

By adding the RCD-100P computer/printer option to the RCD-100 diagnostic system, location of problems to specific circuits and TCR manual page numbers speeds service.

Circle (774) on Reply Card

POLAR RESEARCH

Lil Slipper

Communications/monitoring antennas may be mounted at any level of towers up to 22 inches across. The system, involving three concentric rings, allows the antenna system to be rotated for best reception.

Circle (775) on Reply Card

see ad on page 162

PORTABLE ENERGY PRODUCTS

Lighting battery pack

A new battery pack operates portable 250W lighting systems for up to 50 minutes from a 30V 10Ah capability.

Other new products include the BP90 nicad replacement battery and solar chargers for 12V and 30V sealed lead acid or nicad batteries.

See also Film/Video Equipment Services.

Circle (931) on Reply Card

PORTA-PATTERN

020 charts

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Magna-Chart

See the test equipment update on page 44.

017-10 all weather charts

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

016-10 BBC #62P/9-step log charts

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Other new products include the 001-44 11-step log gray-scale chart, the 001-45 color bar chart and the 021-10 pocket test chart system.

Circle (776) on Reply Card

POTOMAC INSTRUMENTS

MPC-11 controller

The transmitter modulation and power levels are sensed by the MPC-11 modulation and power controller. If either is found outside preset limits, the system automatically corrects levels to maintain desired operation.

RC-16+ controller

Sixteen telemetry and status channels with 32 control functions expand by groups of 16 in the RC-16+ remote control system. Auto pattern/power switching and power control are also included in the package.

Circle (777) on Reply Card

see ad on page 179

POWER PAK SYSTEMS
(Formerly Micro Control Associates)
STL systems

Aural STL systems for AM or FM stereo operation include the PTS-10CD 3-channel microwave system. The new design is aimed at AM stereo and satellite communications, linking the receiving satellite station to the broadcast facility.

FM exciter

Distortion figures of 0.2% for harmonic and intermodulation complement a -70dB S/N ratio and 45dB stereo separation in the SMX-40 exciter handled through Allied Broadcast Equipment.

Circle (932) on Reply Card

PRECISION ECHO

Squeezer effects

Four preset effects may include squeezing, positioning, cropping, bordering, keying or inverting in this unit.

Circle (778) on Reply Card

PROCART

Audio cartridges

The Procart is specified as an NAB AA cartridge. Various lengths from 20 seconds to 10½ minutes meet the AA requirements of ± 60° at 12kHz.

Circle (779) on Reply Card

PROCESSING PLUS

SMA-35 amplifier

The 35W rms output per channel of the SMA-35 stereo monitor amplifier complements lockable output controls, mono summing capabilities, short-circuit proofing and a separate isolated headphone amplifier.

WBC-1 AGC/limiter

The front panel of the WBC-1 wide-band AGC/limiter system includes controls for all operating parameters.

Circle (780) on Reply Card

PRODUCTS INT'L

Repair products

Printed circuit repair systems include soldering/desoldering equipment and materials to replace or repair lifted, damaged and missing pads, and tracks on printed circuit boards.

Also see the test equipment update on page 44.

Circle (933) on Reply Card

QEI

FM exciter

Less than 0.025% distortion is claimed for the 695 FM broadcast exciter with phase-locked carrier design. Broadband design techniques eliminate tuning adjustments.

FM transmitter

The 695T1kW FM transmitter presents an all solid-state design centered on the 695 exciter. Automode automatic modulation and power control maintains operating parameters.

World's Fastest Trouble-Shooter



The TENTELOMETER® in-line dynamic tape tension gauge is the fastest, easiest, most accurate method of diagnosing potential and existing problems in recording tape transports.

Tentel has introduced several New products to keep your audio and video recorders working properly and to prevent tape destruction problems:

- A new tension gauge with ball bearing rollers for 1" Type "C" video recorders.
- Spindle height gauges that insert like a cassette, but measure 5 important machine problem areas, on Beta, VHS and U-Matic recorders.
- The new universal head protrusion and eccentricity gauge. Designed for Beta, VHS, and U-Matic machines. Measures tip projection and drum eccentricity in both microns and ten thousandths of an inch.
- A new low cost (\$198) tension gauge for ¼ and ½" audio recorders.

Send for our NEW data sheet or call our application engineering department **today** on our Toll Free phone number 800 538 6894 (ex CA)

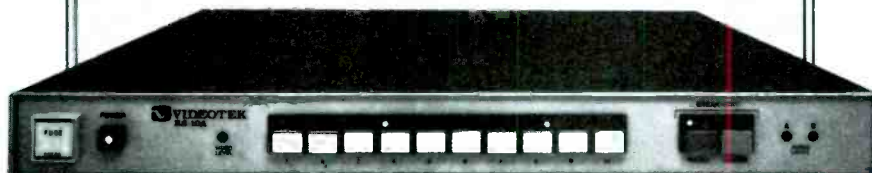
TENTEL

1506 OELL AVENUE
CAMPBELL, CA 95008

(408) 379-1881
TWX 910 590 8001

Circle (99) on Reply Card

PROGRESS



"Breakaway" from the Crowd

...with Videotek's new RS-10A Audio Follow Video Routing Switcher. Ten bridging video inputs with dual channel audio breakaway make this an extremely versatile switcher. A remote control model is also available.

Now that's Progress...

BY · DESIGN

25 N York St., Pottstown, PA 19464
(215) 327-2292. TWX: 710-653-0125



9625 N. 21st Dr., Phoenix, AZ 85021
(602) 997-7523. TWX: 910-951-0621

VIDEOTEK INC.

Circle (100) on Reply Card

1-tube FM transmitters

Both the 695T3.5kW and 695T5kW use solid-state circuitry to drive the 3CX3000A final amplifier in grounded-grid operation. Each system is based on the 695 exciter and offers remote point monitoring and factory assistance via phone lines to complement a built-in ATS system.

Circle (781) on Reply Card
see ad on page 6

QSC AUDIO

Series one amps

Model 1400 drives an 8Ω monitor speaker with 200W/channel, 20Hz-20kHz with 0.1%THD. Octal sockets accept active or passive input

modules. Patented Output Averaging short-circuit protection is available.

Series three power amps.

The 3200, 3350 and 3500 offer 110W, 200W and 285W, respectively, into 8Ω loads. A frequency response of 20Hz-20kHz exhibits 0.1%THD and 0.02%IMD from 250mW to rated power.

Circle (783) on Reply Card

QSI SYSTEMS

CB-9000V video ID/bar generator,

Demod 105

BG200 series

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

VSID-82 source identifier

A switch selects either a 5x7 or 7x9 matrix character format in the VSID-82 source identifier unit. Features include line-by-line vertical positioning, adjustable H/V sizes and eight easily programmable alphanumeric characters.

Slave time displays

Up to 48 slave video time displays may be controlled from a single master clock system.

Circle (782) on Reply Card
see ad on page 54

Q-TV/TELESYNC

VPS-500 computerprompter

Using digital concepts, the VPS-500 electronically stores, retrieves, edits and distributes prompter copy. Full word processing capability, a 60k word disc storage, positive/negative display and key word highlighting are featured.

Circle (784) on Reply Card

QUAD EIGHT

System 5LC

The System 5 LC is a locally controlled digital reverberation processor.

Series 248 components

Several mainframe configurations and modules allow a 248 audio console to have from 8-24 inputs and 2-8 outputs, typically. Various system layouts are available for different audio requirements.

Circle (934) on Reply Card

QUANTA

Select 7 generator

The Quantafont Select 7 (Q7S) graphic titler offers seven resident type face styles, including 56 resident fonts. Nine roll and crawl speeds offer roll-to-stop and roll-to-static-title modes. Disc systems provide extra memory.

Circle (810) on Reply Card

QUANTUM AUDIO LABS

Series 22

The company exhibited with Gotham Audio Corporation and displayed its series 22 professional audio mixing consoles for broadcast purposes. The modular construction allows for various configurations with up to 20 inputs.

Circle (935) on Reply Card

QUICKSCAN SYSTEMS LTD.

Electronic publishing

Quickscan allows NTSC, PAL or SECAM data transmission via broadcast, cable, satellite or videocassette. Full bandwidth signals deliver full color, high quality pictures and text at a rate of up to an 1800-page datapack in 60 seconds.

Circle (785) on Reply Card

There are many ways to split a mic, but only one way is best

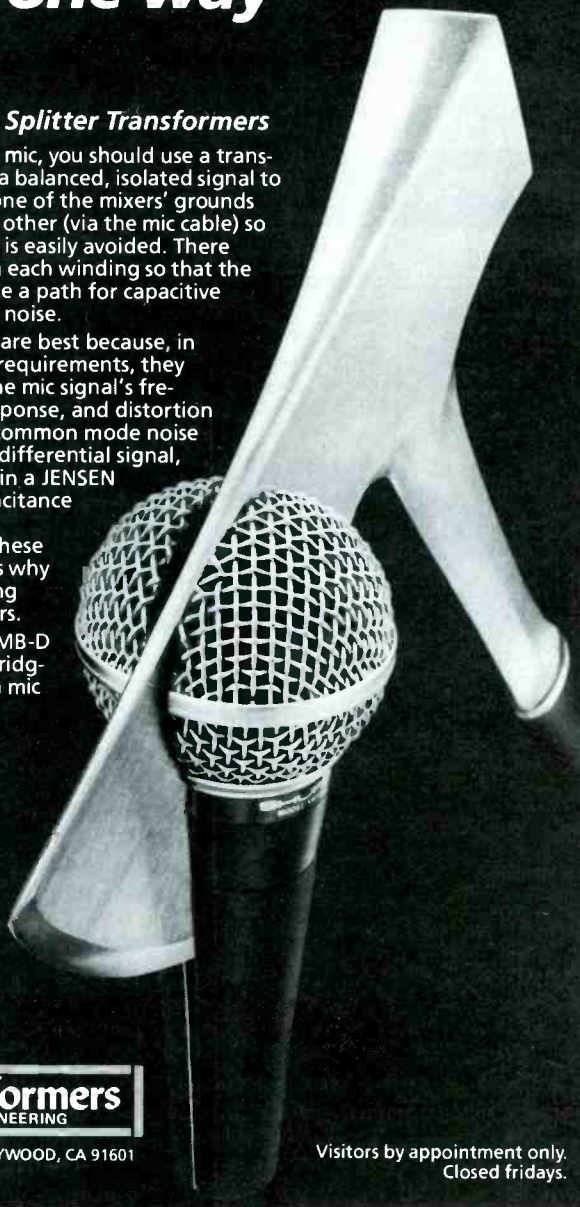
Jensen MB-series Mic Splitter Transformers

When you need to split a mic, you should use a transformer because it provides a balanced, isolated signal to the input of each mixer; none of the mixers' grounds need be connected to each other (via the mic cable) so ground-loop induced noise is easily avoided. There must be a Faraday shield on each winding so that the transformer will not provide a path for capacitive coupling of common mode noise.

JENSEN TRANSFORMERS are best because, in addition to meeting these requirements, they minimize degradation of the mic signal's frequency response, phase response, and distortion characteristics. To prevent common mode noise from being converted to a differential signal, each end of every winding in a JENSEN TRANSFORMER has its capacitance precision-matched to that winding's Faraday shield. These are just a few of the reasons why most engineers end up using JENSEN splitter transformers.

The JENSEN JE-MB-C, JE-MB-D and JE-MB-E microphone bridging transformers will split a mic signal to 2, 3 or 4 mixers.

*Insist on the best...
insist on a JENSEN.*



jensen transformers
By REICHENBACH ENGINEERING

10735 BURBANK BLVD. / N. HOLLYWOOD, CA 91601
(213) 876-0059

Visitors by appointment only.
Closed Fridays.

Circle (101) on Reply Card

**ALL
NEW**

STANTRON

VIDEO CENTER

MODULAR DESK CONSOLES • VTR/VCR RACKS • CABINET CONSOLES • DUBBING RACKS



for
VIDEO
• PRODUCTION •
• POST PRODUCTION •
• DUBBING •
• EDITING •



The **STANTRON VIDEO CENTER** series has been designed primarily for production and post-production facilities • The modular "add-on" features allow for maximum flexibility in designing console arrangements for professional, educational, industrial and communication **VIDEO CENTERS** • "Designed-in" structural strength and aesthetic features, required by users, is "standard equipment" for every **STANTRON VIDEO CENTER** unit.

For a **FREE** copy of the "**ALL NEW**" **STANTRON VIDEO CENTER CATALOG #200**, please write or call.

MAILING ADDRESS: **P.O. Box 9158VC • No. Hollywood, CA 91609 U.S.A.**

STANTRON

Toll Free: 1-800-821-0019
Northern Calif. — Toll Free 1-800-821-0020
Southern Calif. — Please call 1-213-875-0800
TWX: 910-499-2177

FACTORY: **6900-6918 Beck Ave. • No. Hollywood, CA 91605**

Circle (102) on Reply Card

BROADCAST BEST BUY!

MCO®

... from
audiotechniques



FOR SERVICE & PRICE
WE'RE THE BEST!

audiotechniques inc.

NEW YORK CITY
212/586-5989
STAMFORD, CT
203/359-2312

Circle (103) on Reply Card

athena

4500

"The" cost-effective
film-to-tape transport



- Phase-locks to NTSC, PAL or SECAM
- Constant T-V pull-down time at all frame rates.
- 1-2-4-6-8-12-24 FPS stop and single frame
- Capable of computer or programmable control
- Two-year warranty
- Modular design

For more information contact:

L-W INTERNATIONAL
6416 Varlet Ave.
Woodland Hills,
California 91367 U.S.A.
Telephone: (213) 348-8614

Circle (147) on Reply Card

168 **Broadcast Engineering** June 1983

QUICKSET

Super-Hydro head

A 360° pan rotation and ±80° tilt angle enhance the Super-Hydro fluid head complement of System 2000 camera support equipment. Capable of handling up to 50-pound capacities, the head includes a removable sliding camera mounting plate.

Circle (786) on Reply Card

RCA/CCSD

G-Line transmitter

A complement to the G transmitters, the TTG-35H single-ended highband VHF transmitter offers a 35kW rating for Channels 7-13. Only one visual tube and one aural tube are found in the PA stages. A parallel configuration, the TTG-35/35H, provides a 70kW rating.

H panel antenna

Two models of the H panel antenna design serve Channels 2-4 and Channels 5-6 VHF TV transmissions. A wide impedance bandwidth is suitable for multiplexing several channels. Patterns include omni, cardioid, peanut and skull shapes.

TKP-47 portable camera

A portable adjunct to the TK-47 cameras, the TKP-47 camera system uses the same processing unit, remote control unit and setup terminal as the TK-47B.

Hawkeye enhancements

These include the HCA-1, an adapter/interface between HC-1 cameras and 3/4- or 1-inch VTRs; the HCT-1, a joystick remote control unit for the HC-1 camera on up to 5000 feet of triax cable; the HRB-1, an adapter permitting 2-piece operation of the HC-1 camera and HR-1 recorder, which incorporates a 4-channel mic mixer; the HRD-1, an adapter allowing composite video inputs to the HR-1 recorder; and an adapter allowing the HR-2 recorder to be interfaced to Sony BVE-500 editing systems, with Y/I/Q components converted to U-matic Type Y/C signals.

HR-3 component recorder

A portable recorder, the HR-3, weighs 15.8 pounds without battery, and performs insert edits. Composite or component video inputs are recorded with integrally generated SMPTE time code.

HR-2A recorder

Improved luminance, chroma and differential phase/gain performance characteristics are found in the HR-2A studio VTR. Enhanced reel servo operations improve tape handling. An optional TBC, the HT-1, allows the unit to be used on-air.

Hawkeye II camera

Compatible with all HC-1 accessories, the Hawkeye II camera includes an integral viewfinder with external tally indicators, a T-bar handle and improved signal performance.

AE-800 interfacing

The HR-2-AE-800 interface allows an HR-2 VTR with plug-in TBC modules to be integrated into an AE-800 post-production system with other types of recorders/players.

Circle (787) on Reply Card

RCA SOLID STATE/TUBE OPERATIONS

BC4380 Saticon

Incorporating the improved Saticon III target materials, the BC4380 may be used in any 18mm (3/8-inch) format camera that is equipped for diode-gun, LOC tube operation.

LPTV power tube

Shown in prototype, RCA's LPTV output power tube and cavity for UHF installations is designed for low drive, high gain and high efficiency LPTV or translator systems. It is rated at 1kW UHF.

Saticon II

Computer-aided deposition and advanced material processes result in an improved photoconductor in the BC4390 Saticon II tube. Benefits include reduced highlight trailing and improved burn resistance.

Circle (936) on Reply Card

R-COLUMBIA

TR-50/2 single-muff headphones

The model TR-50/2 earphone system allows transmit and receive intercom operation for camera operators looking into a camera-mounted viewfinder.

52/TM headphones

The 52/TM series converts a standard modular telephone to hands-free operation without extra installation charges.

TP/1C system

A main station and power supply offer a wired intercom system for use with up to 10 headphones at a distance of one mile.

SB/2 headphones

The broadcaster's headphone is capable of direct on-air sound. A noise-canceling electret mic mounts on a rotating boom and mutes at the top of its rotation.

Circle (794) on Reply Card

RF TECHNOLOGY

The company displayed its line of portable receivers and transmitters, antennas, diplexers, microwave, STL and remote pickup equipment.

Circle (937) on Reply Card

ROH

Audio products

ROH manufactures a variety of products for audio. Included in its line are intercom systems, audio monitoring amplifiers and equipment and

\$6990 AFFORDABLE FIELD/FRAME SYNCHRONIZATION FROM THE LEADER



\$6,990
Synchronizer

\$12,990
Dual
Synchronizers

\$8,400
TBC

\$15,400
Dual TBC's

\$14,200
TBC
Synchronizer

And with ADDA's AC 20A you can put two channels in a single system for \$12,990.

Never have broadcasters and CATV system operators been faced with signals and feeds from so many sources—satellite, microwave, news and sports remotes. What can you do to handle the problem of switching between all those sources?

ADDA, the quality and performance leader in video signal processing, has some innovative news for you.

Not only can we deliver unusually low cost field/frame synchronization with our AC 20A, but we can provide dual channel capability. You get a full bandwidth, high quality field or frame synchronizer in a modular one or two channel configuration in a single unit. It's priced at \$6,990 for one channel of field synchronization and \$12,990 for two. Frame synchronization is \$1,000 more per channel.

But that's only the beginning. The AC 20A is a modular video signal processing system that also offers one or two channel time base correction, plus a versatile digital effects switching option.

