High marks in everything

The ratings are in on our ST Series AM/FM Broadcast Consoles—and they're number one. They rate high for versatility, reliability and overall excellence.

But we know that even the finest products can be made better—that's why we've introduced the new ST Series II. These new consoles incorporate even more features to insure greater capability and performance.

The new ST consoles offer a series of modular frames that can be equipped to meet your specific needs. A wide range of input, output and signal processing modules is available to cover your present requirements and provide for future expansion.

At ADM we're never content to stand still—the new ST Series II consoles are impressive proof of that. We're so confident of their excellence that they're backed by an exclusive 5-year warranty.

Contact us now! ADM Technology, Inc.—The Audio Company—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

Main Office
and
East Coast Sales
(313) 524-2100

Rocky Mountain Sales
(801) 486-8822
<table>
<thead>
<tr>
<th>SEPTEMBER</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
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<td><strong>Satellite Applications Review</strong></td>
<td><strong>High-Definition Television</strong></td>
<td><strong>The Automated Newsroom</strong></td>
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<td>Energy-Efficient Facility Design *</td>
<td>Resurrecting AM Stereo</td>
<td><strong>Computer Business Systems</strong></td>
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<td><strong>RTNDAR</strong> Preview</td>
<td>Fall SMPTE Preview</td>
<td><strong>Radio Automation Update</strong></td>
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<td><strong>MC</strong> Grow! Ad Performance Study</td>
<td>Improving TV Audio</td>
<td><strong>AES, New York</strong></td>
</tr>
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</table>

**BONUS DISTRIBUTION**
- * Supplemental mailing to all current CP Holders in the U.S.
- **RTNDAR**, Las Vegas, September 30 - October 2

**BONUS DISTRIBUTION**
- Fall SMPTE, New York, November 7-12
- AES, New York

**AD CLOSING DATE**
- AUGUST 16
- SEPTEMBER 17
- OCTOBER 15

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The ideal advertising medium combines Readership with Buying Activity.

OVERALL RESULTS
McGraw-Hill Advertising Performance Study
February, 1982 Edition

**AVERAGE SCORES — SIZE AND COLOR**

<table>
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<tr>
<th>Advertiser</th>
<th>Number of Ads</th>
<th>Attracted Attention</th>
<th>Began To Read</th>
<th>Read Half or More</th>
<th>Planned or Took 1 or More Actions for Future Needs</th>
<th>Evaluated Ad Info for Future Needs</th>
<th>Filed Ad</th>
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**AVERAGE SCORES — PRODUCT GROUPS**

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Your advertising in

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enjoys extraordinary readership and recall, and generates specific buying activity.

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Prairie Village, KS 66208
(913) 642-6611

www.americanradiohistory.com
Why the Networks’ TBC Is Getting Popular in Smaller Markets.

In less than five years, our VW series has become the broadcast industry's basis for comparison in time base correction and frame synchronization. The ADDA VW is standard equipment for 3 of the 4 networks, as well as O and O’s.

The affiliates and independents have been watching, listening and making up their minds. More and more of them, even in the medium and smaller markets, are ordering the VW-1 (for ¾” VTR’s) and the VW-2 (for ¾” and 1 ¼” VTR’s).

The way we see it, the reasons for this trend are clear:

- Superior digital signal processing
- Unequaled reliability
- Infinite correction window
- Full-bandwidth electronic freeze frame
- Frame synchronization (The VW can take raw external feeds and let you switch them synchronously with studio material)
- Meets RS-170A

Of course, the VW costs more than some of its competitors. The ultimate usually does. But the difference buys you a great deal more; and the difference may well be less than you think, because prices are lower now.

The best way to understand the difference between the VW and everything else is to watch a side-by-side comparison on your own premises. Call us for a demo. We’ll be happy to show you why the VW is a TBC for everybody’s market.

Affordable Excellence

ADDACORPORATION
1671 Dell Avenue
Campbell, California 95008
(408) 379-1500
Fine Tuner. $950

Barco has a reputation for quality products. And in the AVD-33 video tuner, which permits television monitors to receive off-the-air signals, Barco quality looks better than ever.

In the AVD-33, Barco engineers have built a tuner you can rely on featuring:

- advanced digital search tuning
- 20-channel memory
- 2 video and audio outputs
- all channels, including mid and upper band
- bi-directional sequential channel selection

A fine tuner at a fine price. Barco's AVD-33.

Available from Elector, exclusive U.S. distributor of Barco communications products.
Get the Edge on price, performance and features

CMX honeS THE EDGE with the addition of Internal Memory, Re-edit and List Ripple to its six-point advantage.

When we at CMX set out to build an advanced medium-scale editing system we took a look at the best competition had to offer. We then applied our 11 years of leadership in building editing systems to produce THE EDGE™, a system that is superior in every respect. Check these six key points and we think you'll agree.

1. The Human EDGE. Veteran editors and beginners alike quickly adapt to THE EDGE because its SMART KEYSTM and layered screens take you easily through the editing process as you direct it. You set your own pace. Frame accurate time code or pulse count editing lets you concentrate on creativity and increase your productivity dramatically.

2. The Technical EDGE. Simple plug-in modularity makes THE EDGE expandable. Going from two to three machines? Add a card. Expanding to a floppy disk? Add a card. Forget about stringing out black boxes. Also, servicing has been human-engineered with built-in diagnostics that trouble shoot on the spot. Information on the screen will tell you the story. No more long waits for service calls.

3. The CMX EDGE. With the internal event memory, which features re-editing, list rippling, event deletion and list scrolling, you can essentially do your off-line editing with THE EDGE and build a CMX Edit Decision List. And this can all be done on a cuts-only system, if desired. Through the availability of a variety of optional techniques, such as using THE EDGE audio/video dissolve or auto-transition control of a production switcher, you can complete your final auto-assembly on THE EDGE. If it's a highly sophisticated finished production that requires numerous special effects, you may wish to complete it from THE EDGE EDL on a 340X system. It's this flexibility of choices that gives you the most cost effective solution to your editing needs.

4. The VTR EDGE. The EDGE speaks very quietly to VTR's and they respond gently. Only CMX knows how to engineer smooth-as-silk VTR interfaces. And that includes 1-inch, ¾-inch, and ½-inch machines from the major manufacturers. Mix and match them on your system.

5. The Protective EDGE. Last year's EDGE becomes this year's with a quick, easy update to incorporate any new features. It's just like our 340X. It's built to grow with you. It's protection against obsolescence.

6. The Dollar EDGE. The most important consideration in computing the true cost of an editing system is what your bottom line is going to be a few years hence. By then you'll have expanded your system into its final configuration. You can get THE EDGE in a two-machine system for $13,250. The complete system, a fully-featured three machine system including A/V dissolver and floppy disk, costs about $23,400. That's many thousands less than competitors. That's the most you'll ever spend.

Call or write us for more information. It costs less to own or lease the very best—and to get the EDGE.

Orrox Corporation 3303 Scott Blvd., Santa Clara, CA 95050 (408) 948-2000 Telex 910-338-0554

*U.S. Domestic TM Orrox Corporation

Circle (3) on Action Card

www.americanradiohistory.com
THE DIRECTORY

38 General Index
An index of all categories in The Directory. The index will direct you to the page where you can find the complete listing of companies that manufacture products in that category. Major categories are listed alphabetically, and subheadings of major categories also are arranged alphabetically. For example, test equipment is divided into three major categories: generators; measuring instruments; and measuring/monitoring meters. Subcategories include everything from stereo generators and acoustic analyzers to antenna base meters.

Advertisers in this issue are highlighted in the General Index under the categories which correspond to the products featured in their ads. There is also a reference to the page on which the ad is located.

46 Product Directory
A comprehensive and up-to-date listing of all major broadcast equipment and service categories, including U.S., Canadian, and foreign manufacturers who responded to our requests for directory information. With few exceptions, most manufacturers re-verified their listings within the past four months, making The Directory as current as possible.

163 Suppliers Showcase
A special suppliers advertising section designed to put you in direct contact with equipment suppliers around the country.

114 Manufacturers
Mailing addresses for companies listed in the equipment and services categories are included along with company sales contacts. Several new additions have been made for companies in the U.S., Canada, and from manufacturers around the world. Regional and international sales offices are included for companies advertising in this issue.

168 Dealers and Distributors
A comprehensive guide to dealers, distributors, independent representatives, and importers/exporters. These listings are arranged alphabetically by state. This section includes complete mailing addresses, telephone numbers, and sales contacts. The product lines carried are also listed with each entry.

Feature

190 NAB '82 Unveils A Record Number of New Products
Part 2 of a two-part review of the hottest products at this year's NAB convention.

Departments

8 On-the-Air
With cable continuing to gain momentum at the expense of the broadcast industry, broadcasters are renewing the fight over copyright protection while, at the same, trying to plan strategies to capitalize on the new technologies.

10 World Update
The Society of Broadcast Engineers has taken the lead in efforts to establish an effective certification procedure for broadcast engineers.

26 Newsmakers
205 SBE Monthly Log
206 Advertisers Index

Cover—Cover design by Mary Christoph.
NEW!

THE 1680 SERIES

Built on the solid reputation of the 1600 Series for reliability and ease of operation
...with nearly double the production power!

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SONY INTRODUCES
THE BETACAM SYSTEM

When we designed the innovative Sony half-inch ENG system, we didn't do it halfway.

So our Betacam® camera/recorder is 30% lighter than its nearest competitor. And more than 40% smaller. A big difference when you're rushing to cover a story.

But not only have we trimmed pounds and inches, we've saved you dollars and cents. In fact, the entire system is so competitively priced, you might want to buy two of our camera/recorders rather than one of the heavier, bulkier units around. Then, obviously, you'll be able to cover twice as much news.

The Betacam camera section employs a High-Band SMF Trinicon® single-tube pickup system. As a result, it has a dramatically improved picture, with better resolution and more sensitivity than conventional one-tube cameras.

And since it has 60% fewer components than three-tube cameras, the cost of maintaining it is low.
SAVE MONEY, AND PICTURES.

(Of course, there will always be applications where you prefer a three-tube camera. So you'll be delighted to know that Sony also offers a three-tube Betacam.)

The Betacam recorder also provides superior performance, with better picture clarity and a higher signal-to-noise ratio, even when compared to ¾" machines. It records for 20 minutes on a Beta L-500 cassette, and runs for a full hour on the low-power, rechargeable battery contained in the unit. And both cassettes and batteries are inexpensive and readily available.

A separate playback unit completes the Betacam system. It's the only interface you need for existing post-production equipment. So nothing is made obsolete.

Naturally, there are many other refinements and innovations. So to request more information, call 1-800-526-0890. Or in New Jersey, (201) 256-4512, ext. B1.

Sony Betacam. Like so many other Sony Broadcast products, it seems revolutionary today. And will be indispensable tomorrow.

Sony® Broadcast
Sony is a registered trademark of Sony Corp.

Circle (5) on Action Card
ON-THE-AIR
RON MERRELL

NAB seeks review of cable copy royalties

The subject of cable copy royalty fees will be argued again and again in this decade. Perhaps the day will even come when programming and event coverage is so competitive that fairness will at last prevail.

For now, the NAB has asked the full U.S. Court of Appeals for the District of Columbia Circuit to change a recent appellate decision on cable copyright royalty fees. Back in April, a three-judge panel upheld the Copyright Royalty Tribunal's decision concerning 1978 fees, which awarded 3.25 percent to commercial television and nothing to commercial radio.

NAB said the court's opinion recognized broadcasters' copyright interest, but manages "to take away the kernel, and leave them only the husk." The court agreed with three critical arguments to the Tribunal: (1) that broadcasters hold copyrights to sports broadcasts; (2) that broadcasters hold copyrights to broadcast day compilations (the arrangement of the various programs of a broadcast day in a particular order); and (3) that broadcasters who own exclusive licenses for certain syndicated programs hold the copyright to the extent of the licenses.

The NAB noted that the court remanded to the Tribunal for consideration of National Public Radio's entitlement to 0.25 percent. "It is anomalous and incorrect to characterize NAB's entitlement to royalties for sports telecasts and compilations as de minimis (minimal), when an award of only one-quarter of one percentage point is already the subject of a remand."

The royalty situation has gone a long way toward erasing the battle lines between cable and commercial TV. But when the money musk of cable out pulls the networks on program and event buys, a royalty re-think will be in order.

Meanwhile, the competition will improve the product of both, beckoning before direct broadcast satellites elbow in for their piece of the pie.

Will DBS sell?

Most U.S. households would be interested in having a satellite dish or antenna to receive multi-channel television programs regularly. That's according to a national survey conducted last October by Frank N. Magid Associates, an Iowa research firm.

The dish antennas would receive TV programs beamed nationwide via direct broadcast satellites (DBS). If the dish cost $300, the survey found that 46 percent of the sample would purchase one: 26 percent would be very likely and another 20 percent would be somewhat likely to spend the money.

These public attitude studies were conducted for United States Satellite Broadcasting Company (USSB) of St. Paul, Minnesota, a company affiliated with Hubbard Broadcasting. USBB is one of a number of applicants to the FCC for a DBS license. USBB proposes to beam free (advertiser-supported) high-quality programming from two satellites to homes equipped with receiver dishes throughout the country. In addition, USBB would feed its programming to a network of independent member television stations.

The study of the national market potential of a 30-channel DBS system showed that 52 percent who already have cable and 61 percent who do not have cable are interested in a home satellite dish for DBS.

A new information age

"We are indeed entering a new age of information in this decade, one that may prove to be as significant as those in which motion pictures, recorded music, radio, and television entered our lives." So commented James H. Rosenfield, executive vice president for the CBS Broadcast Group, when he addressed a Financial Analysts Federation in March. "CBS is positioning itself," said Rosenfield, "to capitalize on the opportunities created by the development of technologies creating new electronic pathways to the home. It is also committed to make broadcasting, and particularly, network broadcasting, the centerpiece of our efforts to maintain our position as the nation's leading supplier of entertainment and information. "Yet these clear goals that we have established, and clear commitments we have maintained, have nonetheless not always been clearly understood. Some have misinterpreted our wide-ranging development efforts in the new media as signaling some doubts about the future of network broadcasting. Nothing could be further off the mark. "Cable television is one of the fastest-growing of these new pathways, and it is a business in which CBS is committed to play a larger role in its function as the premier provider of entertainment and information. The CBS/Fox joint venture we recently announced will help us play that role in both subscriber-supported and advertiser-supported cable. Similarly, there will be more new pathways for information and data, through broadcast means and telephone networks. That is why we are working to develop teletext, which we are testing in Los Angeles, and videotex, which we will be testing in a joint effort with AT&T in New Jersey.

"Far ahead in the future, we see the emergence of direct broadcast satellite and high-definition TV, and we are taking innovative steps to participate in their development."

Summing up, Rosenfield said, "Yet with all these new pathways, there will only be one way to reach virtually every American household at the same time with the same message. There will be only one conduit available to the advertiser that will be able to reach into all the communities of the nation, reach all ages and income groups with the impact of sight, sound, and motion.... This, of course, is the television network and its affiliated stations.

It's only a matter of time

Already, cable TV vertical-interest programming is getting more sets turned on. But cable is still in search of its prime-time leader, even though it's not necessary. Cable and commercial TV do compete for the same dollars now; however, in the future cable's vertical-interest programming is likely to siphon more from newspapers and magazines than from commercial TV. Together, they will give the viewer even more variety than we have now. Only a group of DBS/broadcast networks could derail the momentum of the current broadcast/cable express.

BROADCAST COMMUNICATIONS/JUNE 1982
Enter a new dimension
3M
Quality Videotapes.
Midwest
Price and Delivery.

Together, they bring
A Whole New Dimension of Professionalism and Dependability to Video Production. Midwest Corporation is the nation's largest single-source supplier of video production equipment and supplies, with more than 10,000 different items in stock, ready for immediate delivery.

We stock the complete line of Scotch® Brand Videotapes from 3M. And we can get them to you...FAST!

If you need technical assistance in selecting the type of 3M videotape that's best for you, call on the Midwest professionals. We have more than 20 years of experience in supplying quality Scotch® Videotapes to every phase of the recording industry.

Best of all, Midwest's prices are competitive with anyone in the field. So you not only get the best quality and service in the industry, you get the best deal, too.

3M and Midwest. Together, we take you to a new dimension of quality and service.

Take a trip to a new dimension. For complete information on Midwest's full line of equipment and supplies, call toll-free today:

1-800-543-1584

Midwest Corporation
A UNR Company
Authorized Distributor of 3M Magnetic Products

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Nashville, TN 615-331-5791
Lexington, KY 606-277-4994
Charleston, WV 304-722-2921
Virginia Beach, VA 703-577-6403
Washington, DC 804-464-6256
Charlotte, NC 704-399-6336
Miami, FL 305-599-5355

Circle (8) on Action Card
WORLD UPDATE

SBE leads certification effort

The Society of Broadcast Engineers (SBE), meeting in Dallas in conjunction with the National Association of Broadcasters, has pledged a continuing leadership involvement in certification, including the development of an entry-level examination and a new thrust in the area of frequency coordination.

Jim Wulliman, national SBE certification chairman, moderated an NAB panel discussion on certification and reported that more than 1,750 broadcast engineers have been certified under the SBE program. The SBE certification program has completed its first five-year period of operation and is now processing renewals from the original group of senior broadcast engineers who have been certified.

The recent FCC action, dropping the Radiotelephone First Class license, has prompted broadcasters and broadcast associations to suggest that the SBE reconsider an entry-level certification program, said Wulliman.

"The entry-level certification program, as proposed by the SBE Certification Committee, will consist of an entry-level exam containing questions on (1) electronic fundamentals, (2) FCC rules pertaining to operating tolerances, and (3) safety.

Wulliman said that several hundred questions will be stored in a computer, which will randomly select 50 questions for each exam. Each exam will be different.

The certificate holder will be recognized as a broadcast technologist.

"It is the desire of the committee to hold the fees down to about the present $30 level if outside support can be obtained to meet the increased budget requirements of the expanded program," said Wulliman.

The Certification Committee has developed a five-year budget plan which will require support from NAB and/or other broadcast organizations to meet the start-up expenses of the expanded program.

"Our program will seek support for one half of the first year expenses, decreasing each year until the program is self-supporting," he said, adding that the SBE board voted to subsidize the program until December 31, 1982, and set an introductory fee of $10 for the broadcast technologist certificate only.

"The SBE Certification Program offers the best method of identifying those broadcast engineers who are truly qualified, and also pointing the way for those who are entering the field, through the progressive levels of realistic certification from broadcast technologist through senior broadcast engineer," he noted.

Richard Rudman, an SBE member and chairman of the Southern California Frequency Coordinating Committee, was appointed by SBE president Ron Arendall to chair a newly-created SBE National Frequency Coordinating Committee.

Rudman sees the SBE role in frequency coordination as "one of an informational conduit.

"I believe that it can become a useful tool for the SBE to market itself," said Rudman, who envisions SBE chapters as possibly becoming publishers of the data base for frequency coordination.

"By getting involved in frequency coordination, the individual SBE chapters will own a data base and mailing list," said Rudman.

Rudman's Southern California frequency coordinating effort, which has gained much industry recognition, now has moved into the area of television/microwave coordination.

Rudman termed frequency coordinating as "enlightened peer pressure" and continued that its existence is to "raise awareness level, but we're not policemen.

His warning is "don't copy" the Southern California effort. Every area of the country has its varied problems and "you must mold it to your area,"

Announcement was made at the annual SBE meeting of the re-election of Ron Arendall of Indianapolis, Ind., as president of SBE for the 1982-83 term. Arendall is manager of engineering at WTHR-TV in Indianapolis.

Other officers gaining re-election include Doyle Thompson of Atlanta, Ga., director of engineering of The Weather Channel, vice president; Brad Dick of Lawrene, Kan., director of engineering at KANU/KFKU, secretary; and Ed Karl of Manchester, Mo., engineer in charge of KMOX-TV in St. Louis, treasurer.

Board members re-elected to their positions include Len Ballard of Tulsa, Okla., director of engineering for Swanson Broadcasting; Ray Benedict of Dayton, Ohio, engineering manager of WHIO-TV; Hugh Cleland of Liverpool, N.Y., chief engineer, WCNY-TV/FM in Syracuse; and Roger Johnson of Phoenix, Ariz., chief engineer of KYX Radio.

New board members elected to serve for the 1982-83 term are Robert Klein of Lexington, Ken., director of engineering at Kentucky Educational Television; and Jack McKain of Kansas City.

Continued on page 12

Entry-level certification added

An entry level of certification has been added to the Society of Broadcast Engineers' Certification Program. This class of certification is called Broadcast Technologist and is valid for a period of five years. It can be obtained in either of two ways:

- By holders of a valid FCC First Class Operator license who meet the service requirement; or
- By achieving a passing grade on the required proficiency examination. There is no experience requirement to be eligible for the Broadcast Technologist examination.

The SBE national office is now accepting applications for the Broadcast Technologist certification. For a copy of the application and Program of Certification booklet, write to the Certification Secretary, Society of Broadcast Engineers, P.O. Box 50844, Indianapolis, IN 46250.

SBE is still receiving requests for the recertification material from the engineers whose certification expired January 1, 1982. Some of these engineers stated they were not aware that their certification had expired.

In order to be fair to everyone, SBE will extend the deadline for applying for Recertification until December 31, 1982. Anyone who has not applied by that date, will be deleted from the certification records in the national office.
TV test equipment from the inventors of the Plumbicon tube.

At long last a new, reliable source of TV test equipment. One that offers fast, predictable delivery. One with a name all the world trusts—Philips. Four quick examples:

**PM5565 Waveform Monitor**
Enjoy the luxury of examining one line and one field at a time. On top of this, there's a convenient front probe input so you can use the monitor as a troubleshooting oscilloscope.

**PM5567 Vectorscope**
If you want more accurate decoding and the ability to have an external reference from composite video signals, choose our vectorscope.

Both waveform monitor and vectorscope mount side by side, fit all existing hardware and use less power than the competition.

**PM5539 Color Analyzer**
Take it on a quick trip through your studio or control room and adjust all monitors to the same color temperature in a matter of minutes.

With four different memories, there's no problem in quickly calibrating four different phosphors.

Variable full-scale, from less than set up to more than reference white, allows measurement of color tracking as a function of APL.

**PM5534 Color Pattern Generator**
Our universal pattern contains all the signals needed to verify overall system operation—directly from the picture. No wonder virtually every set manufacturer uses our pattern for their TV set alignment.

Of course our TV test equipment line doesn't end here. Today Philips offers a wide range of equipment including sync and pattern generators, VITS generators and analyzers, and TV modulators and demodulators.

For nationwide sales and service information call 800-631-7172, except in Hawaii, Alaska and New Jersey. In New Jersey call collect (201) 529-3800, or contact Philips Test and Measuring Instruments, Inc., 85 McKee Drive, Mahwah, New Jersey 07430.

Philips, of course.

PHILIPS Test & Measuring Instruments

Circle (7) on Action Card
City, Mo., director of engineering at KCMO-TV/AM-FM.

Roger Johnson, chairman of the Chapter Liaison Committee, urged the formation of a committee of past presidents to chart a five- or 10-year plan for the SBE.

“We have been asked to look at the activity of the Society and come up with a five-year plan,” said Bob Flanders, a past president, who added that the committee hopes to offer the officers of the SBE a “path to go down” similar to a five-year business plan.

The committee has already begun its work; it is hoped that the plan will be drafted in time for the fall board meeting. Flanders, Jim Wulliman, Jim Hurley, Bob Wehrman, Bob Jones, and Lou Wetzel will serve on the committee.

Johnson also announced the establishment of two national awards to be announced at the 1983 convention. Awards will be given for “best membership growth” and “best newsletter, judged on both content and form.”

A highlight of the annual SBE membership meeting was the presentation of a surprise award to Jim Wulliman for his leadership, direction, and continuing efforts in the area of certification.

Wallace E. Johnson of Washington, D.C., an SBE member and current executive director of ABES, was presented a Fellow Award. A special award to John Battison for his early activities as chairman of the steering committee and first president of the SBE, was also announced.

**Canadian show set for Toronto**

The largest gathering in the field of Canadian broadcasting will meet at the Toronto Sheraton Centre Hotel, November 13-16, 1982. Sponsored jointly by the Canadian Association of Broadcasters (CAB), Central Canada Broadcast Engineers (CCBE), and the Central Canada Broadcasters’ Association (CCBA), “Perspectives '83” (the theme of the convention) will focus on the business and technological future of radio and television. In addition to presentations and workshops, convention delegates will witness Canada’s first National Electronic Hardware and Software Trade Exhibition.

To commemorate this event, the CAB will launch the first edition of a new publication, the CAB Yearbook and Directory. Theorists and practitioners representing the domestic and international broadcast business community, technical experts, and government legislators will contribute to the editorial content.

A section of this bilingual periodical will include a listing of CAB members and associated industries, with selected photographs of personnel featured.

For further information, contact Dave Hamilton, (416) 446-5546.

**ABC plans new pay TV service**

American Broadcasting Companies Inc. (ABC) has announced plans to provide a national program distribution service — The Home View Network (HVN) — that would utilize a unique combination of broadcast and video recording technology to deliver quality programming, including motion pictures, on a subscription basis to the viewing public.

Through the ABC-owned and participating affiliated stations of the ABC Television Network, HVN will transmit programming in scrambled form during overnight hours for automatic videocassette recording in HVN homes. The scrambled tape would then be played back at the viewer’s convenience through a decoder developed by Sony, which will be compatible with virtually all VCRs.

Applications were made to the Federal Communications Commission by ABC for expedited authorization to offer the service through its five owned television stations and those affiliated stations who subsequently elect to participate in HVN. Sony also filed an application for FCC approval of its encoding and decoding system for use in conjunction with the new service.

HVN will offer approximately eight feature-length movies new to the service each month, as well as cultural, theatrical, children’s, educational, and other special-interest programming.

The Home View Network will transmit the program service during early morning hours when most stations do not offer programming (2:00 a.m.—6:00 a.m. in the Eastern and Pacific Time Zones and 1:00 a.m.—5:00 a.m. in the Central Mountain Time Zones). HVN will broadcast at least five nights a week and will program up to three hours a night, depending on the length of the programs.

According to ABC, the Home View Network will provide a new convenient alternative for consumers, one that will use an already existing national distribution system. Thus, HVN will be able to enter, relatively quickly, many markets not presently served by pay cable, STV or MDS.

Continued on page 14

BROADCAST COMMUNICATIONS/JUNE 1982
MORE THAN A PORTABLE

Acquisition plus studio-type control makes the Ampex VPR-20B your professional portable.

If you need more than just a portable acquisition recorder, choose the improved Ampex VPR-20B. When you go into the field for realism and immediacy, you'll know you've got it. Right the first time with videotape you've already reviewed, edited and played back—on location, ready to air.

It's the VPR-20B's exclusive dual-cue editing that gives it studio-type control in the field. From instant reviews with precise return to the next edit point, to total control when replacing undesired material with mid-segment, color-frame accurate edits. You can now have it all in one easy-to-use portable.

With the VPR-20B you also get top quality audio and video every time. The built-in video confidence and color stabilizer features play the picture back from the tape into the camera viewfinder, or any color monitor, during recording. So you'll know that the picture you see is the one you've got! And, unlike other portables, the VPR-20B has a simple plug-in AC power pack which replaces the battery. You can forget about bulky external power supplies.

Most of all, the VPR-20B is backed by the unique worldwide service and support that Ampex is known for. So before your next field production, find out more from your Ampex representative. Or write Ampex Corporation, Audio-Video Systems Division, 401 Broadway, Redwood City, CA 94063 (415) 367-2011.

AMPEX TOOLS FOR TOMORROW

Ampex Corporation • One of The Signal Companies

Circle (8) on Action Card
ABC Inc. will be responsible for the programming and marketing aspects of HVN. The technical equipment for HVN will be purchased from Sony. This innovative technology will encode the HVN program before transmission, enabling participating ABC affiliated stations to broadcast HVN selections with the same equipment they use for all other network programs. The subscriber needs only a special Sony decoder and any videocassette recorder. The program will be automatically recorded in scrambled form by the subscriber's videocassette recorder and can be played back for viewing only by HVN homes equipped with the special Sony decoder. This unique feature of the HVN system provides maximum security against unwarranted use. Addressability has been built into the Sony decoders for potential pay-per-view usage. HVN is expected to be offered to consumers at a monthly subscription of $19.95 plus an initial installation charge. Homes without videocassette recorders may lease a VCR through HVN for $29.95 per month or may buy one through the service at a cost comparable to the lowest retail price.

The Company will initiate a technical field test of HVN this summer. HVN is scheduled to start in early 1983.

NAB argues for cable legislation

In hearings before the Senate Commerce Subcommittee on Communications, NAB president Vincent T. Wasilewski asked for the “opportunity to compete fairly, equitably, and openly with cable.” The Subcommittee is considering cable legislation sponsored by Senator Barry Goldwater (R-Ariz.).

Wasilewski cited three goals for broadcasters with respect to cable: fair and equitable access to programming; open entry for broadcasters into the cable industry; and deregulation of broadcasting to achieve regulatory parity with cable. “S. 2172 is a positive step toward realization of these goals,” he stated.

“Legislation now pending in the House, H.R. 5949, embodies provisions designed to resolve both the copyright and communications policy issues presented by cable carriage of broadcast signals,” Wasilewski continued, referring to the cable copyright compromise reached by NAB, the National Cable Television Association, and the Motion Picture Association of America.

“We very much want to secure prompt House passage of H.R. 5949 and urge you to act favorably on it when it comes before you,” he added.

Goldwater's bill would prohibit imposition of cable-broadcast cross-ownership restrictions, a provision heartily endorsed by NAB, allowing broadcasters to participate fully in cable.

Wasilewski warned the Subcommittee that their provision allowing the FCC to decide signal carriage issues is clearly inadequate. “By leaving the Commission free rein, it does no more than perpetuate the greatest inirmity of the present scheme—uncertainty,” he told them. Instead, Wasilewski urged the subcommittee to refrain from adopting any statutory provisions that might be “inconsistent” with the House cable copyright compromise legislation. “I could not emphasize too strongly the desire of NAB to see such a definitive resolution of the signal carriage issue,” he added.

Continued on page 16
Progress by Design

Videotek's philosophy is to progressively design & refine the quality, function, and reliability of our products, to provide equally aggressive service-after-the-sale.

Videotek's state-of-the-art TSM-5A Waveform Monitor and VSM-5A Vectorscope reflect this on-going commitment, with such innovative features as Internal Gridicule CRT for precise parallax-free signal analysis, and Non-Glare Shields to eliminate distracting ambient light. TSM-5A also includes selectable I/H mode for easy one-line viewing, and 0.5 μs/div. scan rate for the most accurate time-base measurements.

Our popular Studio 12 picture monitor includes, as standard equipment, the features found on monitors costing twice as much:
- A-B Split Screen, Selective H-AFC, High Voltage Regulation, ACC-Defeat, Preset Controls, Pulse Cross, Underscan, External Sync plus more.

In only 7 years, Videotek has become an industry leader. We design and build more sizes and configurations of color monitors than anyone—worldwide! And our 1981 "Distinguished Video Industries Service Award" stands as a testimonial to our commitment to your needs.

Now that's Progress...by Design.
Business Hotline

PHILIPS TEST & MEASURING—Philips Test & Measuring Instruments has established field operations in Plano, Texas, to cover Northern Texas, Oklahoma, and Arkansas. Morris Jones has been given the responsibility to initiate field efforts within this new territory.

AUDIO PLUS VIDEO—Audio Plus Video International recently opened a West Coast international standards conversion facility at 1438 North Gower Street in Hollywood, California. Shellie Yaseen heads the new operation.

WESTERN BROADCAST SYSTEMS—Ross Video has appointed Western Broadcast Systems as its exclusive distributor for Northern California, Oregon, and Washington. WBS, based in Cupertino, California, specializes in video and audio broadcast-quality products. Other products distributed include Leitch Video, MCI/Quarcel, Ampex, and Crown International.

TELEIMAGE—Teleimage has been named the official television production company for the Century IV Celebration, Philadelphia’s 300th anniversary celebration being held throughout 1982. Located in Bala Cynwyd, Pa., Teleimage is one of the largest television production facilities in the Philadelphia area.

EECO—EECO Inc. has written and published a comprehensive booklet explaining the early development and technical operation as well as the latest advances in SMPTE/EBU longitudinal and vertical interval time code. The booklet, entitled SMPTE/EBU Longitudinal and Vertical Interval Time Code, is offered free of charge. For your copy, write to EECO Inc., Video Products Marketing, 1601 E. Chestnut Avenue, Santa Ana, CA 92701; or call (714) 835-6000.

HARRIS BROADCAST PRODUCTS—KTTV-TV, Los Angeles, is upgrading its satellite facilities with Harris equipment valued at more than $825,000. The station currently employs a Harris 9-meter satellite dish for receive service, and has purchased the necessary equipment to add uplink capabilities to that antenna. The Metromedia station has also purchased a new Harris 9-meter uplink system to be used for additional transmit capabilities.

BROADCAST MARKETING ASSOCIATES—Richard Reilly, president of BMA, San Jose, California, has announced the sale of four Dubner Computer Graphic Systems to KOMO-TV, Seattle, Washington; KTVA-TV, Anchorage, Alaska; One Pass Video, San Francisco; and Video Post and Transfer, Dallas. BMA is a distributor of high-technology video and audio equipment with offices in Seattle, Los Angeles, and headquarters offices in San Jose.

CONTINENTAL ELECTRONICS—TheShield of the Egyptian Organization of Broadcasting and Television Federation (OBTF) has been awarded to Continental Electronics Mfg. Co. of Dallas in recognition of Continental's outstanding work and cooperation with OBTF during 1981. The award recognizes Continental's on-site engineering and installation work for two OBTF projects. Continental is a leader in the design and manufacture of high-power radio frequency transmitters and related equipment for communications, radio broadcast, radar, linear accelerator, fusion, and other scientific research applications.

SONY BROADCAST PRODUCTS—Cox Broadcasting Corporation, owner and operator of television stations, Continued on page 20

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The Dream Equalizer: Now Mono Or Stereo

When we introduced our 672A “dream equalizer” in 1979, we had an instant hit. Audio professionals loved its versatility and clean sound. Eight parametric EQ bands (with reciprocal curves) were combined with wide-range tunable 12 dB/octave highpass and lowpass filters. The result: an amazingly powerful and useful machine. A cost-saving one too, because the outputs of both filters are available to perform a full electronic crossover function.

The 672A now has a stereo twin — the new 674A, with all the power of two 672As in a space-saving 5½” rackmount package. Naturally, both equalizers are built to full Orban professional standards. That means industrial-quality construction and components, RFI suppression, a heavy-duty roadworthy chassis, and comprehensive backup support.

For complete information on the popular 672A and the brand new stereo 674A, contact your nearest Orban dealer.

Orban Associates Inc. 645 Bryant St. San Francisco, Ca. 94107 (415) 957-1067

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Continental quality, performance & service offers you a new strength in AM & FM radio broadcast equipment.

NOW! Continental Electronics offers you a new strength in radio broadcast equipment: AM and FM transmitters from 1 kW to 50 kW; transmitter coupling and phasing equipment; antennas, antenna systems and accessories; transmission line and accessories; studio audio equipment; remote studio equipment; STL and transmitter remote control equipment; test and monitoring equipment; 24-hour parts and professional field service for Collins and Continental transmitters.

Since its founding in 1946, Continental Electronics has pioneered many advances in rf transmitter and systems technology at power levels from kilowatts to megawatts; for radio broadcast, communications, radar and scientific research applications. Continental medium and short wave transmitters have achieved a world-wide reputation for quality components and construction; circuit innovations and unique, easy-to-operate designs which produce superior performance.

Call your local Continental sales representative whenever you need product data, information or service. Learn first-hand how we can meet your radio broadcast equipment requirements.

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For the first time, mankind will set foot on a surface other than earth. It's a moment that transcends science and politics. A moment that will be seen and reseen all over the world for as long as mankind exists.

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That's why Scotch® Video Tape was there when the Moon Walk was first recorded. And again when the Space Shuttle Landing was first recorded. And again when the U.S.-Russia Hockey Game was first recorded.

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HISTORY IS RECORDED ON SCOTCH VIDEO TAPE.

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radio stations, and cable systems in 23 states, has ordered approximately $750,000 worth of videotape recording equipment from Sony Broadcast Products Company. Combined with 1981 purchases of Sony equipment, the new order brings the total amount of video equipment Cox has purchased from Sony Broadcast to approximately $2 million.

The latest order slated for 1982 delivery includes 23 Sony BVU-800 U-matic videocassette recorders with built-in editing capability. The order also includes nine BVU-50 portable U-matic recorders; six BVU-110 U-matic recorders; and one BVP-250, two BVP-330s, and three BVP-300 cameras.

LOGICA—Television South West (TSW) is the first commercial television broadcaster in the U.K. to buy the Flair videographics system from Logica. Flair will provide additional facilities to the existing TSW graphics department, and will be used for the production of maps and charts as well as special effects.

EECO INC.—Lake Systems Corporation, with offices in Newton, Mass., and North Haven, Conn., has been appointed distributor for EECO's computer controls for video production. Lake Systems is responsible for distributing EECO equipment in the six New England states.

FILM/VIDEO EQUIPMENT SERVICE CO.—Film/Video Equipment Service Co. of Denver, Colorado, has established a professional optical department to provide expert lens service and repair for all makes of professional cine, ENG/EFP, and studio broadcast lenses, such as Angenieux, Canon, Zeiss, Cooke, Schneider, Fujinon, JVC/Tamron, etc. For more information, contact Ron Cotty at Film/Video, 1875 South Pearl St., Denver, CO 80210; or circle number 328 on the Action Card.

SATCOM TECHNOLOGIES—SatCom Technologies' new 7-meter earth station antenna (model 700CH) has been type accepted by PBS. PBS recently purchased five antennas, which will be used to provide programming via satellite to PBS television broadcasting stations around the country.

ALLEN AVIONICS—Allen Avionics has issued catalog 15V containing the firm's expanded line of video and pulse delay lines, video filters, and equalizers. This catalog introduces a complete rack-mountable series of video delay lines, with the capability of replacing up to 1,450 feet of cable. Delay units are available with slide switches or in strapable versions. Catalogs are available from Allen Avionics, 224 East 2nd Street, Mineola, NY 11501; or phone (516) 248-8080.

SPERBER COMMUNICATIONS—A new firm has been formed to guide STV, MDS, CATV, MATV, LPTV, and satellite TV companies from start-up through maturity in optimizing their technical operations and product line development. Sperber Communications, located in Santa Monica, California, will provide comprehensive services for new market launches, existing markets, subcontractor organizations, vendors, and manufacturers. Martin Sperber, most recently with National Subscription TV in Los Angeles, is the founder and president of the company. For more information, contact Sperber Communications, 313 Alta Avenue, Santa Monica, CA 90402: (213) 393-5127.

CONVENTION SET FOR LAS VEGAS

Ted Turner, Mark Fowler, David Brinkley, and Tom Pettit are among the headliners already on the program for the RTNDA convention in Las Vegas, September 30-October 2.

Turner, chairman of the board and president of Turner Broadcasting System Inc., and founder of the Cable News Network, will be the keynote speaker when the convention opens in Caesars Palace.

RTNDA president-elect and conference program chairman Dean Mell, news director, KHQ, Spokane, said he was delighted that Turner had accepted the invitation to keynote the convention. "His experience in cable news and his insight into the future of electronic news are having an undeniable influence on communications in this country," Mell said.

ABC newsman David Brinkley, a former RTNDA convention keynote, has been named recipient of the RTNDA Paul White award, and his acceptance speech will close the three-day conference. Jack Hogan, RTNDA's immediate past president and chairman of the Paul White Award Committee, said, in announcing Brinkley's selection, "I am delighted to have had a hand in formally recognizing David Brinkley's outstanding journalistic achievements and the part he played in making news broadcasting the primary source of information for most Americans."

FCC chairman Mark Fowler and NBC's Tom Pettit are luncheon speakers. Fowler has taken a leadership role in efforts to persuade Congress to repeal government regulation of the content of broadcast news—the so-called fairness doctrine and the equal opportunities provisions of the Communications Act. He is perhaps RTNDA's staunchest current ally in the association's long fight to achieve full First Amendment rights for news broadcasters.

Pettit was covering the Senate in Washington for NBC News when he was tapped for the number-two news job at 30 Rockefeller Plaza, executive vice president of NBC News. Each day of the convention will focus on a major area of concern for radio and television news directors. The first day will be devoted to news content, the second to technology, and the third to management.

Exhibits chairman Eddie Barker reports that the entire exhibit hall in Caesars Palace has been reserved. Bob Vaughn, director of conference planning for RTNDA, is now trying to locate additional space in the hotel for more exhibits. In any event, there will be far more exhibits this year than ever before. Plans are being made to use some of the computers on display to expedite the elections and the handling of resolutions during the business session the second day of the convention.

Convention registrations are now being accepted at RTNDA headquarters at 1735 DeSales St., N.W., Washington, DC 20036. Pre-registration for members is $160, and for non-members $175. Rooms at Caesars Palace can be reserved at a special convention rate of $35 single or $55 double occupancy. Room reservations should be made directly with the hotel, Caesars Palace, 3570 Las Vegas Boulevard, Las Vegas, NV 89109, not with the RTNDA headquarters.

Watch this column for more RTNDA convention news—and get your registration and reservation in early!
Give or take a few pennies, and using some conservative assumptions (18hr/day, 5 year full depreciation), that’s all it costs to replace your current audio processor with an Orban OPTIMOD-AM, -FM, or -TV. And get an immediate improvement in on-air audio quality. An improvement that pays off every minute of every hour of every operating day.

OPTIMODs are fully adjustable to program requirements. Their patented technology has literally revolutionized audio processing in the last six years, and yields a cleaner, brighter, louder sound unmatched at any price.

And their superior sound is complemented by Orban quality and service—a well-established, industry-respected commitment that protects your investment.

Money may be tight. But particularly in trying economic times, the winners are those who compete the hardest and deliver the best-sounding product to their audience. OPTIMODs are lethal competitive weapons. And, at 13¢/hr, very sound investments.

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NEVER BEFORE HAS THIS VITAL COMPONENT BEEN SO SUCCESSFULLY INTEGRATED INTO A 1" VIDEO RECORDER.
SONY INTRODUCES A 1" VIDEO RECORDER TAILORED TO THE PEOPLE WHO USE IT: THE BVH-2000

Because Sony probably has more experience selling and servicing 1" VTRs than anyone else, we're in an unequaled position to understand the wishes of 1" video users.

And now, Sony announces wish fulfillment for the broadcast industry: the new BVH-2000 1" video recorder.

WHY "BVH-2000" WILL MEAN DIFFERENT THINGS TO DIFFERENT PEOPLE.

In broadcast recording, there is no such thing as one typical situation. That's why there's no one single BVH-2000.

The BVH-2000 actually allows you to "design" the VTR you need for your own particular applications and budget. You can choose among three different control panels—ranging from a basic model to one with virtually every possible feature and function.

And the tape transport system, signal system, and control section can either be combined into a single unit, or separated easily and installed in a 19" rack or console.

The BVH-2000 also gives you far greater latitude in setting up your entire recording system. Various remote-control connectors enable you to interface your system in a variety of ways for studio, mobile, and editing configurations. Direct interface with U-matic® and Betacam® is possible, too. The BVH-2000 also has an optional plug-in time base corrector.

What's more, the BVH-2000's lighter weight and smaller size (almost 50% less than its predecessor) make it as ideal on the road as it is in the studio. And because of the ever-increasing number of applications requiring longer program times, the BVH-2000 provides up to 2 hours of tape time.

A VTR THAT LEADS THE SIMPLE LIFE.

In the BVH-2000, unlike most other VTRs, microprocessors are used to their full advantage. All data necessary for servo control are channeled into a central processing unit, making the operator's control over all systems and functions simpler and more precise.

Life is made simpler yet by the fact that every necessary function control, metering facility, and electronic module is accessible from the front.

Even the way the tape moves through the recorder has been simplified. One innovation—an extremely precise servo mechanism—permits the entrance and exit guide posts to move away from the drum during threading. The result is the easiest threading system ever in a 1" video recorder.

THE MOST ARTICULATE VTR EVER BUILT.

The BVH-2000 removes much of the mystery from maintenance, too. It literally tells you about malfunctions—usually well before you'd notice them yourself—through a microprocessor-governed self-diagnostic system.

The system includes various alarm functions and numerous checks to confirm that everything is working properly. Most defects can be easily found—allowing for far less complicated maintenance and repairs, and reducing downtime considerably.

And because the best way to simplify maintenance is by lessening the need for it, the Sony BVH-2000 has been designed to be virtually maintenance-free down to the last detail. For example, only brushless DC motors are used, and all incandescent lamps have been replaced with high-brightness LEDs.

Other welcome advances include a greatly expanded dynamic tracking range (from reverse at normal speed to forward at 3 times normal); programmed play (allowing you to vary playback speed across a range of ±20% of normal speed); and video and audio confidence. Remarkably, these are only some of the Sony BVH-2000's innovations. All of them add up to form the answer to virtually every need ever expressed by the users of 1" video.

To find out how it can answer yours, write Sony Broadcast, 9 West 57th St., New York, NY 10019. Or call us 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) 431-7671; or in Dallas at (214) 659-3600.

SONY

Broadcast

Circle (28) on Action Card
780 SERIES
RAM TIME PROGRAMMERS $1260 to $1520
When programming more than eight times, in the 780 Series TIME PROGRAMMERS are the most cost-effective way of dealing with the problem. The circuit is simple, easy to use, and provides 32 events (expandable to 96) in 12 hours of operation.

780 Series units operate from the power line, with back-up batteries and 72 hour battery charger as an integral part of the equipment. The front face consists of:
- An eight digit real time display when day selection is required as on the ES 781, 782, 783, 784, 785, 786, and 787 units for the other.
- A four digit display of "Next Event" number.
- An eight digit display of "Next Event Date" when the ES 781, 782, 783, 784, 785, 786, and 787 units are used in a multiple system.

750 SERIES
THUMBWHEEL PROGRAMMER/COMPARATORS $310 to $290
When you have to program events in eight time events, the 750 Series is recommended. Thumbwheel programs are set by the time information from an ESE Clock or Timer.

The output (events) occurs each day that the thumbwheel switch setting agrees with the time information. One set of thumbwheels is required for each group of multiple system.

STANDARD UNITS
ES 750—ES 112 and one 0 Dig. Program
ES 751—ES 752 and one 0 Dig. Program
ES 752—ES 753 and two 0 Dig. Programs
ES 753—ES 754 and two 0 Dig. Programs
ES 754—ES 755 and two 0 Dig. Programs

PRESET 1296 $105

SMITH TIME CODE GENERATOR
ES 256 is a pre-settable, eight-digit SMPTPE Time Code Generator, capable of Drop Frame or Non-Drop Frame operation.

ACCESSORIES
ES 191 REMOTE DIGITAL DISPLAY Displays six digits of time on 50" Discharge Display, in either 12 or 24 hour format.
ES 192 DIGITAL IMPULSE DRIVER Plugs into 780 chassis, can drive 20 impulse circuits.

MAGNETIC TAPES
ES 760 $800
ATS CLOCK
The ES 760 is a six digit, 24 hour, programmable clock.

For Off-On signal, or operating tape recorders when nobody is there. ESE has created the ES 760.

ES 760 is a six digit, twelve hour clock with LED displays and a programmable, 200 watt, 117V AC outlet on the rear. These four time intervals are marked 00, 30, 60, and 90 minutes.

The Recorder Option allows the user to select time of four time intervals for recording. These time intervals are marked 00, 30, 60, and 90 minutes.

The ES 256 TELEMETRY display is on a 4" red LED display.

SMPTPE TIME CODE READER
ES 256 is a high-speed SMPTPE Time Code Reader, capable of Drop Frame or Non-Drop Frame operation.

SMALL CLOCKS
ES 112 Measures in a 5½" relay rack panel and chassis, displays six digits of time information on 3½" LED displays, in 12 hour format.

ES 112 has three time formats: hex, decimal, and BCD. The display is compatible, and can drive ES 161, 165, 171, 191 or 903 Remote Displays without buffering. All inputs and outputs are through sealed connectorized circuits.

The 12 hours of standby battery is standard in ES 161, 165, and 191.

MASTER CLOCKS
ES 112 Mounted in a 5½" relay rack panel and chassis, displays six digits of time information on 3½" LED displays, in 12 hour format.

ES 112 has three time formats: hex, decimal, and BCD. The display is compatible, and can drive ES 161, 165, 171, 191 or 903 Remote Displays without buffering. All inputs and outputs are through sealed connectorized circuits.

The 12 hours of standby battery is standard in ES 161, 165, and 191.

ESE Masters provide a means of keeping all time displays in the system in agreement, through the use of a Serial Time Code. Only one pair of wires is needed to distribute the time code to all remote time code units.

An ESE Master Clock System can operate digital displays, clocks with sweep, manually driven clocks, and all other compatible devices. Twenty hours of standby battery is standard in ES 161, 165, and 191.

ACCESORIES
ES 191 REMOTE DIGITAL DISPLAY Displays six digits of time on 50" Discharge Display, in either 12 or 24 hour format.
ES 192 DIGITAL IMPULSE DRIVER Plugs into 780 chassis, can drive 20 impulse circuits.

MAGNETIC TAPES
ES 191 $400
ES 192 $200
ES 193 $150
ES 194 $100
ES 195 $50
ES 196 $50

SMPTPE TIME CODE READER
ES 256 is a high-speed SMPTPE Time Code Reader, capable of Drop Frame or Non-Drop Frame operation.

SMALL CLOCKS
ES 112 Measures in a 5½" relay rack panel and chassis, displays six digits of time information on 3½" LED displays, in 12 hour format.

ES 112 has three time formats: hex, decimal, and BCD. The display is compatible, and can drive ES 161, 165, 171, 191 or 903 Remote Displays without buffering. All inputs and outputs are through sealed connectorized circuits.

The 12 hours of standby battery is standard in ES 161, 165, and 191.

MASTER CLOCKS
ES 112 Mounted in a 5½" relay rack panel and chassis, displays six digits of time information on 3½" LED displays, in 12 hour format.

ES 112 has three time formats: hex, decimal, and BCD. The display is compatible, and can drive ES 161, 165, 171, 191 or 903 Remote Displays without buffering. All inputs and outputs are through sealed connectorized circuits.

The 12 hours of standby battery is standard in ES 161, 165, and 191.

ACCESSORIES
ES 191 REMOTE DIGITAL DISPLAY Displays six digits of time on 50" Discharge Display, in either 12 or 24 hour format.
ES 192 DIGITAL IMPULSE DRIVER Plugs into 780 chassis, can drive 20 impulse circuits.

MAGNETIC TAPES
ES 191 $400
ES 192 $200
ES 193 $150
ES 194 $100
ES 195 $50
ES 196 $50

SMPTPE TIME CODE READER
ES 256 is an eight-digit SMPTPE Time Code Reader displaying Hours, Minutes, Seconds, and Frames. $450

ES 254 SMPTPE TIME CODE READER is a bi-directional, multi-speed, eight-digit SMPTPE Code Reader, that can add the information to a video stream for recording time code on the video portion of a tape, or for displaying it on a monitor. Reading speed is 120 to 20 times playback speed.
CHIEF ENGINEER-
"Thank God, it works. We've tried everything and we're really pleased."

DIRECTOR-
"It's a wonderful sense of security for a director to have access to the people he works with."

TALENT-
"Without the Comrex, I would have been lost."

Are you entirely satisfied with your ENG communications?

We've just finished talking with every Comrex Cue System user and, after talking with them, what we can't understand is why every station who does ENG, EFP, sports, or live studio programming hasn't at least considered our Cue System.

The Comrex Cue System is an RF system that goes in a van, helicopter, press box, studio control room, etc., and sends both program and instructions to small, rugged, pocket receivers.

Give us a call. We're happy to tell you more or to send it out on a free ten day trial.

COMREX
P.O. Box 269  60 Union Avenue
Sudbury, Massachusetts 01776
TEL: 617-443-8811  TWX: 710 347-1049

NEWSMAKERS

Vincent Wasilewski, president of the National Association of Broadcasters, has announced his intention to resign sometime during 1982. Wasilewski joined NAB in October 1949 and has served as president since January 1965. Wasilewski, who will be 60 this December 17, is one of the industry's more respected and forceful figures.

Sterling Davis was hired as production manager and Ray Jacobs was named director of administration at Cox-owned KTVU, San Francisco/Oakland. Davis will be responsible for the supervision of both the film and floor departments, and will serve as the facilities supervisor. Prior to joining KTVU, Davis was chief engineer of Telemation Production in Seattle.

John Ridall has been appointed general manager of Viacom Cablevision in Dayton, Ohio. Ridall was formerly director of marketing for Viacom Cablevision in Cleveland.

John Dimling, Jr., has been named executive director of the Broadcast Rating Council. Dimling assumed the position June 1, following the retirement of Hugh Beville, Jr.

Jim Noeldner joined Katz Communications' sales office in Seattle. Noeldner came to Katz from KAPY Radio, Port Angeles, where he was a sales manager.

Jonathan Klein is the new general sales manager of WBZ-TV, Boston. Klein, formerly vice president and general manager of KDKA Radio, will be responsible for WBZ-TV's national and local sales force.

Peter Rainger, deputy director of engineering for the BBC, has been elected a Fellow of the Royal Society "for his major contributions to the development of electronic techniques used in television." Rainger joined the BBC as a graduate engineer in 1951. He helped develop the first electronic standards converters as well as Coexad, from which teletext has developed. More recently he has played a leading role in the formulation of the standard format for digital video signals which was agreed upon by the CCIR.

Anna Mae Sokusky is the new director, CBS Radio Stations News Service. She replaces Joseph Durso, Jr., who has been appointed news director at WBBM-AM in Chicago.

Fran Wilkinson, an executive with an extensive background in radio sales, has joined the RKO Radio Networks as western region sales manager in the Los Angeles sales office. Wilkinson comes to RKO from Blair Radio, where he was sales manager for the firm's L.A. office.

Sheldon Cooper has been named president of Tribune Productions, a newly formed subsidiary of Tribune Company Broadcasting Inc. Cooper was formerly the president and general manager of WGN Television.

Andrea Cetera has assumed the post of vice president, market strategy, at Viacom Enterprises. Prior to joining Viacom a year ago, Cetera was director of research and client services for Petry Television.

Elliott Klein was elected vice president of the Phoenix Metropolitan Chapter of the Arizona Broadcasters Association. Klein is director of engineering at KNIX, Tempe.
Ampex Announces the Practical End of Video Jitters.

Video Jitters can drive you up a wall. It happens when you've repeated an edit over and over. You want it perfect. Now, everything's cued up just right. You hit the edit button, and what do you get? A glitch. A shaky picture. A sour stomach. Video Jitters.

The culprit is stiction—friction build-up so bad that the tape actually jerks across the heads and scanner. Humid conditions can make it worse.

But not if you use Ampex 196 One-Inch Broadcast Video Tape.

Every batch of Ampex 196 has to pass the toughest test in the industry—stiction-free operation at the extreme environments of 90% RH and 90°F, to guarantee that you have consistent stiction-free operation under all conditions.

Ampex 196. Less friction, because who needs it?

Ampex 196 One-Inch Video Tape.

I want to end the Video Jitters with Ampex 196 One-Inch Broadcast Video Tape. Please send me more information on your 196 Video Tape.

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TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE

Send to:
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401 Broadway MS 22-02, Redwood City, CA 94063

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THE NEW
OF VIDEO.
CAMERA MART, THE SOURCE FOR EVERYTHING IN TODAY'S NEW WORLD OF VIDEO TECHNOLOGY.

At Camera Mart, we're keeping pace with the rapidly advancing science of video technology to give you the most sophisticated state-of-the-art equipment available.

In the new world of video, equipment is more flexible, more versatile, more accurate than ever before, with capabilities far ahead of just a year ago.

At Camera Mart we can give you entire video systems: cameras, sound, lighting, editing...plus the expertise of our trained technical staff to help you put together the system that's exactly right for your needs, TV broadcasting, field production, fixed or mobile installations, ENG/electronic cinematography, you name it.

Whether you want to buy, rent or lease, see what's been happening in video research and development. See how much more you can have with the latest advanced video systems at Camera Mart.

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THE ELECTRONIC NEWSROOM IS HERE TO STAY!

THE PROVEN SYSTEM IS AVAILABLE TODAY!

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NEWSMANERS

Lou Zacche, named vice president of advertising and promotion for Abell Communications, will direct the advertising, promotion, and design activities for Abell's television and radio stations, as well as its direct marketing and program syndication efforts.

Peter Vincelette joined the Inisico Broadcast Group of Florida as general manager of WYOR, Miami. Vincelette had been vice president and general manager of WJYE-FM, Buffalo.

Linda Farrell moved from KOCO-TV, Oklahoma City, to KOA-TV, Denver, where she became news anchor. Farrell has worked as a producer, writer, reporter, anchor, and news director in the Oklahoma City area.

Mary Murano has been appointed northeast region affiliate marketing manager for Rainbow Programming Services. Her responsibilities include developing, planning, and executing affiliate launches; ongoing marketing programs; and follow-through activities for all systems within the district. Prior to joining Rainbow, she was manager of advertising and promotion at Showtime Entertainment.

Business Moves

Herb Lee, formerly in industrial video sales for Peirce-Phelps, Video Systems Division, has been promoted to broadcast/teleproduction salesman for the Washington, D.C., area. Also at Peirce-Phelps, James Wesley Boslough has joined the company as systems engineer. Boslough has more than 20 years of broadcast and technical engineering experience.

Bruce Hall recently joined Bonneville Satellite Corporation as director of operations. Hall is responsible for the operations of Bonneville Satellite's leased and owned satellite facilities and services.

Michael O. Felix has been appointed general manager of Ampex Corporation's Advanced Technology Division. Felix will direct the company's extensive research and development programs in his new position.

Howard McClure has been named vice president of marketing at Townsend Associates. McClure joins Townsend Associates from Fernsheh, where he was director of product management and applications engineering.

Richard Teichman was recently appointed senior vice president of Electronics, Missiles & Communications Inc. (EMC). In his new position, Teichman will be responsible for many phases of the company's operations, including general administration, training, and data processing.

John Robbins, new manager of production and product support at Quad-Eight Electronics, has an extensive background in professional and consumer audio manufacturing and in FM broadcasting. His new responsibilities will cover both standard and custom products at Quad-Eight.

Michael Montag, formerly European regional sales manager for Telemation International, has been appointed head of the newly formed Microtime Europe Limited, a wholly owned subsidiary of Microtime Inc., located in the United Kingdom. The new company will provide sales and service support to Microtime's dealers and customers in Europe, the Middle East, and Africa. Also at Microtime,

Continued on page 32

BROADCAST COMMUNICATIONS/JUNE 1982
Another "state of the art" camera from Philips...

The computer controlled LDK6 joins the family of other Philips cameras... "state of the art" cameras for tough and specialized assignments.

A new era has been launched with the all new LDK6 field and studio triax camera with "distributed intelligence" to control, report and diagnose. These features now mean the operator can concentrate on creative camerawork.

For the first time, individual microcomputer and data communication facilities in each of the main system units provide an unequalled degree of intelligence within the system.

Other unique features include:
- Simultaneous multi-camera computer controlled setup... partial or automatic
- Diagnostics for on line anticipatory, and off line on-demand fault indication
- Digital scan correction for spectacular reduction in corner errors
- Wide band RGB video over triax
- Multiple camera settings can be stored and recalled instantaneously during production
- 4 lens memories to automatically adjust for different lens parameters including back focus
- Built-in dicoscope so standard lenses can be used including LDK5/25 lenses
- Either 25mm or 30mm Plumbicon® can be selected
- Two-wire data bus permits easy and economical expansion

LDK5B and 25B are rugged and reliable high quality cameras. The all triax LDK5B has become a standard for tough remote requirements, and continues to be the first choice for quality field productions. The multi-core LDK25B is a first line studio camera... and surprisingly affordable.

LDK14S and SL EFP/Studio cameras are ready for any shoot out and comparison of automatic features... and require only a simple adapter for triax conversion. The LDK14SL with Low output Capacitance diode gun Plumbicons® offers an unusually high S/N Ratio (57dB) and higher resolution.

LDK44 is a new modular 3-in-1 versatile and economical broadcast quality ENG/EFP/Studio camera. No other camera offers the features and flexibility at such a low price.

For your present or future camera requirements, put yourself behind any one of these Philips LDK cameras and compare... quality, reliability, ease of operation, flexibility, and cost of ownership. Call or write for full details.

Central Dynamics Corporation
The U.S. Broadcast Company
900 Corporate Drive, Mahwah, N.J. 07430 201-529-1550

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THE TRUE MEASURE OF PERFORMANCE

ASACA/SHIBASOKU
925R Color Video Noise Meter

The versatile 925R accurately measures both luminance and chrominance noise generated from TV transmission equipment, TV cameras, VTR’s, videotape and videotapes. Connected to a general purpose interface bus (IEEE-488), it gives you complete receive/transmit capabilities. You can receive measurement start, mode and filter selection commands and transmit measurement data through the bus. You can expand the 925R into a fully automated system by using a desk-top computer with the SHIBASOKU TG-7 TV Test Signal Generator, U705 Noise Test Unit and 531 Interface Unit.

- Tests equipment under actual operating conditions.
- Separates AM/PM chrominance noise and measures each.
- Features HP/LP filters and weighting network for frequency analysis.
- Provides V/H sag compensation, hue compensation, and VTR head balance.
- Logs digital data; may be used as a digital video level meter.
- Available in NTSC; PAL B, M, N; and SECAM systems.

Measure your performance with the best. ASACA/SHIBASOKU 925R. The world standard in color video noise measurement.

For complete specifications, write:

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Sales, Service: (800) 423-8347 • (213) 827-7144

Circle (83) on Action Card

news makers

Stephen Kreinin was named director of engineering; Gary Armour was named western regional manager; and Stephen Krant was named south central regional manager.

David Oseach was recently appointed video products sales manager for Audiontronics International, located in North Hollywood, California. Oseach will have full responsibility for the marketing of both CCTV and data display customers in the international markets, excluding Europe.

Jamie McFarland has been promoted to director of marketing for the Broadcast Division of Data Communications Corporation.

Larry Lamorey joined Audiontronics as international marketing manager. Lamorey was formerly with MCI Inc., serving both the engineering and marketing departments.

Bill Culbertson is the new manager of southern broadcast sales at RCA Commercial Communications Systems Division. Based in Camden, New Jersey, Culbertson is responsible for an organization selling RCA’s line of radio and television studio and transmitting systems throughout the southern states.

Gary Hinderliter has been named director, customer services, at CMX/Orroxx. In his new position, Hinderliter will supervise the company’s technical publications, training, and field service activities. He joined the company in 1978, and was most recently central region field service supervisor.

Peter Maguire, the new head of Valley’s Kansas City office, is responsible for developing new business opportunities for Valtec fiber-optic cable and telecommunications in North Dakota, South Dakota, Nebraska, Colorado, Kansas, Oklahoma, Texas, Louisiana, Missouri, Iowa, Minnesota, Illinois, and Wisconsin.

Richard Moen was recently appointed general sales manager for McMartin Industries. Moen will also continue his former responsibilities as eastern regional sales manager for McMartin broadcast products.

Russell Farrell was promoted to OEM sales manager for Altec Lansing’s industrial/professional sound products line. He was formerly Altec’s district manager for New England.

Nathaniel (Nat) Ostroff, the former principal founder of Acroyde Industries, joined Comark Communications as a member of the board of directors and as an operating vice president. Ostroff will head the company’s new high-technology research and engineering division in Colmar, Pennsylvania.

Dr. Albert A. Comparini has been named vice president of operations for Andersen Laboratories. Dr. Comparini will be responsible for product development, materials, and manufacture of electronic systems for Anderson Laboratories, a subsidiary of Anderson Group Inc. He had been director of operations for Andersen Laboratories since 1979. He joined the firm in 1977 as engineering manager.

James “Jay” Samples is the new midwest regional sales manager for Capscan Cable Company. He will be responsible for Capscan sales and service activities throughout Tennessee, Kentucky, Ohio, Illinois, Indiana, Michigan, Minnesota, and Iowa.
The next generation in editing systems.

Mach One® Series II.

Mach One from Fernseh has always been the fastest videotape editor on the market. The easiest-to-use.

And because it's software-based, we can make it more powerful with software changes.

That's exactly what we've done with the new Mach One Series II—the second-generation system.

**Powerful new features.**

Series II has all the features of the original Mach One. Plus six important new features that not only let you edit faster than ever, but give you unique capabilities and conveniences.

**Dual-channel audio control.** This exclusive feature gives you complete and independent control over two separate audio tracks in addition to the video channel.

**Variable speed control.** You can select any of 16 shuttle-jog speeds in either direction—all the way from freeze frame to maximum VTR speed.

**Programmable slow motion.** Once you've selected a speed, it's displayed on the screen and you can program it in the edit list (for example, "half-speed at two minutes in, three-quarter-speed at three minutes in..." and so forth). The programmed sequence is then completely repeatable.

**Updated edit list formatting.**

Mach One Series II gives you 6-digit alphanumeric reel numbers, audio channel 1 and 2 entry, additional events displayed on the screen, and other edit list features.

**Cluster-event programming.** A Mach One exclusive. This powerful feature lets you program extremely complicated multiple events, known as "elements," in a "cluster" and treat them as a single event. For example, a complex series of switcher wipes, dissolves, or keys—together with digital video effects—can be quickly put together and previewed or recorded in one pass rather than event-at-a-time.

**Screen highlighting.** We've made the Series II edit screen easier to work with. Now it brightens the edit line you're working on and simultaneously dims the rest of the screen. It's easy on the eyes, easy on the nerves, and never lets you lose your place—even for a second.

**The editor's editor.**

Mach One Series II in your editing room will give you speed and ease of operation that translates into creativity and profits.

You need the new generation in computer-assisted editing for your post production. And the new generation is exclusively Mach One Series II.

Your local Fernseh office is anxious to get you full details. Call them. Or get in touch with us directly: Fernseh Inc., the Video Corporation of Bell & Howell and Robert Bosch, P.O. Box 15068, Salt Lake City, UT 84113. (801) 972-8000.

From now on, look to Fernseh.

FERNSEH

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INTRODUCING THE XC EVERYONE ELSE OUT AGAIN.

Saticon* is a registered trademark of NHK (Japan Broadcast Corp.)
Plumbicon* is a registered trademark of N.V. Philips.
800. SHARP® TAKES OF THE PICTURE.

While everyone else is introducing a mid-priced camera, Sharp introduces a whole new generation.
The Saticon II Generation.
The Sharp XC-800 is the first camera priced under $13,000 with Saticon II Tubes.
That means it's the first camera in its class that combines Saticon® strengths with a Plumbicon® plus.
So unlike conventional Saticons, you get substantially less highlight sticking, even when you pan across bright lights.
And you still get the higher resolution and depth of modulation Saticons are known for.
But that's just the beginning.
Pound for pound, feature for feature, nothing comes close to the new Sharp XC-800. It's lightweight and perfectly balanced.
And while we're proud of our new on-board computer, and newly designed Remote Operations Panel with serial data transmission and black stretch, the name of our game is more than just features.
It's reliability.
That's what the pros were looking for when we introduced the original XC-700, the first mid-priced camera that didn't perform like a mid-priced camera.
In fact, it performed so well, there are over a thousand of them out in the field today.
And it's been so successful, it's encouraged a rash of new mid-priced cameras.
We encourage you to compare any of them with the new Sharp XC-800.
Between the Saticon II breakthrough and everything else, nobody offers more camera for the money. For more information, contact your local dealer, or write: Sharp Electronics Corporation, Professional Products, 10 Sharp Plaza, Paramus, New Jersey 07652.

FROM SHARP MINDS COME SHARP PRODUCTS

Circle (27) on Action Card
Every other way to store stills is obsolete.

Introducing the state-of-the-art in electronic still-storage—the Quantel DLS 6030 digital library system.

Obviously it stores still pictures. Up to 800 on each small Winchester disk drive. And with the quality that is a hallmark of Quantel. But the DLS 6030 goes far beyond still-storage.

It is the only electronic still-store with production effects capabilities. So now you can compress still pictures to any size. Crop them to remove unwanted material. Position them anywhere you want. Put borders around them. And dissolve from one shot to the next.

You can even build up totally new pictures—composites or montages—from existing material.

And you can always retain your “originals” in their pristine state.

The DLS 6030 lets you browse through its disk library to select the pictures you need, and gives you unprecedented facilities for on-air editing, previewing, and presentation.

Off-loading? You can dump all the pictures—in digital form—onto standard videotape. Then reload at the remote site via any VTR. The transfer is digital, so there’s no generation loss.

Because Quantel’s technology is leading-edge, the DLS 6030 is small—about one-quarter the size of still-stores using older technology—and draws far less power. So it’s ideal for mobile operations as well as the studio.

There’s nothing else like it. See for yourself. Call your local MCI/Quantel representative. Or get in touch with us directly at 415/856-6228. Micro Consultants, Inc., P.O. Box 50830, Palo Alto, California 94303.
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NEW FROM INTEGRATED SOUND SYSTEMS

The TDM-8000 Audio Time Compressor features proprietary patented technology that achieves performance appropriate for first run movies, video taped segments, records, commercials for TV and AM/FM radio, and related applications. An exclusive, state of the art, intelligent splicing system (pat. pending) is one of the major innovations of the system. The audio signal is analyzed in digital form, but the program signal remains in the analog domain throughout the process. This insures the lowest possible distortion and minimum listening fatigue. Its ability to process complex program material, such as speaking voice over ambient noise or singers with accompaniment, without intermodulation distortion or the need to band limit the program is unique. This makes the TDM-8000 the most versatile on the market. And now with the new TDM-8200 Stereo Slave you can do it all in stereo.

INTEGRATED Sound Systems, Inc.
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Circle (154) on Action Card
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Ear Systems, Inc.
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Di-tech

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Continued on page 48

BROADCAST COMMUNICATIONS/JUNE 1982
Most manufacturers meet industry standards; we exceed them. Our TOMCAT cartridge recorders/reproducers and BMX series of broadcast consoles deliver trendsetting on-line performance in broadcasting systems worldwide, from Boston to L.A., Australia to Great Britain.

TOMCAT: simply the world's finest. Innovative design assures superb sound quality, reliability, and low noise operation. Our Maxtrax™ wide-track fixed azimuth heads yield more signal, lowest phase error.

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See why TOMCAT and BMX series have made us the industry trademark. Call or write today for free information on our complete line of equipment.

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Circle 29 on Action Card
**Smooth, silent, reliable.**

**The New Marconi Line Array Telecine B3410**

For a remarkable contribution to film in TV, Marconi's new Line Array Telecine B3410 fully deserves its great reputation.

The unique combination of full digital processing with micro-processor control and CCD sensors means exceptional picture quality, shorter set-up times, rapid change of TV standards, long life and minimum maintenance. No tubes, no replacements!

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Tel: (201) 767-1000.

**Marconi Electronics Inc. / A.F. Associates Inc.**

100 Stonehurst Cour., Northvale, New Jersey 07647, U.S.A.  
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Ronde & Schwarz
Russo
Sandor Electronics A/S
Scantex Laboratories
Scientific-Atlanta
Shinton
Sierra Audio
Sigma Electronics
John M. Sullivan Associates
Telemet
Television Equipment
Texan
Thomson-CSF
Vanco Engineering
Videne Elec. Mfg.
Video Aids of Colorado
Video Master
Vidicraft
Videx Industries
Vital Industries

ISOLATION AMP
Telemet

PRB AMP
AVL Digital
American Data
Amplic
Athex Systems
Applied Technology
Audio & Design Recording
Bingen Division/Lear Siegler
Broadcast Audio Corp.
Broadcast Electronics
Circuit Research Labs
Continental Electronics Mfg.
Donnough Electronic
Dyna Engineering
Eicom Bauer
Electrophex
Griggy Laboratories
Harris Corporation, Broadcast
Products Division
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Javelin Electronics
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Orange County
Urban Associates
Quad Eight Electronics
Spectra Sonics
TM Systems
Americal CSF Broadcast
VIF International

AMPLIFIER, RF

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ADM Technology
ATI Audio Technology, Inc.
Ame, TAG
Ampic
Athex Systems
Applied Technology
Audio & Design Recording
Bingen Division/Lear Siegler
Broadcast Audio Corp.
Broadcast Electronics
Circuit Research Labs
Continental Electronics Mfg.
Donnough Electronics
Dyna Engineering
Eicom Bauer
Electrophex
Griggy Laboratories
Harris Corporation, Broadcast
Products Division
Harrison Systems
IQM Communications
Inovonics
Javelin Electronics
Jerrold Division, General
Instrument Corp.
Kahn Communications
Leader Broadcast Systems
McMartin Industries
Microwave Power Devices
Modular Audio Products
Modulation Sciences
Moseley Associates
Neum General GmbH
Opamp Labs
Orange County
Urban Associates
Quad Eight Electronics
Spectra Sonics
TM Systems
Americal CSF Broadcast
VIF International

Continued on page 52

BROADCAST COMMUNICATIONS/JUNE 1962

www.americanradiohistory.com
Here's something really new in a portable 3/4" U videocassette recorder: JVC's exclusive VideoConfidence head. Now you can be absolutely confident that you're getting on tape what you see in the camera monitor... because you review as you record!

The picture you see in the monitor is fed to it from the tape a split second after recording. What you get is what you see.

There's no other portable 3/4" U VCR with this feature.

But that's not all the CR-4700U offers. It has SMPTE time code capability to speed post-production editing. Head switching is in the vertical interval to eliminate undesirable switching points. There's microprocessor-based logic for full remote control. You can do assemble editing in the field with the automatic editing function.

And how about a video S/N ratio of better than 46dB! No other portable 3/4" U VCR has so many valuable features.

See it NOW at your JVC dealer. For more information write...

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Prof. Video Div. Dept. BCD 6/82
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For faster action, call toll-free 800-621-7700, Ext. 7005.
(In Missouri: 800-892-7655, Ext. 7005.)

WARNING TO PURCHASERS: The unauthorized recording of copyrighted broadcasts is an infringement.

TV reception simulated

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Technology for Communications
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Transco Products
Unir-MCSD
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TUNING UNITS
CSP Inc.
Continental Electronics Mfg.