Broadcasters and CATV people have already discovered what ADDA's remarkable AC 20A can do for them. Now, the new AC 20A with field/frame synchronization makes it even more remarkable.



Affordable Excellence

ADDA CORPORATION

See the AC 20A at NCTA Booth # 3606.

Call the ADDA 1500 number: Corporate Offices, 130 Knowles Drive, Los Gatos, California 95030 (408) 379-1500; California, Los Angeles, 213/489-1500; Connecticut, Hartford, 203/647-1500; Florida, Miami, 305/759-1500; Georgia, Atlanta, 404/953-1500; Kansas, Kansas City, 913/631-1500; Maryland, Baltimore, 301/974-1500; Michigan, Detroit, 313/332-1500; New York, New York City, 212/398-500; Texas, Dallas, 214/373-1500; Washington, D.C., 301/263-1500; Wisconsin, Wausau, 715/362-1500.

Circle (105) on Reply Card

systems for coupling telephone lines into the studio.

Circle (795) on Reply Card

ROHN

Lighting control system

The A3SS1 control system handles tower lighting equipment rated for 120Vac and 230Vac systems. The 26-flash/minute beacons are suggested for towers from 151-450 feet.

Shelters

Several standard-dimensioned shelter enclosures include a fiber-glass-laminated construction.

Circle (807) on Reply Card

R-SCAN

LPATS lightning detection

LPATS, by Atlantic Scientific, is a lightning position and tracking system currently operational in the Southeastern United States. Time of arrival methods determine the location and intensity of potential damaging lightning.

Circle (796) on Reply Card

RTS SYSTEMS

802 master station

Up to 12 channels of 2-wire, conference line intercom capability is included in the 802 microprocessor-based communications equipment.

Circle (797) on Reply Card

RADIOCOM

Business system

A station business system is based on the IBM personal computer. Software handles billing and logging.

Circle (939) on Reply Card

RADIO COMPUTING SERVICES

Stormcenter

Software for the station business system takes care of school and business closings during bad weather.

Circle (938) on Reply Card

RADIO SYSTEMS

ESA consoles

The ESA Audio-Metrics console uses linear channel faders for dc control voltages. Voltages are converted to digital codes for precise stereo audio level control. Up to 30 inputs are handled by the 10-channel system with audition, program and cue buses.

Mic/line amp

The MLA-1 mic/line amplifier controls two mic or high level inputs and provides 60dB of amplification for line-level outputs.

Turnkey systems

Equipment repair, studio construction and installations are among services provided by the company's consultant services group.

Circle (798) on Reply Card

RAMKO RESEARCH

PRIMUS components

Products include the P-4M, an audio mixer with four mixer channels, selectable EA and full production features from six inputs; the P-5MX, a 5-channel mic/line mixer with push-button-selected send/receive capability which expands the P-4M for additional channels; the P-3S/6M audio DAs for 1x3 stereo, dual 1x3 mono and 1x6 mono; the P-8S/16M audio DAs for 1x8 stereo, dual 1x8 mono and 1x16 mono; the P-93 lab standard stereo and mono turntable preamplifiers, offering up to +26dBm output capabilities; the P-1M/P-2M level monitoring indicators, using LED meters in peak and VU ballistics; the P-21/P-42/P-42MX, mono/stereo, mic/line amplifier/mixers, using conductive plastic controls, for 2 in x 1 out, dual 2 in x 1 out and 4 in x 1 out applications; and the P-VG1/P-VG2, mic amplifiers with compression and noise gating capability, including adjustable compression ratios and thresholds.

Other products include the P-2EQ dual high/low shelving equalizer and line amp combination units and the P-RPM1 cartridge tape equipment with record/play and play-only units available.

Circle (799) on Reply Card

see ads on pages 94 and 95

PRE-WIRED

AUDIO PATCHFIELDS

Eliminates Tiresome Christmas Tree Blocks



- EASIER TO INSTALL • EASIER TO USE
- EASIER TO PAY FOR

FARRTRONICS MANUFACTURES QUALITY INTERCOM SYSTEMS, AUDIO PATCHFIELDS, DISTRIBUTION AMPLIFIERS AND AUDIO CONSOLES.

Ask for our customer list.



151 BENTLEY ST., UNIT 1, MARKHAM, ONTARIO, CANADA
L3R 3X9, (416) 475-6720

Write for our free folder of Product Data

Circle (106) on Reply Card

EELA AUDIO REPORTOPHONE® S 20

The Eela Audio Reportophone® S 20 is a small portable mixer with inputs for microphone and tape machine (line), specially designed for radio-reporters to send their items to the studio, using the public telephone lines.



eela
audio

This mixer is to be connected instead of a normal telephone and takes over all the functions of the telephone. Powering off the telephone line, no batteries.

EELA AUDIO

DON'T FORGET THIS NAME!

Hondsruglaan 83a 5628 DB Eindhoven Tel. 040-424455 Telex: 59281
Holland

Circle (142) on Reply Card

RANK CINTEL LTD.

Amigo

Amigo puts three levels of editing capabilities at the operators hands for film-to-tape transfers. Eight buttons are automatically reassigned for different stages of editing and are relabeled according to the display screen. S-pan and global edit are features.

Slide file

Digital still-storage uses an integral Winchester 8-inch disc system for 80 stills and a streaming cartridge recorder that allows 20 pictures per cassette. Features include preview, cross-fade, cut, dissolve and cleanup modes.

Circle (800) on Reply Card

REAL WORLD TECHNOLOGIES

UniVuer

Audio levels, in PPM or VU ballistics, appear on a video monitor by use of the UniVuer system. Dual channels, each with peak flashers, are superimposed over the picture for easier overall monitoring.

Circle (999) on Reply Card

RECORTEC

Products shown include the DTG-100 low cost, video date/time character generator, the FRU-750 rewriter for 3/4-inch U Format cassettes and the VCE-500, which

measures dropouts and tape quality on 1/2-inch VTR tape.

Circle (940) on Reply Card

REES ASSOCIATES

Consultants

Planning, architectural design and engineering are among the services offered. Facilities renovation and LPTV packages are specialties.

Circle (801) on Reply Card

REGISTER DATA SYSTEMS

Business systems

RDS-III-HD

The RDS-III-HD broadcast computer system takes care of logging, billing, payroll, accounts receivable, general ledger and accounts payable, but requires no previous computer experience. HD indicates hard disc storage.

RDS-5000

RDS-5000 refers to a hard disc computer system for multiprocessing from up to six terminals. The on-line 25Mbyte storage is expandable.

RDS-8000

RDS-8000 indicates an enhanced version of the RDS-5000 business system with up to 16 terminals, 40Mbyte storage and multicompany accounting capability.

Circle (803) on Reply Card

RESEARCH TECHNOLOGY

TV-2000 system

Film inspection, cleaning, previewing and editing with only one machine are the design criteria of the TV-2000 film editing system.

Data-Film 820

Used in conjunction with the TV-2000 or Pulsar 2800, the Data-Film 820 offers complete computer film condition analysis with vital film condition information printed on record cards.

Videocassette evaluators

Beta, VHS and 3/4-inch videocassettes are evaluated and cleaned at 25X normal play speeds. Erasure capabilities are optional, as is the VP20 printer, which provides a paper tape record of cassette faults.

Cinescan 16mm viewer

For table-top film viewing equipment, the Cinescan unit includes a 40-square-inch viewing area with dual speakers attached to the optional Quik-Trac audio processor.

CF series film cleaners

Lipsner-Smith film cleaner systems, the CF-100, CF-190 and CF-200, incorporate ultrasonic techniques with solvent-economic liquid cleaning procedures.

RETEC-410 cleaner/conditioner

When cleaning/conditioning without inspection is desired, the RETEC-410 system provides gentle liquid cleaning without constant super-

WANT ADDITIONAL COPIES OF SPEC BOOK?

You can easily obtain extra copies of Broadcast Engineering's Spec Book. With its many uses, this special issue is a must for **everyone** interested in comparison data on a multitude of broadcast products.

Spec Book is your basic reference source for broadcast equipment comparisons. To order your additional copies, in their easy-to-use, convenient format, send a check or money order for \$15 to:

Spec Book
P.O. Box 12901
Overland Park, KS
66212

Spec Book — for **everyone** involved in buying and specifying products.



We make a nice couple!

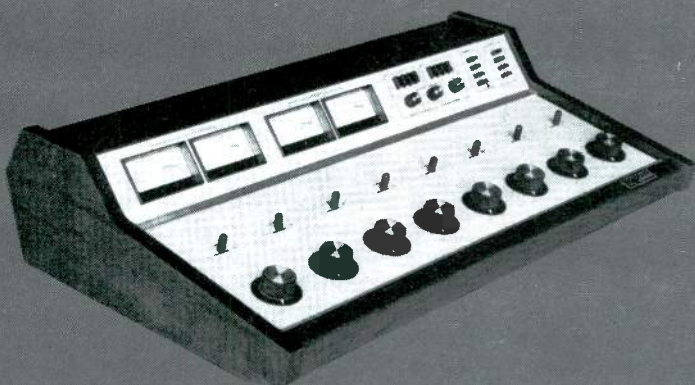
NEED N.B.S. TRACEABLE FREQUENCY?

Get it from N.B.S. and TRUE TIME. We offer an easy-to-operate, accurate-to-parts in 10⁻¹¹ package at a surprisingly low cost. Our instruments incorporate a receiver and indicators to let you monitor and control your standard to a very high degree of accuracy. Let us show you what our years of experience and 2-year warranty can mean for you. Call Vic at:

TRUE TIME INSTRUMENTS
3243 Santa Rosa Ave.
Santa Rosa, CA 95401
(707) 528-230

Circle (107) on Reply Card

INTRODUCING SYSTEM R



Our newest stereo audio console features Penny & Giles® newest fader, a remarkable rotary which you'll have to feel to believe. Measuring a compact 32 inches wide, SYSTEM R combines conventional controls with the advanced audio technology and superb styling you'd expect from Broadcast Audio Corporation. If you need rotary faders, compact size, superb audio quality, and a modest price - we've just designed your audio console - SYSTEM R!

**BROADCAST
AUDIO CORPORATION**

11306 SUNCO DRIVE
RANCHO CORDOVA, CA 95670
(916) 635-1048

Circle (109) on Reply Card

VITC ENCODE-DECODE

PROVIDES THE BEST OF BOTH CODES



MODEL VIE-224 ENCODER



MODEL VID-225 DECODER

- Decodes longitudinal and/or VITC and outputs a SMPTE longitudinal code at a rate proportional to either input to provide an automatic interface with most edit controllers.
- Encodes VITC on any combination of vertical interval lines from 10 through 20 on either or both fields.
- Two separate modular instruments for maximum flexibility and economy.
- Works in conjunction with your existing SMPTE longitudinal code equipment.

GRAY ENGINEERING LABORATORIES

504 W. Chapman Ave.
Suite P
Orange, CA 92668
714-997-4151

vision at speeds to 750 feet/minute.

Film cans

Rolled edges for safety and ribbed tops for easier stacking make the new line of 16mm film cans desirable. Seven sizes handle film lengths from 400-2300 feet.

Circle (788) on Reply Card

RESTORATION

Recording head services

Restoration provides refurbishing, recontouring and repair services, as well as new replacement heads, for many audio, video, industrial and logging recording systems.

Circle (804) on Reply Card

see ad on page 178

RICHARDSON ELECTRONICS

Distributors

Among the products handled by Richardson Electronics are Jennings ITT tube products.

Circle (805) on Reply Card

ROCKWELL INT'L TRANSMISSION SYSTEMS

Microwave video radio

Rockwell manufactures microwave STL equipment for TV broadcast applications for 2GHz, 7GHz and 13GHz bands. Additional MVR systems serve common carrier, CARS and government needs.

Circle (806) on Reply Card

ROHDE & SCHWARZ GmbH

DZF TV data distortion meter, UPSF 2 video noise meter, LFM 2 group-delay measurement set

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

SPF 2 test signal generator, SKF VITS generator/insertor, MUF 2 transcope

See the test equipment update on page 44.

Dual-sound TV equipment

The AVT sound distribution amplifier, STCF TV dual-sound encoder and GM 009 A1 sound modulator kit may modify existing IF-modulated TV transmitter equipment of the SD/SU 014 + 022 series for VHF and UHF installations. The AMF 2 TV demodulator includes plug-in modules for dual-sound activities.

Circle (789) on Reply Card

ROSCO LABORATORIES

Rental platforms

Nivoflex platforms come in 4'x8' sizes with certified safe-loading figures of 153 pounds per square foot.

Videokits

Five kits include light control and color correction materials for film and video applications. The three color systems are Tungsten correction, Daylight correction and creative color kits.

Chroma-key system

High luminance value and color saturation paints from Rosco Iddings are acrylic colors for 1-coat coverage. They may be used on almost any surface. Blue and green paints are available.

Conversion filter selector

The slide-rule-type conversion filter selector compares Rosco Cinegel material filter colors with approximate Wratten values and Mired Shift values.

Textiles

Wide textile materials, suggested for cyclorama applications, come in widths to 36 feet.

Circle (808) on Reply Card

ROSCOR

Rental equipment

Single items or complete systems, including popular video equipment, are available from Roscor on a rental basis.

Post-production

A complete 3/4-inch editing, post-production facility includes a computer-controlled editing system with full list management, computer-controlled switcher, 3/4-inch cassette equipment with high speed shuttling capability, 3/4-inch audio recorders and an 8-track mixer system.

Engineering/sales

Roscor's engineering department will design your custom production system, specify equipment, fabricate required items and install the system, with service after the sale.

Elite Fleet vehicles

Series II Elite Fleet ENG and production vehicles include van-type to semitrailer based production facilities for ENG and remote requirements.

Circle (809) on Reply Card

ROSS VIDEO LTD.

Model 524 switcher

Smaller studios or editing suites may find the model 524 production switcher suitable for their requirements.

Ultra Key

Chroma-keying with the Ultra Key system avoids effects of background color spill, keys with any color and involves only two control adjustments—hue selection and null control.

Circle (1145) on Reply Card

JOHN B. RUDY COMPANY

Distributor

The product line includes A-V wiring/cabling, microphones, connectors and custom cables.

Circle (941) on Reply Card

RUSSCO ELECTRONICS MFG.

RTQ-7 turntable

The new RTQ-7 direct-drive turntable, available in the fall of 1983, will include PLL speed stability and control.

Circle (942) on Reply Card

Professional Results—Child's Play... With The ALLIED/CAT® SPLICER!



Sold exclusively to the broadcast industry by Allied Broadcast Equipment with offices in Atlanta, Chicago, Dallas, Seattle and corporate offices in Richmond, Indiana!

ALLIED

Broadcast Equipment

Richmond	(317) 962-8596
Seattle	(206) 927-4337
Chicago	(312) 794-0224
Dallas	(214) 423-8667
Atlanta	(404) 964-1464

635 South E Street • Box 1487 • Richmond, IN 47374

Circle (111) on Reply Card

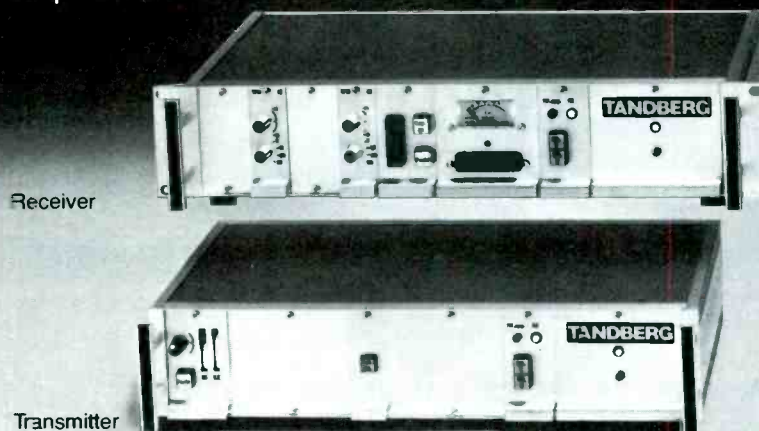
Suddenly, phone relay is much easier to understand.

The TES telephone line enhancement system is the broadcast journalist's best friend. It's a low cost method to turn even poor phone relays into transmission that's clearly understandable.

To achieve optimum intelligibility, the TES employs a compression/expansion system that improves signal-to-noise ratio. It utilizes two ordinary phone lines to expand frequency response to an unprecedented 100 to 5100 Hz. Three lines can be ganged to increase frequency response to 7600 Hz.

Your news gathering teams go to great lengths to cover the news. The least you can do is make sure that their phone relays come in sharp and clear. For details, contact: Tandberg of America, 1 Labriola Ct., Armonk, NY 10504/(914) 273-9150.

TANDBERG Telephone Line Enhancement System



Circle (112) on Reply Card

The Professionals



A complete new line of cartridges built to the exacting standards of professional requirements...

The famous Stanton 881S set a new standard of performance for world professionals and audiophiles alike. Now built to the same careful standards, Stanton introduces three new cartridges—881E, 880S and 880E. The 881E includes the calibrated perfection of the 881S but with an elliptical stylus. The 880S and 880E maintain the same high standards of performance, in applications where calibration is not of prime importance.

The "Professionals" a series of four cartridges featuring all the famous Stanton performance features at different price levels, designed for every budget requirement.

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



Circle (113) on Reply Card

MANUFACTURERS OF MOBIL TV VEHICLES



SHOOK ELECTRONIC ENTERPRISES, INC.
6640 Topper Parkway, San Antonio, Texas 78233
(512) 653-6761

Circle (114) on Reply Card

When accuracy Counts... Count on Belar for AM/FM/TV MONITORS



BELAR
AM MODULATION MONITOR

BELAR CALL ARNO MEYER (215) 687-5550
ELECTRONICS LABORATORY, INC.
LANCASTER AVENUE AT DORSET, DEVON, PA. 19333 • BOX 826 • (215) 687-5550

Circle (115) on Reply Card

SMPTE

Test videocassettes

NTSC receiver/monitor setup is simplified by RMS test cassettes: V3-RMS for 3/4-inch Type E U-matic; VS-RMS-B1 for 1/2-inch Type G 1-hour Beta; V2-RMS-B2 for 1/2-inch Type G 2-hour Beta; and V2-RMS-V for 1/2-inch Type H 2-hour VHS.

16mm Jiffy test film

Picture and sound checks on projectors are performed with the Jiffy test film. P16-PP-C is 160 feet long for 16mm color film with photographic sound. M16-PP-C is 150 feet long for 16mm color film with magnetic sound.