Continued on page 54

BROADCAST COMMUNICATIONS/JUNE 1982
The next time your air monitor goes dead, tell your audience about your bargain low-power television equipment

The high cost of low price equipment

No broadcast equipment is a bargain when it's off the air. So EMCEE Broadcast Products builds its translators, LPTV transmitters and other hardware without cutting corners or costs. Frankly, that often means prices that appear higher. But it also means the proven higher reliability that EMCEE hardware has provided since 1960.

Oldies but goodies

This higher reliability is no blue-sky claim, either. Many EMCEE HRV-1 1 watt translators are still doing a full broadcast day's work eighteen years after installation. EMCEE HTU-100 100 watt translators are still going strong after seventeen years on site. And the list goes on. Because through three generations of low-power television equipment, value and reliability have always come before cost.

Lasting value

This value and reliability comes from higher rated components that last along at operating values. From human engineered front panel metering for immediate status of operating parameters. And from innovations such as the industry's first use of pre-correction to improve linearity and extend final tube life. And the industry's only remote interrogator. A complete translator/transmitter status monitor that reduces the number of trips and hours necessary to keep isolated installations operating efficiently.

Valuable support

But technology alone isn't the source of EMCEE reliability. It comes from the Applications and Field Engineering Departments that supply design, installation and total turnkey services without additional charges. It comes from the expertise of our lower crew. And it comes from our special inventory of emergency hardware and a 24-hour number that can help you solve small problems before they become bigger ones.

A fourth generation of reliability

The next generation of EMCEE low-power television equipment is now in the breadboard stage. Like the three previous generations, it won't be the least expensive hardware available.

Which leaves you with two choices. Pay the price of reliability when you buy. Or when your air monitor goes dead. It's not just how it works. But how long it works.

Circle (32) on Action Card

www.americanradiohistory.com
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McMartin Industries
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Scientific Radio Systems
TBC Pte Ltd.
Tennaplex Systems Ltd.
Thomson-CSF

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Scala Electronic Corporation
Scientific-Atlanta
Sito Antennas
Television Technology
Tennaplex Systems Ltd.
Tepco
Thomson-CSF
Vidai Elect. Mfg.
Wilkinson Electronics

MICROWAVE
AEG-Telefunken
Andrew Corporation
Anten-Mark
Antenna Technology
Antennas for Communications
Bogner Broadcast Equipment
Don Britton Enterprises
Cablewave Systems
Conifer
Fairmont
GTE Products Corp.
Harris Corporation
Broadcast Products Division
Ikemark Communications
Lang Video Systems
LeBlanc & Royle
Micro Communications
Microwave Associates
Moseley Associates
Multitenna Corp. of America
Narda Microwave Corp.
NEC America
Nurad
Prodelin
RF Technology
Sito Antennas
Terracom
Tepco
Wilkinson Electronics

RF TECHNOLOGY
AEG-Telefunken
Barker & Williamson
Blonder-Tongue Labs
Bogner Broadcast
Conifer
Crowder Communications
EMCEE Broadcast Products
The Finney Company
G.C. Electronics
Gorman-Rudolph
Kathrin-Werke KG
Lindsay Specialty Products
McMartin Industries
Micro Communications
Pheps Dodge Communications
Prodelin
RMS Electronics
Rohde & Schwarz
Scala Electronic Corporation
Scientific-Atlanta, Phoenix Div.
Sito Antennas
John M. Sullivan Assoc., Inc.
Swintex Enterprises, Inc.
TBC Pte Ltd.
Television Technology
Tennaplex Systems Ltd.
Tepco
Thomson-CSF
Velec Safel
Vidai Electronics

ANTENNAS, TRANSMITTING
AM ANTENNAS
AEG-Telefunken
Abroyd Construction
Allied Tower
Atlass Tower Cord
Barker & Williamson
Cableco Broadcast Group
Continental Electronics Mfg.
Cordant Cable Co.
Cosmin Electronics
Dyam Engineering
Elcom Specialty Products
Grant Tower
Harris Corporation, Broadcast Products Division
Kathrin-Werke KG
Kline Iron & Steel Co.
LeBlanc & Royle Communications, Inc.
McMartin Industries
Magnus Towers
Marconi Electronics, Inc.
Multiple Consulting
Fred A. Nudd Corporation
Rockwell International
Stainless
Swager Tower Corporation
TBC Pte Ltd.
Technology for Communications International
Thomson-CSF
UNR-Rohn
United States Tower
Utility Tower
V & B Tower
Wilkinson Electronics
World Tower Company

AM DIRECTIONAL SYSTEMS
AEG-Telefunken
Abroyd Engineering
Allied Tower
Atlass Tower Corp.
CSP Inc.
Cableco Broadcast Group
Continental Electronics Mfg.
Cosmin Electronics
Delta Electronics
Dyam Engineering
Elcom Specialty Products
Grant Tower
Harris Corporation, Broadcast Products Division
Harrision Systems
LeBlanc & Royle Communications, Inc.
McMartin Industries
Multiple Consulting
Swager Tower Corporation
TBC Pte Ltd.
Technology for Communications International
Thomson-CSF
UNR-Rohn
V & B Tower
World Tower

Continued on page 55

BROADCAST COMMUNICATIONS/JUNE 1982

www.americanradiohistory.com
“I want a world-class camera I can take a mile from the van, and still get 57 dB S/N and 600-line resolution.”

Then you're looking for broadcast-quality. Then you're looking for lightweight equipment you can carry unencumbered by anything but a lightweight triax cable.

Well, Hitachi heard you. Because now our Hitachi SK-91 and SK-81 can both be connected to our triax DU-91 Digital Command System by up to 6,000 feet of cable.

The SK-91 is an example of the lengths Hitachi will go to give you the camera you want and courage demand. Though just 9.7 pounds, including its 1.5-inch viewfinder, this $33,000 camera has been hailed as a bargain by perfectionists. And it's I.B.A. and C.B.C. accepted.

Its shock-mounted optical system—with Saticon® Plumbicon® or Diode Guns®—gives you up to 57 dB S/N and 600-line resolution. All in an incredibly tough magnesium alloy package.

It has an auto-iris closure. A +9/18 dB high-grain switch. Horizontal and vertical blanking widths adjustable over a wide range. An auto black balance control as well as an auto white balance control.

The SK-81 gives you just a shade less performance for $22,000. The DU-91 at $18,900 lets you get great pictures with either the SK-91 or SK-81 whether you're shooting at the low-light levels of a coal mine or going to the top of the world. Who from? Who else? Hitachi Denshi America, Ltd., 175 Crossways Park West, Woodbury, NY 11797. (516) 921-7200. Offices also in Chicago, Los Angeles, Atlanta, Cincinnati, Dallas, Denver, Seattle and Washington, D.C.
Imagine The Features That Will Answer Your Present And Future Needs

... Then Call Di-Tech

Audio/video routing switchers come in many different shapes and sizes, offering a variety of features. Since your requirements change from year to year, shouldn't you select the one that fits today's budget AND can meet your present and future needs? Then try Di-Tech. We've got that small 4 x 1 matrix switcher and the 200 x 200 switchers. We've even got a selection of in-between sizes for audio only, video only or audio follow video with 1, 2 or 3 channels of audio per input...........

We also manufacture a complete line of terminal equipment, video detectors, touch tone control systems, audio monitor amplifiers and a 7 day computer controller. Our audio, video and pulse distribution amplifiers feature looping inputs with 6 outputs and can be intermixed within the same mounting frame. The model # 101 frame is 1.75" high and mounts up to 3 modules; the model # 103 frame is 5.25" high and mounts up to 10 modules ........................................

Whatever your present or future needs are, call Di-Tech for the high quality, reliable, easy-to-operate answer.

our NEW, bigger location:
48 JEFFRYN BOULEVARD
DEER PARK, N.Y. 11729
TEL. # (516) 667-6300

Circle (34) on Action Card
WH0 MAKES IT

North Hills Electronics
RHO Electronics
Rohde & Schwarz
Sadleco, Inc.
Tech Labs
Television Specialist Inc.
Tesscan Corp.
Thomson-CSF
Trompeter Electronics
Triple Crown Electronics
Wavetek Indiana

VIDEO
AVA Electronics Corp.
AVL Digital
Apexx Systems
Comprehensive Video Supply
Electroline TV Equipment
Harris Corporation, PRD
Electronics
North Hills Electronics
Rohde & Schwarz
Shalco
Tech Labs
Tektronix
Television Specialist Inc.
Vidatele Electronics Mfg. Corp.

AUTOMATED REMOTE CONTROLS
American Data
Audio Kinetics
Don Britton Ent.
CAT Systems
Channelmatic
Cox Data Services
Delta Electronics
Dynair Electronics
Dynamic Technology Ltd.
Hallikainen & Friends
Harris Corporation, Broadcast Products Division
Image Video Limited
Key Video Ltd.
M/A-COM Video Systems
The Management
Moseley Associates
Potomac Instruments
ProTech Audio
Rank Cintel Ltd.
Recotec Inc.
ScientificAtlanta
Tektronix Controls
Telcom Research
Thomson-CSF
Vipco Specialties
video Tape Systems
Vital Industries

AUTOMATION CONTROLS & SYSTEMS
ATS SYSTEMS
AsakaShibasoku
Broadcast Electronics
Consolidated Electronics Inc.
Delta Electronics
Hallikainen and Friends
Harris Corporation, Broadcast Products Division
McMartin Industries
Moseley Associates
Multiplex Consulting
Potomac Instruments
ProTech Audio
QEI Corp.
Sharepoint Systems
TFT Inc.

BUSINESS SYSTEMS & SERVICES
Automated Business Concepts
Automation Electronics, Inc.
BIAS / Data
BIC Computers
Bonneville Data Systems
Cetec Broadcast Group
Chase Media
Columbia Systems
Computer Business Systems
Computer Concepts

Computer Management Systems
Consolidated Electronic Ind.
Cox Data Services
Custom Business Systems, Inc.
Data Communications Corp.
Gorton Computer
Harris Corporation, Broadcast Products Division
IGM Communications
Jefferson Data Systems
Jenex Corp., Consulting Engineers
Kamani Sciences
The Management
Marktron
Matrix Information Systems
NEAS
Nidus Broadcast Systems
Printer Terminal Communications Corp.
Research Technology Intn.
Radio Computing Services
Solid State Logic
Station Business Systems

CART SYSTEM, RANDOM SELECT, AUDIO
Autograph
Automated Broadcast Controls
Broadcast Electronics
David H. Brothers, Co.
Central Dynamics Ltd.
Cetec Broadcast Group
Consolidated Electronic Industries
Deltamod
Harris Corporation, Broadcast Products Division
IGM Communications
International Tapiomedia
Macrozelle Laboratories
Microprobe Electronics Inc. (MEI)
Nidus Broadcast Systems
Sono Mag
UMC Electronics
UREI
VIF International
Vital Industries

DATA PROCESSING
Automated Business Concepts
Automation Electronics, Inc.
BIAS / Data
BIC Computers
Bonneville Data Systems
Central Dynamics Ltd.
Cetec Broadcast Group
Chase Media, Inc.
Columbia Systems, Inc.
Computer Concepts
Computer Management Systems
Cox Data Services
Custom Business Systems, Inc.
Data Communications
Fernshe
Gorton Computer, Inc.
Jefferson Data Systems
Kamani Sciences
McNella-Skinner & Assoc.
The Management
Marcom Communication Systems
Matrix Information Systems
NEAS
Nidus Broadcast Systems
Radio Computing Services
Station Business Systems
TVNS
Telesource Communication Services
WeatherScan International

LIGHTING
(Neering Lighting Controls & Services)
Beney Controls
Dynamic Technology Ltd.
Electronics Diversified, Inc.
Kilgig Bros.

Leedal
Mathews Studio Equipment
Panox Lighting Systems
SSAC Inc.
Skirpang Lighting Control Corp.
Strand Century

LOGGING
American Data
Autograph Corp.
Automated Broadcast Controls
Broadcast Electronics
David H. Brothers Co.
Cat Systems
Central Dynamics Ltd.
Cetec Broadcast Group
Channelmatic
Chase Media, Inc.
Columbine Systems Inc.
Computer Management Systems
Computer Systems
Consolidated Electronic Ind.
Data Communications Corp.
Dynamic Technology Ltd.
ElectrotopeX
Hallikainen and Friends
Harris Corporation, Broadcast Products Division
IGM Communications
Kudelski SA Switzerland
The Management
Marktron, Inc.
Matrix Information Systems
Moseley Associates
NEAS
Nee Ferrograph (USA) Inc.
Nidus Broadcast Systems
Potomac Instruments
QSI Systems
Sono Mag
Station Business Systems
TFT
Telcom Research
Telex Communications
Vital Industries

MASTER CONTROL, CUSTOM
Image Video Ltd.

PROGRAM CONTROL, AUDIO
Ame TAC
American Data
Bays Inc.
Don Britton Enterprises
Broadcast Electronics
David H. Brothers, Co.
C-M-C Technology Corp.
Central Dynamics Ltd.
Century 21 Programming
Daly-Cast Broadcast Group
Channelmatic
Consolidated Electronic Industries
Michael Cox
Crosspoint Latch
Data Communications Corp.
Deltamod
Diotech
EletrotopeX
Grass Valley
Harris Corporation, Broadcast Products Division
Harrison Systems
IGM Communications
Image Video Limited
Kinetek
McCurdy Radio Industries
The Management
Marcom Communication Systems
Microprobe Electronics
Modulation Associates
NEAS
Rupit New
Sono Mag
Sono Mag
Sono Mag
Standard Telephone UN/ Radio
Station Business Systems
VIF International

BATTERY BELTS & ACCESSORIES

BATTERY BELTS
Aazur Video
Alexander Mtg. Co.
Anton Bauser
Calvert Electronics
Christie Electric
Cine 60
Cinema Products
Comprehensive Video Supply
Frazzollini Electronics
Kapco Communications

Continued on page 60

BROADCAST COMMUNICATIONS/JUNE 1982

www.americanradiohistory.com
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 diaoscope-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 plumbicon.
WHO MAKES IT

BATTERY CHECKER
Perrott Engineering

BATTERY PACKS / ENG
Alexander Mfg. Co.
Anton / Bauer
Galveston Electronics
Christie Electric Corporation
Cine 60 inc.
Cinema Products
Comprehensive Video Supply
Film / Video Equipment
Frezzolini
Gould, Inc.
Harris Corporation, Broadcast
Products Division
Ikegamni Electronics
Kapco Communications
M/A-COM Video Systems
Multiplier Industries
Nalpax Sales
One Pass Video
Optical & Textile
PAG Group
Panasonic
Perrott Engineering Labs
Portable Energy Products
Sharp Electronics
Sony Corporation of America
Teledyne Big Beam
Vannin Inc.
U.S. JVC Corporation
Video Medica
Yardney Electric

BATTERY PACKS / LIGHTING
Advar Video
Alexander Mfg. Co.
Anton / Bauer
Walter S. Brewer Co.
Galveston Electronics
Christie Electric Corporation
Cine 60 inc.
Cinema Products
Comprehensive Video Supply
Film / Video Equipment
Frezzolini Electronics
Gould, Inc.
Harwood Mfg. Co.
Kapco Communications
LTM Corporation of America
Multiplier Industries
Nalpax Sales
Panasonic/B/W Lighting Systems
One Pass Video
Optical & Textile
PAG Group
Panasonic
Panasonic
Perrott Engineering Labs
Portable Energy Products
Teledyne Big Beam
Video Medica
Yardney

BATTERY CHARGERS
Alexander Manufacturing
Anton / Bauer
Bayer Dynamic
Brabury Electronics Ltd.
Galveston Electronics
Christie Electric Corporation
Cine 60 inc.
Cinema Products
Cineonica
Comprehensive Video Supply
Dynamax
Farhin VideoHarris Corp.
Film / Video Equipment
Frezzolini Electronics
G.C. Electronics
Gould Inc.
Harris Corporation, Broadcast
Products Division

Harwood Mfg. Co.
Ikegamni Electronics
Kapco Communications
M/A-COM Video Systems
Multiplier Industries
Nalpax Labs
Panasonic/B/W Lighting Systems
North Wind Power Co.
One Pass Video
Optical & Textile
PAG Group
Panasonic
Perrott Engineering Labs
Portable Energy Products
Sharp Electronics
Sony Corporation of America
John M. Sullivan Associates
Swintek Enterprises
Television Division
Waverly

BATTERY PACKS / TEST INSTRUMENTS
Tektronix

BLOWERS & FANS
Amico Engineering Co.
Bus Industries
Comark Communications
Electro Impulse Laboratory, Inc.
Ripley Co.
Stanton Division / Wyco Metal
Products
Winated Corp.

BRIDGES, COMMON POINT
GSP Corp.
Continental Electronics Mfg.
Delta Electronics
Harris Corporation, Broadcast
Products Division
Pomatoc Instruments
Texscan Corp.

BUZZ TONE ELIMINATORS
Merlin Engineering
Orange County
John M. Sullivan Associates

CABINETS, CONSOLES, & EQUIPMENT RACKS
A&S Case Co. Inc.
(Grayтельного/Advance Products
Amico Engineering
Amwil Cases
Audix Limited
Brabury Electronics Ltd.
Broadcast Electronics Inc.
Bud Industries
Calzone Case Co.
Cases Inc.
Cento
Cetec Broadcast Group
Comac Development Corp.
Dee Technical Systems
Dyma Engineering
Elecro Acoustics Industries
Emor Products
Enclosure Corp.
Environmental Container
Systems
Equipo
Fibrill
Forecast Media Installations
GKM Manufacturing
GTE Products Corp.
Grinnan Fixtures
HSG Inc.
Harricord Industries
Harris Corporation, Broadcast
Products Division
iGM Communications
Javelin Electronics
Leeds
Lee-Ray Industries
McCurdy Radio Industries
Micro-Tauk
Neumade Products
Paso Sound Products
ProTech Audio
Rack Technologies
Research Technology Intl.
Russland Corp.
Salt Electronics
Scientific-Atlanta, Optima Division
Shintron
Spectra Sonics
Stantron Division, Wyco
Metal Products
Thermodyne International Ltd.
Thomson-CSF
Wallach & Associates
Winsted
Vector Electronic

CABLE & ACCESSORIES & SERVICES
AEG-Telefunken
Alpha Wire Corporation
Audicon, Inc.
Bi-Ronics
Boston Insulated Wire & Cable
Brand-Rex
Broadcast Electronics
David H. Brothers Co.
Cinetronics
Comprehensive Video Supply
Connect-Air International
Daburn Electronics & Cable
Dyma Engineering
Electroimpex
Emor Products
G.C. Electronics
Galile
Hammond Industries
Harris Corporation, Broadcast
Products Division
Hartley Products
Javelin Electronics
Leader Broadcast Systems
McCurdy Radio Industries
McMartin Industries
Marshall Electronics
Miles Associates, Div. Miles Air
Products Ltd.
Mowhawk Wire & Cable Corp.
Northeast Cable & Grace
Optical & Textile
PAG Group
Pirelli Cable Corp.
RMS Electronics
Robert Bosch Corp.
Stanton Division / Wyco Metal
Products
Winated Corp.

COAX, FLEXIBLE
AEG-Telefunken
AVA Electronics
Alpha Wire
Andrew Corp.
Aixter Mark
Belden
Bi-Ronics
Blonder-Tongue Labs, Inc.
Robert Bosch GmbH
Boston Insulated Wire & Cable
Broadcast Electronics
David H. Brothers Co.
CCS Cable
CSP Inc.
Cableware Systems
Compact
Comprehensive Video Supply
Connect-Air International
Continental Electronics Mfg.
Crow of Reading Ltd.
Daburn Electronics & Cable
Emor Products
The Finnery Company
Gabriel Electronics
Harris Corporation, Broadcast
Products Division
Image Devices Incorporated
Javelin Electronics
LeBlanc & Roylites Communications
McMartin Industries
M/A-COM Video Systems
Marshall Electronics
Micro Communications
Micro Control Associates
Mowhawk Wire & Cable Corp.
Norstad
PAG Group
Phelps Dodge Communications

Continued on page 62
The brightness you need to show it big

General Electric (U.S.A.)* Professional Large Screen Video Projection

With General Electric’s (U.S.A.) exclusive sealed light valve and sealed Xenon lamp system, in both color and monochrome General Electric (U.S.A.) Professional Large Screen Video Projectors, you can depend on sharp pictures from 2 to 25 feet wide. New high brightness models allow the room lighting viewers need to take notes and refer to written material.

The color projectors reproduce every color accurately, with the convenience of inherent color registration. General Electric’s (U.S.A.) exclusive single gun, single optical path light valve system eliminates the need for manual color convergence.

Portable and flexible, the projectors are being used for a wide variety of applications, including front and rear projection. Our applications experts will tell you whether yours can be added to the growing list, which includes:

**Education:** Medical, dental, engineering, computer science instruction.

**Business:** Sales meetings, industrial training, product presentations, real-time display of computer-generated data, teleconferences.

**Aerospace and Defense:** Situation displays, simulator training.

**Entertainment:** Theatre television, closed-circuit TV events, overflow crowds, special effects.

**Television Production:** Backgrounds for news programs, special effects, data display, program previewing.

Call or write: General Electric Company (U.S.A.), Video Display Equipment Operation, Electronics Park b-206, Syracuse, NY 13221 U.S.A., Phone: (315) 456-2152.

**NEWS BACKGROUND** at WTMJ-TV, Milwaukee, is displayed rear screen by General Electric (U.S.A.) projector.

SELL-OUT CROWDS at Fiske Planetarium, Boulder, watched live NASA transmission presented by General Electric (U.S.A.) projector.

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### GE (U.S.A.) Professional Large Screen Television Projector Specifications

<table>
<thead>
<tr>
<th>COLOR PROJECTORS</th>
<th>Model</th>
<th>Light Output in Lumens</th>
<th>Resolution* in TV Lines per Picture Height</th>
<th>Input Power Req.</th>
<th>Scan Standards***</th>
<th>Video Input**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model</td>
<td>Open Gate, Min.</td>
<td>Modulated TV, Min.</td>
<td>Modulated TV, Typ.</td>
<td>Min. Horiz.</td>
<td>Min. Vert.</td>
</tr>
<tr>
<td>PJ 5000</td>
<td>550</td>
<td>220</td>
<td>280</td>
<td>750</td>
<td>300</td>
<td>1200</td>
</tr>
<tr>
<td>PJ 5050</td>
<td>1250</td>
<td>500</td>
<td>650</td>
<td>750</td>
<td>300</td>
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<td>200</td>
<td>280</td>
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<td>1200</td>
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<tr>
<td>PJ 5155</td>
<td>1250</td>
<td>500</td>
<td>650</td>
<td>750</td>
<td>550</td>
<td>1200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MONOCHROME PROJECTORS</th>
<th>Model</th>
<th>Light Output in Lumens</th>
<th>Resolution* in TV Lines per Picture Height</th>
<th>Input Power Req.</th>
<th>Scan Standards***</th>
<th>Video Input**</th>
</tr>
</thead>
<tbody>
<tr>
<td>PJ 7000</td>
<td>1000</td>
<td>600</td>
<td>750</td>
<td>800</td>
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<td>PJ 7050</td>
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<td>PJ 7055</td>
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<td>PJ 7800</td>
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<td>PJ 7850</td>
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<td>1000</td>
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<td>1500</td>
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<tr>
<td>PJ 7855</td>
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<td>PJ 7100</td>
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<td>750</td>
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<tr>
<td>PJ 7150</td>
<td>1700</td>
<td>1000</td>
<td>1250</td>
<td>800</td>
<td>750</td>
<td>1000</td>
</tr>
<tr>
<td>PJ 7155</td>
<td>3300</td>
<td>2000</td>
<td>2400</td>
<td>800</td>
<td>750</td>
<td>1500</td>
</tr>
</tbody>
</table>

Line Power, All Projectors: 117 or 240 v., ± 10%, 50/60 Hz

*Resolution measurements made with wide-band video input.

**Video Input Key: (1) NTSC or RGB. (2) RGB. (3) Wide-Band

***For use at other scanning rates, contact General Electric (U.S.A.) (VIDEO) for special application/model information.

*Not connected with the English company of a similar name.

---

Circle (36) on Action Card
Outstanding Outdoors

Camera location 3 behind home plate is no place to tear down a camera. Especially if the director wants to punch it up on air to catch the next pitch. That's just one reason why the rock-steady, works-every-time HK-357A is an outstanding choice for production in the field.

Beyond its reputation for legendary Ikegami reliability, the HK-357A has a lot more to recommend it as the ideal field camera. For example, its crisp, high resolution picture, signal-to-noise ratio of better than 53 dB, and superb colorimetry.

What's more the camera really shows off when it's time to set up. Use of the optional microprocessor control brings into play Ikegami's Emmy award-winning digital techniques for automatic setup. Simply press one button and the computer automatically refreshes all set up and registration adjustments in about 45 seconds. No clip charts blowing in the wind, no tweaking. Just unpack, plug-in, auto-setup, and shoot.

Hook up is a simple matter too. Choose the triax option and you can position the camera as far as a mile from the van with absolutely no compromise in picture quality as compared to multicore. And for versatility, our triax camera interfaces with TV-81 multicore at the flip of a switch.

Field test an HK-357A to see why Ikegami is the choice of so many networks, major market stations, and independent producers.

Ikegami HK357A

Ikegami Electronics (USA) Inc., 37 Brook Avenue Maywood, NJ 07607, (201) 368-9171
Northeast: (201) 368-9171 West Coast: (213) 534-0050
Southwest: (713) 445-0100 Southeast: (813) 884-2046
Canada: (281) 368-9179
Circle (37) on Action Card
CINEMA PRODUCTS
Compro Productions
Feathercam
Fernseh
Frazzolini
G.B.C.
Alan Gordon Enterprises
Image Devices Incorporated
Team Electronics
Wide Range Electronics

CAMERAS, VIDEO
CCD
English Electric Valve
Fairchild CCD Imaging
NEC America, Broadcast Equipment
Panasonic
Tektronix Controls
Thomson-CSF

CCTV
ATV Research
Adwear Video
Robert Bosch GmbH
David H. Brothers, Co.
Cinema Products
Toshiba America
Commercial Electronics, Inc. (CEI)
Compro Productions
Dage-MTI
Elettroimpex
Fernseh
Hitachi
Hitachi America, Ltd.
Javelin Electronics
Link Electronics
Motorola
Nylex Electronics Corp.
Oxel
Panasonic Video Systems
Phillips Broadcast
RCA Broadcast Systems
Sharp Electronics
Thomson-CSF
Toshiba International

FILM CHAIN CAMERA
Adwear Video
Robert Bosch GmbH
CEI
Cinema Products
Cohu, Electronics Division
Fernseh
Hitachi
Hitachi Denashi America
Javelin
Image Devices Incorporated
Marconi Electronics
NEC America
Nylex Electronics
Philips Broadcasting
RCA Broadcast Systems
Rank Cinel
Sharp Electronics
Thomson-CSF
Toshiba International

ENG/HASHELD
Adwear Video
Amex
Robert Bosch GmbH
CEI
Cinema Products
Fernseh
Frazzolini Electronics
Hitachi Denashi American Ltd.
Javelin
Marconi Electronics
NEC America
Panasonic Video Systems
Philips Broadcasting
Pye TVT
RCA Broadcast Systems
Sharp Electronics
Sony Corporation of America
Swisscom Enterprises
Thomson-CSF Broadcast
Toshiba America
U.S. JVC Corporation

FIELD CAMERA
Amex
Robert Bosch GmbH
CEI
Cinema Products
Fernseh
Hitachi
Hitachi Denashi America
Ikegami
International Video Corp.
Link Electronics
Marconi
NEC America
Panasonic Video Systems
Philips Broadcasting
Pye TVT
RCA Broadcast Systems
Sharp Electronics
Sony Corporation of America
Thomson-CSF Broadcast
Toshiba America

STUDIO CAMERA
Amex
Robert Bosch GmbH
CEI
Cinema Products
Fernseh
Hitachi
Hitachi Denashi America
Ikegami
International Video Corp.
Marconi
NEC America
Pana sonic Video Systems
Philips Broadcast
Pye TVT
RCA Broadcast Systems
Sharp Electronics
Thomson-CSF Broadcast
Toshiba America
U.S. JVC Corporation

CAMERA, VIDEO DIGITAL REMOTE CONTROL SYSTEM
Anton/vBauer
Barry Engineering
David H. Brothers Co.
Cinema Products

CAPACITORS, TRANSMITTING
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Calvert Electronics
Ceco Communications
Comad Communications
English Electric Valve
ITT Jennings
Malloy capacitor
Sungлас Associates
Thomson-CSF

CART MACHINES & SERVICES
SINGLE DECK
Amilon
AmproSculky
Audi-Cord
ASAF Limited
Broadcast Electronics
Century 21 Programming
Centec Broadcast Group
Consolidated Electronic Industries
Contel
Continental Electronics Mfg.
D - B Electronics
Elcom-Bauer
Harris Corporation, Broadcast Products Division
International Radio
Icom

MULTIPLE DECK
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Broadcast Electronics
Century 21 Programming
Centec Broadcast Group
Consolidated Electronic Industries
D - B Electronics
Harris Corporation, Broadcast Products Division
Icom

CART MACHINES & SERVICES
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AmproSculky
Audi-Cord
ASAF Limited
Broadcast Electronics
Century 21 Programming
Centec Broadcast Group
Consolidated Electronic Industries
Contel
Continental Electronics Mfg.
D - B Electronics
Elcom-Bauer
Harris Corporation, Broadcast Products Division
International Radio
Icom

RANDOM ACCESS
(See Also Automation Controls Audio)
Audi-Cord
Broadcast Electronics
Calico Video
Century 21 Programming
Centec Broadcast Group
Consolidated Electronic Industries
Icom

REBUILDING SERVICES
Aristocrat
Audi-Cord
Audio Path

Continued on page 66
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TRANSMITTING TUBES

<table>
<thead>
<tr>
<th>PART NO.</th>
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RCA CAMERA TUBES

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Procar
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Tapecaster TCM, Inc.
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Neuhade Products
RMS Electronics Inc.
Research Technology Int'l
Ruslang
See Hear Industries
Stanton
Strobel Corporation
Tascam
VideoMedia
Western Broadcasting
Winsted Corporation

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AKG Acoustics
AKG Akustische u. Kino-Gerate
The Atlantic Co.
Audio-Technica US, Inc.
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Fidelpac Corp.
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Ortono AS
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Division
Shure Brothers
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VIF International
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William Bai Corporation

CASSETTE MACHINES

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BASF Limited
Bell Audio Systems
Edco Products
Ergmit USA
Fenness
IGM Communications
Javelin Electronics
Neal Panaraph (USA)
Pentagon Industries, Inc.
Ramko Research
Sharp Electronics
Studer ReVoX America
Tascam
Teac Corp. of America
TeleX Communications
Tiffen Mfg. Corp.

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Fenness
Leader Broadcast Systems
Pentagon Industries, Inc.
Sharp Electronics
Tape-Athon / Cavox Stereo Prod.

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Fenness
Orani Corp.
Pentagon Industries, Inc.
Tape-Athon / Cavox Stereo Prod.
VIP International

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Ramko Research
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Triple I Inc.
United Research Lab., Co.

CAVITY
Vanian Associates

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Atwar Video
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Aurora Systems
Autographics
BE (Boston)
Robert Bosch GmbH
The BCT Corporation
C-MC Technologies Corp.
Chromo-log Corporation
Chromatron Corporation
Comdat Communications
Computer Video Systems

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Broadcast Video Systems
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Cedar International
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Crow of Reading Ltd.
Derek
Echolab
Grain Valley Group
Image Video Limited
Industrial Sciences, Inc., (ISI)
International Nuclear Corp.
Marcom Communication Systems
NEC America
Panasonic Video Systems
RCA Broadcast
Shinten
Teletet
Thompson-CSF Broadcast
Vamco
VideoMedia
Vital Industries

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Michael Cox
Crow of Reading Ltd.

Farnoula Laboratories
Image Video Limited
Link Electronics
RCA Broadcast Systems
Sielag Electronics
Thompson-CSF
VideoMedia

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COUNTER, DOWN
Applied Technology
BEI (Beckton Electronics)
Broadcast Aids
Broadcast Electronics
C-MC Technology Corp.
Cinetronics
Chrono-log Corporation
ESE
Harris Corporation, Broadcast Products Division
IGM Communications
Image Video Limited
KB Systems
Leader Broadcast Systems
McCurdy Radio Industries
Nationalwide Electronic Systems
QSI Systems
Standard Electric Time Corp.
Thomson-CSF
Torpe Controls & Engineering
Vamco Engineering

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Applied Technology
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BG Engineering
Broadcast Aids
Broadcast Electronics
Chrono-log Corporation
Cinetronics
Datametrics
Dynaquap Electronic Devices Ltd.
ESE
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IGM Communications
Image Video Limited
KB Systems
McCurdy Radio Industries
Nationalwide Electronic Systems
Nordcom Manufacturing
Pacific Recorders
PVM Electronics Limited
QSI Systems
Radio Systems
Ramko Research
Sharepoint Systems
Standard Electric Time Corp.
Tapecaster TCM
Thomson-CSF
Torpe Controls & Engineering
Vamco Engineering

COUNTER, UP / DOWN
ADT Technology
Applied Technology
Autocut
Broadcast Aids
Broadcast Electronics
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Chrono-log Corporation
Datametrics
Dynaquap Electronic Devices
ESE
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IGM Communications
Image Video Limited
Jaxex Inc.
KB Systems
Kalaalay Oy
Laird Telemedia
Leader Broadcast Systems
Logik Electronic Systems
McCurdy Radio Industries
Multidyne Electronics
Nationalwide Electronic Systems
QSI Systems
Ranger Electronics Research Inc.
Standard Electric Time Corp.
Tapecaster TCM
Thomson-CSF
Torpe Controls & Engineering

Continued on page 68

BROADCAST COMMUNICATIONS/JUNE 1982

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EEV high efficiency UHF klystrons pay for themselves... in 1 to 3 years!

These are the facts:

- Over 70 EEV 55KW high efficiency external cavity klystron installations made during the past three years.
- These klystrons are operating from 38% to 46% efficiency vs. average of 30% efficiency for older generation klystrons.
- Annual power cost savings from $17,000 to $30,000 for single tube installations.
- Existing transmitters upgraded with new EEV klystrons operating from 38% to 46% Eff.
- New transmitter installations with EEV klystrons operating from 40% to 46% Eff.
- Life and reliability proven by 1405 installations worldwide logging over 8,000,000 hours/year.
- EEV 55KW high efficiency klystrons available for UHF channels 14 to 78.
- Development work being completed to attain 55%–65% efficiencies for external cavity klystrons with modulating anode or grid pulsing vs. klystron's intrinsic 46% efficiency.

With these facts you can predict your power cost savings when you install EEV's 55KW high efficiency external cavity klystron.

Start now.

Specify EEV for your existing or new transmitter OR
Convert and upgrade your internal cavity klystron system to EEV's external cavity klystron. Every week you delay installing an EEV 55KW high efficiency klystron can represent an additional 4400KW to 7500KW on your power bill.

*Based on an 18 Hour Broadcast Day and $0.75/kWhr.
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AEL (Am. Elec. Labs)
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American Microlab
Artal Communications
Cencom Communications Control Center
Compucom Inc.
Dell Technical Vehicles
ENG Helicopter Satellites, Ltd.
GTE Products Corp.
Harris Corp. Broadcast Products
Microwave Power Devices
Motorola Comm. and Elec.

Nady Systems
Northland Communications
Pnie Beth Marketing
 Phelps Dodge Communications
Printer Terminal Communications
RCA Broadcast Systems
Radio/techniques
Regency
Rivers Associates
Scientific Radio Systems
Selcom
Sonar Radio
Standard Communications
Swintex Enterprises
Texscan Corp.

MICROWAVE
AEG-Telefunken
Bavy. Engineering
AEL (American Electronics Laboratory)
Aydin Microwave
CALDATCOM
Centro
Coastcom
Compucom

Datcom
Dell Technical Vehicles
ENG Helicopter Satellite Ltd.
Farinlon Video/Harris Corp.
GTE Products Corp.
Harris Broadcast Microwave
Harris Corporation, Broadcast Products Division
Hughes Aircraft, Microwave
Communications Products
International Microwave Corp.
Lang Video Systems
M/A-Com Video Systems
Microwave Power Devices
Motorola Communications and Electronics
NEC America

Nurad
RF Technology
Radiotechniques
Standard Telephone and Radio
Telburl

Television Technology
Terracom
Texscan Corp.

MULTIPLEX
AEG-Telefunken (Bavy Engr.)
Ariel Communications
Aydin Microwave
Broadcast Electronics
CALDATCOM
Coastcom
Foundation Electronic Instruments
GTE Products Corp.
Grass Valley Group
Johnson Electronics, Inc.
International Microwave Corp.
Javelin Electronics
Harris Corp./Farinlon Video
Kalarl! Victor Corporation
M/A-Com Video Systems
Modulation Associates
Motorola Associates
Motorola C & E

Optical & Textile
Polarcom, Marine & Aviation
Radio/techniques
C.N. Road BV
Siemens

STL SYSTEMS
AEG-Telefunken (Bavy Engr.)
Ariel Communications
Aydin Microwave
Broadcast Electronics
CALDATCOM
Celtec Broadcast Group
Composite
Compucom, Inc.
Comsetech, Inc.
Continental Electronics
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GTE Products Corp.
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International Microwave Corp.
McMartin Industries
M/A-Com Video Systems
Micro Control Associates
Motorola Associates
RF Technology
Radio/techniques
C.N. Road B.V.
Telemet

Television Technology
Vold Communications

TSL SYSTEMS
Marin Electronics
TPT (Inc.)

COMPARATOR, TIME

Datam
ESE
True Time Instruments

COMPARATOR, VIDEO

Angenieux Corp. of America
Autogram
Michael Cox
Leitch Video
Mead Data Central
C.N. Road BV
Video Aids of Colorado

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Broadcast Concepts

Broadcast Group
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Cox Data Systems
Data Communications
EEG Enterprises
Elcop
Harrington Corporation, Broadcast Products Division
Kaman Sciences
McIntosh/Skinner & Associates
Mead Data Central
NIDUS Broadcast Systems
Ontoion Manufacturing
Sel Electronics
Station Business Systems
Telesource Manufacturing

Video Specialties
Weather Services Inc'

COMPUTER SYSTEMS & SERVICES

BUSINESS/ACCOUNTING
Automated Business Concepts

BIC Computers
The Broadcast Center
Jim Cason Electronics
Cencom Broadcast Group
Chase Media

Computer Business Systems

Continued on page 70

BROADCAST COMMUNICATIONS/JUNE 1982

COILS, RF

Gageco Electronics

COLLIMETER

Optical & Textile
Rameko Research

COLOR CORRECTOR

Angenieux
Robert Bosch GmbH
Broadcast Video Systems
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Consultants
Michael Cox
Crow of Reading Ltd.
Dubner Compuer System
For-A Corp. of America
Harris Corp., Broadcast Products
Hajami
Kollmorgen, Photo Research Div.
Marcom Communication Systems
Marconi Electronics
Phase Video Inc.
RCA Broadcast Systems
Rank Cintel
Scannex Laboratories, Inc.
Sigel-Electronics
John M. Sullivan Assoc., Inc.
Television Equipment Associates
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COMBINER, POWER

Aydin Monitor Systems
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Consolidated Electronic Ind.
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Data Communications
Grotton Computer
Harrington Corporation, Broadcast Products Division
IGM Communications
Jefferson Data Systems
Kaman Sciences
Marketron
Mead Data Central
NEAS
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Nidus Broadcast Systems
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Telemar Media Systems

NEWSROOM

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BIC Computers
Basys Inc.
Chase Media
Data Communications
Harrington Corporation, Broadcast Products Division
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Logica
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Spacitrak Computer Systems
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TVNS
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TRAFFIC/PROGRAMMING

Automated Business Concepts

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The Broadcast Center

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Custom Business Systems
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Mead Data Central
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WEATHER

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Computer Video Systems

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From super-wide to ultra-tele, in the studio or the stadium, Fujinon BCTV lenses are the clear winners...from any angle.

NEW, Fujinon's P28x15 ESM — the super studio lens. It gives you a wall-to-wall 15mm wide angle and a maximum aperture of F/2.2 which is maintained out to ten times. Even at 420mm, the F/4.2 allows you to keep your lighting levels reasonable. And for the tightest shots, the built-in 1.7X extender takes you to 714mm. Naturally, it has a built-in diacope for near instant computer setup. But range and speed do not reveal the incredibly sharp, bright, high contrast image the new 28X delivers. Its superior resolution and color performance place it ahead of any lens in its class.

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NEW, Fujinon's P30x20 ESM — the super field lens. Whether picking up the clearest shot of the space shuttle lifting off or a concert stage from the back of the top balcony, it goes out farther and flatter to deliver outstanding images...especially under lighting conditions that leave other lenses in the dark. Total zoom range, with the built-in 2X extender

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Urei

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Sound Dynamics
Soundcraft Electronics
Spectra Sonics

Continued on page 72
DELTA BROADCAST PRODUCTS

AMC-1/FMC-1

The Modulation Controllers are the only modulation controlling systems that provide a completely closed loop around the transmitter. The sampling of actual modulation levels after the PA output network assures precise adjustment for optimum modulation levels. The AMC-1/FMC-1 also keep a digital count of positive and negative overmodulation bursts for both present and previous one minute periods.

DAM-1

The Digital Antenna Monitor couples pushbutton ease of operation with digital accuracy. The DAM-1 will accept RF samples from up to 12 towers (with an auxiliary panel) and features ± 1° phase and ± 2% current ratio accuracies. Remote panels and other accessories are available.

AAM-1

The Analog Antenna Monitor gives stable phase and ratio readings even in high RF fields. Separate phase and ratio mirrored-scale meters assure accurate meter indications.

RCS-1V

The RCS-1V Remote Control System combines microprocessor technology with simplified operation. Features include direct interface boards for antenna monitors, patented remote modulation bargraph, automatic logging, and synthesized speech telephone interface. The modular design allows the customer to plug in additional input or control boards to expand remote control capabilities even after the system is operating in the field.

APC-1

The Automatic Power Controller is your insurance against citations for over-and under-power operation. The APC-1 continuously monitors the transmitter output power, and makes automatic power adjustments with the transmitter loading control. This assures proper power adjustment at all times.

6730-E 6740-B

Designed to switch two transmitters from antenna to dummy load, the 6730E interfaces with a 1/8 inch coaxial cable. For 3 1/8" lines, the 6740-B transfer switch is used. Either manually or remote controlled, the Transfer Switch is fully interlocked and can be wired to existing equipment to prevent "hot" switching.

TCA

State of the art antenna current metering has arrived in the TCA Ammeter Systems. Accurate, modulation-free, temperature stable current indications are found in the TCA. Models include single and dual scale meters.

TCT

Delta's Toroidal Current Transformers provide accurate sampling current and phase values without the problems associated with sampling loops. Three output voltage ranges are available, as well as high voltage models for high-power facilities.

OIB-1

The Operating Impedance Bridge measures the impedance of networks, radiators, and the like while they operate under full power. VSWR as well as complex impedances of up to 400 ± 300 ohms can be measured.

The OIB-3 Operating Impedance Bridge provides extended resistance and reactance ranges, measuring up to 1000 ± 700 ohms. The bridge has a built-in carrying case and RF amplifier for improved nulling.

RG-3

The Receiver/Generator combines a two-watt RF output and a correlation detector circuit that virtually eliminates interference problems. The RG-3 can be used in conjunction with any conventional impedance bridge including the OIB series.

CPB-1

The Common Point Impedance Bridge is designed for permanent installation; and allows continuous monitoring of the common point, thus facilitating network adjustment. This model can be provided with one of Delta's TCA ammeters mounted in the front panel.

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Hammond Industries
IGM Communications
Industrial Research Products
Kirk-Teknik Research
Leader Broadcast Systems
Lexicon
MKS Innovations
ProTech Audio Corporation
Spectra Sonics
T M Systems, Inc.
TT Electronics, Inc.
UHER
Unisys

DELAY LINES, VIDEO
Allen Avionics
American Data
Anders Inc.
Andersen Laboratories
Broadcast Video Systems
Michael Cox
ESC Electronics
Eagle Electronics
Fahrchi CDI Imaging
Faroudja Laboratories
Grass Valley Group
Leitch Video
Link Electronics
Listec TV Equipment
NEC America
Rhode & Schwarz
Sandia Electronics A/V
TT Electronics
Television Equipment Assoc. Thomson-CSF

DELAY MACHINE, TALK SHOW
Comrex

DEMODULATORS, OPTICAL
Ariel Communications Corp.
Foundation Electronic
Instruments
Telemat.
Times Fiber Communications

DEMODULATORS, VIDEO
Ariel Communications Corp.
Barco Video Systems
Blonder-Tongue Laboratories
Catel
Comark Communications
EED Enterprises
Electro & Optical Systems
Fung Engineering Labs
Harris Corp. Broadcast Products
Javelin Electronics
Jerrod Div., Gen. Instrument
Lang Video Systems
Lenco Inc.
Optex Inc.
Phasecom
Hans Pilch
QSI Systems
R. E. Instruments
Rhode & Schwarz
Scientific-Atlanta
TL Systems
Tektronix
Telemat
Television Technology
Thomson-CSF
Townsend Associates
Triple Crown Electronics
Videomedia
Velec Safat
Videotek

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MICROWAVE
Coxtal Dynamics, Inc.
GTE Products Corp.
Gralex
Harris Corporation, Pro Electronics Div.
Marconi Instruments Ltd.
Matra-Isat
Motorola Associates
Narda Microwave
Varian Associates
Velec Safat

QUADRATURE DISTORTION
Rohde & Schwarz
Telemat
Velec Safat

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Coaxial Dynamics
Comark Communications
Harris Corporation, Broadcast Products Division
Harris Corporation, Pro Electronics Division
Motorola Associates
Perkin-Elmer Instruments
Rhode & Schwarz
Telemat
Television Technology
Tyrskan Corp.
Velec Safat
Vitek Electronics
Wavelet Indiana
Wide Band Engineering

VIDEO PRESENCE
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Channelmatic
Michael Cox
DI-tech
Graham-Petten Systems
International Microwave
Javelin Electronics
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Rivers Associates
Telemat
Videcraft
Video Aids of Colorado

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BES Electronics
CSP Inc.
Dyna Engineering

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Apter-Horz
NET Enterprises
Rhode & Schwarz
Tektronix

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Amtron Corporation of America
Aurora Systems
Grove Video
Gralex
Technology Service Corp.
Thomson-CSF

DIPLEREX
(See Antenna Accessory)
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Since 1970, TFT, Inc. has been a pioneer in state-of-the-art broadcast technology. As such, we have been able to always keep one move ahead in cost-effective design to provide reliable, versatile and innovative products to the broadcast industry.

TFT was the first to use frequency synthesized circuits in its full line of AM, FM, TV, stereo and SCA Modulation Monitors. TFT concepts in Remote Control Systems now allow expansion all the way to micro-processor based data logging, display and alarm systems. In the relatively new field of Studio Transmitter Links, TFT has made major contributions through the use of IF modulation transmitters and pulse counting discriminators to improve both S/N ratio and stereo performance.

Even in the Emergency Broadcast System (EBS), TFT has taken a leadership role in the development of both EBS generators and receivers.

Now, it's your move! Call or write TFT today for full facts on their winning product lines.
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ECCO Incorporated
ESF
Electro & Optical Systems
For A Corp. of America
Gray Engineering Labs Inc.
Jalex
Kaltionics
Shintron
Skotle Corporation
Steinback
Telecom Research
Thomson-CSF
Torpay Controls & Engineering
Un emoc International
United Media

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Datatron
ECCO Inc.
Editall Corp.
Jalex
Leader Broadcast Systems
Musicians
Quad-Eight Electronics
Santex Laboratories
Steinback
United Media

CMX Systems
Rextron
Cinema Products
Compro Productions
Datatron
Jeep Corp.
Jexcel
Karet Vertical Corporation
Ldeal
3M Company, Video Products
Magnasync / Moviola
Mobile Visual Productions
Neumann Products
New Earth TV Works
PAG Films Ltd.
Paulmar
Research Technology Int'l.
Scantex Laboratories
Steinback
Thomson-CSF
Unidex Film Editing Systems
Videomedia
The Virginia Company

Crow of Reading Ltd.
Harris Video Systems
Panasonic
Sony
US JVCI Corporation
Video I.D
Videomedia

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Ampeg
BCN Electronic Sales Ltd.
BTX Corp.
Robert Bosch GmbH
Television Systems Div.
Cesar International, Ltd.
CMX / Orix
Compro Productions
Control Video Corp.
Convergence
Michael Cox
Crow of Reading Ltd.
Datatron
ECCO Incorporated
Fernco
Gevity Television Network
Harris Corp.
Broadcast Products Div.
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Jalex
3M Company
Microvision
New Earth Television Work System, Ltd.
Panasonic
RCA Broadcast Systems
Scantex Laboratories
Thomson-CSF
Toraya
Un emoc International
United Media Inc.

U.S. JVC Corp.
Video I.D
Videomedia

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Adwar Video
Ampeg
Aurora Systems
Robert Bosch GmbH
Television Systems Div.
Broadcast Video Systems
Central Dynamics Ltd.
Colorado Video
Convergence
Data Communications
Digital Video Systems
The Grass Valley Group
Grove Video
Harris Video Systems
Intaraid
MCQuail
NEC America Inc.
Broadcast Equipment
Precision/Echo Science
Quantel Limited
Telecast/MIS Corporation
Thomson-CSF
Video I.D
Videomedia
Vital Industries

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Thomson-CSF
Varian Associates

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Fnaseh
For A Corporation
Groove Video
Harris Corporation, Broadcast
Products Division
Ikeagi
Jalex
Jerrold Div., General Instrument
Lantico
Marcon Communication Systems Ltd.
Marcon Electronics, Inc.
MPB Technologies
QSI Systems
Siegell Electronics
Thomson-CSF
Videomedia

TONE
AEQ Telefunken
(Bayley Engineering)
American Microsignal
Bogen Division / Lear
Siegel, Inc.
Cable Vista
Channelmatic
Comex Systems
Communications Control Centers
Deltamod
Dietra
Edcor
Frequency Devices
Gorman-Redlich
IGM Communications
McMartin Industries
Monroe Electronics, Inc.
Motorola Communications & Elect.
Rivers Associates, Inc.
Tripac Corporation of America

EBS
Broadcast Electronics
ESE
Gorman-Redlich Mfg. Co.
International Nuclear Corp.
Johnson Electronics
McMartin Industries
Rivers Associates

ENHANCERS, VIDEO IMAGE
Adwar Video
Ascaso/Shibasoku
Robert Bosch GmbH
Cohu, Electronics Division
Composite Video
Consolidated Video
Crow of Reading Ltd.
Edison
Faroudja Laboratories
Fnaseh Inc.
Grove Video
Harris Video Systems
Ikeagi
Lectrotech, Inc.
Listec Television Equipment Corp.
Lucrinite
Micelco, Inc.
Siegel - Electronics
Simon Associates
John M. Sullivan Associates
Thomson-CSF
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Video Optics
Video Products/SM
Vidcraft

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Audiovisionics of Oregon
Kintek
Howe Audio Marketing
Rupert Neve
Orange County

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ADP Technology

AEG Telefunken
(Bayley Engineering)
American Microsignal
Bogen Division / Lear
Siegel, Inc.
Cable Vista
Channelmatic
Comex Systems
Communications Control Centers
Deltamod
Dietra
Frequency Devices
Gorman-Redlich
IGM Communications
McMartin Industries
Monroe Electronics, Inc.
Motorola Communications & Elect.
Rivers Associates

CONTINUED ON PAGE 80

BROADCAST COMMUNICATIONS/JUNE 1982

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www.americanradiohistory.com
Recently, many experts have called for a digital standard based on component coding.

At Harris, we agree. We’ve been using it in our digital time base correctors since 1976 when, as Consolidated Video Systems, we introduced the CVS 517.

Today, the CVS 517 is acknowledged as the most versatile and effective TBC available — proven in over 500 installations.

The 517’s unique architecture processes the video signal in component form instead of in composite form. This component coding technique results in a system that is inherently immune to color phasing problems and horizontal picture shift, or “cycle jump.”

In addition, you receive real benefits in your day-to-day operation:
— Inherent immunity to color subcarrier editing problems.
— Excellent time base correction because there is no need to track the jittering subcarrier.
— Improved odd field and rough edit processing.
— Chroma noise reduction of 3db, without degradation of the luminance component.
— Better signal-to-noise ratio than composite systems with the same bit rate.

What’s more, the CVS 517 features, as standard equipment: one-cable gen-lock, a DOC and a full proc amp with auto preset controls.

Plug-in options include: SECAM; Dub-to-Hiband for mains lock heterodyne-to-direct VTR dub; 16 line memory; and an adjustable image enhancer/noise reducer with coring.

For details and a demonstration, contact your Authorized HVS Distributor, or the HVS office nearest you.

Be sure to ask for our free booklet about the basics of time base correction.
<table>
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<tr>
<th>TRANSMITTING TUBES</th>
<th>TRANSMITTING TUBES</th>
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Marcon
NEC America
Nyteone Electronics Corporation
Phillips Broadcast Group
RCA Broadcast Systems
Radial
Rangertone Research
Rank Cintel
RCA Broadcast Systems
Video I D
Westrex
Zen-Mark Corporation

FILTERS

ACTIVE
ADM Technology
ATI Audio Technologies Inc.
Amek TAC
Apex Systems
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Composite Video
dvb Inc
Dyna Engineering
Electroline Television Equipment
Elektroopa Ml
Frequency Devices
Ive Electronics
ILC Data Device Corp.
Lipser Smith Co.
Georg Neumann GmbH
Rugen Neyer
Georg Neumann
Potomac Marine & Aviation
Quad-Eight Electronics
Research Systems Tech., Inc.
Richard Sound Design
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Sonitac Electronics
Speckson Instrument
Spectra Sonics
TT Electronics
VIF International
White Instruments

ANTENNA
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Coaxial Dynamics
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Deltiatic Communications
Dyna Engineering
Elcom Bauer
Electroline Television Equipment
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Kathleen-Walker AG
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Micro Communications
Philips Directories
RMS Electronics
Rohde & Schwarz
Shively Laboratories
Triple Crown Electronics
TT Electronics
VTE Murawoke Inc.
Viadein Electronics Mfg.

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Beaverton
Broadcast Video Systems
Computer Business Systems
Electroline Television Equipment
Feinhein
Frequency Devices
Lightning Elimination Associates
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Jatex
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Ramko Research
Rohde & Schwarz
C.N. Root B.V.
Spectra Sonics
TT Electronics
Viadein Electronics Mfg.

Viadein Electronics Mfg.

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AVL Digital Ltd.
Alien Avionics
Alec Linding
Anderson Laboratories
Antennas for Communications
Audio & Design Recording
Audio-Video Engineering Co.
Bird Electronics
Blonder Tongue Laboratories
Coastcom
Coaxial Dynamics
Comox Communications, Inc.
Compac Development Corp.
EPI
ESC Electronics
Electroline Television Equipment
The Finney Company
ILC Data Device Corp.
Jerrold Div.
General Instrument
Lightning Elimination Assoc.
Lipser Smith Co.
Modulation Associates
Mu-Del Electronics
North Hills Electronics
Phipps Dodge Communications
Potomac Instruments
Potomac Marine & Aviation
Quad-Eight Electronics
C.N. Root B.V.
Sescom
Shively Brothers
Tepco Corp.
TT Electronics
Viadein Electronics
White Instruments

VARIABLE/FIXED
ADM Technology
Audio & Design Recording
Barker & Willamcra Inc.
Coaxial Dynamics
ECS Electronics
Frequency Devices
ILC Data Device Corp.
International Microwave Corp.
Lipser Smith Co.
North Hills Electronics
Potomac Instruments
ProTech Audio
Pulse Techniques Inc. (Pultec)
Quad-Eight Electronics
Richard Sound Design
Research Systems Tech. Inc.
Sescom
Spectrum Instruments
Texscan Corp.
TT Electronics
White Instruments Inc.

VIDEO
AFL Digital Ltd.
Allen Avionics
Anderson Labs
Audio Video Engineering Co.
Broadcast Video Systems
Cates
Datatec
ESC Electronics
Faroudja Laboratories
ILC Data Device Corp.
Lipser Smith Co.
Modulation Associates.
Rohde & Schwarz
TT Electronics, Inc.
Thomson-CSF
Tiffen Mfg. Corp
Viadein Electronics Mfg.

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Apert-Heyking
Arvin Echo
Asacal/Shibasoku
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Digital Video Systems
ECCO Inc.

Harris Video Systems
Harris Corp.
Broadcast Products Div.
MICR/Quad
Microtime
NEC America Inc.
Broadcast Equipment
Quintal Ltd.
RCA Broadcast Systems
Thomson-CSF

FRAME / FIELD STORE, DIGITAL
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Apert-Heyking
Arvin Echo
Asacal/Shibasoku
Aurora Systems
Colorado Video
Digital Video Systems
Eiger Video
Farnese Inc.
Grove Video
Harris Corp.
Broadcast Products
Harris Video Systems
LogicA
MCI/Quad
Merkel Engineering
Mikrotime
MIPB Technologies
NEC America, Inc.
Broadcast Equipment
Phase Video Inc.
Quantel Ltd.
RCA Broadcast Systems
Rohde & Schwarz
Thomson-CSF
Vital Industries

FRAMES & RACKS
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Ariel Communications Corp.
Army Engineering
Bad Industries
Broadcast Electronics
Cases Inc.
Centro Corp.
David H. Brothers Co.
Digital Video Systems
Dell Technical Vehicles
Dyna Engineering
Dynair
Encore Corporation
GBC Closed Circuit TV Corp.
GF Business Equipment
GKM Manufacturing Corp.
Griffin Fixtures
HSC Incorporated
Hammond Industries
Micro-Trak
Modular Audio Products
Pancofl-W Lighting System
Research Technology Int'l.
Shintron
Straight Wire Audio
Veecto Electronic Co.
Winised Corp.
Wyo Metal Prod.

FURNITURE & CABINETRY, STUDIO
Amco Engineering
Audionics
Bretford Mfg.
Broadcast Audio Corp.
David H. Brothers Co.
Bud Industries
Satellite Case Co.
Centro Corp.
Dell Technical Vehicles
Dyna Engineering
Dynamic Technology Ltd.
Electro-Acoustic Designs
Encor Products

 THE GRAPHIC
Griffin Fixtures
HSC Incorporated
Hammond Industries
Harris Corp.
Broadcast Products Div.
IGM Communications
Kreonlite
Leader Broadcast Systems
Leedal
McCurdy Radio Industries
Micro-Trak
Pacific Recorders & Engineering
Panox Lighting Systems
Pax Technologies
Rangertone Research Inc.
Research Technology Int'l.
Ruslang Corp.
Strantron, Div. of Wyco
Unilaet Corp.
Winised Corporation

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AF
Amper Electro Design
Audisar
Bald Mountain Lab
CMC Technology Corp.
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Comox Systems
Elektroimpress
Georg Neumann GmbH
Kajani, Dy
Leader Broadcast Systems
Leader Instruments
Modular Audio Products
Georg Neumann
Opamo Labs
Polystic Instruments
Potomac Marine & Aviation
Quad-Eight Electronics
Rohde & Schwarz
Sescom
Sennens AG, Ostereich
Spectra Sonics
Tektronix
VIZ Mfg. Co.
White Instruments Inc.
Xedit Corporation

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American Data
Asacal/Shibasoku
Automation Techniques
Beaverton
Robert Bosch GmbH
Broadcast Video Systems
CMC Technology Corp.
Cox International
Michael Cox
Crosspoint Label Corp.
Crow of Reading Ltd.
Elektroimpress
Graham-Patten Systems
The Grass Valley Group
Harris Corporation, Broadcast Products Division
Image Video Limited
Industrial Sciences, Inc. (ISI)
International Nuclear Corp.
Lang Video Systems
Lenco
Shintron
John M. Sullivan Associates
Texascom/W Corporation
Thomson-CSF
Vital Industries

BURST
American Data
Automation Techniques, Inc.
Robert Bosch GmbH
Den Briton Ent.
Broadcast Video Systems
Michael Cox
CMC Technology Corp.
Cox/Redman Technologies
Crosspoint Label
Crow of Reading Ltd.
Dynamic Electronics
Farnese Inc.
Graham-Patten Systems
Harris Corporation, Broadcast Products Division
Continued on page 84

www.americanradiohistory.com
Profitable in-house production starts with the right system.

Designed by MCI.

Time was when you could get by on in-house production with a couple of beat-up tape recorders and a turntable. But audiences and advertisers of today are demanding more. And that means a total production system that allows you to do everything from overdubbing and track bouncing to live multitrack recording. Now the company that has equipped more award winning studios than any other has designed a Total Production Package priced within your budget. You get an 8-track recorder, 2-track recorder and a studio quality console with 10 microphone and 5 stereo line inputs. Plus remote control, an accurate spot timer, 10 programmable "search and find" memories, variable speed and dozens of other features designed to make your job easier and your product better. MCI even offers a comprehensive user training program in the creative use and the maintenance of this system.

Contact your nearest MCI dealer today about the quality design (and current price advantages) of MCI's new Total Production Package. Your advertisers will love you for it.

Circle (48) on Action Card
Telemet
Video Broadcast and Test Equipment

AV Routing Switcher, 7934 is the latest in the state of the art circuitry. Both manual or computer control options available.

Envelope Delay Measurement Set, 3705 measures the envelope delay of video frequencies for compliance with FCC requirements.

Sideband Analyzer, 3706 shows with a calibrated response curve if sideband attenuation and frequency response meet FCC requirements. (Model 3709, for deeper resolution and spectrum analysis).

Broadcast Demodulator, 4501 accurately demodulates the transmitted signal to show the true video signal being broadcast.

Demod Tester, 4503-A1 quickly checks the broadcast signal demodulator for flatness of frequency response.

Modulator, 4420 is a state of the art cable TV modulator with VSB saw filter, digital display, very low noise and FCC TV transmitter specs.

Broadcast Demodulator, 3710 is a comprehensive demodulator with both synchronous and envelope detection, built-in self tester, digital display, multiplexed outputs and other convenience features.

Video and Pulse Distribution System, (3300 series). Features Video DA's with frequency equalization; Pulse DA's with variable delay.

Clamper Amplifier, 3203-F clamps high levels of hum on balanced and unbalanced lines. Equalizes for cable loss up to 10 dB.

Fiber Optics Video Transmission System, 4210 has audio subcarrier. Provides interference-free video and aural transmissions for STL and ENG applications.

Modular Test Set, 3538 provides up to 8 EIA standard video test signals. Special purpose modules also available.

Audio DA System, 6910. Each DA card provides 6 balanced, or 12 unbalanced 600 ohm outputs. 10 cards per frame with power supply.

NTSC Chroma Keyer Decoder, 4706-A1 decodes the NTSC signal with no apparent H delay for RGB keying.

Isolation Amplifier, 5300. An active device that negates hum caused by ground loops on unbalanced video transmission cable.

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Telemet
A Geotel Company

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Eastern Area Office—(914) 279-3231

Circle (47) on Action Card
“Confidentially... the top news is at the bottom.”

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- **CEI 310**: Still the most versatile production camera going... and going... and going.
- **Panacam Reflex**: The premier electronic cinematography camera. More than just a superb "video camera", it's available for rent worldwide. Yes—worldwide.
- **Foton I**: The "smart" one-inch microprocessor studio camera for smart buyers.

**CEI...now a PANAVISION company**

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TEXAS WATS: 800-252-9792

BROADCAST SYSTEMS INC.
6223 JAMESTOWN AUSTIN, TEXAS 78756

Circle (50) on Action Card

WHO MAKES IT

Nytone Electronics Corp.
QS Systems
Torpey Controls & Engineering
Visual Methods

IMAGE REPOSITIONER

Adda Corporation
Grove Video
Interand
McQuarrel
NCE America Inc.
Broadcast Equipment
Video Aids of Colorado

INTEGRATED CIRCUITS

(See Also ICs and Semiconductors)
AEG-Telefunken
(Bavy Engineering)
AE American Electronic
Laboratories
Aqeeq Systems
Cavity Electronics
Cherry Electric Prod. Corp.
Cherry Semiconductor
Cool Light
Data-Inter
Fairchild CCD Imaging
Javelin Electronics
Logica
Motorola
Narda Microwave
NKC America Inc.
Broadcast Equipment
Thomson-CSF

INTERCOM SYSTEMS

AEG-Telefunken
Alice (Blancourt Ltd.)
Audix Ltd.
Bell Audio Systems
Bogen Division / Lear
Siemens Inc.
Brabant Electronics Ltd.
David H. Brothers Co.
Broadcast Technology
Celec Vega
Clear-Com Intercom Systems
Communications Co. Inc.
Communications Control Centers
Comprehensive Video Supply
Crosspoint Latch
Deltarion
Philip Drake Electronics
Dukane Corp.
Dyma Engineering
Dynamote Corp.
ENG Helicopter Satellite Ltd.
Edcor
Elektroplex
Enertec Schumberger
Fartronics Limited
Fisher Berkeley Corp.
G.C. Electronics
GTE Products Corp.
Harris Corporation, Broadcast
Products Division
H. M. Electronics
International Electro - Magnetics
Leader Broadcast Systems
Link Electronics
McCurdy Radio Industries
Mincom
Rupert Neve
PAG Group
Paso Sound Products
ProTech Audio Corporation
R. Columbia Products
RTS Systems
Richmond Sound Design
Rob Corporation
Sail Electronics
Seltom Corporation
Sharepoint Systems
Siemens Ag Osterreich
Singer Products Co.,
Standard Telephone UHF Radio
Swintek Enterprises, Inc.
TOA Electronics
Telecom Systems Corp.
Television Equipment Assoc.

Telex Communications
Thomson-CSF
Tweed Audio USA
Vanco Engineering
Veicep Setat
Vibra Electronics Mfg.
Video Aids of Colorado
Ward-Beck Systems
World Video

INVERTERS

Advance Conversion Devices Co.
Don Britton Ent.
Comprehensive Video Supply
Vanner Inc.

ISOCOUPLERS

Artei Communications Corp.
CSP Inc.
Continental Electronics Mfg.
Harris Corporation, Broadcast
Products Division
McMartin Industries
Mosesley Associates
Shively Laboratories
Video Aids of Colorado

ISOLATOR

Harris Corporation
UTE Microwave Inc.
Varian MicSDL
Video Aids of Colorado

JACK PANELS

ADM Technology
Audio Accessories Inc.
Broadcasti Electronic Systems, Inc.
Broadcast Systems
Broadcast Technology
But Industries
CSP Inc.
Comrad Communications
Continental Electronics Mfg.
Crow of Reading
Diatronics
Dell Technical Vehicles
Diellectric Communications
Dynamic Technology Ltd.
Dyntech Data Systems
Electro-Acoustic Design
Electrokineps
Fartronics Limited
G.C. Electronics
Harris Corp., Broadcast Products
Image Video Limited
Leader Broadcast Systems
Link Electronics
McCurdy Radio Industries
McMartin Industries
Rupert Neve
Panoram-B/W Lighting Systems
Polomat Instruments
Polomat Marine & Aviation
Ramko Research
Rev Rheostat & Co., Inc.
Rockwell International
Shively Laboratories
Sphere
Switchcraft
TM Systems
Trompeter Electronics
Union Connector
Victor Electronic Co.
Ward-Beck Systems

JACK PANELS, WIRED

Audio Accessories
Broadcast Systems
Comrad Communications

KEYERS, VIDEO INSERT

American Data
Beaveronics

(Continued on page 90)

Circle (51) on Action Card

Serving the broadcast industry since 1946

Telephone
803/448-3335

Broadcast Communications/JUne 1982

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SIX REASONS WHY MOTOROLA'S AM STEREO SYSTEM IS GETTING SUCH GOOD RECEPTION.

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Probably because no other AM Stereo system has all that the C-QUAM system offers:

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3) Full coverage in monaural and stereo.
4) Causes no clicks or pops.
5) Full frequency response.
6) Lease plan.

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Dick Harasek
Manager, Advanced Technology Products
Motorola, Inc. P.O. Box 95334
Schaumburg, Illinois 60195

Please send me a copy of your free brochure: "AM Stereo: The Answer to the Marketplace Decision."

Name:___________________________________________
Title:____________________________________________
Station/Group:___________________________________
Address:_________________________________________

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Circle (52) on Action Card

www.americanradiohistory.com
WHO MAKES IT

Don Britton Ent.
Broadcast Video Systems
Control Video Corporation
Michael Cofone
Crosspoint Latch
Dynair Electronics
Graham-Patten Systems
Image Video Limited
Industrial Sciences Inc. (b)
International Nuclear Corp.
Key Video Ltd.
Link Electronics
Rhode & Schwarz
Siegel Electronics
Thomson-CSF
Torpey Controls & Engineering
Video Associates Labs
Videomedia
Vital Industries

KNOWS CONTROL
Alco Electronic Products
Buhl Optical Co.
Electronic Instrument & Specialty Corp.
G.C. Electronics
Salco Products
Sescom, Inc.
VIZ Mfg., Co.

LENS FILTERS
Angenieux Corp. of America
David H. Brotherton Co.
Century Precision CineOptics
Harris Corporation
Schneider Custom of Am.
Tiffen Manufacturing
Tele-Cine Inc.
The Zei-Mark Corp.

LENSES, FIXED
ATV Research
Angenieux
Arriflex
Robert Bosch GmbH
David H. Brotherton Co.
Buhl Optical
Canon USA
Century Precision CineOptics
Cinema Products
Comprehensive Video Supply
D.O. Industries Inc.
Establishments Pierre Angenieux
Fujinon Inc.
GBC Closed Circuit TV Corp.
Harris Corp.-Broadcast Products Div.
Karl Holtz Inc.
Javelin Electronics
Lencax Optics
Panasonic
Power Optics
Rank Precision
Rank Taylor Hobson
Jos. Schneider GmbH
The Schneider Corp. of Am.
Tele-Cine Inc.
Visual Methods
The Zei-Mark Corp.

LENSES, PROJECTION
Buhl Optical
D.O Industries Inc.
Hargertone Research
Jos Schneider
Tele Cine Corp.
The Zei-Mark Corp.

LENSES, ZOOM
ATV Research
Angenieux Inc.

Arriflex
Robert Bosch GmbH
David H. Brotherton Co.
Buhl Optical
Canon USA
Century Precision CineOptics
Cinema Products
Comprehensive Video Supply
Crow of Reading
D.O. Industries Inc.
Establishments Pierre Angenieux
Fujinon Inc.
GBC Closed Circuit TV Corp.
Harris Corp.-Broadcast Products Div.
Javelin Electronics
Kaiart Victor
Lenax Optics
One Pass Video
Panasonic
Power Optics
Rank Precision
Rank Taylor Hobson
Jos. Schneider GmbH & Co.
The Schneider Corp. of Am.
Sharp Electronics
Tele-Cine Inc.
Visual Methods

LIGHTING ACCESSORIES
CONNECTORS PLUGS
AVA Electronics
Bardwell & McAllister
Beiden Communications
Walter S. Brewer Co.
Colortran
Electro Controls
Electronics Diversified, Inc.
G.C. electronics
GTE Products Corp.
Klieg Bros.
L.E. Nelson Corp.
LTM Corp. of America
Oleson
Packaged Lighting Systems
Panasonic Lighting Systems & Supply
Research Technology Int'l
Rex Rheostat & Co.
Strand Century
John M. Sullivan Associates
Union Connector Co., Inc.
Whirwin Wind Music

FADER CONTROLS
Beiden Communications
Walter S. Brewer Co.
CAE Inc.
Colortran
Duncan Electronics
Dynamic Technology Ltd.
Electro Controls
Electronics Diversified Inc.
Hammond Industries
Klieg Bros.
L.E. Nelson Corp.
Oleson
Packaged Lighting Systems
Panasonic Lighting Systems
Skirpam Lighting Control Corp.
Strand Century
John M. Sullivan Associates
Theater Techniques

TRANSFORMERS
Beiden Communications
Peter W. Dahn
Harris Corporation, Broadcast Products Division
L. E. Nelson Corp.
Oleson
Packaged Lighting System
Panasonic-W Lighting Systems
World Tower

LIGHTING: CONTROLS, FIXTURES, LAMPS
CONTROL BOARD/CONSOLE
AEG-Telefunken
Alco Electronics

ANAB America
Barlow & McAllister
Beiden Communications
Walter S. Brewer Co.
Don Britton Ent.
CAE, Inc.
Colortran
Custom Audio Electronics
Dynamic Technology Ltd.
Electro Controls
Electronics Diversified, Inc.
The Great American Market
Hammond Industries
Klieg Bros.
LTM Corp. of America
Matthews Studio Equipment
L.E. Nelson Corp.
Oleson
Osram Sales Corp.
Packaged Lighting Systems
Panasonic Lighting Systems & Supply
Rainbo Products
Siemens
Skirpam Lighting Control Corp.
Strand Century
Tech Theatre Inc.
Theater Techniques Inc.
Thorn Lighting Limited
U Audio Pixtec

FILTERS & GELS
AEG-Telefunken
Bardwell & McAllister
Beiden Communications
Walter S. Brewer Co.
Colortran
Cool Light
Electro Controls
Electronics Diversified Inc.
Klieg Bros.
LTM Corp. of America
Matthews Studio Equipment
L.E. Nelson Corp.
Oleson
Packaged Lighting Systems
Panasonic Lighting Systems & Supply
Smith-Victor Sales Corp.
Strand Century
John Sullivan Associates
Tech Theatre Inc.
Tiffen

HANGS, STUDIO
AEG-Telefunken
Automatic Devices
Bardwell & McAllister
Walter S. Brewer Co.
Colortran
Electro Controls
Electronics Diversified
Image Devices Incorporated
Klieg Bros.
LTM Corp. of America
Matthews Studio Equipment
L.E. Nelson Corp.
Oleson
Packaged Lighting Systems
Panasonic Lighting Systems & Supply
Smith-Victor Sales Corp.
Strand Century
Syracuse Scene & Stage Lighting

LAMPS, REPLACEMENT
AEG-Telefunken
Alco Electronic Products
Bardwell & McAllister
Beiden Communications
Walter S. Brewer Co.
Colortran
Cool Light
Dynamic Technology Ltd.
Electro Controls
Electronics Diversified
Fresneltronics
GTE Products Corp.
Lighting Products Group
The Great American Market
Harris Corporation, Broadcast Products Division
Harwood Mfg. Co.
Klieg Brothers
LTM Corp. of America
Lowel-Light Mfg., Inc.
L.E. Nelson Corp.
Oleson
Packaged Lighting Systems
Panasonic Lighting Systems & Supply
Smith-Victor Sales Corp.
Strand Century
Telodyne Big Beam

LIGHTS, STUDIO
AEG-Telefunken
Arriflex
Barlow & McAllister
Beiden Communications
Walter S. Brewer Co.
Broadcast Electronics Inc.
CAE Inc.
D.O. Industries Inc.
Colortron
Comprehensive Video Supply
Cool Light
Custom Audio Electronics
Dynamic Technology Ltd.
Electro Controls
Electronics Diversified, Inc.
Fresneltronics
GTE Products Corp.
Lighting Products Group
The Great American Market
Harris Corporation, Broadcast Products Division
Harwood Mfg. Co.
Klieg Brothers
LTM Corp. of America
Lowel-Light Mfg., Inc.
Mole-Richardson

Continued on page 92
**A RANGE OF VIDEO SWITCHERS**

6112
The only switcher in its class to offer two fully independent MIX EFFECTS systems, with each M/E having its own pattern generator and positioner. This nine input, four bus unit includes the following standard features: downstream keyer, pattern modulator, spot-lit, colonizer, toggle or "take preview" automatic or manual mix and wipe operation, variable soft wipes, adjustable borders, internal or external keying on each M/E, intercom, loop-thru video inputs, preset mix or wipes, black burst output, and a blanking processor. There is also a plug-in optional chroma keyer available. All inputs accept synchronous, non-synchronous, composite, non-composite, monochrome or color signals and go thru dual back porch clamping.