Circle (812) on Reply Card

SACHTLER CORPORATION OF AMERICA

Camera support equipment

Sachtler offers a variety of fluid-type pan/tilt heads and associated tripod systems. The equipment is optimized for ENG/EFP and lightweight studio cameras.

Circle (813) on Reply Card

SAKI MAGNETICS

Replacement heads

Long-life ferrite audio recording/playback heads are available for MCI, Otari, Revox and Technics reel-to-reel machines.

Sony replacements

Long-life ferrite material audio posts are direct replacements for Sony 1-inch VTR machines.

Circle (814) on Reply Card

SANSUI ELECTRONICS

AM stereo receivers

In-home and automotive receivers for AM and FM stereo reception decode all four AM stereo transmission systems.

PC-X1 digital audio processor

PCM digital audio recording can be accomplished at extended play speeds on a VCR by using the PC-X1 Tricore PCM digital audio processor. Dynamic range and S/N, both at more than 85dB, are developed through an NTSC video/EIAJ-PCM format with the STC-007 digital audio standard.

Audio power amp

The model B-2301, designed for the audiophile, is rated for 300W/channel, for 10Hz-20kHz driving 8Ω. THD is 0.003%. TIM and envelope distortion are unmeasurable.

Circle (815) on Reply Card

SATT ELECTRONICS AB

Portable audio mixers

SAM 42 is designed for mobile or fixed applications, providing four mic/line inputs and two main output channels. Talkback, pre-fade listening, test oscillator and phantom powering facilities are included with dc or ac adapter powering.

Circle (816) on Reply Card

SCIENTIFIC-ATLANTA

Digital audio terminal

DAT-32 for digital audio reception includes a 2.8m antenna, 120°K LNA, RF coax, model 7300 BPSK receiver and model 7325 digital processing unit. Digital program, voice cue or data channels in biphase shift-keying TDM formats are decoded.

Video receiver

The 7500 broadcast video receiver exceeds RS-250B/NTC-7 performance requirements. Two PLL tuning synthesizers provide 20MHz or 250kHz channel spacings.

Video exciter

For 6GHz uplink applications, the modular SA7550 video exciter allows for three subcarrier modulators and an auxiliary group delay equalizer. A microprocessor controller provides communications and control.

SA7600 controller

Complete remote monitor and control functions depend on the installation with the DEC LSI-11-based 7600 earth station controller package.

Uplink protection switch

As many as seven transmitters (exciter, HPA and optional tuner) with up to two backup transmitters are protected by the 7640 uplink protection switch.

Circle (817) on Reply Card

SCRIBE RECORDERS

Audio ENG recorder

The reporter may "talk over" the play/pause modes of a NewsCorder ENG audio recorder for smooth wraparounds without pops or clicks. XLR connectors on input and output avoid miniplug failures.

Circle (818) on Reply Card

SELCO PRODUCTS/SIFAM NPR

Special scales available at little added cost on VU and PPM meters.

Other new products

Selco introduced a complete driver board for use with Selco/Sifam PPM meters.

Circle (983) on Reply Card

SENNHEISER ELECTRONIC

Inside-out headphones

Inside-Out Open-Aire design includes an outside 4-foot cable with ministereo plug and an inside 6-foot extension with a standard stereo phone plug.

Open-Aire headphones

Two models, the HD 420 and HD 430, weighing four ounces and seven ounces, respectively, include an adjustable suspension strap for greater comfort. The HD 430 has special cushions to separate the ear from the ear pad.

Circle (819) on Reply Card

SESCOM

MLD-PS12

The MLD-PS12 is a 12-channel output termination and power supply for simplex-powered mic/line driver applications. Each input may supply two transformer-split outputs.

Audio accessories

Sescom manufactures a variety of audio accessory products, including intercom stations, microphone amplifiers, ENG mixers, distribution amplifiers, line-level splitters, tone generators and matching devices.

Circle (820) on Reply Card

SHARP ELECTRONICS

XC-900D camera

With many features of the XC-800 camera, the XC-900D incorporates diode-gun Plumbicons with linear matrix masking circuitry for easier matching of colorimetry.

Triax adapter

The XC-803TX adapter attaches to the camera battery bracket and allows triaxial cable up to 1-mile lengths to connect into the base station unit.

Circle (821) on Reply Card

SHINTRON

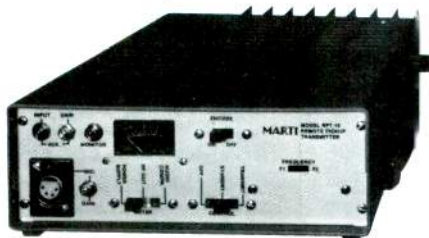
Model 390 component switcher

The 4-input 390 switcher uses 3-channel circuitry to handle M Format and Betacam video component signals. Time code or RS-422 interfac-

Live Remotes

Marti's RPT15 Transmitter has the power to bring difficult remotes back **LIVE**.

VHF-UHF
Model RPT15
Transmitter



Delivering the maximum allowable (15 watts) power for aircraft ENG, the RPT15 produces outstanding results with traffic reports, mobile units and fixed remotes — and with clean broadcast-quality audio and continuous-duty operation. Built-in encoding permits operation with Marti Mobile Repeaters and Automatic Repeaters in wide coverage systems.

RPT15 FEATURES:

- ★ Type accepted on all VHF-UHF RPU channels
- ★ 15 watts continuous output
- ★ Dual frequency capability
- ★ Sub audible encoder
- ★ Built-in metering
- ★ Built-in AC supply
- ★ FM Compressor-Limiter
- ★ Mixing mic and line inputs

MARTI

MARTI Electronics, Inc.
1501 N. Main • P.O. Box 661
Cleburne, Texas 76031
(817) 645-9163 • Telex 794 835

Circle (116) on Reply Card

PREWIRED AUDIO JACK PANELS FOR EVERY USE

BJ-240A

\$545

BJ-200

\$350

BJ-240A

Prewired and pretested, the BJ-240A Audio Jack Panel features 24 normalled-thru (selectable) circuits. Tip, ring and normals are wired to a terminal strip on rear of unit. The jack panel is easily removed from the front for cleaning without removing the unit from the rack.

BJ-200

The BJ-200 prewired jack panel system is an economical version of the deluxe BJ-240A. It is physically smaller and yet handles more circuits. It features 52 tip-ring-sleeve jacks prewired to a rear terminal strip. The BJ-200 occupies only 1 3/4" vertical rack space.

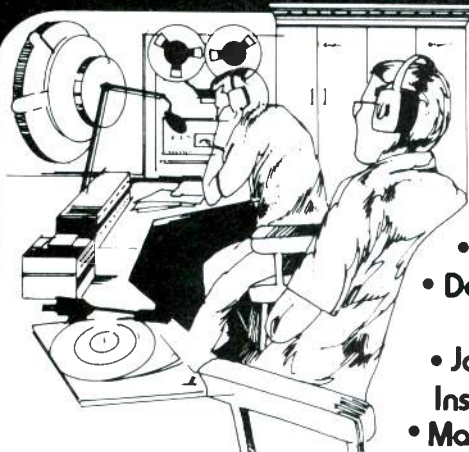
BSI

BROADCAST SYSTEMS INC.
8222 Jamestown Dr. 800-531-5232
Austin, TX 78758 800-252-9792 TX

Circle (117) on Reply Card

THE SOURCE

For all your equipment needs



- AKG • Amperex • Ampex
- Atlas • Audiopak
- Audio Technica • Belden
- Broadcast Electronics
- CRL • CSI • Crown
- Cablewave Systems • DBX
- Deltalab • Electro-Voice • EXR
- Fidelipac • Inovonics
- Jampro-Cetec • JBL • Leader Instruments • Lexicon • 3-M
- Marti • Micro-Trak • Nortronics

Orban Associates • Otari • Phelps Dodge • Revox • Russco
 • Shure • Sola • Staco • Stanton • Surcom • Tapco
 • Technics • Telex • Urei • VIF and many more.

Call us for fast shipments from stock **305-651-5752**



Telex 51-4733 ELECTREX MIA

ELECTREX COMPANY © 1983

18680 N. E. 2nd Avenue, Miami, Florida 33179

Circle (118) on Reply Card

NOW!

The Penny & Giles Feel in a Rotary Fader.

Compare and there's no comparison.

Nothing compares with Penny & Giles' world-famous smooth-as-glass feel. These totally new rotary faders

1640 Fifth Street, Santa Monica, CA 90401 • Phone: (213) 393-0014 • Telex: 652337

As seen at NAB, Las Vegas.



For the complete story on Penny & Giles' new rotary fader, call or write:

Penny & Giles

Circle (119) on Reply Card

from Penny & Giles continue a tradition of incomparable performance, matchless quality, total reliability. They'll give you the same level of excellence you've come to expect with Penny & Giles' linear faders.

Discover a new standard of rotary action.

Nothing approaches the technology of Penny & Giles' new rotary faders:

- Ultra-smooth rotary action
- Mono or stereo (optional)
- Maintenance-free
- Fully sealed construction
- Up to eight outputs per fader
- Audio, linear or pan pot taper
- Detents and switches (optional)

ing to editing controllers allows flexibility in production and post-production.

Computer/NTSC interface

A digital frame-store system, the model 400, interfaces personal computers to NTSC standards, allowing personal computers to provide videographics to other standard components.

Series 200 DAs

The 220 audio and 250 audio DA modules provide 1 in x 6 out capability for use in 211 rack-mounted trays. The modules are direct plug-in units that may also be used in GVG tray systems.

Edit code equipment

Model 647 generates SMPTE/EBU code independently or synchronously with input video. Model 646 reads the code, at up to 40X play speed, and may key data into the video for a CRT display.

Circle (1144) on Reply Card

see ad on page 122

SHIVELY LABORATORIES

VTV antennas

VTV antennas by SIRA/Sistemi Radio are available for lowband and highband VHF operation in linear or circular polarization.

UTV antennas

SIRA UTV panel antennas cover UHF frequencies 470-860MHz (bands IV/V) with horizontal or vertical polarization.

FM antennas

SIRA FMC FM broadcast antennas include omnidirectional and directional dipole-type antennas with circular polarization. Power capacities are typically 2.5kW/panel. FMC-03 accepts up to 10kW with circular, linear and elliptic polarization. The FM-02 model is linearly polarized.

6015 FM broadband

The broadband design of the side-mounted 6015 FM broadcast antenna allows more than one station to use the same transmitting antenna.

Circle (823) on Reply Card

SHOOK ELECTRONIC ENTERPRISES

22-foot production vehicle

The new 22-foot remote production vehicle includes a 14-foot production area large enough for up to four cameras with a full complement of audio and video equipment.

Circle (824) on Reply Card

see ad on page 174

SHURE BROTHERS

Interview microphone

SM63 and SM63L designate omnidirectional mics with a 6dB higher output than comparable units. Either model is furnished with a dual-density, 2-layer windscreen and the VERAFLEX grille.

Automatic microphone systems

NOW YOU CAN HAVE THE BEST IN WIRELESS WITHOUT GOING PENNILESS.



When we asked sound engineers which wireless was superior for sound, quality and design, the overwhelming choice was Sony.

And now, the wireless system unequalled by any of our competitors in quality is highly competitive in price.

Which means, for about what you pay for an ordinary system, you can have the most flexible system you can buy. A modular system that can be set up and rearranged in the greatest possible number of configurations in a mere fraction of the time it takes to set up any other system. So it's suitable for any production requirement—studio or field.

Then there's the performance. The dynamic range is 96dB. The frequency response is 100-15000 Hz. And signal-to-noise is greater than 60dB.

And because the wireless system is based on the Sony theory of total system technology, it's compatible with all standard professional audio and video systems on the market today. For all the facts on how you can have the state of the art in wireless without going into a state of bankruptcy, contact Sony Professional Audio Products, Sony Drive, Park Ridge, New Jersey 07656.

SONY
Professional Audio

Sony Communications Products Company, Sony Drive, Park Ridge, New Jersey 07656. © 1983 Sony Corp. of America. Sony is a registered trademark of the Sony Corp.

Cost-saving solid-state plug-in replacement for mercury vapor tubes.

Now eliminate tube failure, preheating and warm-up time. Reduce heat problems, power costs, hash and AC hum! Eagle Hill rectifier stacks plug directly into mercury vapor tube sockets. Diodes are easily replaceable. Built-in automatic test indicator and transient surge protection. Call or write today for selector chart and prices.

CALL BILL JOHNSON at 215/544-8879

EAGLE HILL ELECTRONICS, INC.
41 Linden Avenue • Rutledge, PA 19070

Circle (120) on Reply Card



FREE 32pg Catalog & 50 Audio/Video Applic.

PWR SUPP. EQ.
PHONO. MIC.
TRANS. ACN.
TAPE, VIDEO,
LINE, OSC

Stereo/Mono Pwr Ampl. 8-in/2-out, 12-in/4-out, 16-in/4-out
Video & Audio Dist Amps. TV Audio & Recd Prod Consoles

OPAMP LABS INC (213) 934-3566
1033 N Sycamore Av LOS ANGELES CA, 90038

Circle (121) on Reply Card

SENNHEISER

MKH416TU/P48U.....\$553.-	MD421U.....\$208.-
MKH816TU/P48U.....\$729.-	MD441U.....\$289.-
HMD224.....\$139.-	HD414.....\$50.-

1-800-431-3232

MICROPHONICS P.O. Box 37, Brooklyn, NY 11204
(212) 438-6400

Circle (122) on Reply Card

HEAD RE-LAPPING AND NEW HEADS FOR AMPEX

Worn cartridge and reel to reel heads re-contoured and re-lapped for original performance. Send for free brochure.

R.K. Morrison Co.
819 Coventry Road • Kensington, CA 94707
(415) 525-9409

Circle (123) on Reply Card

MODEL 100MP PROGRAMMER

- 24/48 Events
- 8 Machines & Net
- 25 Hz Sensor, Filter, Silence Sense

MEI MICROPROBE Call Dave Collins, (312) 440-3111
ELECTRONICS INC 875 N. Michigan Ave., #1532A
Chicago, Illinois 60611

Circle (124) on Reply Card

HEAD RE-CONTOURING

Standard 24 hour service. All Mfg's & Trk formats: Audio, Video, & Still Storage. Full line of replacement heads & accessories are also available. Send for FREE brochure.

RESTORATION
15904 STRATHERN ST. #23 • VAN NUYS, CA 91406
(213) 994-6602

Circle (125) on Reply Card

Reconfirm
your involvement in
the broadcast industry!
**Renew
your subscription
today.**

AMS systems use complementary mics, mixers and logic. Each mic is actuated only when addressed within its tailored 120° acceptance window.

Circle (825) on Reply Card
see ad on page 92

SIGMA ELECTRONICS

CGS-350A sync

A frequency stability of 1ppm highlights the CSG-350A sync generator. Outputs include all standard drive signals, black burst and a color field ID pulse.

CSG-355A generator

RS-170A phased synchronizing pulses from the CSG-355A include color field ID pulses for proper color edits. An optional color field marker may appear on blackburst for timing. SMPTE bars aid monitor setup, while an audio test tone aids recordings.

System timing module

The BBG-144 blackburst system timing module offers four independently adjustable blackburst signals. RS-170A phasing complements advance/delay H-sync adjustments of 3µs, and subcarrier phaseshifts to 360°.

VDA-515 DAs

Video distribution amplifiers with equalizing use differential inputs and equalization adjustments for up to 1100 feet of RG-59 coaxial cable.

Circle (826) on Reply Card

SINGER BROADCAST PRODUCTS

FM exciter

The FM30F FM exciter/30W transmitter uses PLL AFC for stability with direct FM modulation. Up to four multiplex inputs are available for stereo and SCA applications.

ST30F stereo generator

A matrix method of signal generation in the ST30F requires no complex filtering of the final composite, producing maximum separation, minimum crosstalk and reduced intermodulation.

SC30F SCA generator

Automatic muting in the SC30F SCA generator includes a muting threshold level and delay timing for any type of programming. Inputs may be 600Ω balanced or wideband unbalanced.

FM transmitters

New models to the FM transmitter series include a 3kW system using a grounded-grid 8874 IPA stage with a 3CX3000A7 in the final PA. The 25kW model uses a pentode IPA and a 3CX15000 as a grounded-grid PA.

AM transmitter

An addition to the AM transmitter series from Singer includes a 5kW level transmitter using a 4CX5000 for high level plate modulation.

Circle (827) on Reply Card

SKIRPAN LIGHTING SYSTEMS/ DMR 1220 LITEPAK dimmers

The modular DMR 1220 modular dimmer system places up to four 3x2.4kW dimmers in a portable case. The high density system offers output voltage regulation with independent precision per-channel control.

Circle (828) on Reply Card

SKOTEL

Time code products

Portable and studio time code generators and readers operate with SMPTE and EBU standards for longitudinal and vertical interval time code usage. Intelligent interfacing uses an RS-232C communications port for a channel capacity of 900 baud or 1200 baud. A metronome uses digital technology to aid in synchronizing music scores to the video.

Circle (829) on Reply Card

SNARR/CHASE SYSTEMS

The company offers sophisticated, cost-effective hardware and a complete selection of software rated important to broadcasters.

Circle (982) on Reply Card

SOLID STATE LOGIC

SSL 6000E audio console

Live, teleproduction, outside broadcast and post-production facilities of the SSL 6000E console/computer package include multi-track features, patch-free subgrouping, eight dedicated VCA subgroups and three stereo mix buses.

Master transport selector

The SSL Master Transport Selector uses a single button to place any of three recorders on-line as the master recording system. Control line switching for the Audio Kinetics Q-Lock 3.10 synchronizer is included.

SSL multimachine control panel

Up to five machines and two Q-Lock synchronizers interface through the multimachine control panel for transparent control of the entire machine system.

Dual-microphone amplifier

Each dual-mic amplifier module includes up to 50dB variable gain per mic, phantom power switching, phase reversal and a 6-segment, 3-color LED level indicator.

For more information, contact: Doug Dickey, Solid State Logic, 2633 15th St., NW, Suite 3, Washington, DC 20007.

see ads on pages 130 and 131

SOLUTECH, HA

Automated broadcast system

The SOL-6800 includes individual personalized control cards for each VTR to be included in the automated system. For up to eight VTRs, the system checks for video presence, provides fill-in or emergency signals, uses an RS-422 link to computer control and may be triggered by satellite cues or a master clock.

Other new products include the SOL 8200 co-channel filter.