**Price $7,950.00 PAL $8,950.00**

**Options**
- Encoded color keyer (plug-in board) $1,050.00
- RGB color keyer (plug in board) $1,050.00
- Slimline control panel (4 inches) $250.00

6114
Eight input production switcher with three fully independent Mix Effects Systems. Each ME has its own pattern generator and positioner and each one is capable of double re-entry. Chroma keyer (either encoded or RGB), downstream keyer with matte, blank, invert and or external border. Downstream keyer may be previewed. Five video signals can be displayed at the same time. Downstream fade to black. Quadratic split: Field equalize to 4 inputs with additional pattern selector.

**Price: $4,980 PAL $5,880**

6107
The 6107 is a broadcast quality switcher. Though there are only 2 buses it is possible to preview and or preset a mix or effect without disturbing the program output. The special mix-wipe function provides a combination mix and wipe (for instance, a dissolve within a circle pattern), which normally requires at least three buses. It also features 12 patterns, soft wipes, built-in intercom amplifiers; and colonizer, toggle and blackburst output.

**Price: $3,800. PAL $4,800.**
INNOVATIVE AND A REAL VALUE—the Gemini™ battery/charger duo in ni-cad or silver.

The compact lightweight PE 100 Minicharger® is available singly or in multiples up to 8 units.

Our 8AH ni-cad pack operates the Ampex VPR 20 recorder for over an hour. It can be charged in an hour with our KWIK-CHARGER™.

PERROTT'S™ long awaited KWIK-CHARGER™ the ultimate fast charger for ni-cads. One hour troublefree charging.

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Our VTR battery packs in 4AH ni-cad, 8AH silver and 3AH lead acid are industry favorites.

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The legendary favorite—our lightweight silver 12AH leather battery belt for maximum performance.

PERROTT'S™ leather 4AH and 7AH ni-cad belts for film and video are acclaimed for reliability.

PERROTT'S™ continued high standards in equipment design and engineering have resulted in our 25 year reputation for reliable products.

Circle (54) on Action Card
WHO MAKES IT

Utility Tower

World Tower Company

FM SERVICES
AEG-Telatinum
Abroid Construction
Atlas Tower Corp.
Burden Associates
Jim Cason Electronics
Crowder Communications Ltd.
Davis Electronics
John J. Davis & Assoc.
Electro-Acoustic Designs
Image Devices Incorporated
Global Communications
Grant Towers
Harris Corp.
Broadcast Products Div.
Harrison Systems
IGM Communications
Leader Broadcast Systems
LeBlanc & Royé Communications
Micro Communications
Multichoice Sourcing
Processing Plus
RCA Service Company
RadioElectronics
Rohde & Schwarz GmbH
Swager Tower Corp.
Tramco Electronics
Utility Tower
World Tower Company

TV SERVICES
AEG-Telatinum
Abroid Construction
Atlas Tower Corp.
Broadcast Aids Inc.
Jim Cason Electronics
Cinema Products
Comark Communications
Cohu, Electronics Div.
Crowder Communications
Davis Electronics
John J. Davis & Assoc.
Grant Towers
Harris Corp.
Broadcast Product Div.
Harrison Systems
Image Devices Incorporated
Global Communications
LeBlanc & Royé Communications Inc.
Micro Communications
Radiotechnik
RCA Service Company
Rohde & Schwarz
Swager Tower Corp.
Utility Tower
Veel Sefat
Videocon Engineering
Videomagnetics
World Tower Company

MICROWAVE
AEG-Telatinum
Abroid Construction
Andrew Corp.
Atlas Tower Corp.
Davis Electronics
John J. Davis & Associates
Gabriel Electronics
Grant Towers
Harris Corp.
Broadcast Products Div.
Image Devices Incorporated
International Microwave Corp.
Jetec Inc.
Leader Broadcast Systems
LeBlanc & Royé Communications Inc.
M/A-COM Video Systems
Motorola Communications & Elect.
Multichoice Sourcing
Nutre Inc.
RCA Service Company
R.F. Technology
Radiotechnik
Swager Tower Corp.
Utility Tower
Veel Sefat
World Tower Company

TOWER SERVICES
AEG-Telatinum
Abroid Construction

Atlas Tower Corp.
Davis Electronics
John J. Davis & Assoc.
Gabriel Electronics
Grant Towers
Harris Corp., Broadcast Products Div.
Image Devices Incorporated
M/A-COM Video Systems
Multichoice Sourcing
Fred A. Nudd Corporation
LeBlanc & Royé Communications Inc.
RCA Service Co.
Swager Tower Corp.
Utility Tower
World Tower Company

MDS SYSTEMS
Bogner Broadcast Equipment
Comad Communications
Compucon Inc.
Comtech
Conifer
Dynacom Electronics Ltd.
EMC3 Broadcast Products
Lindsay Specialty Products Ltd.
Micro Communications
Oak Communications, CATV Division
Standard Communications
Texscan

METERS
(See Test Equipment)

MIXERS, MICROPHONE
AKG Akustische u. Kino-Gerate
ATI Audio Technologies Inc.
Anek TAC
Applied Technology
Audio
Audio Technica U.S.
Avan America
Bill Audio Systems
Bogen Division / Lear Siegler
Broadcast Electronics, Inc.
Cinematics
Coherent Communications
Creative Trade
Crown International
Georg Neumann GmbH
Editor
Electro-Voice
Electrolux
EV Tapco
Foundation Electronic Instruments
H.M. Electronics
Haltliaknen & Friends
Hammond Industries
Howe Audio
IGM Communications
Industrial Research Products
Integrated Sound Systems, Inc.
Irish Electronics
LMI Corp. of America
MBI Broadcast Systems, Inc.
McCurdy Radio Industries
McMartin Industries
Micro-Track
Rupert Neve
Northland Communications
PAG-Group
Panasonic, Professional Audio Div.
Pasco Sound Products
ProTech Audio
Quad-Eight Electronics
Quantum Audio Labs
RTS Systems
Ramko Research
Richmond Sound Design
Rusuco
Satt Electronics AB
Seacom Inc.
Shure Brothers
Sonett Electronics
Spectra Sonics
Sphere
Stanzoll Ltd.
Stellvox
Studer International AG
Studer Revox AG
Teac Corp. of America
Transit-O-Sound
Ultra Audio Pro
Videotronics Mfg.
Video '69
Videomedia
Ward-Beck Systems

MICROPHONES & ACCESSORIES

BOOMS & STANDS
AKG Acoustics
AKG Akustische u. Kino-Gerate
Accurate Sound
Allen Gordon Enterprises
The Astal Corporation
Atlas Sound
Audio-Technica US Inc.
Beyer Dynamics
Eugene Beyer Elektrotechnische
Fabrik GmbH & Co.
Bogen Division / Lear Siegler
Broadcast Electronics, Inc.
David H. Brothers Co.
Cinema Products
Contemporary Electronics Mfg.
Creative Trade, CTAB AB
D - B Electronics
Electrolux
Fidellipac Corp.
G.C. Electronics
Hammond Industries
Harris Corporation
Karl Heitz Inc.
McCurdy Radio Industries
NET Enterprises
Neal Ferrograph Inc.
Northland Communications
Georg Neumann GmbH
Paco Sound Products
Sennheiser Electronic Corp.
Shure Brothers
Singer Products Co. Inc.
 Strand Century
Studer International AG
John M. Sullivan Associates
Turner, Division of Telex
Communications, Inc.
Vidare Elec. Mfg.

FLEXIBLE / MOBILE HOLDER (FOR CONSOLES)
AKG Acoustics
AKG Akustische u. Kino-Gerate
Atlas Sounds
Beyer Dynamics
Creative Trade, CTAB AB
Eugene Beyer Elektrotechnische
Fabrik GmbH & Co.
Bogen Division / Lear Siegler
Broadcast Electronics
Contemporary Electronics Mfg.
Harris Corporation
Neal Ferrograph (USA) Inc.
Georg Neumann
R.Columbia Products
Saccom
Shure Brothers
Studer International AG

HAND HELD
AKWA
AKG Acoustics
AKG Akustische u. Kino-Gerate
Arca Laboratories
The Astal Corporation
Audio-Technica US Inc.
Auditorium
Beyer Dynamics
Eugene Beyer Elektrotechnische
Fabrik GmbH & Co.
Bogen Division / Lear Siegler
Broadcast Electronics
David H. Brothers Co.
Cetec Vega
Coherent Communications
Comprehensive Video Supply
Creative Trade, CTAB AB
Crown International
Dukane Corp.
Editor
Electro-Voice
Eumig USA
Fidellipac Corp.
G.C. Electronics
Harris Corporation
Micron Audio Prod. Ltd.
Nady Systems
George Neumann GmbH

Continued on page 96

BROADCAST COMMUNICATIONS/JUNE 1982

www.americanradiohistory.com
SAM82
Dimensions: 17.5 x 3.2"
Weight: 17.6 lbs

SAM42
Dimensions: 11.3 x 10.4 x 3.1"
Weight: 8.5 lbs

(ac and dc operated)

Made in Sweden by
SATT
Electronics
P.O. Box 32006
S-126 11 Stockholm/Sweden
Phone: +46 (8) 81 01 00 Telex: 10884 SATTEL S

International distribution:
Australia: G.E. Direct Marketing, Melbourne Benelux: Trans-
Tec BV, Rotterdam Denmark: AEG Dansk Elektricitets A/S,
Copenhagen Finland: Sahkolikkeiden OY, Vantaa France:
Publison Audio Professional, Paris Japan: Hoel Sangyo Co
Ltd, Tokyo Middle East: AATC, Amman/Jordan Norway:
Siving Benum A/S, Oslo Switzerland: Biese Elettronica SA,
Lugano United Kingdom: AKG Acoustics Ltd, London USA:
Martin Audio Video Corp., New York West Germany: BFE KG,
Mainz Yugoslavia, Czechoslovakia, Bulgaria, Romania,
Greece: C Stavrinidis, Paudex/Switzerland

I am interested in SAM 82/SAM 42

Company:
Name:
Address:
Postal code:
Country:
Telephone:

Circle (55) on Action Card
**WHO MAKES IT**

- **NET Enterprises**
- **Northland Communications**
- **PAG Group**
- **Panasonic Canada Video Systems**
- **Panasonic Professional Audio**
- **Paso Sound Products**
- **Sennheiser**
- **Shure Brothers**
- **Sony**
- **Studer International AG**
- **Swintek Enterprises**
- **Telex Communications**
- **Turner, Division of Telex Communications, Inc.**
- **Video Elec. Mfg.**

**PARABOLIC & SHOTGUN**

AKG Acoustics
AKG Akustische u. Kino-Geaute Audio-Technica US Inc.
Eugene Beyer Elektrotechnische Fabrik GmbH & Co.
Beyer Dynamics
Bogen Division / Leer Siegler
David H. Brothers Co.
Coherent Communications
Comprehensive Video Supply
Electro-Voice
Fidelisso Corp.
Galco Electronics Ltd.
Georg Neumann GmbH
PAG - Group
Sennheiser Electronic Corp.

**MICROPHONES, WIRELESS**

AEG-Telefunken
Beyer Dynamic Inc.
Eugene Beyer Elektrotechnische Fabrik GmbH & Co.
Celtic Vega
Coherent Communications
Comrex Corporation
Edit
Alan Gordon Enterprises
H. M. Electronics
Micron Audio Prod. Ltd.
Nady Systems
Paso Sound Products
R-Columbus Products
Ken Schaffer Group
Sennheiser Electronic Corp.
Spectra Sound
Swintek Enterprises, Inc.
Telex Communications

**MICROPHONE SPLITTER**

Beyer Dynamics
Harris Corp., Broadcast Products
Neal Ferrograph (USA) Inc.
Georg Neumann
Ramco Research
Sescom
Straight Wire Audio
Wireworks
Whirlwind Music Dist.

**MOBILE UNITS**

*(See Vans)*

**MODULATION CONTROLLER**

Delta Electronics

**MODULATORS, TV**

Asaca/Shibasoku
Astro Electronic Design Inc.
Automation Techniques Inc.
ATV Research
Barco Video Systems
Don Brittent Ent.
Datel
Comtec Data Corp.
Crowder Communications
Crown of Reading Ltd.
Dynar Electronics

**MONITORS, AUDIO & RF**

**AM SYSTEM**

BES Electronics
Belar
CSP Inc.
Comad Communications
Continental Electronics Mfg.
Delta Electronics
Gorman Redlich
Harris Corp., Broadcast Products Division
Motorola Inc., Spectra Products
Potomac Instruments
ProTech Audio
Sennheiser, Elektrotechnik
Sennheiser, Elektrotechnik

**BASE CURRENT / ANT SAMPLING**

BES Electronics Ltd.
Belar
CSP Inc.
Continental Electronics Mfg.
Cosmic Electronics
Delta Electronics
Gekko Electronics
Gorman Redlich
Harris - Broadcast Products
Potomac Instruments
Thomson-CSF

**DIRECTIONS**

BES Electronics Ltd.
Belar
CSP Inc.
Continental Electronics Mfg.
Cosmic Electronics
Delta Electronics
Gekko Electronics
Gorman Redlich
Harris Corporation, Broadcast Products Division
Micro Communications
Potomac Instruments
Thomson-CSF

**FM SYSTEMS**

Broadcast Electronics
Rohde & Schwarz

**FREQUENCY**

Altech
Belar
Broadcast Electronics,
Inc.
Celtic Broadcast Group
Comad Communications
Continental Electronics Mfg.
Edison Electronics
Global Specialties Corp.
Harris Corporation, Broadcast Products Division
McMartin Industries
Motorola
Phillips Test & Measuring
Rohde & Schwarz
Rohde & Schwarz GmbH

**SINGER PRODUCTS CO. INC.**

**TFT INC.**

**TEKTRONIX**

**THOMSON-CSF**

**TRUE TIME INSTRUMENTS**

**VERA-COUNT**

**WAVELEK INDIANA**

**MODULATION**

Belar
Broadcast Electronics
Celtic broadcast Group
Comad Communications
Continental Electronics Mfg.
Harris Corporation
Harris Corporation, Broadcast Products Division
Javelin Electronics
Kudelski S.A., Switzerland
McMartin Industries
Marconi Instruments Ltd.
Motorola Communications & Elec.
QEI Corp.
R. E. Instruments
Scientific Atlanta
Singer Products Co. Inc.
TFT Inc.
Thomson-CSF
Vera-Count
Wavelek Indiana

**PHASE MONITOR**

Belar
CSP Inc.
Continental Electronics Mfg.
Delta Electronics
Diatex Eng. Labs
Gorman Redlich Mfg. Co.
Javelin Electronics
Jerrold Div. General Instrument
Kajarih Oy
Marconi Instruments Ltd.
Potomac Instruments
Pro Tech Audio
Selco Produts
Thomson-CSF
Video Aids of Colorado

**POWER MONITOR**

B & I Electronics
Belar
Bird Electronic
Bogen Division / Leer Siegler
Coastal Dynamics
Delta Electronics
Harris Corporation, Broadcast Products Division
Marconi Instruments Ltd.
Moseley Associates
Narda Microwave
Potomac Instruments
ProTech Audio
SGL Waber Electric
Sierra Audio Corp.
Thomson-CSF

**PROGRAM MONITOR**

Belar
Bogen Division / Leer Siegler
Harris Corp., Broadcast Products
ProTech Audio
Real World Technologies
Ron Corp.
Russco
Thomson-CSF
Ultra Audio Pixtoc
Videotek
Video Aids of Colorado
World Video

**RF LEVEL**

B & I Electronics
Belar
Bird Electronic
Coastal Dynamics
Delta Electronics
Harris Corporation, Broadcast Products Division
Jerrold Div., General Instrument
Marconi Instruments Ltd.
Moseley Associates
Potomac Instruments
R. E. Instruments
Rohde & Schwarz
Sadelco Inc.
Thomson-CSF

**SCA MONITOR**

Belar
Broadcast Electronics
David H. Brothers Co.
Cotec Broad Group
Comad Communications
Continental Electronics Mfg.
Harris Corporation
McMartin Industries
Rohde & Schwarz
Singer Products Co. Inc.
Sennheiser Enterprises
TFT Inc.
Thomson-CSF
Vera-Count

**TV AURAL**

Comex Communications
Comrex Corp.

**MONITORS, VIDEO**

**B & W RACK**

ATV Research
Adwar Video
Amtron Corp.
Asaca Corporation
Audioelectronics Corp.
Barco Video Systems
Robert Bosch GmbH
David H. Brothers Co.
Cineca Products
Cohu, Electronics Division
Conrac Corp.
Crow of Reading Ltd.
Electrohome Ltd.
ElektroIMP
Fernseh Inc.
G.B.C. Closed Circuit TV Corp.
Harris Corp.
Broadcast Products Div.
Ikegamni
Javelin Electronics
Lenco
Link Electronics
Motorola Communications & Elec.
NET Enterprises
Panasonic
Rohde & Schwarz
Rohde & Schwarz GmbH
Team Electronics
Tektronix
Telemations
Thomson-CSF
Veiee Sefai
Vidcom Engineering
Vide o-1-D

**B & W STANDALONE**

Amtron Corp.
ATV Research
Audioelectronics Corp.
Barco Video Systems
Robert Bosch GmbH Television
Cineca Products
Cohu, Electronics Division
Conrac Corporation
Crow of Reading
Electrohome Ltd.
ElektroIMP
Fernseh Inc.
G.B.C. Closed Circuit TV Corp.
Ikegami
Javelin Electronics
Lenco
Link Electronics
Motorola Comm. & Elec.
Panasonic
Rohde & Schwarz
Rohde & Schwarz GmbH
Team Electronics
Tektronix
Thomson-CSF
Veiee Sefai
Vidcom Engineering
Visual Methods Inc.

**COLOR RACK**

Adwar Video
Amtron Corporation of America
Asaca/SHibasoku
Autoeleva Products
Barco Video Systems

**Continued on page 98**

BROADCAST COMMUNICATIONS/JUNE 1982
A solide solution...

Siemens: a synonym for years of experience in sound control and studio engineering. Development, planning, manufacture and mounting of complete radio and television studios, intercommunications systems, microprocessor-controlled signal routing systems, sound control desks for all purposes and sizes, professional and semi-professional TV and radio transmission vans, speech and sound transmission systems of digital technique, peripheral modules for switch room and control desk applications.

For further details on sound control and studio engineering, please contact
Siemens AG Österreich
Division Ton- und Studiotechnik
A-1031 Vienna, P.O.B. 326
Phone (0222) 73 45 11/103
Tx 1 33603

Sound control equipment – for Eurovision – OB van EW 11

Circle (59) on Action Card
WHO MAKES IT

Robert Bosch GmbH
Cinema Products
Conrac
Crowd of Reading Ltd.
Elector
Electro-Optical Systems
Electrohome
Elkem
Fernseh Inc.
Hitachi
Ikegami
Lenco
Link Electronics
NET Enterprises
Panasonic
Pye TV
Rhode & Schwarz
Rhode & Schwarz GmbH
Shintron
Sony Corporation of America
Team Electronics
Tektronix
Thomson-CSF
VecLoc Segaf
Videocon Engineering
Video I-D
Videotek Inc.
World Video

COLOR STANDALONE
Antron Corporation of America
Asaka/Hitachi
ATV Research
Autocou Products
Barco Video Systems
Robert Bosch GmbH
Broadcast Video Systems
Carier-Pedem Technologies Corp.
Cinema Products
Conrac
Crowd of Reading Ltd.
Elector
Electro & Optical Systems
Electrohome
Elkem
Fernseh Inc.
Hitachi
Ikegami
Lenco
Link Electronics
Panasonic
Pye TV
Rhode & Schwarz
Rhode & Schwarz GmbH
Shintron
Sony
Team Electronics
Tektronix
VecLoc Segaf
Videocon Engineering
Video Aids of Colorado
Video I-D
World Video

PULSE CROSS
Advar Video
Antron Corporation of America
Asaka/Hitachi
Autocou Products Ltd.
Barco
Robert Bosch GmbH
Cinema Products
Conrac
Crowd of Reading
Elector
Electrohome
Fernseh Inc.
Ikegami
Lenco
Link Electronics
Panasonic
Rhode & Schwarz
Shintron
Tektronix
Videocon Engineering
Video Aids of Colorado
Video I-D
Videotek Inc.
World Video

RECEIVER / MONITORS
ATV Research
Advar Video
Amtron Corporation
BCB Electronic Sales
Barco Electronic

DeWolfe Music Library
Kitchen Productions
Muscipol
Network Production Music
Parasound Inc.
Real Radio Co.
Ken Schaffer Group
Tape-Athon / Cavox Stereo
Production
Yelestinco Inc.

MUSIC
PROGRAM SERVICES

Emil Ascher Music
BPI (Broadcast Programming International)
The CNB Studios
CVE Recording
Century 21 Programming
Chass Media Inc.
Computer Management Systems
Concept Productions
GeWolfe Music Library
Drake-Chenault
Kai's Music
Klein Sales Inc.
Kitchen Productions
Live Sound
Mighty Minute Programs
MusicUS
Radio Consulting Services
Real Radio Company
Sacred Sounds
Shane Media Services
Tape-Athon / Cavox Stereo
Production
VIF International
Valekinci
Video Data Systems

MULTICARRIER SYSTEMS

Aydin Microwave
Coastcom
Colpso Case Co.
GTE Lenkurt Incorporated
Modulation Associates
Morse Associates
C.N. Rodd BV
Valves Corporation

MULTIPLEXER

ATV Research
Advar Mfg.
Athy Communications Corp.
Aydin Microwave
Aydin Monitor Systems
Bally Engineering
Buhl Optical
CSB Mfg.
Coastcom
Cohu
Electrohome
Dielectric Communications
Fernseh Inc.
GTE Lenkurt Incorporated
GTE Products Corp.
Ikegami Electronics
Kalart Victor
Laird Telecom
Micro Communications
Modulation Associates
Mu-Def Electronics
North Hills Electronics
Nytone Electronics Corp.
C.N. Rodd BV
Novelties Laboratories
Thomson-CSF
Zen-Mark Corporation

MUSIC PRODUCTION SERVICES

American Image Productions
Emil Ascher Music
BPI
The Broadcast Center
Century 21 Programming
The CNB Studios
CVE Recording
Columbia Special Products
Continental Recordings

NEWS SERVICES

The Associated Press
United Press International

NOISE REDUCTION SYSTEMS, AUDIO

ADM Technology
AKG-Telutzenken
(Bayb Engineering)
ATI-Audio Technologies Inc.
Advanced Analog Systems, Inc.
Apex Systems
Applied Technology Corp.
Audio & Design Recording
Audiosonic of Oregon
Brassel & Kjær Instruments
Coastcom
Composite Video
dbx Inc.
Deltaco
Dolby Laboratories
EMT Franz
GTE Products Corp.
Harris Corporation
Broadcast Products Division
IGM Communications
Inovonics
Integra
Kientzle
Leader Broadcast Systems
MVR Innovations
McCurdy Radio Industries
Micronix Audio Products
Modulation Associates
NRC America
NET Enterprises
Oprain Labs Inc.
Processing Plus
Ramos Research
Sierra Audio
Straight Wire Audio
Tascam, Div. of Teac
Valley People

NOISE REDUCTION SYSTEMS, VIDEO

Asaka/Hitachi
Compac Video
Crowd of Reading Ltd.
Digipal Video Systems
Faroudja Laboratories
Fernseh, Inc.
Forte
GTE Products Corp.
Harris Corporation
MicroMite
NRC America
NET Enterprises
Phillips Broadcast Group
Siagel - Electronics
Thomson-CSF

OSCILLATORS, TONE

Audisor
Broadcast Electronics
Broadcast Technology
Brutel & Kjær
CMC Technology Corp.
Channelomatic
Datalotix
Deltaco
Frequency Devices
Gorman-Feudrich
Leader Broadcast Systems
McCurdy Radio Industries
Vu/Vdreme Electronics
Oomp Laboratories
Porotmark Marine & Aviation
ProTech Audio Corporation
Rhode & Schwarz
Spectra Sonics
Sphere
Tektronix

Continued on page 100
EIMAC cavities cover 54 to 970 MHz at power levels to 30 kW – our design or yours

Varian EIMAC has complete cavity design and production capability. We make sure that tube and cavity are compatible. If it isn’t an off-the-shelf item, we have the designers and engineers for any specific job.

EIMAC has expertise in all disciplines including pulse, CW, FM, and TV. We match tube, power, bandwidth and operating mode to achieve optimum performance.

More information on EIMAC cavities and tubes is available in our Cavity Capability brochure from Varian EIMAC. Or for prompt consideration of your special design requirements, contact Product Manager, Varian EIMAC, or the nearest Varian Electron Device Group sales office. Call or write today.

<table>
<thead>
<tr>
<th>EIMAC Cavity</th>
<th>Matching EIMAC Tube</th>
<th>Tuning Range (MHz)</th>
<th>Power Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV2200</td>
<td>4CX20,000A</td>
<td>86-108</td>
<td>30 kW</td>
</tr>
<tr>
<td>CV2220</td>
<td>3CX1500A7</td>
<td>86-108</td>
<td>15 kW</td>
</tr>
<tr>
<td>CV2225</td>
<td>4CX3500A</td>
<td>86-108</td>
<td>5 kW</td>
</tr>
<tr>
<td>CV2240</td>
<td>3CX10,000U7</td>
<td>54-88</td>
<td>10 kW†</td>
</tr>
<tr>
<td>CV2250</td>
<td>3CX10,000U7</td>
<td>170-227</td>
<td>10 kW†</td>
</tr>
<tr>
<td>CV2400</td>
<td>8874</td>
<td>420-450</td>
<td>300/1250 W*</td>
</tr>
<tr>
<td>CV2800</td>
<td>3CX400U7</td>
<td>850-970</td>
<td>225 W</td>
</tr>
<tr>
<td>CV2810</td>
<td>3CX400U7</td>
<td>910-970</td>
<td>190 W</td>
</tr>
</tbody>
</table>

*pulsed power
†peak sync, or 2.5 kW combined in translator service

Circle (57) on Action Card
WHOMAKESIT

Oscilloscopes

(See Test Equipment)

Patch Panels

ADM Technology
Audio Accessories, Inc.
Auditoriums
Bayley Engineering Ltd.
Brabury Broadcast Systems
Broadcast Electronics
Broadcast Technology
Continental Electronics
Crow of Reading Ltd.
Datatronics
Delphi Technical Vehicles
Dial Communications
Dyma Engineering
Dynamic Technology Ltd.
Dynatech Data Systems
Electro-Acoustic Designs
Electrophone
Fantronix
Harris Corporation, Broadcast
Products Division
Kings Electronics
Link Electronics
McCurdy Radio Industries
McMartin Industries
Micro Communications
Panoak Lighting Systems
Phoenix Dodge Communications
Potomac Instruments
Rex Rheetost & Co., Inc.
S.W.R.
Shively Laboratories
Siemens AG, Austria
Spherex
Strand Century
Switchcraft
Tascam, Div. of Teac
Theatre Technology Inc.
Thomson-CSF
Trumformer Electronics
Union Connector Co., Inc.
Vector Electronics
Videomedia
Wireworks

Phase Controller, Automatic

California Instruments
Delphi
Micro Communications
NEC America
Rohde & Schwarz
Thomson-CSF

Phase Converters

California Instruments
Key Industries
Thomson-CSF
Wilkinson Electronics

Phase Corrector, Cart

Howe Audio Productions

Power Controller

Delta Electronics

Power Supplies

AEL, (Am. Elec. Labs)
Amp Acoustics
AKG-Akustische u. Kino-Gerate
Advance Conversion Devices
Alpha Technologies
Antilouer
Beyer Dynamic
California Instruments
Caelul
Christie Electric Corp.
Cinema Products

Cinetronics
Coastcom
Comprehensive Video Supply
CROWER Communications Peter W. Dahl Co., Inc.
Dykane Corp.
Dynamite
Dynascan
Elektroimpex
Frequencies Devices
GET Products Corp.
Glassman High Voltage
Gould Inc.Instruments Div.
Harris Corp. Broadcast Products
Keithley Instruments
McCurdy Radio Industries
Microwave Devices
Modular Audio Products
Motorola Comm. & Elec.
Georg Neumann GbW
North Wind Power Co.
Ompack, Inc.
PTS Electronics
Potomac Marine & Aviation
Power Products
ProTech Audio Corporation
Sage Electronics
Siemens AG, Germany
Sorensen
Spectra Sonics
Stromm Donner
Stryek Inc.
Telethane Energy Systems
Teeco Corp.
Thomson-CSF
Vanderland
Varian
MCSD
Vidalite Electronics Mfg. Corp.

Preamplifiers

Microphone

ADM Technology
AKG Acoustics
ATI Audio Technologies Incorporated
Amek TAC
Arrakis Systems
Audio & Design Recording
Audionics of Oregon
Audisk
Audio Ltd.
Bayley Engineering Ltd.
Bell Audio Systems, Inc.
Bogen Division / Lear Siegler
Broadcast Electronics, Inc.
Broadcast Technology
Buer & Kjer Instruments
Cablecast Broadcast Group
Comad Communications
Continental Electronics Mfg.
Datatek
Datatronics
Dykane Corp.
Dyma Engineering
Edcor
Elektroimpex
EV Tapco
Full Compass Systems
Georg Neumann GbW
Greff Laboratories
Hammond Industries
Harri Corporation, Broadcast
Products Division
ITT Electronics
Leader Broadcast Systems
MXR Innovations, Inc.
McCurdy Radio Industries
Micro Trak Corporation
Miles Associates, Div. of Miles
Air Products Ltd.
Modular Audio Products
Rupert Neve
Ompack Labs, Inc.
Paso Sound Products
Processing Plus
ProTech Audio Corporation
Quad Eight Electronics
RTS Systems
Ramko Research
Richmond Sound Design
Rohr Corporation
Rohde \\u2013 Schlauch
Rohde & Schwarz GmbH
C.N. Rodd B.V.
Rusco
Salt Electronics
Sescom, Inc.
Siemens AG, Austria
Sonitec Electronics
Shure Brothers
Siemens AG, Osterreich
Spectra Sonics
Sphera
Straight Wire Audio
TOA Electronics
Tri Tec Systems Inc.
Valley People

Modules, For Consols

ADM Technology
ALICE (Stancoll Ltd.)
Amek TAC
Arrakis Systems
Audio Ltd.
Bogen Division / Lear Siegler
Broadcast Electronics, Inc.
Broadcast Technology
Datatronics
Dyma Engineering
Elektroimpex
Georg Neumann GbW
Howe Audio
Leader Broadcast Systems
McCurdy Radio Industries
McMartin
Micro Trak Corporation
Modular Audio Products
Rupert Neve
Georg Neumann
Ompack Labs, Inc.
ProTech Audio Corporation
Quad Eight Electronics
Richard Sound Design
Rohr Corporation
Salt Electronics
Sescom
Siemens AG, Austria
Sonitec Electronics
Spectra Sonics
Sphere
Stanton Magnetics
Straight Wire Audio
Teac Corp. of America

Telesa Communications, Inc.
Valley People
Vidalite Electronics Mfg. Corp.

Turntable

ADM Technology
ALICE (Stancoll Ltd.)
Applied Technology
Arrakis Systems
ATI Audio Technologies Inc.
Audio Path
Audio Technology
Audionics of Oregon
Audasir
Audio Ltd.
Bogen Division / Lear Siegler
Broadcast Audio Assoc.
Broadcast Electronics
Byron
Cablecast Broadcast Group
Comad Communications
Continental Electronics Mfg.
Crown International
D-B Electronics
Datatronics
Dyma Engineering
Full Compass Systems
Gregg Laboratories
Hammond Industries
Harris Corporation, Broadcast
Products Division
Howe Audio
Leader Broadcast Systems
Logitek Electronic Systems
LPS Inc.
MXR Innovations
McCurdy Radio Industries
McMartin Industries
Micro Trak Corporation
Ompack Labs, Inc.
Processing Plus
ProTech Audio Corporation
RTS Systems
Radio Systems
Ramsko Research
Research Systems Tech.
Rusco
Sescom
Sonitec Electronics
Stanton Magnetics
Straight Wire Audio
Tweedia Audio USA Inc.
Vidalite Electronics Mfg.

Video

Acrodyne
Blonder-Tongue Laboratories
Comad Communications
Crow of Reading Ltd.
International Nuclear Corp.
Ompack Labs, Inc.
Rohde & Schwarz
Thomson-CSF

Processors, Audio

ATI Audio Technologies Inc.
Aphex Systems Ltd.
Applied Technology Corp.
Audio & Design
Audio Path
Broadcast Electronics
Citlull Research Coasch
Comad Communications
Composite Video
Deltamod
Dyma Engineering
Evedale Inc.
Greg Laboratories
IGM Communications
Inovox
Integrated Sound
Kahn Communications
Labs Inc.
Lexicon
MXR Innovations
Modulation Sciences
Orban Associates
Processing Plus
ProTech Audio
Pyramid Loudspeaker Corp.
Richmond Sound Design
Sonitec Electronics
Spectra Sonics
Trident (USA)

Continued on page 102
IMPROVE YOUR IMAGE

with angénieux

Angénieux has developed for your needs, the complete modular lens systems. With selectable attachments, we cover—from the widest wide angle to the super telephoto with the same basic lens. These systems cover studio lenses with outstanding optical quality as well as durable, lightweight, compact ENG, EF and field lenses.

Whatever your format, ½", ¾", 1", 1 ¼", if you're thinking about purchasing a good lens then why not consider—the very best.

angénieux inc.

120 DERRY RD., HUDSON, N.H., 03051 • (603) 880-1710
13381 BEACH AVE., VENICE, CA 90291 • (213) 821-5080
190 DON PARK RD., MARKHAM, ONT. L3R-2V6 • (416) 475-5454

Circle (58) on Action Card
WHO MAKES IT

VIF International
URSA Major
Valley People

PRODUCTION/POST-PRODUCTION SERVICES

Action Video
BCB Electronic Sales Ltd.
Bonelli Productions
The Broadcast Center
Center City Video
Compro
Dolphin Productions
Golden Egg
Interactive Video Systems
Immo Fiorenino Assoc.
Bernie Krause/Gary Renoil
LTI Productions
Leo Diner Films
MGC Productions
Master Digital Inc.
Mobile Visual Productions
NET Enterprises
New Earth Television Works Systems Ltd.
Oak Communications Inc.
Satellite Systems
Optical Radiation
Quantum Audio Labs
R.A.V.E./Reliable Audio Video Enterprises
Rank Precision Industries, Inc. (Cintel Div.)
K.L. Rubel & Assoc., Ltd.
Smith-Mattingly Productions Ltd.
E.J. Stewart Inc.
Teleconcepts in Communications
Television Asssoc. Inc.
Television Production Services
Television International
Operations, Ltd.
Trans-American Video
Unidek Film Editing Systems
Valentino Inc.
Vipro Program Services
Video Workshop

PROJECTORS

FILM CHAIN
Buhi Optical
Crow of Reading Ltd.
Eastman Kodak
Harris Corporation, Broadcast Products Division
Ikegami Electronics
Image Devices Incorporated
Kaiart Victor Corporation
Lantel Telemedia
L-W International
Mobile Visual Productions
Multi-Track Magnetics
Rangertone Research
Rane Precision Industries (Cintel Div.)
Soendier & Sapphe
Westrex
The Zei-Mark Corp.

LARGE SCREEN TV
Advent Corp.
Barco Electronic
Centar Redman Technologies Corp.
Conrac
Eldophor Ltd.
Elector
Electrohome Ltd.
General Electric Co. - Video Display Equipment Operation
Image Magnification Inc.
Kaiart Victor Corporation
Link Electronics
Panasonic
Tele Concepts in Communications

SLIDE
Buhi Optical
Crow of Reading Ltd.
Datatron
Eastman Kodak
The Great American Market

Harris Corporation, Broadcast Products Division
Kaiart Victor
Lantel Telemedia
Mobile Visual Productions
Optical Radiation
Rank Chintel
Rangertone Research
Research Technology Intl.
Spender & Sapphe
The Zei-Mark Corp.

PROMPTERS

Actoscope Products Ltd.
BEE (Bestons Electronics)
Cinema Products
D'Isan Corporation
Listec Television Equipment Corp.
Q-TV
Telecine
Texas/NeMo Corporation

PULSE ASSIGNMENT SYSTEMS

Audio Inc.
Central Dynamics
Lehman Video
Thomson-GST

RF COMPONENTS

Andrew Corp.
BBS Electronics
Cascad Electronics
Catal
Coaxial Dynamics
Compac Development Corp.
CSP Inc.
Delta Electronics
Econ-Bauer
Graflex
Jenfull Div.
Magnacraft Electric Co.
Marcon Instruments Ltd.
Marshall Electronics
Micro Communications
Motorola
Mu-Dei Electronics
Nash Industries
Nurad Inc.
Phipps Dodge Communications
Roehn & Schwarz
S.W.R.
Scientific Atlanta Phoenix Div.
Shively Labs
TL Systems
Texscan
Thompson-CSF
Trancis Electronics
UTE Microwave
Varian Microwave
Varian MCD
Varian Associates

READER FOR TIME CODE IN VERTICAL INTERVAL

BTX Corporation
Control Video Corp.
Datatron
Dynamic Technology Ltd.
ECCO Inc.
Gray Engineering Labs
Skokel Corp.
Telcom Research

RECEIVERS

AM RECEIVER
TFT Inc.

DATA
AEG-Telefunken
Aydin Microwave
Cafe (Division of United Scientific)

Datum Inc.
Johnson Electronics
Radio Data Systems
Technology Service Corp.

EARTH STATION
AEG-Telefunken
Andersen Scientific
Anser Mark
Automation Techniques
Aydin Microwave
Blonder-Tongue Labs
California Microwave
Coastcom
Comad Communications
ComTech Data
Conver
Crowder Communication
Gardiner Communications
Harris Corp., Broadcast Products
Hughes Aircraft Co., Inc.
M/A-Com Video Systems
International Microwave Corp.
Microdyne Corporation
Modulation Associates
Nec America
Oak Communications Inc.
Satellite Systems
Roehn & Schwarz
SED Systems
Salcom Inc.
Savision
Scientific-Atlanta
Standard Communications
TL Systems
TerraCom-Loral
Tri-R Crown Electronics
United States Tower
Velosafe

EBS RECEIVER

AEG-Telefunken
Automation Techniques
Broadcast Electronics
Emergency Alert Receiver
Gormann Redrich Inc.
Harris Corp., Broadcast Products
International Nuclear Corp.
Johnson Electronics
McMarin Industries
Radio Systems Inc.
Rivers Associates Inc.
TFT Inc.

FM RECEIVER

AEG-Telefunken
Audi Ltd.
Bogen Division / Lear Siegler Cafe
Comad Communications
Electra Co., Div. of Masco
Emergency Alert Receiver
Gormann Redrich Mfg. Co.
McMarin Industries
Micro Communications
Paso Sound Products
Pyramid Loudspeaker Corp.
R-Columbia Products
Regency Electronics
Roehn & Schwarz
Scientific Atlanta Phoenix Div.
Scott H. Scott
Sharp Electronics
Sterling International AG
Studer ReVox America
Swent Enterprises
TFT Inc.
Tri-R Crown Electronics

MICROWAVE

AEG-Telefunken
Automation Techniques
Aydin Microwave
Cablewave Systems
Comter Corp.
Datron
Fatron Video/Harris Corp.
Harris Broadcast Microwave
Harris Corp., Broadcast Products
International Microwave Corp.
M/A-Com Video Systems
Marcon Instruments Ltd.
Mosley Associates
NEC America
Nurad Inc.
R.F. Technology
Reg Electronics
Satvision
Tyburn Electronics
Tepeco Corp.
Terracom - Loral
Visual Methods Inc.

RECEIVER/GENERATOR

Delta Electronics
SCA
AEG-Telefunken
Bogen Division/Lear Siegler
David H. Brothers Co.
Comad Communications
Continental Electronics Mfg.
Emergency Alert Receiver Inc.
Harris Corp., Broadcast Products
Johnson Electronics
McMarin Industries
Moseley Associates
Radio Data Systems, Inc.
Roehn & Schwarz
TFT Inc.

STL

AEG-Telefunken
Ariel Communications
Aydin Microwave
Broadcast Electronics
Cablewave Systems
Comad Communications
Continental Electronics Mfg.
Harris Corp./Fatron Video
International Microwave Corp.
McMarin Industries
M/A-Com Video Systems
Marti
Micro Control Associates, Inc.
Moseley Associates
Phelps Dodge Communications
R.F. Technology
R.H.G. Electronics
Swept Enterprises
TFT Inc.
Tyburn Electronics
Versa-Court

TSL

TFT Inc.

TIME (WVW)

AEG-Telefunken
Catel
ESI
McKay-Dyem Company
Scientific Radio Systems
Tepco Corp.
True Time Instruments

WEATHER/VHF

AEG-Telefunken
Alten Electronic Impulse
& Recording Equipment
Catel
Electra, Div. of Masco
Emergency Alert Receiver
Gormann Redrich
Kudaklesi S.A., Switzerland
Health Company
Motorola Communications & Elec.
Regency Electronics
Scientific Radio Systems

RECEIVER, TV AURAL

Roehn & Schwarz

RECORDER PARTS & ACCESSORIES

CAPSTAN ASSEMBLY
Broadcast Electronics
Century 21 Programming
Consolidated Electronic Ind.
Head Leader Broadcast Systems
Merlin Engineering
Neal-Fergerock
Studer ReVox America
Telecino Systems
UMC Electronics
VIF International

www.americanradiohistory.com
CARE KITS
Altolop
R. B. Annis Co.
Broadcast Electronics
Century 21 Programming
Chentronics
Fidelitek
G.C. Electronics
Harrick Corp., Broadcast Products Div.
Leader Broadcast Systems
Marathon Products
Merlin Engineering
Neal-Ferograph
Nortronics
PAG - Group
Studer RevOx America
Tec Corp. of America
The Telviscope Company

DRIVE MOTOR POWER SUPPLY
Broadcast Electronics
Century 21 Programming
Consolidated Electronic Ind.
Leader Broadcast Systems
Merlin Engineering
Neal-Ferograph
Studer RevOx America

ELECTRONICS
Audi-CoD
Broadcast Electronics
Brush Magnetic Heads
Consolidated Electronic Ind.
Inovtronics
Leader Broadcast Systems
Merlin Engineering
Neal Ferograph
Sontec Electronics
Studer RevOx America
Taber Mfg. & Eng.
Tec Corp. of America
UMC Electronics
United Research Lab Corp.
Videomagnetics
VIF International
Westrex
HEADS (See Head)

MOTORS
Audi-CoD
Broadcast Electronics
Brush Magnetic Heads
Century 21 Programming
Consolidated Electronic Ind.
International Electro-Magnetics
Leader Broadcast Systems
Merlin Engineering
Neal Ferograph
Studer RevOx America
Taber Mfg. & Eng. Co.
Talectro System
UMC Electronics
United Research Lab Corp.
VIF International

SERVO MODIFICATIONS
Consolidated Electronic Ind.
Inovtronics
Marconi Electronics
Merlin Engineering
Multi - Track Magnetics
Recotec
Studer RevOx America
Video Associates Labs

SPEED CONTROLS
Cherry, Semiconductor
Consolidated Electronic Ind.
Leader Broadcast Systems
Merlin Engineering
Neal Ferograph
Studer RevOx America
Unemco International

Synchronizers
Audi-CoD
The B.TK Corporation
Consolidated Electronic Ind.
ECCO Incorporated
Kudelski S.A.
Leader Broadcast Systems
Merlin Engineering
Multi - Track Magnetics

NEAL FEROGRAPH
Skope Corporation
Studer International AG
Studer RevOx America
Telecom Research
Tillman Manufacturing Corp.

TAPE DECK CABINETS
Broadcast Electronics
Consolidated Electronic Industries
Ear Systems Inc.
Grumman Aircraft
Leader Broadcast Systems
Mico Trak
Merlin Engineering
Orsat Corp.
Sound Dynamics
Taber Mfg. & Eng.
UMC Electronics
Westrex

TAPE DECKS
AEG-Telefunken
Amirion Corp.
Ampro-Scally
Audio CoD
Broadcast Electronics
David H. Brothers Co.
Century 21 Programming
Consolidated Electronic Industries
International Electro-Magnetics
Kudelski S.A.
Leader Broadcast Systems
Merlin Engineering
Neal Ferograph
Rupert Neve
Panasonic, Professional Audio Div.
Sound Dynamics
Studer RevOx America
Tascam, Div. of Teac
Telephone Systems
Telrex Communications
Triglot Inc.
UMC Electronics
United Research Lab Corp.
VIF International

TENSION CONTROLS
Broadcast Electronics
Consolidated Electronic Industries
Inovtronics
K B Systems
Merlin Engineering
Recotec
UMC Electronics
VIF International

TRANSPORT SERVICES
Century 21 Programmer
Consolidated Electronic Industries
Leader Broadcast Systems
Merlin Engineering
Neal Ferograph
Recotec
Sound Dynamics
Taber Mfg. & Eng.
VIF International

VELOCITY ERROR CORRECTORS
CMC Technology Corporation
Consolidated Electronic Industries
Merlin Engineering
Studer International AG

RECORDERS, AUDIO TAPE
CARTRIDGE (See Cart Machines)
CASSETTE (See Cassette Machines)

DIGITAL
Amirion Corp.
Comet Systems
Consolidated Electronic Industries
3M Company, Video Products
MCI
Master Digital Inc.
Panasonic, Professional Audio Div.
Rangerbyte Research Inc.
Sony

FILM RECORDER
Enerlec Schlumberger
Kudelski S.A.

Magna-Tech Electronic Co.
Magninovy Moviola
Multi-Track Magnetics
Magnetophone Research
Rank Cintel Ltd.
Westrex

LOGGING
Amirion Corp.
Ampro-Scally
Broadcast Electronics
David H. Brothers Co.
International Electro-Magnetics
Kudelski S.A.
Leader Broadcast Systems
Mica Moviola
Nagra Magnetic Recorders
Neal Ferograph (USA), Inc.
Ostap
QSI Systems
Recotec
Singer Products Co. Inc.
Sonobell Magnetic Recording Co. Inc.
The Stancliff-Hoffman Corporation
Studer RevOx America
Telrex Communications
Triglot Inc.

REEL: ONE & TWO TRACK
Accurate Sound
Amphi
Ampro-Scally
Basf Limited
David H. Brothers Co.
Deltac Broadcast Group
Consolidated Electronic Industries
International Electro-Magnetics
Mica Moviola
Nagra Magnetic Recorders
Neal Ferograph (USA), Inc.
Ostap
QSI Systems
Rupert Neve
Studer International AG
Studer RevOx America
Tascam, Div. of Teac
Telrex Communications
Triglot Inc.

REEL: FOUR TRACK
Accurate Sound
Amphi
Ampro-Scally
Broadcast Electronics
International Electro-Magnetics
Kudelski S.A.
Lyrec Manufacturing A/G
Mica Moviola
Nagra Magnetic Recorders
Neal Ferograph (USA), Inc.
Ostap
Studer International AG
Studer RevOx America
Tascam, Div. of Teac
Telrex Communications
Triglot Inc.

RECORDER, VIDEOTAPE
1/4 INCH
Faxion
Hitachi
Ikegam Commercial

1/2 INCH
Action Video Inc.
Advar Video
Center Redman Technologies Corp.
Feathercam Inc.
Ikegam Commercial
Javelin Electronics
Merlin Engineering
NET Enterprises
Panasonic
QSI Systems
RCA
Sharp Electronics
Sony Corporation of America
US JVC Corporation
Videx

1 INCH
A.F. Associates
Advar Video
Amphi
BGB Electronic Sales Ltd.
Robert Bosch GmbH
Fernsehen Inc.
Hitachi
International Video Corp.
3M Company, Video Products
Marconi Electronics
Merlin Engineering Works
NCS America
Philips Broadcast Group
RCA Broadcast Systems
Sony Corporation of America
Video Devices

Extended Flyer Kit
Marcou Electronics

Continued on page 104
WHO MAKES IT

QUAD
A.F. Associates
Amplex
Robert Bosch GmbH
Marconi
Merlin Engineering
RCA Broadcast Systems
Recorec
Video Masters

LOGGING
David H. Brothers Co.
Farnsworth Inc.
Merlin Engineering
QSI Systems

RECONDITIONED MACHINES
A.F. Associates
Merlin Engineering Works

SLOW MOTION REPLAY
Amplex
Arvin Echo
Brabury Broadcast Systems
Egan Video
Fenness Inc.
Javelin Electronics
Marconi Electronics
Merlin Engineering Works
NED America, Broadcast Equipment
NET Enterprises
Oxlet Corporation
Panasonic
RCA Broadcast Systems
Television Graphics
U.S., JVC Corporation

RECORDING SERVICES, AUDIO
Accurate Sound
American Image Productions
Bonneville Productions
CVC Recording
Century 21 Programming
Command Productions
Conquest Video
Conpro Productions
Continental Recordings
Highland Labs
Master Digital Inc.
Mudcups
W.A. Palmer Films, Inc.
Real Radio Company
Ridgemont Sound Design
See Hear Industries
Sierra Auditions
John M. Sullivan Assoc., Inc.
Tape
Tuesday Productions
Video Workshop
9 West Recording Studio

RECORDS
Audio-Technica US, Inc.
Bruni & Knox Instruments
Leader Broadcast Systems
Ortolan A/B
Shore Brothers

SOUND EFFECTS
Emil Archer Music
Century 21 Programming
Columbia Special Products (CBS Records)
Comprehensive Video Supply
Leader Broadcast Systems
Tech Theatre Inc.
Valentino Inc.

REELS
AUDIOTAPE
Broadcast Electronics, Inc.
Continental Electronics
Dictaphone

D'Scan Corporation
ENG Corp.
Hansay Reels
Harris Corporation, Broadcast Products Division
Leader Broadcast Systems
3M Mag/AV Products Division
Pan California Magnetics Ltd.
Plastic Reel Corp.
Polaroid Corp.
See Hear Industries
The Stanford-Hoffman Corporation
Studer Revox A
Tascam, Div. of Teac
VIF International
CABLE & MIKE
(See Cables)

VIDEOTAPE
Cicico Video
Fuji Magnetic Tape Division
Goldberg Bros., Inc.
J.R. Film Co., Inc.
Javelin Electronics
3M Mag/AV Products Division
Panasonic
Plastic Reel Corp.
Polaroid Corp.
RCA Service Company
Re-Replay Video Cartridge Service
Scheusler Cable
See Hear Industries

REGULATORS VOLTAGE
AEG-Telefunken (Bayly Engineering)
California Instruments
Cinetrak
Continental Electronics
DTE Superior Electric Co.
Lightning Elimination Associates
MCG Electronics
Motorola
Sidewinder Transistor Systems
Videxaire Electronics

RECTIFIERS
POWER (SEMICONDUCTOR)
AEG-Telefunken (Bayly Engineering)
Amperex Electronics
Calvert Electronics
Ceco Communications
Electronic Devices
GTE Products Corp.
Motorola
RCA Distributor & Special Products
Thomson-CSF

SCR
AEG-Telefunken (Bayly Engineering)
Amperex Electronics
Calvert Electronics
Ceco Communications
Comprehensive Video Supply
Electronic Devices
Motorola
RCA Distributor & Special Products
Thomson-CSF

STACK
Amperex Electronics
Calvert Electronics
Ceco Communications
Electronic Devices
TUBES (See Tubes)

REMOTE CONTROL SYSTEMS, AM-FM
Bayley Engineering
Broadcast Electronics
Channelmatic
Comad Communications
Communication Control Centers Inc.
Delta Electronics
Harris Corporation
Hallikainen & Friends
Micro Control Assoc.
Monroe Electronics
Moseley Associates
Potomac Instruments
Ronde & Schwarz
C.N. Rood B.V.
Soil Inc.
TFT Inc.
Tayburn
Torrey Controls & Engineering
Tramec Electronics
Video Specialties
Zecon Corp.

REMOTE CONTROL SYSTEMS, VIDEO
Advanced Analog Systems
Albione Video Systems Corp.
Alfa Video & Elect. Corp.
American Data
Asaka/Shibasoku
Davis H. Brothers
CALDATCOM
Cat Systems
Cfenllmatic
Chenis Products
Cohu, Electronics Division
Communications Control Centers
Contro Video Corporation
Michael Cox
Crown of Reading Ltd., Delta Electronics
Dijtech
Dynatronics
Dynamic Technology Ltd.
Fenness Inc.
GBC Closed-Circuit TV
Harris Corporation, Broadcast Products Division
Image Video Limited
Javelin Electronics
Jenal Corp., Consulting Engineers
Micro Control Associates
Monore Electronics
Moseley Associates
NED America
Panasonic
Philips Broadcast Group
PWH Electronics Limited
Randall & Schwarz
Soil Inc.
Tayburn Electronics
TFT Inc.

REWINDERS, TAPE
(See Tape Accessories)

SAFE AREA GENERATORS
Asaka/Shibasoku
Broadcast Video Systems
CMC Technology
Crow of Reading Ltd.
Gray Engineering Labs

SATELLITE DISTRIBUTION SERVICES
AEG-Telefunken
American Satellite Company
Bonneville Satellite Corp.
California Microwave
Cable (Division of United Scientists)
Centro
Cinepost Communications
Compucon Inc.
Connet Data Corp.
Crowder Communications Ltd.
Global Video Comm. Corp.
Modulation Associates
New Earth Television Works
Oak Satellite Corp.
RCA-Amercom
SED Systems
Sidewinder
Scientific Atlanta, Phoenix Div.
Telecommunications System
Tuesday Productions
Video Tape Systems

Micro Control Associates
Micro-Trak
Moseley Associates
Motorola Communications
and Electronics
Nady Systems
Norcom Manufacturing
Northland Communications
P & F Technology
Peters Associates
Sound Dynamics
Tayburn

REPEAT COILS
ITT Electronics Inc.
Video Aids of Colorado

RETICULE, SAFE AREA/TITLE
Amtron Corp.
CMC Technology Corp.
Gray Engineering Labs
Porta-Pattern Telecommunications

REVERBERATION UNITS
AKG Acoustics
AKG Akustische u. KinGeräte
Advanced Analog Systems
Audionc Inc.
Audio & Design
Comex Systems
Deltalab Research
EMT Franz
EV-Tappo
Eventide Inc.
IQM Communications
Karl-Teknik Research Ltd.
Leader Broadcast Systems
Lexicon
Mcmill Audio Products
Urban Associates
ProTech Audio Corporation
Quad Eight
Sony
Ursar Major
VIF International

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SWITCHES, VIDEO ACTIVATED

AVL Digital Ltd.
Channelmatic
Michael Cox
Dynamic Technology Ltd.
Panasonic
Rohde & Schwarz
Video Arts of Colorado
Vital Industries

SWITCHER LIGHTING KIT

Dynaar

SWITCHERS, ROUTING

American Data
AVL Digital Ltd.
Audio Links
Broadcast Video Systems
Broadcast Technology
Channelmatic
Communications Control Centers Inc.
Michael Cox
Crow of Reading Ltd.
Dakapex Corp.
Delta Systems
Detective Communications
Dolphy
Dynar Electronic
EDICO
Industrial Sciences Inc.
Key Video Ltd.
Lenico Inc.
McCurdy Radio Industries
NEC America
NTP Electronic AIS
Oozam Lab Inc.
Pacific Recorders & Engineering
Pro Bay Ltd.
Richmond Sound Design
Scanlabex Laboratories
Telemat
Thomson-CSF
Viscount Ind.
Vital Industries

SWITCHES, CROSSBAR

AEG-Telefunken
Alco Electronic Products
Ava Electronics
Robert Busch GmbH
Central Dynamics Ltd.
Channelmatic
Cherry Elec. Prod. Corp.
Communications Control Centers Inc.
Michael Cox
datatron
Delta Electronics
Delta Systems
Dynar Electronics
ITT Jennings
Industrial Sciences Inc. (ISI)
Jawelin Electronics

SWITCHERS, VIDEO

NTP Electronic A/S
Pacific Recorders
Rohde & Schwarz GmbH
Rohde & Schwarz Sales
Siemens AG Österreich
Shintron
Standard Telephone and Radio
Telemet
Thomson-CSF
Unimoli International
Vital Industries

SYNCHRONIZERS, VIDEO

(See Consoles, Video)

Adda Corporation
Amplex
Audio Kinetics
Audionics
The BXT Corporation
California Instruments
Control Video Corp.
Dataron
Digital Video Systems
EEOC Incorporated
Harris Corporation, Broadcast Products Division
Harris Video Systems
Lechler Broadcast Systems
MDI Inc.
MCD/Quintel
Micronics
Multi-Track Magnetics
NCE America
Perfection Products SA
Phillips Broadcast Group
Rohde & Schwarz GmbH
Rohde & Schwarz Sales
Skoveland Corporation
Studer International AG
Studer Revox America
Telecom Research
Thomson-CSF

SYNCHRONIZERS, DIGITAL VIDEO

(See Frame Store)

SYNTHESIZERS, STEREO

The BTX Corporation
Celer
Elecro Bauer
Elecom Specialty Products
IBM Communications
Innovate Associates
Rohde & Schwarz GmbH
Rohde & Schwarz Sales
Studer International
Telamat
Thomson-CSF
Viscount Ind.
Vital Industries

SYSTEM DESIGN, AUDIO

Accurate Sound
Alice Stancil Ltd.
Amek TAC
Audio
Aydin Microwaves
C-Cor Electronics
Cento
Coastcom
Comad Communications
Crosspoint Video
Dell Technical Vehicles
Dukane
Dyma Engineering
ENG Helicopter Satellite Ltd.
East Coast Video
Electro Acoustic Designs
Electrolines
GA. A. Gilbreath
Graham-Pattain Systems
Harris Corporation
Harrison Systems
Hoppmann Corp.
Janal Consultants Corp.
Kindig
Leader Broadcast Systems
Link Electronics
MCI
McCurdy Radio Industries
The Management
Kenneth R. Mead
Multichip Consulting
Multi-Track Magnetics
Olapm Labs Inc.
Pacific Recorders & Engineering
Perfection Products SA
ProTech Audio
Radio-Techniques
Richmond Sound Design
Rohde & Schwarz
C.N. Rood B.V.
Scantex Laboratories
Siemens AG Österreich
SoL Inc.
Specira Sonics
Straitline Audio
Tascam Div. of Tascam
Ultrasound Pixtec

SYSTEM DESIGN, VIDEO

A.F. Associates
Altho Video & Elect. Corp.
Ayden Microwave
Robert Bosun GmbH
C-Cor Electronics
Carter-Hedman Technologies Corp.
Central Dynamics Ltd.
Centro
Cinema Products
Conu, Electronics Division
Crosspoint Video Ltd.
Crow of Reading Ltd.
Dell Technical Vehicles
Delta Systems
Dyna Engineering
Dynamic Technology Ltd.
ENG Helicopter Satellite Ltd.
East Coast Video
Graham-Patten Systems
Harrig Corp., Broadcast Products
Hollmann Corp.
Holland
Jafet
Jawelin Electronics
Jenell Consultants Corp.
Link Electronics
Kehnsten R. Mead
Multi-Track Magnetics
Panasonic Lighting Systems
QSI Systems
Rohde & Schwarz
Rosner Television Systems
Sandor Electronics AB
Scantex Laboratories
Siegel Electronics
Soli Inc.
Thomson-CSF
Ultra Audio Pixtec
Viscom
Vital Industries

TAPE-FILM INTERLOCK

Magitek

TAPE, AUDIO

(See Also Cartridges)

CARTRIDGE

Amplex, Magnetic Tape Division
Artocast
Audio Magnetics
BASF Limited
Broadcast Electronics
Capitol Magnetic Products
Century 21 Programming
Colorado Magnetics
Consolidated Electronics Inc.
Fidelac
Full Photo Film USA Inc.
3M Mag A/V Products Division
Marathon Products
Memorex
Pan Canada Magnetics Ltd.
Procar
Ranko Research
See Hear Industries
Tape-Atlton Corp.
Team Electronics
Teletron Systems Corp.
UMC Electronics

CASSETTE

Agfa-Gaevart
Amplex, Magnetic Tape Division
Audio Magnetics
BASF Limited
Capital Magnetic Products
Colorado Magnetics
Fidelac
Full Photo Film USA Inc.
3M Mag A/V Products Division
Maxell Corp. of America
Memorex
Pan Canada Magnetics Ltd.
RKO Tape
Recortec
See Hear Industries
TDX Electronics
Tape-Atlton Corp.
Team Electronics
Teletron Systems Corp.
Video 1-0

LOGGING

Amplex, Magnetic Tape Division
Colorado Magnetics
Consolidated Electronic Ind.
Electro-TechnoCorporation
Elektronix
Filitecap Corp.
Ferrycorpe Inc.
3M Mag A/V Products Division
Magnasonic
Marathon Products
Memorex
Pan Canada Magnetics Ltd.
Sondors'thres Magnetic Recording
The Starch-Hoffman Corporation
Teltron Systems

OPEN REEL

Agfa Gevaert
Amplex, Magnetic Tape Division
BASF Limited
Broadcast Electronics
Century 21 Programming
Colorado Magnetics
Consolidated Electronic Ind.
Elektronix
Filitecap Corp.
Ferrycorpe Inc.
Levers Rich Equipment Ltd.
3M Mag A/V Products Division
Maxell Corp. of America
Memorex
Pan Canada Magnetics Ltd.
RKO Corp.
Recortec
See Hear Industries
Studer Revox America
TDX Electronics
Tape-Atlton Corp.
Team Electronics
Teletron Systems Corp.
VIF International
Video 1-0

TEST TAPE

Amplex, Magnetic Tape Division
Artocast
AudioTek Inc.
BASF Limited
BPI Audio Test Instruments
Broadcast Electronics
Colorado Magnetics
Consolidated Electronic Ind.
Datatronix
Fidelac
IBM Constructions
Kudelski S.A.
3M Magnetic A/V Products
Magnetic Recording Laboratories
Marathon Prod. Co.
Memorex
Nortonics
Radio-Techniques
Sound Dynamics
Standard Tape Laboratory, Inc.
Studer Revox America
TDX Electronics
Team Electronics
VIF International
Video 1-0
TAPE, VIDEO

ACCESSORIES

CARRIERS

CLEANERS

Audio Magnetics
Magnetics A.S., U.S.
Broadcast Electronics
Chemtronics
Dictaphone Corporation
Philco

Cassette Tapes

Advair Video
Agfa-Gevaert
Ampeg
Audio-Technica
BASF Limited
Ceco Communications
E.D. DuPont De Nemours & Co.
Fidelpac Corp.
Fujitsu Photo Film USA Inc.

Tape Exchange

Sony

Teac

Tape Exchange

Teac Corp. of America

UMC Electronics

Nortronics

Pan Canada Magnetics Ltd.

RMS Electronics

Recotec

Südwest

Research Technology Int'l.

 splicefinders

Broadcast Electronics

Consolidated Electronic Ind.

Harris Corporation, Broadcast Products Division

IGM Communications

ITC/GM

Nortronics

UMC Electronics

TAPE, VIDEO

CARETTERS

Advair Video

Agfa-Gevaert

Ampeg

Audio-Technica

BASF Limited

Ceco Communications

E.D. DuPont De Nemours & Co.

Fidelpac Corp.

Fujitsu Photo Film USA Inc.

Nortronics

Pan Canada Magnetics Ltd.

RMS Electronics

Recotec

Südwest

Teac Corp. of America

Telex

United Research Lab Corp.

Vidoline Electronics

Xedit Corporation

DE-MAGNETIZERS

R. B. Antis Co.

Broadcast Electronics

Dictaphone

Fidelpac Corp.

Garnier Ind.

IGM Communications

Magnetics International

Marathon Products

Nalpak Sales

Neal Ferrograph USA

Nortronics

PAG-Group

Presidential Magnetic Recording

TDK Electronics

Tape

Teac

Teac Corp. of America

UMC Electronics

LOADERS

Audio-Technica

AudioTek Inc.

Merlin Engineering Works

Orli Corporation

Recoject

Südwest

Tape Exchange

Tapecaster TCM

MOTION CONTROLS

Merlin Engineering Works

Television Graphics

United Research Lab Corp.

REWINDERS

Audio-Technica

DB Electronics

Dictaphone Corporation

K B Systems

Merlin Engineering Works

Neumade

Südwest

Tape Exchange

Tapecaster TCM Inc.

SPLICERS

Audio-Technica

Broadcast Electronics

DB Electronics

Dictaphone Corporation

Fidelpac

Goldberg Bros. Inc.

ITC/GM

JR Film Co., Inc.

Leader Broadcast Systems

Marathon Products

Neal Ferrograph USA

Nortronics

Plastic Reel Corp.

Recoject

Südwest

Vidoline Electronics Mfg. Corp.

Xedit Corporation

SPICE FINDERS

Broadcast Electronics

Consolidated Electronic Ind.

Harris Corporation, Broadcast Products Division

IGM Communications

ITC/GM

Nortronics

UMC Electronics

Nalpak Sales

Neumade Products

Plastic Real Corp.

Reliance Plastics & Packaging

Research Technology, Int'l.

Schneckler Case

See-Hear Industries

Winsted Corporation

DE-MAGNETIZERS

Garner Industries

EVALUATOR

Ascah/Innovosuboshu

Chyron Telesystems

Merlin Engineering Works

Recoject

Research Technology Int'l.

Television Equipment Associates

SPINDLE HEIGHT GAUGE

Tental

REWINDERS

Audio-Technica

Merlin Engineering Works

Neumade Products

Ramko Research

Recoject

Research Technology Int'l.

TAPE CLEANER

Advair Video

Aitell

Ascah/Subashou

Audio-Technica

U.S.

G.C. Electronics

Merlin Engineering Works

Nalpak Corporation

PAG-Group

Polaroid

Recoject

Research Technology Int'l.

TDK Electronics

Telex

XC.IData Corporation

TENSION GAUGE

Advair Video

BOB Electronic Sales

Leaves Rich Equipment Ltd.

Merlin Engineering Works

Tental

TELCINE

Laidi Telemedia

Magnasonic/Moviola Corp.

Marcioni Electronics

Multi-Track Magnetics

Piclear Inc.

Rangertone Research Inc.

Rankin Ind. Ltd.

Westrex

Thorson-CSF

The Zen-Mark Corp.

TELECONFERENCE SYSTEM, AUTOMATIC AUDIO/VIDEO

Altha Video & Elect. Corp.

Centro

Dyna Engineering

Happman Corp.

HearInd Corp.

Miser Industries

Teledata Systems Corp.

TELECONFERENCE SYSTEMS

Ariel Communications Corp.

Audir Limited

Borneman Satellite Corp.

Centro

Correx Corporation

David Bowers Co.

GE VIDE

GTE Products

Hoppman Corp.

Interand Corp.

Microdyne Corp.

Miser Industries

NEC America

NET Enterprises

Sharp Electronics

Tele Concepts in Communications

TELEPHONE EQUIPMENT

EQUALIZERS

AEG-Telefunken

(Bayly Engineering)

Audio & Design

Coastcom

Correx

GTE Products

ITI Electronics

Kahn Communications

McCurdy Radio Industries

NTP Elektronik AIS

Radiotechnik

C.N. Reed B.V.

Rusco

T M Systems

Teletext

White Instruments Inc.

HYBRID FILTER / AMP

AEG-Telefunken

(Bayly Engineering)

Alice Stancoll Ltd.

Coastcom

Correx

GTE Products

Gray Laboratories

IGM Communications

ITI Electronics

Ichyto Radio Industries

Northland Communications

Potomac Marine & Aviation

RTS Systems

Südwest

Studer International

Südwest

Tental

Thomson-CSF

Western Broadcasting

TON RECEIVERS

AEG-Telefunken

(Bayly Engineering Ltd.)

American MicroSignal

Don Britton Ent.

Cecel Vega

Channelmatic

Frequency Devices

GTE Products

Potomac Marine & Aviation

T M Systems

Trepac Corp. of America

TONE TRANSITTERS

AEG-Telefunken

American Microsignal

Bayly Engineering Ltd.

Don Britton Ent.

Cecel Vega

Channelmatic

Frequency Devices

GTE Products

Potomac Marine & Aviation

T M Systems

Trepac Corp. of America

Triplet Corporation

TELETEXT SYSTEMS

AEG-Telefunken

Aetoppe Votetex Systems

Aster,Electronic Design Ltd.

Barco Electronics

Barco Technologies

Computer Video, Systems

Consolidated Electronic Ind.

Dynamic Technology Ltd.

ECC Enterprises

Electro & Optical Systems

Logic

Oak Communications

Rhodes & Schwarz

Torrey Controls & Engineering

Uniter

Video Data Systems

Continued on page 108

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WHO MAKES IT

TERMINAL EQUIPMENT
DI-tech
Graham-Patten Systems
Harris Corporation
HECO

TEST EQUIPMENT: GENERATORS

AUDIO SINE
Amalgated Wireless
Amber Electro Design
Asaka/Chipasushoku
Audison
BPI Audio Test Instruments
Bald Mountain Lab
Broadcast Electronics, Inc.
Bruel & Kjaer Instruments
CMC Technology Corp.
California Instruments
Dynascan
Frequency Devices
Global Specialties
Hickok
Kajianti Oy
Leader Instruments Corp.
Link Electronics
Marconi Instruments Ltd.
Multidyne Electronics
Neal Ferrogroag (USA)
Opamp Labs Inc.
Phillips Test & Measuring
Polonoma Instruments
Rohde & Schwarz
Sescom
Spectra Sonic
Teac Corp. of America
Tektronix
Ultra Audio Pixtec
Viz Manufacturing

AUDIO SWEEP
Amalgated Wireless
Amber Electro Design
Asaka/Chipasushoku
Audison
Bruel & Kjaer Instruments
CMC Technology Corp.
Dynascan
Global Specialties Corp.
Leader Instruments Corp.
Marconi Instruments Ltd.
Tektronix
UHE
Viz Manufacturing

COLOR BAR
AVL Digital Ltd.
Automation Techniques
Asaka/Chipasushoku
Robert Bosch GmbH
Broadcast Video Systems
CMC Technology Corp.
Center-Redman Technologies Corp.
Michael Cox
Crosspoint Latch
Crow of Reading Ltd.
D and S Corley
Dynascan
Electroimpex
Hickok
Industrial Sciences Inc. (ISI)
Langel Video Systems
Leader Instruments Corp.
Lectrotech
Leitch Video
Leonco
Link Electronics
Marconi Electronics
Multidyne Electronics
QSI Systems
Panasonic
Rohde & Schwarz
Sencore
Sigma Electronics
Tektronix
Telemet
Thomson-CSF
Ultra Audio Pixtec
VideoAid of Colorado
Visual Information Institute
Viz Manufacturing
World Video

CROSS PULSE
AVL Digital Ltd.
Amtron Corp.
Asaka/Chipasushoku
Robert Bosch GmbH
Crow of Reading Ltd.
Dynascan
Lenco
Rohde & Schwarz
Thomson-CSF
VideoAid of Colorado

DOT I BAR
AVL Digital Ltd.
Asaka/Chipasushoku
Broadcast Video Systems
Center-Redman Technologies Corp.
Crow of Reading Ltd.
Dynascan
Hickok
Leader Instruments Corp.
Lectrotech
Leitch Video
Lenco
Link Electronics
Marconi Electronics
Phillips Test & Measuring
Sencore
Sigma Electronics
Tektronix
Telemet
Thomson-CSF
Ultra Audio Pixtec
Visual Information Institute
World Video

FUNCTION
Amber Electro Design Inc.
Asaka/Chipasushoku
Audison
Bruel & Kjaer Instruments
Dynascan
Global Specialties Corporation
Heath Company
Hickok
Leader Instruments Corp.
Marconi Instruments Ltd.
Phillips Test & Measuring
Tektronix
Thomson-CSF
Viz Manufacturing

MARKER
Amtron Corp.
Asaka/Chipasushoku
Ballantine Laboratories
Dynascan
Philips Test & Measuring
Tektronix
Texas Instrument Corp.
Thomson-CSF
Viz Manufacturing

NTSC SIGNAL TEST
Asaka/Chipasushoku
Broadcast Video Systems
Center-Redman Technologies Corp.
Cezar International
Dynascan
Lang Video Systems
Leader Instruments Corp.
Leitch Video
Link Electronics
Marconi Instruments Ltd.
Multidyne Electronics
Rohde & Schwarz
Sigma Electronics
Tektronix
Ultra Audio Pixtec
Widcraft
VideoAid of Colorado
Visual Information Institute
World Video

PULSE
Asaka/Chipasushoku
Audio Inc.
Broadcast Video Systems
Bruel & Kjaer Instruments
Dynascan
Electroimpex
Global Specialties
Leitch Video
Leonco
Link Electronics
Marconi Instruments Ltd.
North American Soar Corp.
Rohde & Schwarz
System Donner
Tektronix
Thomson-CSF
VideoAid of Colorado
Videomedia
Viz Manufacturing
Xexcel Corporation

RF SIGNAL
Asaka/Chipasushoku
Delta Electronics
John Fyfe Mfg. Co. Inc.
Dynascan
Harris Corp., Broadcast Products
Harris Corporation - PRD
Electro Video Div.
Heath Company
Lang Video Systems
Leader Instruments Corp.
Marconi Instruments Ltd.
Motorola
Narda Microwave Corp.
Potomac Instruments
R. E. Instruments
Sencore
Sound Technology
Syntron Donner
Tesscan Corp.
Triple Crown Electronics
Videomedia
Viz Manufacturing
Wavelet Indiana

SQUARE WAVE
Amber Electro Design
Asaka/Chipasushoku
BPI Audio Test Instruments
California Instruments
D and S Corley
Dynascan
Global Specialties
Hickok
Leader Instruments Corp.
Leitch Video
Link Electronics
Marconi Instruments Ltd.
Rohde & Schwarz
Tektronix
Telemet
Thomson-CSF
Visual Information Institute
Viz Manufacturing
Wavelet Indiana Inc.