Circle (830) on Reply Card

SONO-MAG

Bidirectional cart player

A bidirectional carousel scheme improves access time for particular announcement cartridges in an automation system.

Circle (972) on Reply Card

SONY

Betacam products

These products include the BVW-20 portable field playback unit; the BVW-40 1/2-inch recorder/editor with direct interface capability to component equipment, as well as Y/C RF-based BVU recorders; the BVP-3 camera, offering Plumbicon or Saticon mixed field, 3-tube cameras to the line; adapters extend Betacam flexibility with the VA-1V, converting NTSC video to Y/R-Y/B-Y components; the VA-1 adapter, separating the Betacam camera and BVV-1 recorder; the CA-3 adapter, allowing either Betacam camera to be used with other recorders; and the CA-300 adapter, making any BVP-300 series camera compatible with the BVV-1 recorder.

BVP-330A camera

A new deflection assembly, focus modulation and improved picture quality of the BVP-330A camera combines with a choice of multiconductor, triax or fiber-optic interconnection to the remote control unit.

Animation recorder

The BVH-2500 Delta t 1-inch recorder accomplishes still-frame animation recording. Up to 200,000 frames may be stored per reel of tape, yet the machine may function as a conventional Type C recorder as well.

BVU-800 series enhancements

The circuitry for improved performance in the BVU-800 IP recorder, giving better luminance and chroma noise and delay characteristics, may retrofit existing BVU-820 machines. A remote control system for the BVU-800 adds normal remote functions, while a remote control system for the BVU-820 creates a 150 cue-point storage capacity.

BVE-5000 enhancements

Interfacing for the BVE-5000 edit control system allows combined operation of the editor with systems such as the GVG-300 E-MEM, floppy disc memory storage and audio recording equipment such as the MCI/Sony systems.

Video monitors

Three series of video monitors, BVM, PVM and CVM, include models from 3 1/2-inch to 30-inch screens and projection equipment.

HDTV theater presentation

For Tape Heads Head for TABER

TABER you get precision work, quality results and low price... unmatched by any other head manufacturer.

We will recondition your Ampex, Scully, MCI, 3M or other three head assembly... FT \$75.00... 2 TRK \$90.00. Three new 2 TRK heads installed and aligned in your Ampex 440B at \$388.00... Scully 280B for \$406.00.

Ampex 2" VTR audio is only \$600.00 for four new heads installed, or \$154.00 for four reconditioned heads (add \$38.50 if monitor post needs lapping). RCA 2" VTR audio heads are available for only \$445.00.

Loaner assemblies available.

For heads, head for TABER... the best source available.

Send for free brochure.

TABER Manufacturing & Engineering Company

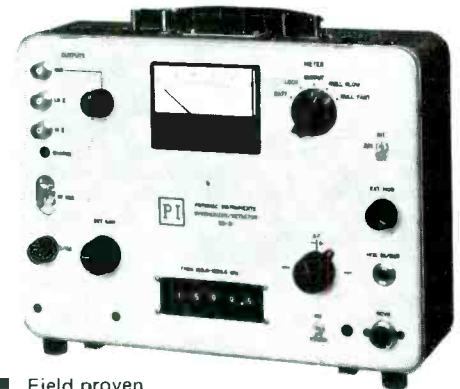
2468 Embarcadero Way • Palo Alto, CA 94303 • (415) 493-3811

Circle (126) on Reply Card

ANTENNA IMPEDANCE MEASUREMENTS WITH INTERFERENCE IMMUNITY

The Model SD-31 Synthesizer/Detector Is...

... designed for antenna impedance measurements in presence of strong interference ■ High-level oscillator compatible with General Radio 916 Series, 1606 Series, and Delta OIB-1 Impedance Bridges ■ Special coherent detector circuit rejects interfering signals during measurements ■ Crystal controlled frequency, variable in 500 Hz steps from 100.0 kHz to 1999.5 kHz ■ Receiver for detector can be external or optional built-in RX-31 ■ Powered by rechargeable batteries ■ Self-contained portable package ■ Field proven ■ Versatile — can use as an RF signal generator for troubleshooting antenna systems; as a variable frequency oscillator for antenna site survey; or other applications requiring a precise frequency source

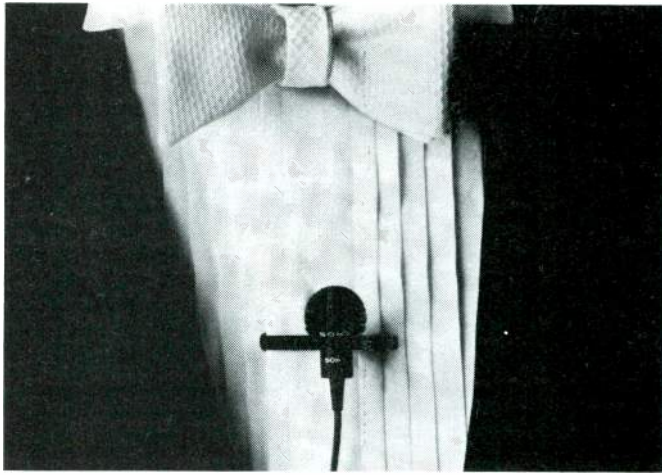


CONTACT US FOR DETAILS.

POTOMAC INSTRUMENTS

932 PHILADELPHIA AVE.
SILVER SPRING, MD, 20910
(301) 589-2662

Circle (127) on Reply Card



SONY FORMALLY INTRODUCES THE ECM 50-PBW.

Covering the Emmys? The Grammys? The Oscars? Or merely having a little tête-à-tête with the President of the United States in front of 40 million people? You'll find the world's most preferred broadcast mic is now even more suited for the occasion. Because the legendary Sony ECM 50 lavalier mic now comes in an elegant, black satin finish.

Ask your Sony dealer about the ECM 50. It's what all the best-dressed newscasters will be wearing this year.

SONY
Professional Audio

Sony Communications Products Company, Sony Drive, Park Ridge, New Jersey 07656. © 1983 Sony Corp. of America. Sony is a registered trademark of the Sony Corp.

REPLACEMENT TRANSFORMERS GATES, COLLINS, RCA, CCA



PLATE TRANSFORMERS

COLLINS 20V-1, 20V-2, 20V-3	\$550
CCA FM-4000E	\$650
GATES BC1E, BC1F	\$550
GATES BC1G, BC1H	\$550
GATES BC1J	\$550
GATES BC1T	\$550
GATES BC5P 3 Phase	\$1200
GATES BC500T	\$400
GATES FM-250	\$275
GATES FM-1B	\$575
RCA BTA1G, BTA1H	\$550
RCA BTA1R, BTA1S	\$550
RCA BTA5G, BTA5H (Main or Teaser)	\$750
RCA BTA10H (Main or Teaser)	\$1500

MODULATION TRANSFORMERS

BAUER 707 Series	\$695
COLLINS 20V Series	\$695

COLLINS 21E Series	1350
GATES BC1 Series	\$695
GATES BC5 Series	\$1350
RCA BTA1 Series	\$695

MODULATION REACTORS

GATES BC1 Series, 40 Hy @ 600 MA DC	\$400
GATES BC5 Series, 35 Hy @ 1.4 AMP DC	\$650
10KW Universal, 20 Hy @ 2.5 AMP DC	\$850

FILTER REACTORS

3 Hy @ 2.5 AMP DC, 10 KV INS	\$250
5 Hy @ 1.0 AMP DC, 10 KV INS	\$175
10 Hy @ 1.0 AMP DC, 10 KV INS	\$200
10 Hy @ 2.5 AMP DC, 10 KV INS	\$350
15 Hy @ 1.0 AMP DC, 10 KV INS	\$250

Many other transformers also available. Call us for free quotations: Large stock and fast delivery. 12 Month Guarantee on all items.

PETER W. DAHL CO., INC.
4007 Fort Blvd., El Paso, Texas 79930
Telephone: (915) 566-5385

Circle (128) on Reply Card

Examples of component digital techniques and high definition concepts were presented by Sony to begin interactive communications with other manufacturers to form comparable standards for future TV systems.

Circle (831) on Reply Card

see ads on pages 146, 147, 177 and 180

SOUND TECHNOLOGY

1510A recorder/audio test system

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (833) on Reply Card

SOUNDCRAFT ELECTRONICS

Series 200 consoles

Three models of the series 200 portable console offer 8-, 16- and 24-input capability in a foam-lined flight case.

Series 400B consoles

Production or sound reinforcement with 16, 24 or 32 inputs in a series 400B modular console have advantages of EQ, filtering, PFL, peak level LEDs with effects sends/returns and monitoring modules.

Circle (973) on Reply Card

SOUND WORKSHOP PRO AUDIO PRODUCTS

Stereo input module

Standard and stereo input modules for the series 30 console may coexist within the mainframe system. Two stereo balanced inputs with 3-band stereo EQ, full stereo group assignment, logic switching and PFL/solo capability are features.

Stereo output/submaster module

Use of a stereo output/submaster module in a series 30 system permits four stereo output groups with provisions for group EQ, sends, PFL and Solo.

Other new products include the VIM-II interface modules and DISKMIX computer.

Circle (834) on Reply Card

SPECTRUM PLANNING

Consultant services

A database for TV and radio FCC filings aids in broadcast services, microwave ITFS and earth station coordination. Expertise is based on work with the BBC, Marconi, and British ITA, RCA, Collins and Rockwell.

Circle (835) on Reply Card

see ad on page 161

SPENCER BROADCAST

Distributor

Radio, TV, audio/visual, cable and recording requirements may find answers in equipment available from Spencer Broadcast. Engineering planning services may also be found with the organization.

Circle (836) on Reply Card

STAGE LIGHTING DISTRIBUTORS

Lycian arc lights

Two Lycian SuperArc models, the 350 short throw and the 350, feature smokeless, carbonless and quiet light capabilities of 3.2 million and 11.2 million candle power, respectively. Auto color booms, faders, trim shutters and pan/tilt breaking are featured.

Circle (837) on Reply Card

STAINLESS

Communications towers

Whether the requirement is for 2-way communications, AM, FM, microwave, CATV, translators or TV broadcast, G towers in custom designs will meet the strict requirements of twist and sway. Up to 2000-foot heights may be handled by Stainless.

Circle (838) on Reply Card

STANTON MAGNETICS

PBR announcer's earphone

Only 100mW drives the PBR-25, PBR-500 or PBR-2000 25Ω, 600Ω or 2000Ω earphones.

Phono cartridges

For broadcast purposes the 500 MK II offers 35dB of channel separation in three stylus tip models: 0.3x0.7 mil, 0.4x0.7 mil or 0.7 mil spherical. Suggested loads are 47kΩ, 275pF.

Circle (839) on Reply Card

see ad on page 174

STANTRON DIV. OF WYCO METAL PRODUCTS

Video center equipment

Equipment racks and cabinetry for video operating centers are designed for post-production, production, dubbing and editing configurations.

Circle (840) on Reply Card
see ad on page 167

STATION BUSINESS SYSTEMS

Computerized systems

BAT 1700 includes traffic and accounting software as well as optional switcher connections for automation; playlist and inventory needs; media cart inventory; and Newscom assignment-desk, archival and editing uses.

Circle (841) on Reply Card

STATION RESEARCH SYSTEMS

Computer software

AutoSelect emulates the radio programmer for total control of music selection. Breakout software, a CP/M-based package, works on microcomputers to aid in sales presentations.

Circle (842) on Reply Card

W. STEENBECK & COMPANY GmbH

ST 102 time code reader

SMPTE, EBU and film time code standard signals from less than 5% to 15X sync sound speeds are sensed and synchronized to external clock pulses according to DIN 15573.

ST 1B scanner

The ST 1B video scanner for 16mm materials uses a color video camera, as well as microprocessor control. Easy threading of the film, a foolproof keyboard control, flexible synchronization and modular design are featured.

Circle (843) on Reply Card

STOREEL

Storage racks

Among a variety of storage racks and storage/retrieval systems is the new mobile storage case rack for 1/2-inch VHS tape.

Circle (844) on Reply Card

STRAIGHT WIRE AUDIO

Noise reduction system

High-Com allows up to 25dB of noise reduction with an automatically adjusting release time scheme to prevent pumping and breathing.

Preamp cards

The UP-2 universal preamplifier cards operate in an input range from -70 to -25dBV to aid in balancing tape head and phono cartridge inductive inputs.

Circle (845) on Reply Card

STRAND CENTURY

Mantrix memory

The Mantrix lighting control board incorporates a memory device to provide instant recall of circuit patching and circuit level settings.

New lighting products include the #3380 6-inch Fresnel with 1kW lamp, #3480 8-inch Fresnel with 2kW lamp and 4 1/2-inch Lekolite fixture.

Circle (974) on Reply Card

STUDER REVOX AMERICA

A810 recorder

Microprocessor control in the A810 determines tape position in real time in any of four speeds; allows programming of bias, level, EQ and time constants; handles fully servo-controlled transport functions; and offers a number of editing and convenience features.

A710 cassette deck

In a 19-inch rack-mount format, the A710 is designed for use in demanding operations. Dual-capstan direct drive, direct drive tape spooling and microcomputer control combine with efficient noise reduction and modular electronics.

A800 MK III

Software in the A800 MK III multi-track post-production recorder surpasses existing A800 systems to meet any production requirements. Standard interfaces match Solid State Logic, Neve/Necam and Audio Kinetics synchronizing and automation systems, as well as EECO and BTX synchronizers. Inputs and outputs may include transformers.

Circle (846) on Reply Card
see ad on page 101

SWINTEK

Switching diversity system

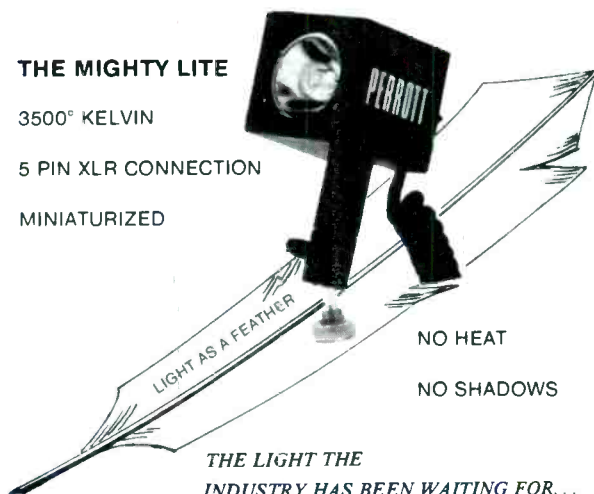
and **NOW** the
ULTIMATE in lighting

THE MIGHTY LITE

3500° KELVIN

5 PIN XLR CONNECTION

MINIATURIZED



NO HEAT

NO SHADOWS

THE LIGHT THE
INDUSTRY HAS BEEN WAITING FOR...

from

PERROTT

a name you can depend on

7201 Lee Highway, Falls Church, Va. 22046 (703) 532-0700

Circle (129) on Reply Card

In USA
available from

Hoffman
Video Systems

800 West Pico Boulevard
Los Angeles, California 90015
(213) 749-3311

YEC/PHOTRON VS-1000

SYNC/TEST SIGNAL GENERATOR



STANDARD FUNCTION: Sync, Color Bar, Linearity, Convergence, Level Control

OPTION: Pulse & Bar (Sin²), Multiburst & Sweep

FEATURES: Five signal generators

RS-170-A standard

Stable subcarrier (accuracy ± 10 Hz or ± 1 Hz)

Genlock/Internal sync generator

Low profile (1.7") and light weight (18 lbs)

Better cost performance

In Canada available from

m.s.c. electronics ltd.

254 wildcat rd. Downsview, Ont.

Tel. (416) 661-4180



J. OSAWA & CO., LTD.

2-8, Shibaura 4-chome, Minato-ku, Tokyo 108, Japan
Tel. 03-455-0111 Telex J 23881 OSAWAIMP

Circle (130) on Reply Card

Winsted

THE PERFECT MATCH
for your video equipment



MODEL
900LC

LOW PROFILE EDITING CONSOLE

This new low-profile editing console combines operator convenience and over-the-top viewing. Generous 31 1/2" rack space. Pullout VTR shelves and editor shelf bring editing equipment into easy reach: walnut woodgrain paneling blends with any decor.

Winsted traditional rugged construction features provide for safe support of valuable video equipment. Many models and configurations available.

For full-line catalog of editing, production and dubbing consoles, tape and film trucks, film and videotape storage systems, call or write:

THE WINSTED CORPORATION

9801 James Circle • Minneapolis, MN 55431

PHONE
TOLL-FREE **1-800-328-2962**

Circle (131) on Reply Card

Get Aligned Stay Aligned with STL precision magnetic test tapes

These dependable tapes are used by broadcasters, recording studios, equipment manufacturers, governments and educators throughout the world. Widest variety...Alignment, Sweep, Pink Noise, Level Set, Azimuth and Flutter/Speed. Available on reels, in cartridges and in cassettes. Also, the Standard Tape Manual & the Magnetic Tape Reproducer Calibrator.

Phone for fast delivery or free catalog.

STL

STANDARD TAPE LABORATORY, INC.

26120 EDEN LANDING ROAD #5, HAYWARD, CALIFORNIA 94545 • (415) 786-3546

Circle (132) on Reply Card

Narrowband frequency modules discriminate between adjacent channels in the RFSD, allowing many channels to be used on a set. Switching RF instead of audio reduces switching transients.

All-weather intercom

Weatherized equipment allows full duplex intercommunications between wireless headsets.

Circle (847) on Reply Card
see ad on page 128

SYLVANIA

Brite Beam lights

BB575/PAR46 specifies a 5600°K studio lamp system with four choices of beam control lenses, from narrow-spot to wide-flood lenses. The 575W power rating comes from a PAR46.

Brite Arc lamps

Brite Arc 200 is an 80V, 200W lamp for use in follow-spots, broads and fresnels using HMI lamps. Providing a daylight fill source, the BA200 requires a proper ballast.

Circle (848) on Reply Card

SYMETRIX

DCS-16 remote control

Remote-control operations with the DCS-16 system communicate with microwave antenna switching, machine controls, STL equipment or transmitter control and status circuits.

511 noise reducer

Noise reduction from audio recording systems is reduced up to 30dB without previous encoding requirements. A downward expansion scheme in conjunction with program-controlled dynamic low-pass filtering cleans up stereo or dual mono.

Circle (850) on Reply Card

SYSTEM ASSOCIATES

Used equipment brokers

Video recorders, editing systems, cameras, character generator systems and remote vans are some types of equipment handled by this company.

Circle (851) on Reply Card

TDK ELECTRONICS

High performance tape

Super Avilyn extra high grade, an improved tape formulation, is offered in VHS T-120, Beta L-500 and VHS-compact TC-20 cassettes for ENG/EPF production needs.

Circle (852) on Reply Card

TFT

8300 STL system

The 8300 STL equipment is designed for operation in RF-congested environments. Front-panel switching selects a variable bandwidth and preamplifier gain for optimum operation. The modulation scheme permits IF repeaters for long STL.

Control/status monitoring system

The 8350 provides 24-channel control and verification with BCD interfacing to two or more satellite receivers and earth station facilities, as well as alarm status monitoring.

Stereo equipment

The 840 AM stereo exciter and 841 AM stereo monitor are produced under license from Motorola and operate according to the C-QUAM stereo technique.

Other equipment includes the 834/835 TV aural, SCA modulation monitoring equipment and RC-82 load management.

Circle (853) on Reply Card

TTC/WILKINSON

LPTV/FM translators

TTC/Wilkinson provides LPTV/translator systems for all FCC and CCIR UHF and VHF TV channels. UHF, VHF and baseband input options provide the desired program sources, which may include Blonder-Tongue STV addressable/scrambler encoding. Antennas by Bogner complete the TV system. FM systems include LPFM, high power transmitters and translators with Scala antenna equipment.

Circle (861) on Reply Card

TABER MFG. & ENGINEERING

1500 auto eraser

For 1000 oersted and higher tape, the 1500 automatic tape eraser accepts all sizes and formats of tape products to 16-inch reels.

Circle (855) on Reply Card
see ad on page 179

TAMRON COMPANY LTD.

Zoom lens

The 12x9.5-114mm model 76H lens for 3/4-inch, 3-tube cameras offers a f/1.6 aperture varying to f/2. The minimum object distance is 1 meter.

Circle (856) on Reply Card

TANDBERG OF AMERICA

TCD 910 cassette recorder

Features of the TCD 910 cassette recorder include manual control of recording bias for optimum sound quality, microprocessor control and a servoed 4-motor drive system. DYNEQ and ACTILINEAR circuitry improve sound quality.

Also new are the TD20A-L logging recorder, TCD 621 duplicator, TES telephone enhancement system and TD20A-SE recorder.

Circle (857) on Reply Card

see ad on page 173

TASCAM-TEAC PRODUCTION PRODUCTS

Series 50 recorders

The model 52 (2-track, 1/4-inch) and 58 (8-track, 1/2-inch) audio recorders handle up to 10 1/2-inch reels and 15 ips recording applications. The 52 also has 7.5 ips capability with NAB and IEC EQ.

M-50 console

A 12x8 console includes 48Vdc phantom powering, 3-band sweep frequency equalization, stereo solo in place and PFL cueing from 12 input channels into eight buses.

Cassette decks

Model 122-B includes balanced input and output connections based on the Philips cassette 2-track format. Model 133-B includes a third track for use with tones for cueing. SMPTE time code or billing codes. With availability in late summer, the machine offers TTL parallel logic for remote control.

Model 42 recorder

A 2-track recorder uses three servo-controlled motors with a PPL capstan of ceramic materials.

Circle (975) on Reply Card

see ads on pages 43 and 151

TEATRONICS

Genesis dimmers

Dead shorts, hot patching, overload or miswiring of the 240/208Vac power feeds with the Genesis 2400 dimmer system causes no functional damage. The 12-channel dimmer pack carries 2400W/channel.

Genesis 6000 carries up to 6kW/channel in a 6-channel dimmer system. A control voltage from 0-10Vdc or optional multiplex scheme determines dimmer output.

Marathon dimmers

Triacs handle the dimming of 1.2kW loads in a Marathon 1200 dimming system. The Marathon 2400 system may carry 2.4kW/channel loads.

Circle (858) on Reply Card

TECHNOLOGY SERVICE

Series 2000 weather displays

The 2100 is for color weather radar picture from NWS and FAA sources; the 2200 is for weather satellite or private groups, such as WSI and ESD; and the 2300 is for color radar and weather satellite/graphics pictures.

Circle (859) on Reply Card

TEKTRONIX

1980 ANSWER, Option 4; 1910 Digital test generator/insertor; Audio test system; 2200 & 2400 series oscilloscopes

See the test equipment update on page 44.

Frame synchronizer

The 110-S synchronizer incorporates 10-bit architecture for negligible quantization errors. RS-170A phasing, 60dB S/N and 0.5% 2T K-factor are featured. Adaptive decoding with 2- or 4-field memory are options.

Circle (862) on Reply Card

see ads on pages 12, 13 and 15

TELCOM RESEARCH

Time code products

A complete line of time code reader and generator products handles SMPTE and EBU codes. Included are a portable generator system and the T-6010 high speed reader with an integral character generator/keyer circuit.

Circle (1036) on Reply Card

see ad on page 138

Perfect Timing

SMPTE

EQUIPMENT THAT YOU CAN AFFORD



ES261 is an eight digit SMPTE/Time Code Generator, capable of drop frame or non-drop frame operation. **\$788**



ES253 Eight digit reader, displays Hours, Minutes, Seconds and Frames.

Reads at play back speed, has "freeze" control. **\$477**

ES254 BI-Directional, Multispeed (1/20 to 20 times), eight digit reader with "freeze" control. On loss of code, displays last valid code read. **\$709**

AND FOR OFF-LINE EDITING

ES255 SMPTE IN/VIDEO OUT



ES255 is an eight digit, multi-speed, bi-directional SMPTE reader which adds the SMPTE input to your video. You can now "burn" the time code into the video portion of your tape, or feed a monitor directly. **\$1045**



Write, Wire or Call: (213) 322-2136
142 Sierra Street, El Segundo, CA 90245

Circle (134) on Reply Card

TELEASE

MAAST

Multiple Application Addressable Secure TV (MAAST) allows impulse-pay-per-view, electronic billing, 2-way communications, tiering, scrambling and multiple audio channels.

Circle (863) on Reply Card

TELE-CINE

Schneider lens systems

½-inch camera equipment

Products include a 30X zoom lens assembly that presents an effective aperture of f/1.7 and a maximum focal length of 800mm. Adapters are available to use the system with the Hawkeye or other cameras. Another product is the Type 54 14X Variogon 1.4/6.5-91 zoom lens, which includes a 2X extender.

¾-inch camera equipment

A special adapter with Types TV 35, 26 and 39 allow the 1-inch format lenses to be used on ¾-inch cameras. These Variogon f/1.7 systems provide wide-angle (12.5-375mm), standard (16-480mm) and tele/OB (26-800mm) 30X zoom ranges.

1-inch camera equipment

The Type TV 61 Variogon 1.7/12.5-190 lens serves wide-angle requirements in a 15X zoom system. A 2X range extender and diascopes are integral.

1¼-inch camera equipment

The Variogon 2.1/16-240 TV 51 lens offers a 15X zoom capability in a wide-angle lens system. Integral features include the 2X extender and diascopes.

Circle (864) on Reply Card

see ad on page 98

TELEMET

A-V routing switcher

The basic 20x10 standard matrix may be combined into a 400x400 crosspoint audio-video routing switcher system. Stereo audio and an auxiliary and breakaway audio functions are available.

Other products include the 4502 digital demodulator system, the 3581 multiburst generator and the 7934 routing switcher.

Circle (865) on Reply Card

TELESCRIPT

MPS-E text processor

Complete text processing in the MPS-E system allows the user to write, edit and store scripts for news or other production requirements, then recall the script for electronic prompting at show time.

Circle (866) on Reply Card

TELESOURCE COMMUNICATION SERVICES

Election reporting system

A specialized system provides computerized election reporting along with newsroom management and text editing.

Circle (867) on Reply Card

TELEVISION ENGINEERING

System designers/distributor

All major brands of TV equipment are available in studio or mobile production vehicle systems designed by TEC. Production vehicle systems are based on Ford Econoline vans, the Ford E-350 cutaway chassis, a Ford LN600/Grumman X93 chassis or a 40- to 45-foot custom trailer with Kenworth tractor.

Circle (868) on Reply Card

see ad on page 136

TELEVISION EQUIPMENT

IRT color monitor comparator, VGE 1032 zone plate generator

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Distributes products from Elcon, Matthey, Astrolite, Link, Slimgard and Secrette.

Circle (869) on Reply Card

see ad on page 136

TELEX COMMUNICATIONS

Wireless system enhancements

Wireless headsets now add flexibility to the wireless microphone system offered by Telex.

Caramate 4000

Caramate 4000 combines an audiocassette recorder/player capability with a slide projector in a single package for learning centers and display systems. The cassette contains narration as

well as tones for slide changing.

Audiotape duplicator

The 6120 system for high speed audiotape duplication may be configured in a variety of ways for use of reel-to-reel or cassette masters and reel-to-reel and cassette.

Circle (870) on Reply Card

TELFAX

The company displayed its line of headphones and remote equipment.

Circle (897) on Reply Card

TENNAPLEX SYSTEMS LTD.

FM transmitting antenna

Circularly polarized dipole panels (Type 754 154) may be used to develop a required radiation pattern in the 87.5MHz-108MHz spectrum. A VSWR of less than 1.2 is found throughout the FM broadcast band.

Circle (871) on Reply Card

TENTEL

Tentelometers Head protrusion gauge

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

Circle (872) on Reply Card

see ad on page 165

TERMINAL SYSTEMS

ACORN newsroom computer

ACORN automatically prints bulletins and news flashes and sorts incoming wire stories by category and time. The stories you select are stored on floppy discs for editing, rewrite or future use.

Circle (873) on Reply Card

THEATRE SERVICE/SUPPLY

Studio/theater hardware

ROLL-O-RAIL is an efficient system for handling overhead lighting equipment in TV and photo studios.

Cyc systems

Complete cyclorama tracks, hangers and fabrics fulfill production studio requirements.

Circle (874) on Reply Card

THEATRE VISION/TVI

Stage/studio equipment

Stage draperies and studio fixtures as well as lighting instruments and Strand-Century lighting control systems are available from TVI.

Circle (854) on Reply Card

THERMODYNE INT'L

Rack-Pack cases

An addition to the Rack-Pack line of transport and storage cases is a new mounting system for equipment using 3-tiered slides.

Circle (875) on Reply Card

THOMSON-CSF BROADCAST

Betacam VRCs

The 1-tube MC-611 and 3-tube MC-613 cameras attach directly to a VT-611 recorder to form a recording camera (VRC) system. Inputs to the recorder and the recording format are Y/R-Y/B-Y components. NTSC composite signals are available.

VT-615 cassette player

Compatible with the Betacam, the VT-615 player backs the equipment in the studio. Composite and component video dub outputs add versatility of interface to other recorders.

Graphics V

The Vidifont Graphics V system combines computer graphics capabilities with extensive character generation facilities for multichannel, multiplane image displays. New software includes 3-D imaging, as well as the Vidivote election returns.

Weather/sports displays

Special software systems for the Vidifont V offer Vidicast/Vidisports displays. A subscription tie-in to WSI Corporation feeds data to your Graphics V system to insert weather data and sports information into the proper windows of predetermined display formats.

Transmitter products

Thomson-LGT UHF and VHF TV transmitter systems are now available from stock for typically 4-week deliveries. Models include 100W VHF, 1kW UHF and 20kW UHF transmitters.

Circle (876) on Reply Card

THOMSON-CSF/TUBE DIV.

TH 371 tetrode

Pyroblock pyrolytic-graphite grids add stability to operation with the TH 371 VHF tetrode. For common visual/aural PA operation, a 20kW rating is typical. In video carrier only applications, up to 30kW may be expected at peak of sync.

FM PA tetrode

Applications of the TH 320 FM tetrode include power ratings as high as 50kW.

CCD device

The THX 31133 charge-coupled device uses a 576x384 element sensing matrix for high resolution imaging.

Circle (877) on Reply Card

THORN EMI LIGHTING

Lighting products

Replacement lamps for theatrical and studio needs include tungsten/halogen, xenon and compact iodide daylight (CID) units. Of particular interest are the new long tungsten/halogen types (1-10kW rated), a 1kW CID lamp with fixture and a 2kW CID hand-held fixture.

Circle (878) on Reply Card

3M MAG A-V

TT-8000 VTR

This fourth-generation Type C VTR by NEC includes SMPTE and VITC time code readers/generators with character generation/insertion, enhanced editing, improved signal performance and a matching TBC, the NTC-10B. Audio and video confidence heads verify video, sync and three channels of audio.

Series H routing

Hybrid circuit technology in the series H routing switchers offer "electronically clean" transparent signal paths for A-V switching systems. A 16x16 matrix stacks 1024x1024 cross-points in a multiple frame network.

Circle (879) on Reply Card

see ads on pages 72 and 73

3M SCOTCHCART

Scotch 480 tape

Before a roll of 1-inch 480 videotape is shipped, it is 100% laser-inspected for dropouts. After making more than 1000 edits from the same pre-roll point, signal decay is less than 1.5dB.

1/2-inch videocassettes

The 1/2-inch PB-20 and PV-20 videocassettes are designed to withstand hard ENG use. For Beta and VHS use, these new cassettes have red doors and hubs for identification.

Splicing accessory

A desk-top dispenser includes yellow and white leader tapes, write-on tape, red and blue hold-down tape and two sizes of blue splicing tape. Other features include razor blade and cotton swab storage department and a specially designed cutting edge to safeguard fingers.

Other new tape products include the XS series audiocassettes, BX audiocassettes for mass merchandisers and 8-hour videocassettes for consumers.

Circle (880) on Reply Card

see ads on pages 72 and 73

TIFFEN

Filter set

The #445 filter set features a carrying case. Included are softnet, soft contrast and combination color-grad video effect filter types.

Circle (881) on Reply Card

TOSHIBA

AS-II audio delay

Digital techniques retain a wide dynamic range of 90dB with little degradation in the AS-II digital audio delay unit. Delays to 1.3 seconds and in restoring video/audio synchronization to overcome delays caused in visual signal processing paths.

VS-IV synchronizer

The VS-IV video synchronizer eliminates the need for gen-lock operation. A 1-line buffer avoids problems when non-synchronous input signal switching is done.

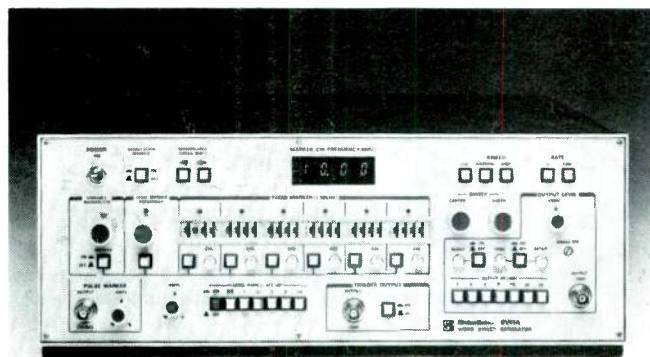
WG-V generator

Video productions are enhanced with bar, rotary, circle, diamond and windshield wipes generated by the WG-V wipe pattern generator system.

DPE-III effects generator

A natural binary PCM Y/I/Q direct process is used in the DPE-III digital picture effects system. Bubble memory storage retains

THE TRUE MEASURE OF PERFORMANCE



ASACA/SHIBASOKU SV11A Video Sweep Generator

The SV11A measures frequency response on high resolution, wide-band color video equipment. It has a frequency band ranging from 100 kHz to 30 MHz. You also get a choice of two amplitude ranges: wide range covering the whole band in one sweep, and narrow range centered on a particular frequency. Sweep signals may be selected by the switching V sweep of the built-in sync signal and power line frequency. A variable marker and six fixed marker waves are built-in and may be set to desired frequencies.

- Generates sweep (0.1–30 MHz), Wide sweep width (3–30 MHz), Narrow sweep width (1–10 MHz).
- 6 pre-settable fixed frequency markers plus variable marker with digital readout.
- 22.5 db level marker can be inserted to 0.5 db steps, facilitating readout.
- Composite sync signal and VD signal available.
- On-off switch for sync signal, color burst signal and setup.
- CW output.
- Available in NTSC; PAL B, M, N; and SECAM systems.

Measure your performance with the best.
ASACA/SHIBASOKU SV11A. Wide band video sweeps up to 30 MHz.

For complete specifications, write:

ASACA

ASACA/SHIBASOKU CORP OF AMERICA
12509 Beatrice Street, Los Angeles, California 90066
Sales, Service: (800) 423-6347 • (213) 827-7144

Circle (135) on Reply Card

instructions for a variety of flips, tumbles, defocus and curvilinear movement effects.

Circle (882) on Reply Card

TOWNSEND ASSOCIATES

IR-500 impedance plotter

See "New Test Equipment at NAB-'83," BE April 1983, page 34.

TC vacuum contactors

For replacement of GE AK-15, AK-25 and AK-50 contactor systems in broadcast facilities, TC 3-phase vacuum contactors offer reliable, fast action and handle up to 800A rms continuous current with a 2-cycle maximum dropout and interrupt time.

MDS/ITFS transmitter

The TMD-100XT transmitter offers 100W peak visual power service for any MDS/ITFS channel assignment.

New transmitter systems include the TA-55TE 55kW UHF TV transmitter, the TA-10ATH 10kW VHF/TV transmitter, the TA-100ASU 100W UHF TV transmitter and the TA-5ATU-M 5kW UHF TV transmitter.

Circle (883) on Reply Card

see ad on page 113

TRIDENT (USA)

Series 80B consoles

Cost-cutting strategies use rigid welded steel instead of aluminum for the series 80B console construction, as well as a hard-wired patch bay.

Series 70 consoles

The series 70 consoles serve multi-track studio requirements. Modular construction includes 4-way echo returns, 4-band equalization, 16 group outputs, separate stereo master outputs and full subgrouping.

VFM consoles

Recording and PA applications may find the VFM range of consoles ideal, with 16/4/2, 16/8/2 and 20/8/16 formats. Modular design includes 4-band EQ on each channel, three aux sends, insert send/return on each input, multi-track monitoring and 12-segment LED metering.

Circle (884) on Reply Card

TROMPETER ELECTRONICS

Miniature 75Ω jacks

J18 dual patch jacks allow load and source circuits to be reconfigured from normal through to any cross patching required. In J18T-R jacks, sources and loads are switched "break-before-make" and terminated into specified resistances.

TRS connectors

TRS Bayonet/TTM connectors are subminiature concentric twinax jacks, plugs and receptacles for high density installations.