STAIRCASE
AVL Digital Ltd.
Asaka/Chipasushoku
Robert Bosch GmbH
Broadcast Video Systems
Center-Redman Technologies Corp.
Dynascan
Lang Video Systems
Leader Instruments Corp.
Leitch Video
Lenco
Link Electronics
Rohde & Schwarz
Tektronix
Telemet
Thomson-CSF
Ultra Audio Pixtec
Visual Information Institute

STEREO
Asaka/Chipasushoku
Leader Instruments
McMartin Industries
Marconi Instruments Ltd.
Rohde & Schwarz
VideoAid of Colorado
Widcraft
VideoAid of Colorado

VIDEO SWEEP
AVL Digital Ltd.
Asaka/Chipasushoku
Audio Inc.
Broadcast Video Systems
Bruel & Kjaer Instruments
Dynascan
Electroimpex
Global Specialties
Leitch Video
Leonco
Link Electronics
Marconi Instruments Ltd.
Rohde & Schwarz
Tektronix
Telemet

TEST EQUIPMENT: MEASURING INSTRUMENTS

ACOUSTIC ANALYZER
Amber Electro Design Ltd.
David H. Brothers Co.
Bruel & Kjaer Instruments
Communications Co. Inc.
Crown International
Eventide Clockworks
Inovonics
Ive Electronics
Klark Teknik Research
Neufly Products
Ortofon A/S
Telecro Systems Corp
White Instruments

AUDIO SYSTEM ANALYZER
Amber Electro Design Ltd.
Asaka/Chipasushoku
BPI Audio Test Instruments
Bald Mountain Lab
Barker & Williamson
Bruel & Kjaer
Crown International
Eventide Inc.
Hammond Industries
Inovonics
Ive Electronics
Klark Teknik Research
Leader Instruments Corp.
Neufly (USA)
Neufly Products
Ortofon A/S
Potomac Instruments
R. E. Instruments
Rohde & Schwarz
Sound Technology
Spectra Sonic
Tektronix

BURST PHASE METER
Asaka/Chipasushoku
Ortofon A/S
Rohde & Schwarz
VideoAid of Colorado

COLOR ANALYZER
Philips Test & Measuring

DELAY MEASURING SETS
Asaka/Chipasushoku
Bruel & Kjaer Instruments
Daretek
Hirschmann Electric
Hitachi Denki America
Ive Electronics
Klark Teknik Research
Marconi Instruments Ltd.
Philips Test & Measuring
Rohde & Schwarz
Telecro Systems Corp.
Telecommunications Technology
Telemet

VITS
AVL Digital Ltd.
Asaka/Chipasushoku
Electroimpex
Lento
Link Electronics
Rohde & Schwarz
Sencore
Tektronix
Telemet
Thomson-CSF
VideoAid of Colorado

VITS INSERTER
Asaka/Chipasushoku
Electroimpex
Lento
Link Electronics
Marconi Instruments Ltd.
Rohde & Schwarz
Tektronix
Thomson-CSF
VideoAid of Colorado

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DEM O D T E S T E R  
R. E. Instruments  
Tektronix

DIFFERENTIAL PHASE / GAIN SETS  
Amtron Corporation  
Asaka/Shibayuki  
Brunel & Kjaer Instruments  
Crow of Reading Ltd.  
Hammond Industries  
Harris Corporation, P.R.D. Elect.  
Hewlett-Packard  
Hirschmann Radio  
Labtech  
Link Electronics  
Phillips Test & Measuring  
Potomac Instruments  
Rohde & Schwarz  
Sadelco Inc.  
Texscan Corp.  
Videala Electronics Mfg. Corp.

FIELD STRENGTH METER, AM / FM  
Anritsu America  
Broadcast Electronics  
Continental Electronics  
Harris Corporation  
Kathran-Werke KG  
McKinnon Industries  
Potomac Instruments  
Rohde & Schwarz  
Sadelco Inc.  
Texscan Corp.  
Videala Electronics Mfg. Corp.

FIELD STRENGTH METER, TV  
Anritsu America  
Asaka/Shibayuki  
Kathran-Werke KG  
Leader Instruments  
Labtech  
PTS Electronics  
Potomac Instruments  
Rohde & Schwarz  
Sadelco Inc.  
Texscan Corp.

FREQUENCY COUNTER  
Alltech  
Anritsu America  
Ballantine Laboratories  
Dynescan Corp.  
Belar Electronic Labs  
Coaxial Dynamics Inc.  
EIP Microwave, Inc.  
John Fluke Mfg. Co. Inc.  
Glentronics  
Global Specialties Corporation  
Hammond Industries  
Heath Company  
Leader Instruments Corp.  
Labtech  
Marcos Instruments Ltd.  
Motorola  
North American Soar Corp.  
Orion A/S  
Phillips Test & Measuring  
Sencore  
Systrom Difier  
TFT Inc.  
Texscan Corp.  
Telecommunications Technology  
Texscan Corp.  
Triplet  
Vite Manufacturing  
Xedit Corporation

HARMONIC DISTORTION ANALYZER  
Amalgamated Wireless  
Amber Electronic Design Ltd.  
Asaka/Shibayuki  
BPI Audio Test Instruments  
Broadcast Electronics  
Brunel & Kjaer Instruments  
Draneis Eng. Labs  
Elektromos  
Heath Company  
Leader Instruments Corp.  
Oroton A/S  
Potomac Instruments  
Radiometer Electronics  
Sescom  
Sound Technology  
Tektronix  
Telecommunications Technology  
Vollmke Magnetbandtechnik GmbH

INSERTER / READAR VIT  
Asaka/Shibayuki  
Crow of Reading Ltd.  
Harris Corporation  
Link Electronics  
Tektronix

INTERMOD DISTORTION ANALYZER  
Amalgamated Wireless  
Amber Electro Design Ltd.  
BPI Audio Test Instruments  
Broadcast Electronics  
Brunel & Kjaer Instruments  
Health Company  
Oroton A/S  
Potomac Instruments  
RTV Technology  
Tektronix

INTERNAL TIMER, V & H  
A.F. Associates  
Anritsu America  
Broadcast Video Systems Ltd.  
D'San Corporation  
Global Specialties Corporation  
Nationwide Electronic Systems  
Standard Electric Type Corp.  
World Video  
MONITORS  
(Some Monitors, Audio, Monitors, Video)  
MULTI-PHASEVORS INSERTER  
Tektronix  
Video Aids of Colorado

OSCILLOSCOPES  
Ballantine Laboratory  
Brunel & Kjaer Instruments  
Dynescan  
Graunt Instruments Division  
Health Company  
Hewlett-Packard  
Hickok  
Hitchcliff Design America  
Leader Instruments Corp.  
Labtech  
Motorola  
North American Soar Corp.  
Phillips Test & Measuring  
Rohde & Schwarz  
Scientific-Atlanta, Phoenix Div.  
Sencore  
Tektronix  
Vite Manufacturing  
Wavetek Indiana

PHASE ANGLE METER  
Brunel & Kjaer Instruments  
Delta Electronics  
Draneis Eng. Labs  
Hewlett-Packard  
Potomac Instruments  
Western Broadcasting

SIDE BAND ANALYZER  
Tektronix  
Rohde & Schwarz

SPECTRUM ANALYZER  
Alltech  
Amber Electro Design Ltd.  
Anritsu America  
Applied Technology  
Brunel & Kjaer Instruments  
Crown International  
Eventide Inc.  
Glentronics  
Ivis Electronics  
Klark Teknik Research  
Marcos Instruments Ltd.  
Motorola  
NTP Electronics A/S  
Phillips Test & Measuring  
Photo Research, Kohllmorgen Corp.  
R. E. Instruments  
Scientific-Artesion  
Spectrum Instruments  
Styron Donnel  
Tektronix  
Texscan Corp.  
Wavetek Indiana

SWM & POWER METER  
Bird Electronic  
Boonton Electronics  
Coaxial Dynamics  
Delta Electronics

Detective Communications  
Electro Impulse Inc.  
Marconi Instruments Ltd.  
Motorola  
Norda Microwave Corp.  
Sadelco Inc.  
Texscan Corp.  
Videala Electronics  
Vite Manufacturing

VIDEO ANALYZER  
Rohde & Schwarz

VIDEO LINE OUTPUT DISPLAY  
Broadcast Video Systems

WAVEFORM MONITORS  
Amtron Corporation  
Anritsu America  
Broadcast Video Systems  
Brunel & Kjaer Instruments  
Crown-Readman Technologies  
Michael Cox  
Crow of Reading Ltd.  
Elettroimpex  
Leader Instruments Corp.  
Labtech  
Lanco  
Marcos Instruments Ltd.  
Motorola  
Rohde & Schwarz  
Sencore  
Tektronix  
Television Graphics  
Ultra Audio Pitec  
Videom Engineer Inc.  
Vitekex  
Wolfe & Magnetbandtechnik GmbH

WOW & FLUTTER METER  
Asaka/Shibayuki  
Broadcast Electronics  
Brunel & Kjaer Instruments  
Fidelipac  
Hammond Industries  
Leader Instruments Corp.  
Neal Fyeograph (USA)  
Orctorf A/S  
Potomac Instruments  
Ralphmont Electronics  
Raidmotor Electronics  
Sural Telecommunication  
Wolfe & Magnetbandtechnik GmbH  
Xedit Corporation

VECTORSCOPE  
Amtron Corporation  
Broadcast Video Systems  
Crow of Reading Ltd.  
Leader Instruments Corp.  
Labtech  
Tektronix  
Television Graphics  
Ultra Audio Pitec  
Videom Engineering  
Video I.D.  
Vitekex

TEST EQUIPMENT:  
MEASURING / MONITORING METERS

ANTENNA BASE METER  
Antenna Base Meter  
Continental Electronics  
Delta Electronics  
Gorman Redlich

COHERENT DETECTOR  
Image Devices Incorporated  
Potomac Instruments

DIGITAL MULTIMETER  
Ballantine Laboratories  
Biddle Instruments  
Dynescan  
Elettroimpex  
John Fluke Mfg. Co. Inc.  
G.C. Electronics  
Global Specialties Corp.  
Hickok  
Keithley Instruments  
Leader Instruments Corp.  
Motorola  
North American Soar Corp.

Sencore  
Tektronix  
Triplet  
Videora Elect. Mfg.  
vite Manufacturing

DIGITAL PANEL METER  
Ballantine Laboratories  
Delta Electronics  
Graulex

GRID DIP METER  
Barber & Williamson  
Image Devices Incorporated

IC TESTER  
Datsun  
Dyanecan  
John Fluke Mfg. Co. Inc.  
G.C. Electronics  
Global Specialties Corporation  
Keithley Instruments  
Orban Associates  
Videala Electronics Mfg. Corp.

IMPEDEANCE BRIDGE  
Biddle Instruments  
Boonton Electronics  
Delta Electronics  
HEEDCO  
Harris Corporation  
Leader Instruments Corp.  
Marcos Instruments Ltd.  
Potomac Instruments  
Sadelco Inc.  
Sencore  
Texscan Corp.  
Wide Band Engineering

LINE VOLTAGE METER  
Audio Technology  
Biddle Instruments  
Graulex Industries  
Image Devices Incorporated  
International Instruments  
Motorola Communications  
Paladin  
Sencore  
Triplet  
Vite Manufacturing

MODULAR TEST SET  
Telemet

PEAK PROGRAM  
Alice Stancoll Ltd.  
Applied Technology Corp.  
Audio Technology  
Broadcast Technology  
Michael Cox  
Crow of Reading Ltd.  
Dorrough Electronics  
ESE  
Elettroimpex  
Inovonics  
Logitel  
McCurdy Radio Industries  
Micron Audio  
NTP Elektronik A/S  
Ramko Research  
Setco Products  
Siemens AG  
Tweed Audio USA

POWER  
Audio Technology  
Bird Electronic  
Boonton Electronics  
Coaxial Dynamics  
Dranetz  
Electro Impulse Laboratory, Inc.  
Graullex Industries  
Harris, PRD Electronics Div.  
Image Devices Incorporated  
Leader Instruments Corp.  
Marcos Instruments Ltd.  
Paladin  
Photo Research  
T M Systems

RF METER  
Ballantine Laboratories  
Barber & Williamson  
Bird Electronic  
Boonton Electronics  
Coaxial Dynamics

Continued on page 110
WHO MAKES IT

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Products/Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta Electronics</td>
<td>Electro impulse inc.</td>
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<tr>
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<td>PRD Electronics Div.</td>
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<td>Marconi Instruments Ltd.</td>
<td>Motorola</td>
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<td>P. E. Instruments</td>
<td>Sadeco Inc.</td>
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<tr>
<td>T M Systems</td>
<td>Trippett</td>
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<td>Viz Manufacturing</td>
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<td>SEMICONDUCTOR TESTER</td>
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<td>Keithley Instruments</td>
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<td>Sencore</td>
<td>Tektronix</td>
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<td>VIDEO LEVEL METER</td>
<td>Asaca/Shibasoku</td>
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<td>Link Electronics</td>
<td>Rohde &amp; Schwarz</td>
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<td>Vidcraft</td>
<td>Videolab of Colorado</td>
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<td>Asaca/Shibasoku</td>
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<td>Lenco</td>
<td>Link Electronics</td>
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<td>Rohde &amp; Schwarz</td>
<td>Sadeco Inc.</td>
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<tr>
<td>Tektronix</td>
<td>Video Aids of Colorado</td>
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<td>VOLTMETER, AUDIO</td>
<td>Amber Electro Design Ltd.</td>
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<td>Asaca/Shibasoku</td>
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<td>Audio Technology</td>
<td>BPI Audio Test Instruments</td>
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<td>B&amp;K</td>
<td>Bald Mountain Lab.</td>
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<tr>
<td>Ballantine Laboratories</td>
<td>Bayley Engineering</td>
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<td>Bicron</td>
<td>Broadcast Technology</td>
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<td>Bruel &amp; Kjaer Instruments</td>
<td>dB Inc.</td>
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<td>Elektroimpex</td>
<td>John Fluke Mfg. Co., Inc.</td>
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<td>Link Electronics</td>
<td>Global Specialties Corp.</td>
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<tr>
<td>Heath Company</td>
<td>Image Devices Incorporated</td>
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<td>Leader Broadcast Systems</td>
<td>Motorola</td>
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<td>NEF</td>
<td>Neaferrograph USA</td>
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<td>Ortolan AS</td>
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<td>VTVM</td>
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<td>E &amp; K Precision Product</td>
<td>Ballantine Laboratories</td>
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<td>Group/Dynascan Corp.</td>
<td>Heath Company</td>
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<td>ITT Jennings</td>
<td>Motorola</td>
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<td>Trippett</td>
<td>Vidaire Electronics</td>
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<td>Viz Manufacturing</td>
<td>VU METER</td>
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<tr>
<td>ADM Technology</td>
<td>ATI Audio Technology Inc.</td>
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<td>Applied Technology Corp.</td>
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<td>Audio Technology</td>
<td>Bald Mountain Lab.</td>
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<td>Bald Mountain Lab.</td>
<td>Broadcast Electronics</td>
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<td>Logitek</td>
<td>McCurdy Radio Industries</td>
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<td>NTP Electronic A/S</td>
<td>Potomac Marine &amp; Aviation</td>
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<tr>
<td>Ramko Research</td>
<td>Rohr Corp.</td>
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<td>Rohr Corp.</td>
<td>Rohde &amp; Schwarz</td>
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<td>Selco Products</td>
<td>Siemens AG of Switzerland</td>
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<td>T M Systems</td>
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<td>Ward-Beck Systems Ltd.</td>
<td>VIZTECH</td>
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<td>WATTMETER</td>
<td>AEG-Telefunken (Bayr. Elektr.)</td>
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<td>Audio Technology</td>
<td>Barker &amp; Williamson</td>
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<tr>
<td>Bird Electronic</td>
<td>Coastal Dynamics</td>
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<td>Dielectric Communications</td>
<td>Marconi Instruments Ltd.</td>
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<td>Micro Instruments</td>
<td>Motorola</td>
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<tr>
<td>North American Soar Corp.</td>
<td>P. E. Instruments</td>
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<tr>
<td>Rohde &amp; Schwarz</td>
<td>Trippett</td>
</tr>
<tr>
<td>Viz Manufacturing</td>
<td>TIME BASE CORRECTORS</td>
</tr>
<tr>
<td>Adda Corporation</td>
<td>Advar Video</td>
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<tr>
<td>Ampex</td>
<td>Automation Techniques</td>
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<tr>
<td>BCB Electronic Sales</td>
<td>Don Britton Ent.</td>
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<td>Digital Video Systems</td>
<td>Eikon Video</td>
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<td>For-A Corporation</td>
<td>Forntel Inc.</td>
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<td>Harris Video Systems</td>
<td>MCI/Quantic</td>
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<td>Marconi Electronics</td>
<td>Merlin Engineering Works</td>
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<td>Microwave</td>
<td>NEC America</td>
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<td>NET Enterprises</td>
<td>Phase Video Inc.</td>
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<td>Philips</td>
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<tr>
<td>RCA Broadcast</td>
<td>Siegel Electronics</td>
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<tr>
<td>Sony</td>
<td>TBC Pty. Ltd.</td>
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<tr>
<td>Video Data Systems</td>
<td>Video HD</td>
</tr>
<tr>
<td>Video Tape Systems</td>
<td>TIME CODE GENERATOR, VERTICAL INTERVAL</td>
</tr>
<tr>
<td>EECO Inc.</td>
<td>TIME COMPRESSOR, AUDIO</td>
</tr>
<tr>
<td>Deltaba Research</td>
<td>Eventide Inc.</td>
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<tr>
<td>Harris Corporation</td>
<td>IGM Communications</td>
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<tr>
<td>Integrated Sound</td>
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<tr>
<td>TIMERS, BLANKING INTERVAL</td>
<td>Broadcast Video Systems</td>
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<tr>
<td>For-A Corp. of America</td>
<td>Harris Corporation, Broadcast Products Division</td>
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<tr>
<td>Palomex Inc</td>
<td>Standard Electric Time Corp.</td>
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<tr>
<td>Tektronix</td>
<td>V.S.C.</td>
</tr>
<tr>
<td>World Video</td>
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<tr>
<td>TIMERS, PROGRAM</td>
<td>Applied Technology</td>
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<td>ADC</td>
<td>Automation Techniques</td>
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<tr>
<td>B &amp; G Engineering</td>
<td>Broadcast Aids</td>
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<td>Broadcast Electronics</td>
<td>Channelmatic</td>
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<tr>
<td>Michael Cox</td>
<td>Datum</td>
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<tr>
<td>D'San Corporation</td>
<td>Dynaquik Electron Devices Ltd.</td>
</tr>
<tr>
<td>ESE</td>
<td>Harris Corporation, Broadcast Products Division</td>
</tr>
<tr>
<td>IGM Communications</td>
<td>Imago Video Limited</td>
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<tr>
<td>Jacen Inc.</td>
<td>Kalanai Oy</td>
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<tr>
<td>Logitek</td>
<td>The Management</td>
</tr>
<tr>
<td>Nationwide Electronic Systems</td>
<td>Neaferrograph (USA)</td>
</tr>
<tr>
<td>Pacific Recorders</td>
<td>QEI Systems</td>
</tr>
<tr>
<td>Radio Systems</td>
<td>Sharepoint Systems</td>
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<tr>
<td>Standard Electric Time Corp.</td>
<td>Tapecaster TCM, Inc.</td>
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<tr>
<td>Tente</td>
<td>Torpey Controls &amp; Engineering Ltd.</td>
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<tr>
<td>Vamco Engineering</td>
<td>Video Tape Systems</td>
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<td>TIME LATITUDE</td>
<td>TIMERS, VIDEO TAPE</td>
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<tr>
<td>Convergence</td>
<td>Michael Cox</td>
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<tr>
<td>Dynamic Technology Ltd.</td>
<td>Dynaquik Electron Devices Ltd.</td>
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<tr>
<td>ESE</td>
<td>Electro &amp; Optical Systems</td>
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<tr>
<td>For-A Corp. of America</td>
<td>G.B.C.</td>
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<tr>
<td>Jatex Inc.</td>
<td>Merlin Engineering Works</td>
</tr>
<tr>
<td>Panasonic Video Systems</td>
<td>QEI Systems</td>
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<td>QEI Systems</td>
<td>Recorec</td>
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<tr>
<td>Standard Electric Time Corp.</td>
<td>TenTel</td>
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<tr>
<td>Vamco Engineering</td>
<td>Video Tape Systems</td>
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<tr>
<td>TITLING SYSTEMS</td>
<td>(See Also Character Generators)</td>
</tr>
<tr>
<td>Aurora Systems</td>
<td>Autographics Inc.</td>
</tr>
<tr>
<td>Beckon Electronic Inc.</td>
<td>B&amp;G Electronics</td>
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<tr>
<td>Robert Bosch GmbH</td>
<td>CMC Technology Corp.</td>
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<tr>
<td>Chryon Telesystem</td>
<td>Comprehensive Video Supply</td>
</tr>
<tr>
<td>Computer Video Systems</td>
<td>Michael Cox</td>
</tr>
<tr>
<td>Crow of Reading Ltd.</td>
<td>Eilon</td>
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<tr>
<td>Fisnesh Inc.</td>
<td>For-A Corp. of America</td>
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<tr>
<td>FOR-A Corp. of America</td>
<td>Internad</td>
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<tr>
<td>Knox Video Products</td>
<td>Laird Telemedia</td>
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<tr>
<td>Martin Skinner &amp; Assoc.</td>
<td>PAG Group</td>
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<tr>
<td>PAL Group</td>
<td>Reynolds/Leiferon</td>
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<tr>
<td>Shintom</td>
<td>Television Graphics</td>
</tr>
<tr>
<td>Thomson/CSF</td>
<td>Unitek</td>
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<tr>
<td>Veelo Sefat</td>
<td>Video Associates Labs</td>
</tr>
<tr>
<td>TOOL KITS</td>
<td>AWA Electronics Corp.</td>
</tr>
<tr>
<td>The Will Burt Company</td>
<td>Comprehensive Video Supply</td>
</tr>
<tr>
<td>The Cooper Group</td>
<td>Kline Iron &amp; Steel</td>
</tr>
<tr>
<td>Nealpaek Sales</td>
<td>PAG Group</td>
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<tr>
<td>Pace Inc.</td>
<td>Paladin Corporation</td>
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<tr>
<td>U.S.A.</td>
<td>UNR-Rohn</td>
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<tr>
<td>Vidaire Electronics Mfg.</td>
<td>UNR-Rohn</td>
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<tr>
<td>TOWER LIGHTS &amp; ACCESSORIES</td>
<td>FLASHERS</td>
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<tr>
<td>AEG-Telefunken</td>
<td>Abrody Construction</td>
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<tr>
<td>Allied Tower</td>
<td>Calvert Electronics</td>
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<tr>
<td>Elcom Bauer</td>
<td>Flash Technology</td>
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<tr>
<td>Hughey &amp; Phillips</td>
<td>LeBlanc &amp; Roye</td>
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<tr>
<td>Communications Towers Inc.</td>
<td>Osrum Sales</td>
</tr>
<tr>
<td>SSAC</td>
<td>Swager Tower Corporation</td>
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<tr>
<td>Tech Theater Co.</td>
<td>Teleodyne Big Beam</td>
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<tr>
<td>UNR-Rohn</td>
<td>United States Tower</td>
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<tr>
<td>Utility Tower</td>
<td>World Tower</td>
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<td>FLASHERS, HIGH INTENSITY</td>
<td>AEG-Telefunken</td>
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<tr>
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<td>Calvert Electronics</td>
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<td>EGA, Electric Optics</td>
<td>Flash Technology Corp. of America</td>
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<td>LeBlanc &amp; Roye</td>
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<td>Communications Inc.</td>
<td>Osrum Sales</td>
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<td>SSAC</td>
<td>Swager Tower Corporation</td>
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<td>Utility Tower</td>
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<td>ISOLATION TRANSFORMERS</td>
<td>AEG-Telefunken</td>
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<td>Abrody Construction</td>
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<td>BES Electronics</td>
<td>CSP Inc.</td>
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<td>Peter Dahl Company</td>
<td>Decca Austin Insulators</td>
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<td>Flash Technology</td>
<td>Hughey &amp; Phillips</td>
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<td>LeBlanc &amp; Roye</td>
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<td>Communications Inc.</td>
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<td>MCG Electronics, Inc.</td>
<td>North Hills Electronics</td>
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<td>Swager Tower Corporation</td>
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<td>UNR-Rohn</td>
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<td>Utility Tower</td>
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<td>World Tower</td>
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<td>LAMPS, REPLACEMENT</td>
<td>AEG-Telefunken</td>
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<td>Abrody Construction</td>
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<td>Atlas Tower Corp.</td>
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<td>Flash Technology Corp. of America</td>
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<td>Grant Tower</td>
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<td>Hughey &amp; Phillips</td>
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<td>LeBlanc &amp; Roye</td>
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<td>Fred Hudd Corp.</td>
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<td>Swager Tower Corporation</td>
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<td>Utility Tower</td>
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<td>World Tower</td>
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<tr>
<td>LIGHT FAILURE ALARM</td>
<td>(See Alarms)</td>
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<td>LIGHT INDICATOR PANELS</td>
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<td>CSP Inc.</td>
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<td>Flash Technology Corporation of America</td>
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<td>Gravis</td>
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<td>UNR-Rohn</td>
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<td>TOWERS</td>
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<td>The Will Burt Company, TND Div.</td>
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<td>Cetec Broadcast Group</td>
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<td>Continental Electronics</td>
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<td>Contland Cable Co.</td>
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<td>E-NQ Corporation</td>
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<td>E-Z Way Products</td>
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<td>Fort Worth Tower</td>
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<td>Grant Tower</td>
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<td>Gravis Corporation</td>
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<td><a href="http://www.americanradiohistory.com">www.americanradiohistory.com</a></td>
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</tr>
</tbody>
</table>
TRANSMITTERS, AM

500 WATTS & UNDER

AEG-Telefunken
Cetec Broadcast Group
Comad Communications
Dyna Engineering
Elcom Bauer
Harris Corporation, Broadcast Products Division
McMartin Industries
Marconi
Microphone Power Devices
Nady Systems
NEC America
QEI Corp
Singer Broadcast Products
Singer Broadcast Products

OVER 20,000 WATTS

AEG-Telefunken (Basy Engineering Ltd.)
CBS Electronics
Comad Communications
Dyna Engineering
Elcom Bauer
Elcom Speciality Products
Harris Corporation, Broadcast Products Division
McMartin Industries
Marconi, Electronics Inc.
Siemens AG
Singer Broadcast Products
Transom-CSP
Tramec Electronics
Wilkinson Electronics

TRANSMITTERS, FM

500 WATTS & UNDER

AEG-Telefunken (Basy Engineering)
Anderson Scientific
CBS Electronics
Cetec Broadcast Group
Comad Communications
Dyna Engineering
Elcom Bauer
Elcom Speciality Products
Harris Corporation, Broadcast Products Division
LPI Inc.
McMartin Industries
Marconi
Microphone Power Devices
Nady Systems
NEC America
QEI Corp
Singer Broadcast Products
Singer Broadcast Products

500 WATTS & OVER, SOLID-STATE

AEG-Telefunken
Cetec Broadcast Group
Comad Communications
Dyna Engineering
Elcom Bauer
Harris Corporation, Broadcast Products Division
McMartin Industries
Microphone Power Devices
Nautel Maine
Singer Broadcast Products
Singer Broadcast Products

TRANSMISSION LINES, SUPERVISION SYSTEMS

CATel (Division of United Scientific Corp.)
Fernsm Inc.
Grass Valley
GTE Lenkurt Incorporated
LeBlanc & Royce Communications
LeCroy Research Systems
Timex Wire & Cable
Telechem
Vallec Corporation

TRANSMITTER MODULATION CONTROLLER

AEG-Telefunken

PLATE
Peter W. Dahl Co.
Clentronics
Tramec Electronics

RF SAMPLING
BES Electronics
CSP Inc.
Coastal Dynamics
Peter Dahl Company
Delta Electronics

TOROIDAL CURRENT
BES Electronics
CSP Inc.
Clentronics
Peter Dahl Company
Delta Electronics
Milcon Components

TRANSMITTER VIDEO/DATA LINE ISOLATION
North Hills Electronics

TRANSLATORS

HIGH POWER
AEG-Telefunken
Acrodyne Industries
Anderson Scientific
EMCEE Broadcast Products
Harris Corporation, Broadcast Products Division
Hans Pilsh
Larson Communications Inc.
Roblco
Rohde & Schwarz
TBC Ph. Ltd.
Television Technology
Thomson-CSF
Townsend Associates
Veeco Serv
Versa - Count

LOW POWER
AEG-Telefunken
Acrodyne Industries
Anderson Scientific
Crowdgd Communications
EMCEE Broadcast Products
Harris Corporation, Broadcast Products Division
Hans Pilsh
LeVeen Communications
Roblco
Rohde & Schwarz
TBC Ph. Ltd.
Television Technology
Thomson-CSF
Townsend Associates
Veeco Serv
VERSUS

TRANSFORMERS

AUDIO
Alto Lansing
Audisar
Bogen Division 1 Lear Siegler
Broadcast Technology
Clentronics
Consolidated Electronic Ind.
Peter W. Dahl Co.
Dyna Engineering
Electroplex
Erich Schumberger
Harris Corporation, Broadcast Products Division
ITI Electronics, Inc.
Jensen Transformers
Marconi Instruments Ltd.
Modular Audio Products
Modulation Associates
Northern Communications
Oampfi Labs Inc.
ProTech Audio Corporation
Sescem
Standard Corporation
Siemens AG Osterreich
Spectra Sonics
Tend Inc.
Tramec Electronics
Tri Tec Systems Inc.
Vidahide Electronics Mfg. Corp.

FOILAMENT
Peter W. Dahl Co.
Clentronics
Tramec Electronics

MODULATION
Peter W. Dahl Co.
Clentronics
Tramec Electronics

JUNE 1982/BROADCAST COMMUNICATIONS

www.americanradiohistory.com
WHO MAKES IT

McMartin Industries
Microwave Power Devices
NEC America
OEI Corp.
Rohde & Schwarz
Singer Broadcast Products
TBC Pty. Ltd.
Thomson-CSF
Tramec Electronics
Wilkinson Electronics

1,000 TO 2,500 WATTS
AEG-Telefunken
(Bavly Engineering Ltd.)
Broadcast Electronics
CSI Electronics
Cetec Broadcast Group
Comad Communications
Continental Electronics
Dyma Engineering
Elcom Bauer
Elcom Specialty Products
Harris Corporation, Broadcast Products Division
Larcan Communications Inc.
McMartin Industries
NEC America
RCA Broadcast Systems
Singer Broadcast Products
Thomson-CSF
Tramec Electronics
Wilkinson Electronics

TRANSMITTERS, TV

LOW POWER, UHF
AEG-Telefunken
(Bavly Engineering)
Acrodyne Industries
Anderson Scientific
Comar Communications
Comark Communications
EMCEE Broadcast Products
Harris Corporation, Broadcast Products Division
Hirschi-Muncher
Marconi
Microwave Power Devices
NEC America
Rodeo Electronics Corp.
Rohde & Schwarz
Satcom Inc.
Switel Enterprises
TBC Pty. Ltd.
Television Technology
Thomson-CSF
Towed Associates
Triple Crown Electronics
United States Tower
Visual Methods, Inc.

LOW POWER VHFRadio
AEG-Telefunken
Bavly Engineering
Acrodyne Industries
Comar Communications
Crowder Communications
EMCEE Broadcast Products
Harris Corporation, Broadcast Products Division
Howe-Yin Research
Microwave Power Devices
Nady Systems
Rodeo Electronics
Rohde & Schwarz
Switel Enterprises
TBC Pty. Ltd.
Television Technology
Thomson-CSF
Towed Associates
Triple Crown Electronics
Visual Methods

ULPH HIGH POWER
AEG-Telefunken
Acrodyne Industries
Comar Communications
Comark Communications Inc.
Harris Corp., Broadcast Products
Marcom Communication Systems Ltd.
Marconi Electronics Inc.
Microwave Power Devices
NEC America
Phillips Broadcast
RCA Broadcast Systems
Rodelco Electronics
Rohde & Schwarz
Singer Broadcast Products
TBC Pty. Ltd.
Thomson-CSF
Towed Associates
Varian MCSD

VHF HIGH POWER
AEG-Telefunken
Acrodyne Industries
Comar Communications
Comark Communications Inc.
Harris Corp., Broadcast Products
Larcan Communications Inc.
Marcom Communication Systems Ltd.
Marconi
Microwave Power Devices
NEC America
RCA Broadcast Systems
Rodelco Electronics
Rohde & Schwarz

CECO Communications
Comad Communications
Comar Broadcast Products
Comark Communications Inc.
Harris Corp., Broadcast Products
Larcan Communications Inc.
Marcom Communication Systems Ltd.
Marconi
Microwave Power Devices
NEC America
RCA Broadcast Systems
Rodelco Electronics
Rohde & Schwarz

TRANSMITTERS, MICROWAVE
AEG-Telefunken
Audin Microwave
Datum
EEV
Farnese Video
Hughes Aircraft Company
International Microwave
MA-CON Video Systems
Mesolese Associates
Nualar
RF Technology
Taybourn Electronics
Tesorcom
Thomson-CSF
Varian, MCSD
Veilec Tele
Visual Methods

TRANSMITTERS, SHORTWARE
Continental Electronics

TUBES

CRT MONITOR
Audiornics
Calvert Electronics
EEV
GBC Closed Circuit TV Corp.
Levit Electronics, Inc.
Team Electronics
Thomson-CSF

CRT OSCILLOSCOPE
Amperex
Calvert Electronics
EEV
Levit Electronics
RCA Electro-Optics
Texscan
Thomson-CSF

RECEIVER TYPES
AEG-Telefunken
Amperex
David H. Brother Co.
Calvert Electronics
CoCo Communications
EEV
Levit Electronics
RCA Distributor & Special Products
RF Gain
Team Electronics
Varian Associates

RECTIFIER TUBES
AEG-Telefunken
Amperex
Calvert Electronics
CoCo Communications
EEV
Levit Electronics
RCA Distributor & Special Products
RF Gain
Team Electronics
Thomson-CSF
Varian Associates
Westinghouse Electric Corp.