Circle (885) on Reply Card

TRUE TIME INSTRUMENTS

Simplex interface option

Simplex type 2310 synchronous wired clocks may be continually updated directly from the US NBS to a subsecond accuracy. Up to 50 clocks may be driven by the master at up to 1000-foot distances.

Receiver-phase comparator

The WWVB receiver phase comparator, model 60-TF, compares phases of local frequency standards with the primary NBS standard at Boulder, CO.

Circle (886) on Reply Card

see ad on page 171

TWEED AUDIO

System designs

Tweed develops custom-designed systems for radio and TV facilities.

Circle (976) on Reply Card

UMC ELECTRONICS

Splice finder

An optomechanical sensing system in the SFE-100 automatic splice finder locates splices and stops the tape within 1/2-inch beyond the capstan window. Once the splice is located, the cartridge is ejected.

Circle (887) on Reply Card

ULTIMATTE

Postmatte

The Postmatte allows simplified video matting or compositing

during post-production activities. The system, expected to be available by fall, allows two videotapes to be combined into a single program.

Circle (888) on Reply Card

UNI-SET

Modular staging systems

Scale models allow pre-planning of staging needs before the modular set pieces are assembled into the full-sized studio setting. The modular construction simplifies storage.

Circle (889) on Reply Card

UNITED MEDIA

Studio talkback system

From Computer Dynamix, the CDX talkback system was designed for TV studio talkback, with full duplex operation, solid-state switching, microprocessor control and as many channels as there are outstations.

Command II B

The Commander II B editing control system includes the 8-VTR-plus switcher capabilities of the Commander II system, with software enhancements and user-suggested changes that make editing chores easier, faster and error-free.

Circle (890) on Reply Card

UNITED RECORDING ELECTRONICS INDUSTRIES/UREI

Model 200 X-Y recorder

Model 21 mic preamp/warble generator

See "New Test Equipment at NAB-'83," BE April, page 34.

Music mixer

The 1620 stereo music mixer provides two stereo-phonos, one mic and five stereo-line inputs. Switching assigns 11 inputs to six level controls.

Broadcast limiter

Fast attack time reduces overshoot for optimum intelligibility and maximum modulation with the 1B international unit.

On-air consoles

Two series of on-air consoles, the 1650 (with five mixers) and the 1680 (with eight mixing channels) offer P&G, Shallco or conductive plastic slider or rotary faders.

CallCount recorder

Interactive broadcasting uses CallCount to keep track of audience responses. The system answers calls with a recorded message, then instantly records the callers' opinion to the "question."

Circle (891) on Reply Card

UNITED RESEARCH LABORATORY

Microphone preamp

The MP-1 microphone preamplifier uses solid-state design for reliable, quiet operation.

Circle (892) on Reply Card

URSA MAJOR

Audio effects equipment

Digital techniques for reverb are found in the SST-282 Space Station effects system and the 8x32 reverb units.

Circle (977) on Reply Card

UTAH SCIENTIFIC

Audio distribution amps

The ADA-8 audio DAs may be formatted for 1 in x 8 out or dual 1 in x 4 out use. Gain adjustment covers a range of -6dB to +30dB. The outputs are short-circuit protected.

Video DAs

VDA-8 video DAs are formatted for 1 in x 8 out applications. Path length of the DA is adjustable. Optional feedback clamp and cable equalization is available.

Master control switchers

The 2-bus (MC-501) and 3-bus (MC-502) switchers use RS-422 panel/mainframe interconnections with panel functions software-assignable.

Circle (893) on Reply Card

see ad on page 79

UTILITY TOWER

Tower products/services

Triangular towers for broadcast, CATV and other communications services are constructed of steel members.

Circle (894) on Reply Card

VSA/VIDEOGRAPHICS SYSTEMS OF AMERICA

Videotex

In stand-alone, front-ended and network-distributed system formats, VSA videotex equipment provides a low cost, user-friendly concept for on-line applications, based on the North American Presentation Level Protocol Syntax (NAPLPS).

Teletext

From single stations to network broadcasting magazine interests, the VSA teletext equipment includes data generation and storage devices, as well as the VS-R10 receiver/decoder.

Circle (895) on Reply Card

VSC/VARIABLE SPEECH CONTROL

Stereo slave unit

Operating with the ISS TDM-8000 audio time compressor, the TDM-8200 allows stereo signals to be compressed or expanded in time without pitch change.

Circle (896) on Reply Card

VALLEY PEOPLE

Dual compressor/expander

Two high quality compressors and expanders control a common-channel VCA. The compressor serves as a voice over. Anticipatory release time is computed in accordance to program material.

400 series packages

Model 430 couples two Dyna-Mite cards for stereo. Model 431 combines a Dyna-Mic dual preamp with a Dyna-Mite multifunction signal processor. Model 432 offers four independent preamp sections from dual Dyna-Mite cards.

Circle (897) on Reply Card

VARIAN ASSOCIATES/ EIMAC DIV.

Klystrodes

The best features of klystrons and tetrodes result in the Klystrode device, producing greater power gain and efficiency for UHF TV applications. At 775MHz, an RF drive of 160W develops an RF output power of 20kW in FM sound/aural service.

Power tetrode

The 4CW25,000G is a ceramic/metal power tetrode for use in UHF TV up to 806MHz. A coaxial design uses pyrolytic graphite grids for high RF efficiency.

X-2239/3CX1000A3

A medium-mu power triode, using forced air cooling, the X-2239/3CLX1000A3 is of ceramic/metal construction for power oscillator applications in industrial heating.

X2238 planar triode

The X2238 planar design triode tube serves high voltage regulation (series or shunt) or switching (modulation) services.

Circle (898) on Reply Card

see ad on page 127

VARIAN ASSOCIATES/ MICROWAVE EQUIPMENT DIV.

VZU-6993D6 amplifier

A lightweight Ku-Band traveling wave tube (TWT) for ground transmitters, the VZU-6993D6 provides 500MHz-wide operation for SCPC, FDM-FM, FDMA and TDMA techniques. At 14-14.5GHz, the new amplifier typically outputs 300W.

High power amplifiers (HPA)

The GEN II VZU-2701G series HPAs provide a selection of one of eight preset channels in the 14-14.5GHz region. Nominal RF outputs of 3kW offer energy efficiency with on-board computer control for remotely located earth stations.

C-Band klystron

Exhibited in the GEN II VZJ-2700G series HPA, the VKC-7980A12 klystron operates from 5.85-6.45GHz. The new tube, offering a full 80MHz bandwidth, outputs 3kW CW RF levels and is compatible with existing VA-936 klystrons.

Ku-Band klystrons

For earth station uplink applications, the 600W VKU-7791D16 exhibits a 16-channel capability, whereas the 1kW VKU-7791P6 may handle 6-channel operations.

Circle (899) on Reply Card

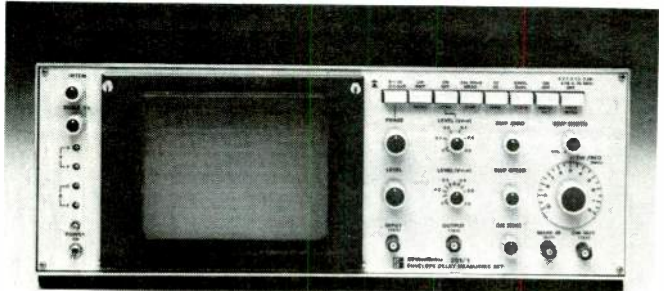
see ad on page 117

VIA VIDEO

Electronic graphics

System One allows artist-created stills or animated sequences of stills to enhance programming. Graphics from a digitizing camera input or from the electronic drawing board join

THE TRUE MEASURE OF PERFORMANCE

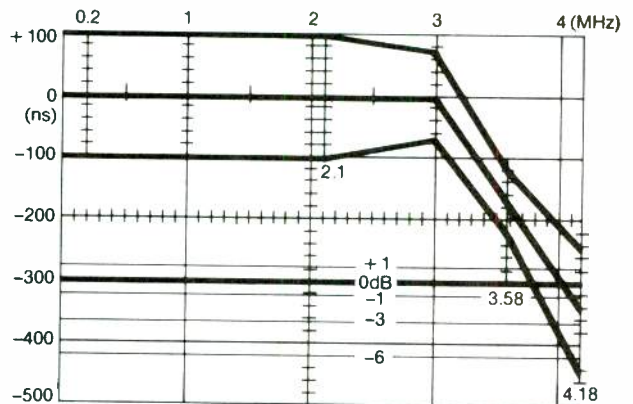


ASACA/SHIBASOKU 201 Envelope Delay Measuring Set

This compact unit measures the envelope delay in video transmission equipment quickly and accurately. It displays both delay and amplitude response simultaneously on a large, easy-to-read screen. A built-in sweep and CW generator measures delays up to 200kHz-10MHz. An internal sync generator measures systems with clamp controls. Sweep speed control and fixed frequency markers help you take more accurate readings, keeping errors to an absolute minimum.

- Measures from +100ns to -500ns (+50ns to -25ns 2X mag.)
- Internal sweep and CW generator covers 0.1-10MHz.
- Variable sweep rate 1-10Hz.
- 7-inch square CRT readout with FCC graticule facilitates transmitter alignment.
- Provides delay compensation up to 10ns.
- Available in NTSC; PAL B, M, N; and SECAM systems.

FCC Scale (NTSC)



Measure your performance with the best. ASACA/SHIBASOKU 201. Accurate measurement and alignment every time.

For complete specifications, write:



ASACA/SHIBASOKU CORP. OF AMERICA
12509 Beatrice Street, Los Angeles, California 90066
Sales, Service: (800) 423-6347 • (213) 827-7144

Circle (137) on Reply Card

International Wholesalers INDUSTRIAL & PROFESSIONAL VIDEO PRICE LIST



U-matic 1/2"

SONY VP 5000	\$1390
SONY VO 5600	\$1690
SONY VO 5800	\$3270
SONY VO 5850	\$5295
SONY VO 4800	\$2410
JVC CP 5550	\$2200
JVC CR 6650	\$2900
JVC CR 8250	\$4470
JVC CR 4700	\$3100
PANASONIC NV 9100	\$1060
PANASONIC NV 9240	\$3100
PANASONIC NV 9600	\$4990
PANASONIC NV 9400	\$2100
PANASONIC AU 700	\$6000

Special Effects Generator

SONY SEG 2000	\$3600
PANASONIC WJ 4600	\$1650
PANASONIC WJ 5500	\$3000
PANASONIC AS 6100	\$5900
JVC KM 2000	\$4100
ROSS POINT LATCH 6112	\$6360
SCITECH H-1	\$1400

1/2" Industrial

SONY SLO 383	\$2000
PANASONIC NV 8350	\$950
PANASONIC NV 8950	\$1420
PANASONIC NV 8500	\$2500
JVC BR 6400	\$1300
JVC BR 6200	\$939

U-matic Tape

KCS 10	\$11.99
KCS 20	\$14.20
KCA 30	\$15.19
KCA 60	\$21.19
KCS 10 BR	\$13.25
KCS 20 BR	\$15.39
KCA 30 BR	\$16.99
KCA 60 BR	\$23.65

Tripods-Heads-Dollies

BOGEN 3069	\$375
------------	-------

Color Monitor

SONY CVM 1250	\$602
SONY CVM 1900	\$870
SONY PVM 8000	\$600
NEC 12" COLOR MONITOR	\$299
NEC 25" COLOR MONITOR	\$699
PANASONIC CT 110MA	\$360
PANASONIC CT 1350MG	\$490
PANASONIC BTS 1300N	\$515
PANASONIC BTS 1900N	\$620
PANASONIC CT 1920M	\$499
PANASONIC CT 2000	\$760
PANASONIC CT 10,000M	\$5400
PANASONIC WV 5203B	\$600
JVC TM 22U	\$320
JVC AV 2000	\$599

Cameras

SONY DXC-1800K	\$2350
SONY DXC-6000L	\$9100
JVC KY1900 CHL10	\$4300
PANASONIC WV3060	\$590
PANASONIC WV3070	\$720
PANASONIC WV3400	\$920
PANASONIC WV3400 6X	\$920
PANASONIC WV3400 6AF	\$1000
PANASONIC WV3400 12X	\$1050
PANASONIC WV3890 B	\$1750
PANASONIC WV3990 B	\$2350
PANASONIC WV777	\$5490
HITACHI FP 10 UC	\$2900
HITACHI FP 21	\$7000
IKEGAMI ITC 730	\$6000

Lighting

SMITH VICTOR K74	\$675
SMITH VICTOR K76	\$900

Automatic Editing Control

SONY RM 440	\$1300
JVC RM 88	\$2500
JVC VE 90	\$4100
PANASONIC NVA 500	\$1125
PANASONIC NVA 970	\$2900
PANASONIC AUA 70	\$5900

keyboard entered characters in 754x482-pixel resolution.

Circle (900) on Reply Card

VIDEO ASSOCIATES LABS

Micro-keyer systems

Joining the VB-1 and VB-3 micro-keyers, allowing smaller computers to be used for TV titling/keying applications, these systems are available for Atari 800 units.

Interface card

A switcher interface card allowing six inputs to be applied to micro-keyer systems may be expanded to 12- or 18-input units.

Circle (901) on Reply Card

VIDEO DATA SYSTEMS

Character generation systems

A variety of data display products include the Performer T-1000B production titler for broadcast quality character generation and the MCG-2500 message generator system.

Circle (902) on Reply Card

VIDEO INT'L

Standards converter

Time base corrector, frame store/synchronizer and test pattern generator functions add to versatility of the STC 2003 standards converter.

Circle (903) on Reply Card

VIDEOMEDIA

Eagle editing systems

Eagle I allows 2-machine editing from a 250-event memory. Eagle II adds list management capability. Both are designed around distributed intelligence and provide frame accuracy with a printer output.

VMC-200 control system

This master control system handles six machine sources with random access functions for each source. The VMC-201 expands the capabilities with remote sequencing features. A VMC-202 programming station performs station automation, freeing the VMC-200 unit for last-minute changes and sequence updating.

Interfacing

Interfaces include an ISI 904 switcher and Z6000E DOS editing control system. A second places the Z6000E in control of an ADDA AC-20 dual-channel TBC with effects.

Other new products include the STC-1 transport controller, Q-STAR remote control and interfaces.

Circle (904) on Reply Card

VIDEOSTAR CONNECTIONS

Transportable uplink services

VideoStar uses Microdyne uplink systems for Ku-Band satellite communications. The systems, with fully redundant electronics and field engineering, are available on a lease basis for satellite networking.

Circle (905) on Reply Card

VIDEOTEK

Delphi I

See the test equipment update on page 44.

Routing switcher

RS-10A designates a 10x1 audio-follow-video routing switcher with breakaway capabilities. Each video input accepts two audio inputs. Remote switching is possible.

Also shown were the VDA-16, PDA-16 and ADA-15 DAs, and the Studio-12A color monitor.

Circle (906) on Reply Card

see ads on pages 78 and 165

VIDEOTELECOM

Baby Boom

The tripod-mounted Baby Boom allows camera shots from ground level to 11 feet high. Remote-controlled camera pictures are displayed on a 5-inch monitor.

Wearable viewfinder

A small format viewfinder by Barber attaches to the camera operator's head, allowing the operator to keep one eye on the picture and still see where he is going.

Circle (907) on Reply Card

1-800-327-0596

International Wholesalers

17866 Ipco Road, N. Miami, FL 33162 (305) 940-7542

Send \$5.00 for our complete industrial catalog.

We carry the complete line of SONY, JVC, PANASONIC, HITACHI, NEC, IKEGAMI, CROSS POINT LATCH, SMITH VICTOR, SENNHEISER, SHURE, QUICKSET, ITE, BOGEN, & LOWEL. Phone or write us for the lowest prices anywhere! We gladly honor American Express, Visa, and MasterCard by phone or mail.

Circle (138) on Reply Card

VISUAL INFORMATION INSTITUTE

Test pattern generators

See the test equipment update on page 44.

Circle (908) on Reply Card

VITAL INDUSTRIES

Production switcher

Studio and remote operations may include the 250P/N 16-input switcher system. Black and background signals are available on all four switching buses. Features include 32 patterns, three keyers and automation memory.

SAM automation

SAM operates with the VIX 115 series master control switchers to provide error-free system automation.

SANDI control

Serial machine control with SANDI uses the SMPTE communications protocol.

PSAS II+ automation

An updated non-volatile memory allows up to 256 build-your-own patterns for the SqueeZoom effects package.

Circle (909) on Reply Card

WSI

Weather Graphics

SuperSat and Weather Graphics allow complete weather information via a local telephone call.

Sports reports

SuperSports gives scores of Sports Ticker, the official reporting service of most professional leagues and associations.

Vectrix graphics

The VXB-TV graphics system by Vectrix allows 3-D display of graphic material, with perspective, rotation, scaling and translation built into the system as standard features.

Circle (910) on Reply Card

WARD-BECK SYSTEMS LTD.

MicroCOM

A single, 2-conductor cable allows complete control and tally communication between the central microprocessor and remote units of the MicroCOM intercom system.

WBS T1202A transportable console

Twelve input channels of the T1202A transportable audio console mix down to three output channels. An internal power supply, phantom powering, 3-section state variable EQ, P&G faders, panpots, cue function and a 120-pound total weight are features of the portable, stereo-ready unit.

R1000 radio console

Now in full production, the R1000 console comes fully wired for stereo operation. Mono or stereo is dependent upon the modules installed, for example, Mic, Line or Stereo. Ten input channels mix to two stereo outputs or two mono outputs, with stereo monitor and PFL/cue.

Circle (978) on Reply Card
see ad on back cover

WEATHERMATION/SBN

Weather graphics service

Satellite Broadcast Network is an addressable satellite graphics service delivering graphics and weather radar summaries with up-to-the-minute news imagery on a 24-hour basis.

Circle (1037) on Reply Card

WEGENER COMMUNICATIONS

VIDATA products

Series 2100 VIDATA products include computer interface, data bridge, vertical interval line inserter, asynchronous receiver/transmitter and other equipment needed for transmission and creation of teletext signals.

Data receivers

Series 2000 data receivers, as used by the Turner Broadcasting System, provide up to eight independent 300-baud information channels on one low level data subcarrier.

Series 1600 products

Subcarrier radio networking with the series 1600 audio transmission system provides high quality 15kHz bandwidth program channels on satellite subcarriers.

Circle (911) on Reply Card

WHIRLWIND MUSIC

Cabling and accessories

Specialized cable harness products for video and audio may be obtained with specified connectors, wiring types and lengths.

Direct box

The Director direct box offers impedance transformation on the input to connect to 150Ω equipment. Outputs include one parallel and one transformed.

Circle (912) on Reply Card

WINSTED

System/85

An addition to the Winsted line of studio furnishings is the System/85 corner editing console for front-loading VTRs.

Other new equipment includes a console for 1-inch VTR equipment.

Circle (913) on Reply Card

see ad on page 182

WIREWOKS

Microphone/audio accessories

Pre-wired microphone cables, multichannel multiboxes and accessories for multi-track studio interconnections.

Circle (914) on Reply Card

WOLD COMMUNICATIONS

Satellite networking services

The Satellite Subcarrier Transmission System (SSTS) and transportable uplinks allow high quality audio services and TV relay by satellite. Redundant equipment provides video with stereo subcarrier for television or combined SCPC and subcarrier for radio.

Circle (915) on Reply Card

WOLF COACH

Production vehicles

Custom-fitted vehicles for ENG and mobile production requirements are constructed to the user's plans. Units, such as the B-102 mobile mini newsroom or the C-1000 coach format vehicles, may include telescoping masts, roll-out/fix equipment racks, on-board generators and microwave systems.

Circle (916) on Reply Card

FRANK WOOLEY & COMPANY

Motionmaster animation

Motionmaster techniques use polaroid lighting filters and materials to create a sense of movement in graphics or in limited area set design.

Circle (917) on Reply Card

WORLD SYSTEM TELETEXT

TTS4 text generator

VG Electronics Ltd. builds the TTS4 full editing system: a data generator/inserter, editing terminal, digitizer with stand and camera and a teletext decoder. The 144-page storage is expandable by 144 pages with a TTE4 expander module.

Teletext accessories

Equipment displaying World System Teletext in operation included TV receivers by Zenith and Magnavox (with off-air transmissions from KTNV/13, Las Vegas, NV).

Circle (492) on Reply Card

WORLD TOWER

Towers, services

Communications tower needs may be answered by World Tower, whether the requirement is for CATV TV/FM support, AM broadcast towers or microwave relay systems.

Circle (918) on Reply Card

YAMAHA/COMBO PRODUCTS

Recording mixers

The RM804 mixer system incorporates eight electronically balanced inputs on XLR mic/line and RCA unbalanced inputs. The inputs are selected to four mixing buses for 4-track recordings and overdub applications.

Multi-track mixer

Sixteen input channels with XLR and RCA input connectors are directed to eight output mixing buses for multi-track recordings.

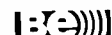
Circle (919) on Reply Card

ZENITH

Scrambling system

SSAVI stands for synchronization suppression and active video inversion as a means to protect STV programming. Multiple-tier operation, with addressability, gives CATV channel packaging capabilities or over-the-air signal security.

Circle (920) on Reply Card



ad index

ADC Products	63	International Tapetronics/3M	56-57
ADM Technology Inc.	IFC, 155	International Wholesalers	188
A.F. Associates, Inc.	107	JVC Corp. of America	111
AKG Associates, Inc.	160	Jensen Transformers	166
Abekas Video Systems, Inc.	5	Kaman Broadcast Systems	99
ADDA Corp.	169	LPB, Inc.	116
Agfa-Gevaert Inc.	39	Lake Systems Corp.	139
Allied Broadcast Equipment	173	Leitch Video Ltd.	64
Alpha Audio	62	Lenco, Inc. Electronics Div.	121
Amperex Electronic Corp.	61	Lerro Electrical Corp.	47
Ampex Corp.	17-32, 36-37	MCI/Sony	114-115
Anchor Systems	102	3M Mag Tape	72-73
Antenna Technology Corp.	157	McCurdy Radio Industries, Inc.	IBC
Asaca/Shibasoku Corp. of America	185, 187	McMartin Industries, Inc.	80
Audio-Technica U.S., Inc.	141	Magna-Tech Electronics Co., Inc.	143
Audiotechniques, Inc.	168	MCL, Inc.	132
Auditronics, Inc.	58	Marti Electronics	175
Belar Electronic Labs	174	Microdyne Corp.	137
Belden Corp.	51	Micro Controls Inc.	110
Bosch-Fernseh Inc.	123	Microphonics	178
Broadcast Audio Corp.	172	Microprobe Electronics Inc.	178
Broadcast Systems Inc.	149, 175	Midwest Corp.	1
Broadcast Video Systems	154	R.K. Morrison Co.	178
Calvert Electronics, Inc.	49	Moseley Associates Inc.	152, 153
Canon USA Inc.	163	NEC America Inc.	9
Cetec Antennas	135	Neutrik Products	160
Cetec Vega	53	Opamp Labs	178
Chyron Corp.	119	J. Osawa & Co., Ltd.	181
Cine-60, Inc.	161	Otari Corp.	45
Comark	97	Panasonic	40-41
Comex Systems	150	Penny & Giles	176
Comsearch Inc.	75	Perrott Engineering Labs	181
Comtech Data Corp.	4	Philips Television Systems	159
Continental Electronics Mfg. Co.	16	Polar Research Inc.	162
Convergence Corp.	129	Polyline Corp.	160
Crosspoint Latch Corp.	194	Potomac Instruments	179
Peter W. Dahl, Inc.	180	Q.E.I.	6
Data Communications Corp.	105	Q.S.I.	54
Dielectric Communications	118	Ramko Research	94-95
DigiVision, Inc.	55	Restoration	178
Dolby Laboratories Inc.	77	Sencore	11
EECO, Inc.	103	Shintron Co., Inc.	122
EEV, Inc.	59	Shook Electronic Enterprises Inc.	174
ESE	183	Shure Bros.	92
Eagle Hill Electronics, Inc.	178	Solid State Logic	130-131
EELA Audio	170	Sony Corp. of America	146-147, 177, 180
Elector USA, Inc.	69	Spectra Sonics	70
Electrex Co.	176	Spectrum Planning	161
Electro-Voice Inc.	71	Standard Tape Laboratory	182
Eventide Clockworks	144-145	Stanton Magnetic Products	174
Farrtronics, Ltd.	170	Stantron Div. Wyco Metal Products	167
Fidelipac Corp.	140	Studer ReVox	101
Film Video Equipment	164	Swintek Telecommunications/Div.	128
Fortel, Inc.	81-88, 89-90	Taber Mfg.	179
Frezzolini Electronics Inc.	106	Tandberg of America	173
Fuji Photo Film U.S.A., Inc.	125	Tascam Div. TEAC Corp. of America	43, 151
Fujinon Inc.	67	Tektronix, Inc.	12-13, 15
Garner Industries	112	Telcom Research	138
Ghilmetti	156	Tele-Cine Corp.	98
Graham Patten Systems, Inc.	48	Television Equipment Associates, Inc.	136
Grass Valley Group	7	Temtron Electronics Ltd.	164
Gray Engineering	172	Tentel Corp.	165
Great American Market	66	Townsend Associates, Inc.	113
Grumann Aerospace	93	True Time Instruments	171
Hannay Reels	126	Utah Scientific, Inc.	79
Harris Corp.	46, 65	Varian Associates	117, 127
Harvey Professional Audio/Video	133	Videotek, Inc.	78, 165
Hitachi Denshi America Ltd.	3	Ward-Beck Systems Ltd.	BC
Howe Audio	109	Winsted Corp.	182

professional services

VIR JAMES P.C.
CONSULTING ENGINEERS
Applications and Field Engineering
Computerized Frequency Surveys
3137 W. Kentucky Ave. - 80219
(303) 937-1900
DENVER, COLORADO
Member AFCCE & NAB

STEIGER, HURRAY & ASSOCIATES INC.
Broadcast Technical Consultants
ANTENNA SYSTEM SPECIALISTS
6816 Westview Drive
Cleveland, OH 44141
(216) 526-7187

RALPH E. EVANS ASSOCIATES
CONSULTING COMMUNICATIONS ENGINEERS
216 N. Green Bay Road
Suite 208
Thiensville, WI 53082
Phone: (414) 242-6000 Member AFCCE

ATLANTIC RESEARCH CORPORATION
Jansky & Bailey
Telecommunications Consulting
Member AFCCE
5390 Cherokee Avenue
Alexandria, Virginia 22314
(703) 642-4000

dataworld inc
AM • FM • TV • LPTV
Computerized
Allocation Studies/Directories
1302 18th St., N.W., Suite 502
Washington, D.C. 20036
(800) 368-5754 (202) 296-4790
Established 1971

R. L. HOOVER
Consulting Telecommunications
Engineer
11704 Seven Locks Road
Potomac, Maryland 20854
301-983-0054
Member AFCCE

D. L. MARKLEY & Associates, Inc.
CONSULTING ENGINEERS
206 North Bergan
Peoria, Illinois 61604
(309) 673-7511
Member AFCCE

CHARLES F. KOCHER, P.E.
Consulting Radio and TV Engineer
Allocation Engineering
Antenna Systems
27235 Berkshire Drive
Southfield, Michigan 48076
(313) 357-2304
Member AFCCE

Radiotechniques

RADIO CONSULTING ENGINEERS
STATION DESIGN AND SERVICE
ELECTRONIC PRODUCT DESIGN
Edward A. Schober, P.E.
402 Tenth Avenue, Haddon Heights, NJ 08035
(609) 546-1841

RADIO ENGINEERING CO. CONSULTANTS
NORWOOD J. PATTERSON
BOX 420
SANTA YNEZ CA 93460
(805) 688-2333
Serving Broadcasters over 35 years

MIDWEST ENGINEERING ASSOCIATES
Consulting Engineers
150 Wesley Rd.
Creve Coeur, Illinois 61611
Phone (309) 698-3160
F. W. Hannel, P.E.
Member AFCCE

SINCE 1952 **MSI** Tel. 201-627-7400
MICROWAVE SERVICES INTERNATIONAL, INC.
SATELLITE AND TERRESTRIAL SYSTEMS
CONSULTANTS • ENGINEERS • CONSTRUCTORS
FREQUENCY COORDINATORS
VICTOR J. NEXON, PE 266 W. MAIN ST.
PRESIDENT DENVER, NJ 07834
MEMBER AFCEE

BROADCAST ENGINEERING SERVICE COMPANY
TV-FM-AM Field Engineering -
Emergency Maintenance - Turnkey Installation -
System Design - Survey and Critique -
Interim Maintenance or Chief Engineer
B E S COMPANY
100 Star Trail, New Port Richey, Fla 33553, 813-868-2989

SMITH and POWSTENKO
Broadcasting and Telecommunications
Consultants
2000 N. Street, N.W.
Washington, D. C. 20036
(202) 293-7742

McCLANATHAN & ASSOCIATES, INC.
Consulting Engineers
APPLICATIONS & FIELD ENGINEERING
TURNKEY INSTALLATIONS - RADIO & TV
DIRECTIONAL ANTENNA DESIGN
P.O. Box 750
PORTLAND, OREGON 97207
Phone: 503/246-8080 Member AFCCE
TWX 910-464-6112/Front!

4124 Green Oak Dr. • Atlanta, GA 30340
(404) 448-8956
YURIS INC. YURY M. PODRAZHANSKY
President
Television System Design, Drawing
Main Video, Audio and Pulse Flow
Computerized Cable Run List
Patch Panels

BROADCAST engineering
Advertising Sales Offices
NEW YORK, NEW YORK
Joe Concert,
Phone: (212) 682-6630
Anita K. Gold
Phone: (212) 682-6040
630 Third Ave., Eighth Floor
New York, NY 10017
KANSAS CITY, MISSOURI
Jan Winters,
P.O. Box 12901, Overland Park, KS 66212
Phone: (913) 888-4664
SANTA MONICA, CALIFORNIA
Herbert A. Schill,
Schiff & Associates
1408 Santa Monica Mall, Suite 200
Santa Monica, CA 90401
Phone: (213) 393-9285
LONDON, ENGLAND
John Ashcraft & Co., John Ashcraft
12 Bear Street
Leicester Square, London WC2H 7AS
England
Phone: 930-0525
Telex: 895-2387
AMSTERDAM, HOLLAND
John Ashcraft & Co., John J. Lucassen
Akerdijk 150A, 1171 PV-Badhoevedorp,
Holland
Phone: 0-2968-6226
Telex: 11640
TOKYO, JAPAN
Sumio Oka
International Media Representatives, Ltd.,
2-29, Toranomon 1-chome, Minato-ku
Tokyo 105, Japan
Phone: 502-0656
TAIWAN, R.O.C.
Antony Liu
Long Life Advertisement Agency Co.
P.O. Box 36-1094
8F-3.50, sec 5
Naking E Road
Taipei, Taiwan
Telephone: (02) 760-2468
Telex: 25923 Fondland
Cable: Longad Taipei
NORWOOD, AUSTRALIA
Hastwell, Williamson, Rouse Pty. Ltd.
P.O. Box 419
Norwood 5067, Australia
Phone: 332-3322
Telex: AA87113

Why not run
your business card
here?
Only \$35.00
per insertion.
Frequency discounts
available.
Call 913/888-4664

classified

Advertising rates in Classified Section are 75 cents per word, each insertion, and must be accompanied by cash to insure publication.

Each initial or abbreviation counts a full word. Minimum classified charge, \$10.00.

For ads on which replies are sent to us for forwarding (blind ads), there is an additional charge of \$10.00 per insertion, to cover department number, processing of replies, and mailing costs.

Classified columns are not open to advertising of any products regularly produced by manufacturers unless used and no longer owned by the manufacturer or distributor.

TRAINING

ELECTRONICS DEGREE by correspondence. Earn A.S.E.T., then B.S.E.T. Free catalog. Grantham College of Engineering, 2500 La Cienega, Los Angeles, California 90034. 7-82-tfn

FCC GENERAL RADIOTELEPHONE operators license through cassette recorded lessons at home plus one week seminar in Boston, Washington, Detroit or Philadelphia. Our twentieth year teaching FCC license courses. Bob Johnson Radio License Preparation, 1201 Ninth, Manhattan Beach, Calif. 90266, Telephone (213) 379-4461. 8-81-tfn

SERVICES

ONE STOP FOR ALL YOUR PROFESSIONAL AUDIO REQUIREMENTS. Bottom line oriented. F.T.C. Brewer Company, P.O. Box 8057, Pensacola, Florida 32506. 7-71-tf

HELIX-STYROFLEX. Large stock—bargain prices—tested and certified. Write for price and stock lists. Sierra Western Electric, Box 23872, Oakland, Calif. 94623. Telephone (415) 832-3527. 1-73-tf

TRANSMITTER TUBES REPROCESSED—Save 40 to 50%. 3CX2500, 4CX5000, 4CX15000 and many others. Write for details. FREELAND PRODUCTS CO., Rt. 7, Box 628, Covington, LA 70433. (504) 893-1243. 6-79-tfn

HEAD RE-LAPPING SERVICE. We expertly refinish all professional non-glass heads. Fine hand crafted work by professionals. 1/4" heads—\$35, 1/2"—\$135, 1"—\$250, 2" 16TK—\$460, 2" 24TK—\$590. Price includes shipping. Compare our prices over buying new heads. TUCKER ENTERPRISES, P.O. Box 10120, Alexandria, Virginia 22310-0120, 703/971-2321. 1-83-tfn

RENTAL EQUIPMENT

RENT TEST EQUIPMENT from the largest broadcast rental fleet in America, Potomac AT-51 and FIM21-41-71, SDRX, Delta OIB series, Microtrak Portable Studios, David Green Broadcast Consultants, Box 590, Leesburg, VA 22075. 703-777-8660. 6-83-tfn

MISCELLANEOUS FOR SALE

COPPER STRAP, WIRE, SCREEN. Check our prices. (317) 962-8596 ask for copper sales. 1-83-6t

QUALITY BROADCAST EQUIPMENT: New and Used, Buy and Sell! Transmission, Video and Audio. Formed my own company. Call Ray LaRue, (813) 685-2938. 10-82-tfn

EQUIPMENT FOR SALE

THE VIDEO MONITOR. Hollywood/West Coast Directory of Communications Industry. 1000's of listings. Very complete. Very accurate. Computer-updated twice yearly. \$11.50. The Video Monitor, 6331 Hollywood Blvd., #603, Hollywood, CA 90028. 6-83-1t

ATTN: CATV COMPANIES. STRAND MAPPING & MAKE READY DESIGN. Contact Walt Deffenbaugh Company, Box 878, Alva, Florida 33920, 813/728-3201. 6-83-1t

HARRIS SYSTEM S-90 AUTOMATION 3-42 tray go-carts, RPD, time announce, instacart, 5-ITC R to R, encoding, logging with 2 printers, 3 consoles. \$37,500 or best offer. 408-475-5527. 4-83-4t

CCU FOR HL-79A with 300 feet of twin coax. Cinema Products model COE-A purchased two years ago by Freelancer and used 14 times. Looks and works like new. (702) 739-7705. 5-83-2t

EQUIPMENT FOR SALE (CONT.)

SONY BVH 1100 TYPE C 1" TAPE MACHINE. BVT 2000 TBC, Sony BVM 1201 Color Monitor, Tektronix 528 waveform monitor, Tektronix 602 Vector Display, complete with console. Excellent Condition \$43,000. Call today, 813-576-4444, John or Rick. 6-83-1t

SHIVELY 6810, 8-BAY FM antenna, 90.1, new, \$6,000; Gates FM10B transmitter, \$3,000; new Pirod 250' tower complete, \$6,000; 244' 1 1/4" transmission cable, \$1,200. (216) 493-7000, (216) 497-9000. 6-83-3t

CDL SWITCHER VS-14 with extended effects generator: Used less than one year. \$12,900. (301) 652-7800. 6-83-1t

C BAND MICROWAVE LINK: Frequency 6575-6875MHz, Transmitter Pwr 200mw, Carrier deviation ±3MHz, Frequency response ±.5dbm from 300Hz to 3MHz. Mfr. Motorola type MR-30. In stock for immediate delivery fully tested. Radio Research Instrument Co., Inc., 2 Lake Avenue Extension, Danbury, CT 06810. Tel: 203-792-6666. 6-83-3t

FOR SALE AND IMMEDIATE DELIVERY. Brand new channel 3 Canadian General Electric 3kW TV transmitter, with spares. May be factory returned to your channel. Never left factory as CP was withheld. Also 3 gain CGE slot antenna. For details contact Peter Onnigian, (916) 392-8964. 6-83-3t

COLLINS 831F-2—Upping power, 3 years old, like new, FM transmitter. Call Bruce Harlan 216-821-1111. 6-83-1t

"I.G.M." BASIC "A" AUTOMATION SYSTEM. Encoder—logger—plus two of the latest Model 78 tray Go-Cart II. System like brand new. Near Chicago. Robby (214) 843-5565. 6-83-2t

CMX 34 with 1 1/2", Sony BVU 200's, Microtime time base correctors. All like new. Call (216) 421-2680, ask for Fern. 6-83-1t

TWO BVU 200s plus one BVE 500 Editor all like new. Total price all three \$12,000, (212) 406-1181. 6-83-1t

EQUIPMENT FOR SALE (CONT.)

TK28B Color Telecine with ASCET (fitted w/satcon tubes). Includes: Remote joystick control panel; gamma control panel and extenders. **TP55B** Multiplexer with 3 input and 1 output port. Includes: Internal TK28 mounting package and monitor bridge. **TP7B** Slide Projector with solid state control unit. Includes: 7 1/2" lens; remote control panel. **FR35B-TV** 35mm Projector (135mm lens). Includes: Remote control panel; instant start/stop; variable speed; 6000' modification kit. **PM86-SL3** Magnetic 35/16mm 3 track Recorder/Reproducer. Includes: Edgetrack time code capability. **Athena 5000TSM** 16mm Projector. Includes: 1, 2, 4, 6, 8, 12, 16, and 24 fps operation; instant start/stop; still operation; remote control panel; Pi-clear wet gate. **System XL** Color Corrector (scene-by-scene) interfaced to TK28B Film Chain. Includes: Full control of color balance; colorimetry, and luminance components. System in operation approximately 48 months. Package Price—\$119,500.00. Please contact Joe Flores for technical questions, Sid Kavenow for purchase inquiries. Also for Sale: **Five 3M Color D.O.C.** (Part #7680A000) International. Never Used—\$5,500.00 each. **RCA TKP-48 Color Camera** with Studio CCU Angenieux 10 x 16T zoom lens—\$10,500.00. Swell! Pictures, Inc., 233 East Wacker Drive, Chicago, Illinois 60601, (312) 649-9000. 6-83-1t

WANTED TO BUY

WANTED: Pre-1923 radio equipment and tubes. August J. Link, Surcom Associates, 305 Wisconsin Ave., Oceanside, CA 92054, (619) 722-6162. 3-76-tf

HIGHEST PRICES PAID for 112 Phase Monitors and for clean, 12 year old or less, 1 KW and 10 KW AM Transmitters. All duty and transportation paid. Surplus Equipment Sales, 2 Thorncliffe Park Dr., Unit 28, Toronto, Canada M4H 1H2, 416-421-5631. 2-79-tfn

WANTED: STATION LIBRARIES OF MUSIC, 16" ET's, 12" Transcriptions, 45's, 78's, LP's. Boyd Robeson, 2425 W. Maple, Wichita, KS 67213, (316) 942-3673, 722-7765. 5-82-tfn

WANTED: GOOD SURPLUS TYPE T12-A AM broadcast crystals for crystal bank; mutually beneficial so contact us for details of plan. **BROADCAST CRYSTALS:** for AM, FM and TV transmitters. Frequency change, repair or replacement of oven types, also vacuum types available. Over 30 years in this business. Eidson Electronic Co., Box 3751, Temple, TX 76501. (817) 773-3901. 4-83-eom

TOP DOLLAR PAID for good Collins 830D or 831D stereo FM transmitter or other recent vintage 1-2.5KW FM. Howard Dybedock, WBYG, Kankakee, Illinois, (815) 939-4541. 6-83-1t

WANTED

BIBLE COLLEGE AND NON-COMMERCIAL FM station starting broadcasting school for Christian radio. Seeking new/used studio equipment donations. Tax-deductible. Charlie Edwards, WSOE, 502-825-3004. 6-83-1t

HELP WANTED


ENGINEER/TECHNICIAN. A midwest CBS affiliate is seeking an engineer/technician to maintain studio, transmitter, and ENG equipment. If interested, send a resume and salary requirements to: Supervisor of Engineering, WEHT-TV, P.O. Box 25, Evansville, Indiana 47701. EOE-M/F. 5-83-2t

WE PLACE TV and Video Engineers

Come to the source
COME TO
KEY SYSTEMS

Westminster Road
Wilkes-Barre, PA 18702

Phone Alan Kornish at
(717) 655-1458

Want  More information on advertised products?

Just refer to the reader service # beneath each ad. Circle the appropriate number on the Reader Service Card in the back of this issue. Complete the remaining information and mail!

BROADCAST
engineering

P.O. Box 12901, Overland Park, KS 66212
U.S.A.

HELP WANTED (CONT.)

ENGINEERS, TV Systems Engineers, Electronic Technicians, Technical Supervisors, Maintenance. Immediate openings. Experienced. Full time. Full benefits, plus Pension. Excellent salary plus commissions. Send resume to Technical Operations, Inc., P.O. Box 840, New Hyde Park, N.Y. 11040, or call Personnel Mgr. (516) 352-2238. 9-80-tfn

VIDEO SALES—Major N.J. video dealer offers a challenging opportunity for professional video sales people. Previous industrial and/or broadcast experience required. Salary commensurate with experience. Commission, car, excellent fringe benefits. Reply in confidence to: Video Corporation of America, 1913 Route 27, P.O. Box 697, Edison, N.J. 08818. 1-82-tfn

ASSISTANT CHIEF ENGINEER—KCSO-TV Channel 19 has an opening for an Assistant Chief Engineer. Must be capable of extensive studio maintenance. Knowledge of RCA TR-22, TK-27, TP-86, Sony 2860, studio camera set-up and maintenance helpful. UHF transmitter experience an asset. Equal Opportunity Employer. Send resume. Chief Engineer, KCSO-TV, Post Office Box 3689, Modesto, California 95352. 4-83-3t

RADIO CHIEF ENGINEER: Hands on Chief Engineer for established stations WNOG-AM 1KW and WCVU. FM Class C. Must know FCC regs, AM directional, FM automation, studio maintenance and be familiar with related equipment. Send resume—Personnel Department, Palmer Communications Centre, 333 8th Street South, Naples, FL 33940. WE ARE AN EQUAL OPPORTUNITY EMPLOYER. 6-83-11

Technical Maintenance — Maintenance Engineers —

Group W Satellite Communications, a division of Westinghouse Broadcasting and Cable, is a dynamic leader in the cable industry. Our Operations and Technical Services Department currently has openings for Technical Maintenance Engineers in our new facility. Experience with Sony and Ampex state-of-the-art equipment, as well as a strong broadcast maintenance background is a must. We offer competitive starting salaries and generous benefits. For more information, send resume to: Manager of Technical Maintenance, GROUP W Satellite Communications, 41 Harbor Plaza Drive, Stamford, CT 06904. An Equal Opportunity Employer M/F

CHIEF ENGINEER FOR MAJOR MARKET AM directional station. KRBE, Houston, Texas is seeking Chief Engineer strong in AM directional experience capable of maintaining an eleven tower array; efficient management of personnel, and ability to communicate well with other Department Heads. Send resume to Dave Ping, KRBE Radio, 9801 Westheimer, Suite 700, Houston, Texas 77042; or call (713) 266-1111. 6-83-11

CHIEF ENGINEER. GROUP OWNED VHF CBS AFFILIATE in the sunny south. Our current chief has decided to retire after 35 years with the company. We offer an attractive facility, stability, good pay and benefits. We require an administrator who can plan and supervise. We would prefer a degree or suitable experience. Send resume and requirements to Don McGouirk, WMAZ-TV, P.O. Box 5008, Macon, GA 31213. We are an Equal Opportunity Employer. 6-83-11

SMALL MIDWEST MARKET, network TV Station seeks a maintenance engineer. Must have a minimum 2 years technical school and TV Station experience. Will assist Chief with 40 years experience. Career opportunity. EEO Station. Dept. 591, Broadcast Engineering, P.O. Box 12901, Overland Park, Kansas 66212. 6-83-2t

TV/RADIO MAINTENANCE ENGINEERING SUPERVISOR needed in nation's fastest growing Christian college. Applicant must have transmitter and ENG maintenance experience, hold FCC General Class license and have 3 years current broadcast maintenance experience. If you desire challenging work in a Christian environment, send resume to Manager, Electronic Services Department, Liberty Baptist College, Lynchburg, VA 24506. 6-83-11

VIDEO ENGINEER AT ENTRY LEVEL or a little more. Post production operation for large Texas farm organization. Excellent benefits, Monday through Friday. Must be willing to learn the production side as well. 14 to 15 K to start. Contact Gene Hall at 817-772-3030. 6-83-11

REGIONAL SALES ENGINEER—Ampere Electronics Corp., a North American Philips Co., has an opening in our Dallas, TX district office for a camera tube sales engineer to call on end user accounts. This position requires a person with a strong technical background in the television camera field. To be considered you must be willing to travel a minimum of 50%. Excellent base salary, incentive program, company car and benefit package. Please call John Hertia, 513/278-7351 for an interview. 6-83-11

VIDEO MAINTENANCE ENGINEER. If you are an experienced qualified Video Maintenance Engineer, we would like to hear from you. We offer up to 32K for a 35 hour week for the right person. Excellent benefits and working conditions. Send resume to: Richard Pfister, Chief Engineer, WTTG, Metromedia, Inc., 5151 Wisconsin Ave., NW, Washington, DC 20016 E.O.E. 6-83-11

ENGINEERING-ASSISTANT TO CHIEF ENGINEER—Telecommunications Division at MCCC needs Assistant Chief Engineer. Must hold FCC 1st or General License. SBE certification a plus. Work with state-of-the-art radio, TV and satellite facilities at West Windsor campus including public radio station WWFM, MCCC cable TV network, closed circuit TV and radio/TV academic programs. Requires maintenance and/or construction experience in radio and/or TV. BA or AA degree desirable. Salary in mid teens. Excellent fringe benefits. Forward resume and salary requirements to: MERCER COUNTY COMMUNITY COLLEGE, Personnel Services, Dept. GS, P.O. Box B, Trenton, NJ 08690. Equal Opportunity/Affirmative Action Employer. 6-83-11

ENGINEERING SUPERVISOR

For transmitter and studio maintenance. 5 years experience. Openings in Dallas and Houston. Join fast growing chain. You will be given authority and support to build a successful operation. \$30,000. Call or write Ed Reid, Director of Engineering, 1712 E. Randol Mill Rd., Arlington, TX 76011. (817) 265-2100.

BENCH & FIELD TECHS

Experience only 1/2", 3/4" and 1" computer assisted editing, color cameras.

Please send resume including salary history and requirements to the attention of Bob Hemenway, Lake Systems Corporation, P.O. Box 65, Newton, MA 02160

An Equal Opportunity Employer

LAKE
LAKE SYSTEMS
CORPORATION



Grass Valley Group

Engineering & Management Positions

The Grass Valley Group is the acknowledged worldwide leader in the design, manufacture, and sales of sophisticated electronic equipment used in the TV broadcast industry. For 24 years we've attracted top professionals committed to technical superiority and to living in the rural beauty of the Sierra Nevada foothills.

Current openings exist for sales applications engineers and service engineers in Los Angeles and New York. Project managers, an engineering manager, a manufacturing manager, manufacturing engineering manager and analog video design engineers are also needed.

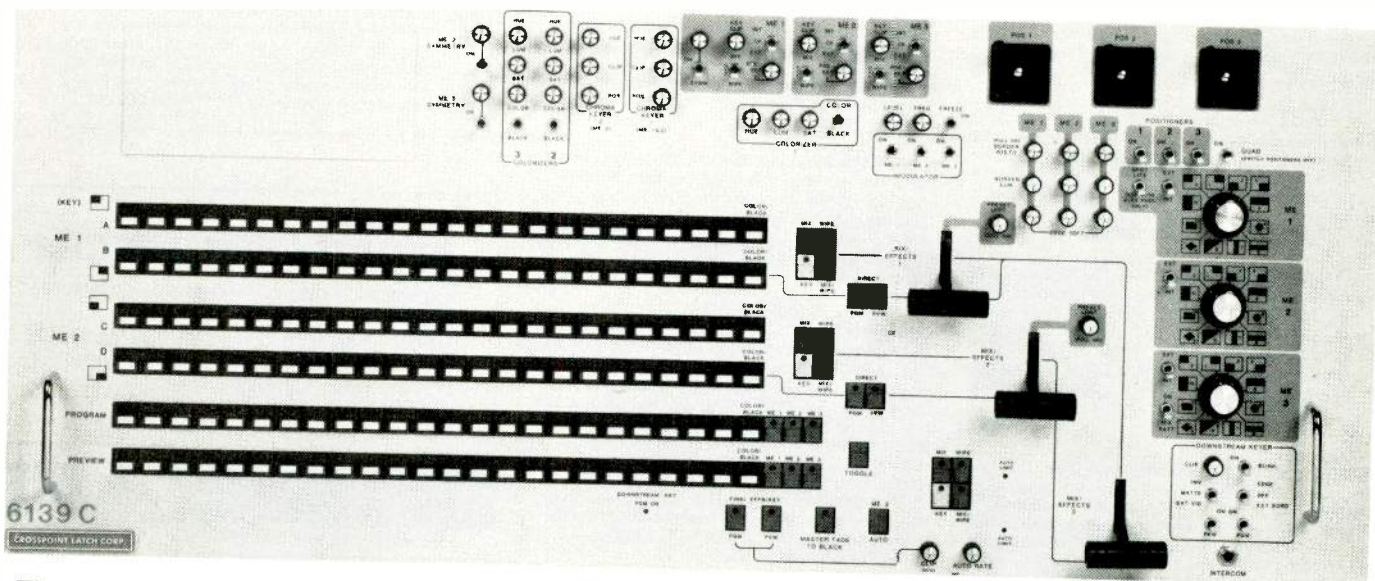
A BSEE or equivalent is required, with proven management experience in the applicable positions.

Qualified candidates may submit their resume to: Sylvia Shelton, The Grass Valley Group, Inc., Dept. AA30, P.O. Box 1114, Grass Valley, CA 95945. An equal opportunity employer, M/F/H/V.

A TEKTRONIX COMPANY

6139 SUPERB QUALITY

THE PRINCIPAL
FEATURE



The quality of the 6139 is superb. You could not ask for more. Imagine you had to select a switcher for one feature and one feature alone - quality. If you overlooked the tremendous production power of the 6139, overlooked its ability to be controlled from most editors, overlooked its modular "state of the art" design, you would still end up selecting the 6139, based on that one single feature - its high quality performance.

8, 16, OR 24 INPUTS LED OR ILLUMINATED PUSHBUTTONS

PRODUCTION

- THREE MIX EFFECTS SYSTEMS
- FIVE LEVELS OF KEYS
- QUAD SPLIT
- DOWNSTREAM KEYS, WITH EDGE, MATTE AND INSERT
- DOWNSTREAM FADE TO BLACK
- TWO CHROMA KEYS, RGB OR ENCODED
- THREE COLORIZERS
- MASTER FADE TO BLACK
- AUTOMATIC AND MANUAL TRANSITIONS
- MIX PATTERN MODE (DISSOLVE PATTERNS)
- TOGGLE

THE ELECTRONICS

New state of the art design. Multiple back-porch feedback clamps provide a very high degree of stability. Modular construction, with standardized function oriented plug-in boards facilitate maintenance, and field replacement. We recognize the fact that no matter how reliable a unit is, there is always the possibility that a component can fail. The 6139 has been designed with back-up paths, to reduce the possibility of complete shut down. For instance the PREVIEW system is an exact duplicate of PROGRAM. Several boards are interchangeable, and may be swapped to at least provide essential functions in an emergency.

POST PRODUCTION

THE 6139 INTERFACES WITH MOST EDITORS. It will accept commands directly from their keyboards, when used in conjunction with the CROSSPOINT LATCH 6403 Editor Switcher Interface, or the 7200 AUTO DRIVE. These are not mere "INTERFACES", nor are they merely "PROGRAMMABLE". They are human engineered devices SPECIFICALLY designed for use in editing. Consider just one point; they allow the operator to set the START and FINISH points of a transition precisely, (in order to obtain FRAME ACCURATE edits) while at the same time leaving the editor full control of the rest of the switcher functions; and the ability to insert and control these other functions from the edit list.

BLANKING PROCESSOR eliminates color shift at the end of a mix or wipe

- FIVE LEVELS OF KEYS**
- ROTARY AND MATRIX WIPE OPTION**
- AVAILABLE WITH ILLUMINATED PUSH BUTTONS**
- INTERFACES WITH MOST EDITORS**
- AUTO DRIVE™ OPTION (COMPUTER CONTROL)**
- TWO CHROMA KEYS (RGB OR ENCODED)**
- UNIQUE "TEST" MODE TO FACILITATE SYSTEM TIMING**

8 Inputs **\$14,500**. All options **\$43,370**
All options, illuminated push buttons **\$61,370**

CROSSPOINT LATCH CORP.

95 PROGRESS ST. • UNION, N.J. 07083
(201) 688-1510 • Telex 181160

MRI Systems' new 24-channel stereo audio console stands alone in quality and performance...



Total control of mixing and monitoring, in stereo, over 24 channels, is not easy at the best of times. Now however, MRI SYSTEMS' new SS8824, stands alone in its ability to supply that total control.

The SS8824 is loaded with standard features that provide ease of operation and quality of reproduction. Items like two individually assignable stereo buses, plus an auxiliary stereo bus, with individual level and assignment, electronic cue switching and improved

on/off switching.

The MRI SYSTEMS' SS3824 also has an extensive list of prewired, plug-in options and is compatible with a wide range of MRI SYSTEMS' auxiliary audio equipment.

All this gives you quality audio, simplicity of use and flexibility for best possible component matching.

Let us show all the reasons why the new MRI SYSTEMS' SS8824 stands alone in quality audio reproduction. Call us today.

Totally engineered audio and video systems.

INTRODUCING THE MODULAR

SS8824



MRI SYSTEMS LTD.
Toronto (416) 751-6262

MRI SYSTEMS INC.
Chicago (312) 640-7077

This ultra-sophisticated Ward-Beck audio system for the Post Production Control Room at Group W's, KPIX, San Francisco, is the third of a series operating at their new station facilities. Using top of the line Ward-Beck Series 460 modular components, its features include an integral routing switcher with alpha-numeric dot-matrix displays to indicate the status of the 48-input/24-output configuration.

This particular unit is employed on program post-production for Group W's highly successful, nationally syndicated *PM Magazine*.



First by Design.

Ward-Beck Systems Ltd.
841 Progress Avenue, Scarborough,
Ontario, Canada M1H 2X4.
Tel: (416) 438-6550.
Tlx: 065-25399.