SOLID-STATE REPLACEMENT
AEG-Telefunken
Amperex
Calvert Electronics
Electronic Devices
Microwave Power Devices

TRANSMITTER TUBES, AM/FM
AEG-Telefunken
Amperex
Broadcast Electronics
Calvert Electronics

TUNERS, FM
Bill Audio Systems
Bogan Division/Leer Siegler
Cate
Crown International
Johnson Electronics
McMatin Industries
Pasgo Sound Products
Pyramid Loudspeaker Corp.
H. H. Scott
Sharp Electronics
Sigfrin Products Company
Studer International AG
Studer Revox America

TUNERS, VIDEO
Barco (Electronic)

TURNKEY INSTALLATION SERVICES
AEG-Telefunken
A.F. Associates
Alice Stancell Ltd.
Alitha Video & Ele. Corp.
Amex Systems & Controls
Andrew Corporations
Antennas for Communications Inc.
Audix
Audin Microwave
Braybury Electronics

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**TURN TABLES & ACCESSORIES**

PHONO CARTRIDGES
(See Cartridges, Phonos)

TONE ARMS
Audio-Technica US, Inc.
Broadcast Electronics
Cart-Align Research
Cetelec Broadcast Group
Continental Electronics
D - B Electronics
Electro-Vox
Fidelipac Corp.
Harris Corporation, Broadcast
Product Division
IGM Communications
LBV
McCurdy Radio Industries
Micro-X
Panasonic, Professional Audio Div.
Remko Research
Shure Brothers
Westrex

**TUNABLE**

AIR
Bogen Division / Lek Sigler
Broadcast Electronics
David H. Broder Co., Cetelec Group
Continental Electronics
D - B Electronics
Electro-Vox
EMT - Frans
Harris Corporation, Broadcast
Product Division
IGM Communications
LBV

**TUNE ARMS**

Audio-Technica US, Inc.
Broadcast Electronics
Cart-Align Research
Cetelec Broadcast Group
Continental Electronics
D - B Electronics
Electro-Vox
Fidelipac Corp.
Harris Corporation, Broadcast
Product Division
IGM Communications
LBV
McCurdy Radio Industries
Micro-X
Panasonic, Professional Audio Div.
Remko Research
Shure Brothers
Westrex

**VANS & MOBILE UNITS**

ENG/ENG REMOTE
A.F. Associates
Airbus Video & Eng. Corp.
Audax Limited
Robert Bosch GmbH
Brabury Broadcast Systems
Brabury Electronics
Centro
ComCoach Corporation
Compact Video Systems
ComPro
Crow of Reading Ltd.
Dell Technical Vehicles
Dynamic Technology
E-N-G Corporation
Faith Electronics
The Garnetts Company
Harris Broadcast Microwave
Harris Corporation, Broadcast
Products Division
Hughes Television Network
Jenel Consulting Engineers
L.E. Nelson
RCA Broadcast Systems
Rhode & Schwarz
Rosner
Soll Inc.
Siemens AG Österreich
Strand Corporation
Thomson-CSF
Ultra Audio Pixtec

**VING S & MOBILE UNITS**

ENG/ENG REMOTE
A.F. Associates
Airbus Video & Eng. Corp.
Audax Limited
Robert Bosch GmbH
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Brabury Electronics
Centro
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Compact Video Systems
ComPro
Crow of Reading Ltd.
Dell Technical Vehicles
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Harris Corporation, Broadcast
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Hughes Television Network
Jenel Consulting Engineers
L.E. Nelson
RCA Broadcast Systems
Rhode & Schwarz
Rosner
Soll Inc.
Siemens AG Österreich
Strand Corporation
Thomson-CSF
Ultra Audio Pixtec

**VIDEO CONTROLLER**

BCB Electronics Sales
BTX Corp.
CXM Technology Corp.
Cesar International
Channelmatic
Control Video

**WEATHER GRAPHIC SYSTEM**

Spectra Computer Systems

**WEATHER INSTRUMENTS**

Anvin-Diamond

**WEATHER RADAR SYSTEMS**

AEG Telefunken

**WEATHER SERVICES**

Arvin Echo

**WEATHER RECEIVERS**

(Below, Weather)

**WIRE**

(Cable)

**WIRING SERVICES**

(Cable)
WHERE TO BUY IT

DIRECTORY OF MANUFACTURERS AND SERVICE COMPANIES

A

ADDA CORPORATION
1671 Dell Ave.
Campbell, CA 95008
(408) 379-1500
Regional Sales Offices:
ADDA CORPORATION
10, 7th Place
Westfield, MA 01090
(413) 245-4802
Contact: Frank Alcito, Reg. Sls. Mgr.
ADDA CORPORATION
1901 E. 38th St.
Brooklyn, NY 11234
(212) 375-4044
Contact: Frank Frangis, Reg. Sls. Mgr.

AMP INC.
P.O. Box 3608
Harrisburg, PA 17105
(717) 564-1000
Sales Contact: Robert Sieveke, VP Ind. Sls.

AMP SPECIAL INDUSTRIES
(A subsidiary of AMP Incorporated)
Valley Forge, PA 19482
(215) 647-1000
Sales Contact: Joseph Mater; Gen. Sls. Mgr.

A & S CASE COMPANY
1111 North Gordon Street
Hollywood, CA 90036
(213) 486-1861
Sales Contact: Jan Alejandro, Sales Mgr.

ATI/AUDIO TECHNOLOGIES INC.
328 W. Maple Ave.
Horsham, PA 19044
(215) 483-0330
Sales Contact: Ed M. Mullin, V.P.

Regional Sales Offices:
AUDIO TECHNOLOGIES
252 Glenbrook Road
Stamford, CT 06906
(203) 395-2312
Contact: Michael Paulkner
ALLIED BROADCAST EQPT.
305 South Street
Richmond, VA 23234
(317) 962-8596
Contact: Roy Ridge
AVC SYSTEMS INC.
1917 E. Lakes St.
Minneapolis, MN 55407
(612) 729-9305
AUDIO DISTRIBUTORS INC.
2342 Division Avenue, S
Grand Rapids, MI 49507
(616) 452-1596
BROADCAST COMMUNICATIONS PRODUCTS
1817 Second Ave.
Lyden, CO 80421
(303) 424-3231
Contact: Greg Prie
BROADCAST EQPT. & SUPPLY CO.
P.O. Box 1045
Bristol, TN 37620
(865) 879-2531
Contact: Doug Brown ENTERPRISES
1702 E. Skelton Drive
Tulsa, OK 74105
(918) 747-3618
Contact: Doug Brown
COMAD COMMUNICATIONS
1100 Kellogg Street, Unit 5
Nexacola, Ontario M9W 5A3
(416) 245-1734
Contact: Emil Amandy
CRAFTER VIDEO/AUDIO SYSTEMS
120 Hampton Ave.
Henderson, NV 89014
(702) 449-2100
Contact: Jim Hitteman
CROUSE-KIMBAY CO.
P.O. Box 986
Fort Worth, TX 76117
(817) 433-2105
Contact: Mark Bradford
FLANIGAN AND HAFOSO
3050 N. Mayfair Rd
Milwaukee, WI 53226
(414) 259-9665
Contact: John Loper
FULL COMPASS SYSTEMS
3728 Sylwood Road
Madison, WI 53719
(608) 271-1100
Contact: Jon Lippin
GRAY COMM. CONSULTANTS INC.
3451 Southern Comfort Blvd.
Florida, FL 33414
(813) 865-1411
Contact: David Green BROCT.

BROADCAST COMMUNICATIONS
P.O. Box 590
Leesburg, VA 20175
(703) 777-4660
Contact: David Green
MARTIN AUDIO/AUDIO/PYO CORP.
423 W. 54th Street
New York, NY 10019
(212) 541-6000
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<td>Nick Glade</td>
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Contact: Jim Tinglejohn, Dist. Sales Mgr.
CONTINENTAL ELECTRONICS MFG. CO.
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Holts Summit, MO 65043
(314) 896-5791
Contact: Lloyd C. Collins, Dist. Sales Mgr.
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P.O. Box 2009
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(214) 423-3644
Contact: Steve H. Schott, Dist. Sales Mgr.
CONTINENTAL ELECTRONICS MFG. CO.
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(503) 254-2818
Contact: Tom Gauthier, Dist. Sales Mgr.
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Contact: Steve Keating, Dist. Sales Mgr.

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(617) 426-3131
Sales Contact: Dan Flynn, Pres.

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576 Division St.
Campbell, CA 95008
(408) 866-7457
Sales Contact: Michael Goddard, Mktg. Mgr.

CONVERGENCE CORPORATION
1641 McGaw
Irvine, CA 92714
(714) 540-3146
Sales Contact: Richard Moscarello, Dir. of Domestic Sales
Donald LeFevre, Dir. of Intl Mktg.

COOL LIGHT CO., INC.
5723 Auckland Ave.
No. Hollywood, CA 91601
(213) 761-6116

THE COOPER GROUP
P.O. Box 30102
Raleigh, NC 27622
(919) 781-7200
Sales Contact: E.R. Lawrence, Gen. Sls. Mgr.

COPPERWELD BIMETALLICS GROUP
Robinson Plaza Two
Pittsburgh, PA 15205
(412) 777-3000

CORPORATE COMM. CONSULTANTS INC.
4250 Veterans Memorial Highway
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(516) 737-0903
Sales Contact: Mr. Armand B. Sarabia, Pres.

CORTLAND CABLE COMPANY
P.O. Box 352
171 Post Watson St.
Cortland, NY 13045
(607) 753-8276
Sales Contact: John Dower, Sls. Mgr.

COSMINS ELECTRONICS
4214 San Pedro
San Antonio, TX 78212
(512) 736-6116
(215) 847-2044
Sales Contact: Jim Lucy, VP Sales

Cox Data Services
5600 Roswell Road, N.E.
Suite 100 Prado North
Atlanta, GA 30342
(404) 256-5200
Sales Contact: Lou Kalb, Manager

MICHAEL COX ELECTRONICS LTD.
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Hampton Road West
Feltham Middx
01-896 809 1/2 3/4
Sales Contact: Susan Bell, Sales Mgr.

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1417 N. Selfridge
Clawson, MI 48017
(313) 425-8916
Sales Contact: Carl W. Yette, Pres.

CREATIVE TRADE, CTAB AB
Knutsgatan 6
S-265 00 ASTORP Sweden
46 42/515 21-597 56
Sales Contact: Mrs. Sarah Rosander,
Marketing Manager

CROSSPOINT LATCH
95 Progress Street
Union, NJ 07083
(201) 688-1510
Sales Contact: H. George Piras, Pres.
Michael Molinaro,
Regional Sales Offices:
CROSSPOINT LATCH CORP.
206 Bass Rd.
Chattanooga, TN 37421
(815) 894-3247
Contact: George Cudaback, S. Reg. Sls. Mgr.

CROSSPOINT VIDEO LIMITED
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Shorting Rd.
Scarborough, Ontario
Canada
(416) 288-6199
Sales Contact: Arthur W. Critchley, Pres.

CROW OF READING LTD.
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Reading RG1 2NB.
(0734) 595025
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Telex: 847055
Sales Contact: Mike Angiow, Mktg. Mgr.

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4312 Norfolk Street
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Canada
(604) 437-4433
Sales Contact: Peter Crowder, President

CROWN INTERNATIONAL
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Elkhart, IN 46517
(219) 294-5571
Sales Contact: Murray Young, Adv. Mgr.

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(212) 921-9221

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(503) 271-3084
Sales Contact: Steve Kenagy, VP/Mktg.

D

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(213) 769-6752
Sales Contact: James F. Butterfield, Mgr.

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(716) 385-4920
Sales Contact: Geri Drooz, Advtg. Mgr.

D AND S CORLEY LIMITED
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(416) 675-3511
Sales Contact: Richard Corley, VP Research

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70 Oak St.
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(201) 768-5400
Sales Contact: Ira M. Lash, Sales Mgr.

DAE-MEI INC.
208 Wabash St.
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(219) 872-5514
Sales Contact: Paul Thomas, Nat'l. Sls. Mgr.

PETER W. DAHL CO. INC.
4007 Fort Blvd.
El Paso, TX 79930
(915) 566-5365
Sales Contact: P. W. Dahl, President

DA-LITE SCREEN COMPANY
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3100 State Road 15 North
Warsaw, IN 46580
(219) 267-8101
Sales Contact: Martin Olsen, Sales Mgr.

DATA COMMUNICATIONS CORP.
3000 Directors Row
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(901) 345-3544
Sales Contact: Nancy Jeffries, Sls. Mgr.

DATAMETERS INC.
340 Fordham Road
Wilmington, MA 01887
(617) 658-5410
Sales Contact: Walter Hickman, Prod. Mgr.

DATATEK CORP.
1121 Bristol Rd.
Mountainside, NJ 07092
(201) 654-8100
Sales Contact: Bob Rainey, Mktg. Mgr.

DATATRONIX INC.
2100 Reston Ave.
Reston, VA 22091
(703) 620-5300
Sales Contact: David Brooks, Dir., Audio Systems

DATATRON INC.
2922 Dow Avenue
Tustin, CA 92680
(714) 544-9970
Sales Contact: Roger Bailey, Dir., Video Marketing

DATEL-INTERSIL INC.
11 Cabot Boulevard
Mansfield, MA 02048
(617) 339-9341
Sales Contact: Ted Petri, X221, App. Eng.

DATUM INC.
1363 S. State College Blvd.
Anaheim, CA 92806
(714) 533-6333
Sales Contact: Lester Turner, Sr. Staff Eng.

JOHN J. DAVIS & ASSOCIATES
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Sierra Madre, CA 91024
(213) 355-6909
Sales Contact: John J. Davis, Pres.

DAVIS ELECTRONICS CO.
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Sales Contact: John J. Davis, Pres.

Continued on page 135

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New York, NY 10021
(212) 628-5930
Sales Contact: Allan Stanley, Pres.

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Sales Contact: Kay Dorough, PT

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Sales Contact: Jack L. Dysart, Prod. Mgr.

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01-221-1475
Contact: David Bower, Sales Mgr.

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Sales Contact: Ron Harrison, VP/Sales

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Sales Contact: A.W. Oriacchio, V.P. Sales

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Sales Contact: O.S. Swarth, Pres.

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Fort Lee, NJ 07024
(216) 592-6500
Sales Contact: Harvey Dubner, President

DUKANE CORP.
Communications Systems Div.
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(213) 584-2300
Sales Contact: Don Cantrell, Admin. Asst.

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MAGNETIC PRODUCTS DIVISION
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Sales Contact: E.R. Buckley, Mktg. Mgr.

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Sales Contact: Madelon Cohen, President

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(505) 758-8666
Sales Contact: W. Cunningham, VP

DYNACOM ELECTRONICS LTD.
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(404) 428-3100
Sales Contact: Robert W. Payne, Jr., Director of Marketing

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5275 Market Street
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(714) 263-7711
Sales Contact: Robert Jacobs, Gen. Mgr.

DYNAMETRICS INC.
4646 Mission Gorge Place
San Diego, CA 92120
(714) 383-8890
Sales Contact: John Peterson, Pres.

DYNATOMIC TECHNOLOGY LIMITED
Zornai House, Alliance Road
Acton, London W3 6BA UK
01-993-2401
Sales Contact: Derek Tugwell, Mgr. Dir.
Continued on page 138

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31 Progress Court
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M1G 3V5
(416) 439-9333
Sales Contact: Maurice Evans

ELECTROLINE TELEVISION EQUIP. INC.
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Montreal Quebec
Canada H1Z 2W4
(514) 725-2471
Sales Contact: John Amann, Mktg. Dir.

ELECTRONIC DEVICES INC.
21 Gray Oaks Ave.
Yorkers, NY 10710
(914) 965-4400
Sales Contact: Dennis Dean, Sales Mgr.

ELECTRONICS DIVERSIFIED INC.
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Hillsboro, OR 97123
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Sales Contact: Greg Long, Dir., Sales Mgr.

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0 70 25/10 11
Sales Contact: Frank Hirsch, Dr.rer.nat.

ENCLOSURE CORP.
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Sales Contact: R.D. Edelman, Pres.

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92950 Rueil Malmaison
(France)
(1) 732-9223
Sales Contact: Jean Schwob, Sales Mgr.

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Sales Contact: Charles C. Little, Jr.

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Sales Contact: Dave Fairar
Light Conversion Marketing Manager

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Enterprise, AL 36331
(205) 347-3478
Sales Contact: C.P. Jeter, Gen. Mgr.

ENVIRONMENTAL CONTAINER SYSTEMS
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Grants Pass, OR 97528
(503) 478-8871
Sales Contact: Tom Heiman, Sys. Analyst

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Aurora, IL 60507
(312) 559-1000
Sales Contact: Jeff Vaughn, Sales Prom. Mgr.

ESCOA
737 A-1 Waver Drive
Lexington, KY 40504
(606) 252-3536
Sales Contact: Ron Eigenmann

EUMIG (USA) INC.
Lake Success Business Park
225 Community Drive
Great Neck, NY 11020
(516) 466-6533
Sales Contact: Tom Benson

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TWX: 710-581-2593
New York, NY 10019
(212) 681-2290
Sales Contact: Suzanne Langle, Mktg.

EXCALIBUR INDUSTRIES
12427 Foothill Blvd.
Lake View Terrace, CA 91342
(213) 899-2547
Sales Contact: John A. Gresh, Dir. of Mktg.

F

FABICECO INC.
315 West 43rd Street
New York City, NY 10036
(212) 974-4600
Sales Contact: Walter Druker, Exec. VP

FAIRCILD CCD IMAGING
4001 Miranda Avenue
(415) 493-8003
Sales Contact: Neil Madonick, Prod. Mktg.

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404 N. River
Uppland, MI 48197
(313) 482-6556
Sales Contact: Stefan Graf, Pres.

FARINON GmbH
Diesterweggasse 29
1140 Wein, Austria

FARINON VIDEO
1680 Bayport Avenue
San Carlos, CA 94070
(415) 595-3500
Sales Contact: Christ Fields, Nat’l. Sls. Mgr.

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Sales Contact: Isabella Faroudia, Admin. Asst.

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Sales Contact: James Gorman, Owner

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(215) 752-0555
Sales Contact: Robert T. Hanson

GOULD INC., INSTRUMENTS DIV.
35129 Curtis Blvd.
Eastlake, OH 44094
(216) 361-3315
Sales Contact: Henry Berek, Nat'l. Sls. Mgr.

GRAHAM-PATTON SYSTEMS
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Grass Valley, CA 95945
(916) 273-8412
Sales Contact: Merry Graham, Pres.

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Farmingdale, NY 11735
(516) 694-3600 x234
Sales Contact: Cary Retner, Sls. Mgr.

GRANT TOWER INC.
13064 Wisner Avenue
Grant, MI 49227
(616) 834-5663
Sales Contact: Walt Knoch, Office Mgr.

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7660 Engineer Rd, Suite 201
San Diego, CA 92111
(714) 565-2146

GRASS CORPORATION
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(916) 273-8421
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Regional Sls. Offices:
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(516) 487-1311
Contact: Danny Antonelli, Reg. Mgr.
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(219) 264-0931
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(612) 483-2994
Contact: Larry Ehmann, Dist. Mgr.
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Contact: Roger Haas, Dist. Mgr.
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(714) 357-1100
Sales Contact: Scott J. Rubenstein, Mktg. Dir.

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Sales Contact: R.H. Salews, Sls. Mgr.

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H

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HSC INCORPORATED
2932 River Road
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River Grove, IL 60171
(312) 452-6551
Sales Contact: Paul F. Bergetz, Sls. Mgr.

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San Luis Obispo, CA 93401
(805) 541-0200
Sales Contact: Harold Hallikainen, Pres.

HAMMOND INDUSTRIES INC.
8000 Madison Pike
Madison, AZ 85758
(502) 772-9626
Sales Contact: Paul Twist, VP Sales

HARRIS CORPORATION,
BROADCAST PRODUCTS DIVISION
P.O. Box 4290
Quincy, IL 62305-4290
(217) 222-6200
Sales Contact: Ken Schwenk, Dir. of Dom. Sls.

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BROADCAST MICROWAVE
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San Carlos, CA 94070
(415) 595-3500
Sales Contact: Cliff Fields, Natl. Sls. Mgr.

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San Carlos, CA 94070
(415) 595-3500
Sales Contact: Cliff Fields, Dom. Sls. Mgr.

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Westbury, NY 11590
(516) 364-0400
Sales Contact: Jeffrey Price, Sales Admin.

HARRIS VIDEO SYSTEMS
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Peoria, IL 61602
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Contact: Clay Seither, Midwest Reg. Mgr.
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<td>HOWE AUDIO MARKETING</td>
<td>4041 Home Rd, Bellingham, WA 98226</td>
<td>(206) 733-4567</td>
<td>Nick Solberg, Tech, Mktg.</td>
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<td>ICM COMMUNICATIONS</td>
<td>3065-A Bluff St, Boulder, CO 80301</td>
<td>(303) 444-4693</td>
<td>Greg Pine, Sales Mgr.</td>
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<td>ITC INNOVATIVE TELEVISION EQUIP.</td>
<td>P.O. Box 881</td>
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<td>HUGHES ELECTRONIC DEVICES CORP. (HEDCO)</td>
<td>P.O. Box 1965, Grass Valley, CA 95945</td>
<td>(916) 273-9524</td>
<td>Bob Wincentsen, VP Mktg.</td>
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<td>Microwave Communications Products, 3100 Fujitsu Street, P.O. Box 2996, Torrance, CA 90509</td>
<td>(213) 517-6100</td>
<td>L.E. Stanley, Mgr, Mktg.</td>
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<td>HUGHES TELEVISION NETWORK</td>
<td>4 Penn Plaza, New York, NY 10001</td>
<td>(212) 563-8929</td>
<td>Bill Page, Dir, Sales Dev.</td>
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<td>HUGHES HELENCOPTERS INC.</td>
<td>Centinela Avenue &amp; Teal St, Culver City, CA 90230</td>
<td>(231) 305-3055</td>
<td>Norman S. Jacobson, No. Am. Sales Mgr.</td>
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<td>HUNT CHEMICAL</td>
<td>Roosevelt Place, Piscataway Park, NJ 08850</td>
<td>(201) 944-4000</td>
<td>E. Matteazzi, Dir of Sales</td>
<td></td>
<td></td>
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<td>IKEMAG ELECTRONICS INC. (USA)</td>
<td>37 Brook Avenue, Maywood, NJ 07607-1195</td>
<td>(201) 368-9171</td>
<td>Herman Schloss, VP Sales/Marketing</td>
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<td>Schmetterer, Sales Contact</td>
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Contact: S. J. Shelley

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(205) 328-6431
Contact: Louis H. Plan, Pres.

ALASKA
ALASKA ELECTRONICS SUPPLY, INC.
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ARIZONA
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5401 Fairbanks Street
Suites 1 & 2
Anchorage, AK 99502
(907) 272-9416
Contact: Harry J. Lang, President

HARRY J. LANG & ASSOCIATES
LINE: McMartin, Fluke, Ampeg, Pulsecom.
1371 Hillcrest Drive #303
Anchorage, Alaska 99503
(907) 278-6741
Contact: Harry J. Lang, Owner

NVS SYSTEMS, INC.
LINE: Acrodyne, Barco, Conrac, Hitachi, Sony, Telrex, Tektronix.
8300 King Street
Anchorage, Alaska 99502
(907) 349-3523
Contact: Jack O. Smith, President

IMC
LINE: Wind power systems.
2515 E. Thomas, Suite 17
Phoenix, AZ 85016
(602) 957-8224
Contact: Karen Berry, V.P.

JENSEN TOOLS, INC.
LINE: Tool & tool kits, test equipment.
1200 S. Priest Dr.
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(602) 968-6241
Contact: Tom Fenzel, Sls. Mgr.

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(602) 931-4956
Contact: L. Bollinger, Sls. Mgr.

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Tucson, Arizona 85711
(602) 796-8573
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2338 W. Royal Palm
Phoenix, AZ 85021
(602) 242-2211
Contact: Janene Spencer, Sales Director
SEE AD ON PAGE 168

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STANTON

Circle (114) on Action Card

168

Broadcast Communications/June 1982
Video Delay Lines

ALLEN AVIONICS Video & Pulse Delay Lines replace 75 ohm coaxial cable, provide a more suitable method of achieving precise short delays. The units reduce size, weight, installation costs, save time & effort in making delay changes.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Delay Range (Nanosec.)</th>
<th>Delay Steps (Nanosec.)</th>
<th>Method of Variation</th>
<th>Maximum Insertion Loss (dB)</th>
<th>Average Flattest @ Any Delay Setting (50 KHz)</th>
<th>Max. Rise Time (Nanosec.)</th>
<th>Package Size (Inches)</th>
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<tr>
<td>VA909</td>
<td>3-7</td>
<td>Continuous</td>
<td>Trimmer</td>
<td>20</td>
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<td>EA15</td>
<td>8 x 5 x 1 3/4</td>
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<td>VA9011</td>
<td>0-11</td>
<td>Continuous</td>
<td>Trimmer &amp; Toggle</td>
<td>20</td>
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<td>EA15</td>
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<td>5</td>
<td>Toggle</td>
<td>15</td>
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<td>EA15</td>
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<td>VP9017</td>
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<td>Toggle</td>
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<td>VP9317</td>
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<td>Toggle</td>
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<td>EA15</td>
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<td>Toggle</td>
<td>* .50</td>
<td>44 1/5 / 11/4</td>
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<td>VP1100</td>
<td>0-1100</td>
<td>12.0</td>
<td>Rotary</td>
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<td>VP1270</td>
<td>0-1270</td>
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<td>Toggle</td>
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<td>VS3015</td>
<td>0-3015</td>
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<td>Strap</td>
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<td>0-6035</td>
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<td>VS2075</td>
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<td>Strap</td>
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<td>44 1/5 / 11/4</td>
<td>EA15</td>
<td>8 x 5 x 1 3/4</td>
</tr>
</tbody>
</table>

**RACK MOUNTABLE UNITS**

| VRM2025  | 0-255                   | 1.0                | Slide Switch        | .4 Max.                      | 20 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM6037  | 0-637.5                 | 2.5                | Slide Switch        | *1.00                       | 28 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM1275  | 0-1275                  | 5.0                | Slide Switch        | *1.00                       | 33 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM2270  | 0-2270                  | 7.0                | Slide Switch        | *3.00                       | 40 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM2270  | 0-2270                  | 7.0                | Slide Switch        | *3.00                       | 40 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM2270  | 0-2270                  | 7.0                | Slide Switch        | *3.00                       | 40 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM2270  | 0-2270                  | 7.0                | Slide Switch        | *3.00                       | 40 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |
| VRM2270  | 0-2270                  | 7.0                | Slide Switch        | *3.00                       | 40 7/8 x 4 1/4                  | EA15                     | 8 x 5 x 1 3/4     |

**Impedance:** 75 ohms.
**Pulse Distortion:** Less than 4% with an input pulse rise time of 20 nanoseconds.
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San Diego, CA 92110
(714) 297-3261
Contact: Victor M. Hall, President
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Fresno, CA 93703
(209) 251-4213
Contact: Robti D. Sidwell, VP-Sales

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(213) 769-6752
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(213) 272-9282
Contact: Eddie Edgan, President

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5128 Calle Del Sol
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(408) 727-1536
Contact: Guido Govaert, Sls. Mgr.
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J. Harris, Mgr., Video Sales

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(805) 656-3696
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(213) 332-2335
Contact: Leigh Adams, Mgr.

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(213) 641-7733
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(714) 375-5690
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(213) 866-2772
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Continued on page 172

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SOLID STATE TRANSMITTERS
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Circle (117) on Action Card

JUNE 1982/BROADCAST COMMUNICATIONS

171
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low cost Dynacom system

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Circle (119) on Action Card

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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:**
- 15 watts continuous output
- Dual frequency capability
- Sub audio encoder
- Built-in metering
- Built-in AC supply
- FM Compressor-Limiter
- Mixing mic and line inputs

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<tr>
<th>COLORADO MAGNETICS</th>
</tr>
</thead>
<tbody>
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<td>LINE: AudioFak, Fidelio, Audiofak, Astrolab, Audio Technica, Ampex.</td>
</tr>
<tr>
<td>P.O. Box 713</td>
</tr>
<tr>
<td>Colorado Springs, CO 80901</td>
</tr>
<tr>
<td>(303) 596-0684</td>
</tr>
<tr>
<td>Contact: Larry Wilson, Owner</td>
</tr>
<tr>
<td>COLUMBINE SYSTEMS, INC.</td>
</tr>
<tr>
<td>LINE: Data processing for the broadcast industry.</td>
</tr>
<tr>
<td>Seven Jackson Building Level 3</td>
</tr>
<tr>
<td>Plaza of the Presidents Golden, CO 80401</td>
</tr>
<tr>
<td>(303) 279-4000</td>
</tr>
<tr>
<td>Contact: Sue Thompson, VP/Marketing</td>
</tr>
<tr>
<td>DAVIS AUDIO VISUAL, INC.</td>
</tr>
<tr>
<td>LINE: Conrad, JVC, Panasonic, Scotch, Videotek.</td>
</tr>
<tr>
<td>1601 Federal Blvd.</td>
</tr>
<tr>
<td>Denver, CO 80204</td>
</tr>
<tr>
<td>(303) 465-1122</td>
</tr>
<tr>
<td>Contact: David McRae, Video Mgr.</td>
</tr>
<tr>
<td>DIDIER/DENVER, INC.</td>
</tr>
<tr>
<td>P.O. Box 1599</td>
</tr>
<tr>
<td>Evergreen, CO 80439</td>
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<tr>
<td>(303) 674-8000</td>
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<tr>
<td>Contact: Herb Didier, Pres.</td>
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<td>FILM / VIDEO EQUIPMENT SERVICE CO.</td>
</tr>
<tr>
<td>1975 S. Pearl St.</td>
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<tr>
<td>Denver, CO 80210</td>
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<tr>
<td>(303) 776-8616</td>
</tr>
<tr>
<td>Contact: Dean Schneider, Pres.</td>
</tr>
<tr>
<td>GENERAL SOUND &amp; ELECTRONICS</td>
</tr>
<tr>
<td>1369-A Byers Place</td>
</tr>
<tr>
<td>Denver, CO 80223</td>
</tr>
<tr>
<td>(303) 744-1768</td>
</tr>
<tr>
<td>Contact: Jim Husky, President</td>
</tr>
<tr>
<td>HIGHLAND ASSOCIATES, INC.</td>
</tr>
<tr>
<td>LINE: Antennas, consoles, transmitters, microphones, turntables, tape recorders.</td>
</tr>
<tr>
<td>Box 99</td>
</tr>
<tr>
<td>Broomfield, Colorado 80020</td>
</tr>
<tr>
<td>(303) 466-3851</td>
</tr>
<tr>
<td>Contact: Mrs. H. S. Broughall, President</td>
</tr>
<tr>
<td>McLOU &amp; RAYMOND CO.</td>
</tr>
<tr>
<td>LINE: Professional audio, tape products, microphones, mixers, headphones.</td>
</tr>
<tr>
<td>1562 South Parker Road #336</td>
</tr>
<tr>
<td>Denver, Colorado 80231</td>
</tr>
<tr>
<td>(303) 761-5305</td>
</tr>
<tr>
<td>Contact: W. Cliff McCloud, Pres.</td>
</tr>
<tr>
<td>REES ARCHITECTS ASSOCIATES INC.</td>
</tr>
<tr>
<td>4506 Perimeter Center Drive</td>
</tr>
<tr>
<td>Atlanta, Georgia 31127</td>
</tr>
<tr>
<td>Telephone 404-996-9800</td>
</tr>
</tbody>
</table>

992 High Ridge Road
Stamford, CT 06905
(203) 322-9020, (212) 585-2207
Contact: John B. Anthony, Pres.

**AUDIO TECHNIQUES**

LINE: NOC, tape machines and consoles, Dolby, UREI, Crown, Lexicon, Neumann, AKG.

562 Gienbrock Rd.
Stamford, CT 06903
(203) 359-2922
Contact: Mike Faulkner, V.P.

**COMET SALES**

LINE: Fixed & variable ceramic vacuum capacitors

38 Brushwood Lane
Stamford, CT 06903
(203) 322-5272
Contact: H. Ripperger, Sales Coord.

**CONCORD COMMUNICATIONS**

LINE: Video equipment, audio equipment, lighting accessories, video services.

970 High Ridge Rd.
Stamford, CT 06905
(203) 327-8322
Contact: Alan Rich, VP

**DENSON ELECTRONICS CORP.**

LINE: Video equipment.

919 Box B-5
Rockville, CT 06066
(203) 875-5198
Contact: A. C. Denson, President

**GLOBAL COMMUNICATIONS AND ENGINEERING, INC.**

LINE: TV, AM, FM transmitters, towers, antenna, audio / visual equip., "Turnkey" installations & services.

314 White Plains Rd.
Tuckahoe, NY 10707
(203) 261-2062
Contact: R. M. Read, Pres.

**INMARK CORPORATION**

LINE: Comet vacuum capacitors, Weber Circuit Breakers for equipment.

147 West Cedar St.
Northville, NY 14553
(203) 886-8474
Contact: Jacquelin E. Nettle, Dir.

**NATIONAL VIDEO SERVICES, INC.**

LINE: JVC, Panasonic, RCA, NEC, Sony, Leno, Barco.

3 Pembroke Road
Danbury, CT 06810
(203) 792-3862
Contact: G. Johnston, Pres.

**NEUTRIK PRODUCTS**

77 Selleck St.
Stamford, CT 06902
(203) 248-2121
Contact: Richard Pavlish, Mkt. Mgr.

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A Division of SJ Industries, Inc.


Box 344
Fairfield, CT 06430
Contact: Sascha Deale, VP/Marketing
STATION BUSINESS SYSTEMS
Div. Control Data Corp.
LINE: DAT1700 billing, accounting, and traffic systems; music playlist & inventory systems; media cartridge inventory system; program package inventory system; and Newscum automated newsroom system for broadcast. Also subscriber processing & accounting systems for cable.
600 West Putnam Avenue
Greenwich, CT 06830
(203) 622-2400
Contact: Joe Babler, VP, Sales

DISTRICT OF COLUMBIA
COMEX CORPORATION
LINE: JVC professional video, Teraco microwave, Shively FM antenna, Ferguson CCTV.
P.O. Box 17011
Dulles Int'l Airport
Washington, D.C. 20041
(703) 471-4215
Contact: Jack Rickett, President

FLORIDA
AVS PROFESSIONAL
LINE: Tape machines, consoles, microphones, signal processing, accessories, supplies, monitor speakers, amplifiers, turntables; all audio equipment.
Tampa, Florida 33614
(813) 884-1461
Contact: Michael Polee, Sales Eng.

ALEXANDER BATTERY SALES, INC.
LINE: Batteries; nicad, alkaline & mercury cell cells.
P.O. Box 1053
Pompano Beach, FL 33061
(800) 337-1197
Contact: Charles Slingson, GM

BAA INTERNATIONAL, INC.
LINE: Amplifiers, cart machines, audio accessories, carts, mixes, linestems, compressors, open reel recorders, turntables, STL systems.
1229 NE 37th St.
Ft. Lauderdale, Florida 33334
(305) 564-4422
Contact: K. Cameron, VP, Eng.

BENCSIK ASSOCIATES
1627 E. Silver Springs Blvd.
Suite F
Ocala, Florida 32670
(904) 732-9775
Contact: W.L. Bencksik, Pres.

BROADCAST AUTOMATION ASSOCIATES
LINE: Transmitters, consoles, cart machines, antennas, transmission line.
300 S. 6th St.
Ft. Pierce, FL 33450
(305) 444-5495
Contact: Ron Cadle, Pres.

BROADCAST INTERNATIONAL, INC.
LINE: Lexicon Model 1200, dbx, Otari, Phillips, Orban, Stanton, Eastern Acoustic Works, Technics, West Penn, Scotch, GSI, LPB, Betair
1229 NE 37th St.
Ft. Lauderdale, FL 33334
(305) 564-4422
(305) 945-0635 MIA
Contact: Ken Cameron, V.P., Eng.

CONTROL TECHNOLOGY INC.
2322 Davie Blvd.
Ft. Lauderdale, FL 33312
(305) 587-2716 or (800) 327-4121
Contact: James Woodworth, President

CRESCENDO ASSOCIATES
9766 Deer Run Drive
Ponte Vedra Beach, FL 32082
(904) 285-6732
Contact: Patty Hall, Office Mgr.

DESIGN LINE, INC.
LINE: Berkey Colortron, Skirpan, Rosco, GE, Sylvania, Noritake, Strand, EDI.

P.O. Box 260007
Tampa, Florida 33685
(813) 886-5073 or 886-5561
Contact: S.M. Goldman, GM

ELECTREX COMPANY
18860 NE 2 Avenue
Miami, Florida 33179
(305) 651-5752, Tlx: 51-4733
Contact: Ben Ostrowsky, Pres.

P. R. FERMAINT
LINE: AM-FM-IV transmitters, towers, antennas, transmitters, monitors.
1031 Southwest 74 Court
Miami, Florida 33144
(305) 261-4755
Contact: Owner

FERMCO ELECTRONICS, INC.
LINE: Radio broadcasting & television equipment (transmitters, antennas, audiograph).
1031 SW 74 Court
Miami, FL 33144
(305) 261-4755
Contact: P.R. Fermaint, Pres.

FLORIDA VIDEO SYSTEMS
LINE: Sony, Sony Broadcast, Microlite, Sharp, Quanta, Videotek, Crosspoint, Convergencia.

Continued on page 176

FIDELIPAC CARTRIDGES
USE TAPE FOR ONLY SOUND REASONS.

Magnetic tape is sacred at Fidelipac. That's why we only use it to record and reproduce audio. Not to do jobs it was never intended to do. Like act as part of the cartridge brake. Induce drag. Or increase tape tension.
Fidelipac cartridges use a brake on the reel assembly. Not on the tape surface. Which means no stretched or broken tape, feathering or dropout. And far less wear and abrasion to critical tape surfaces.
Now you decide. Do you want a cartridge designed for sound reasons? Or for reasons that are highly unsound?

Who knows more about tape cartridges than Fidelipac?
WHERE TO BUY IT

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LINE: Cinema Products, Frezzolini, Cine 60, Chimex, Colorflex, Smith Victor Lowel, Strand Century, EV, Shure, etc. 6327 South Orange Ave. Orlando, FL 32809 (305) 851-2780 Contact: Charles Suyk, Sales Tony Delia, Sales

PRO AUDIO
GENERAL STORE, INC.
LINE: MCI recorders, Audиeo/ictics, dbx, ADR, R/L, Otari, EXR, Del Lab, EV, Rhusling. 1378 N.W. 100th Ave. Coral Springs, FL 33065 (305) 702-0330 Contact: Bill Shute, Pres.

R & H ASSOCIATES

RECORDING STUDIO
EQUIPMENT CO.
LINE: Full line of audio equipment. 14205 N.E. 18th Ave. No. Miami, FL 33182 (305) 949-9714 Contact: Seth Snyder, Sales Mgr.

SOUTHEAST ELECTRONICS
LINE: Panasonic, Sony, JVC, Microtime, Videolex, 3M, American Data. 1125 Roselle St. P.O. Box 1308 Jacksonville, Florida 32203 (904) 356-3007 Contact: James N. Otton, V.P.

SUN VIDEO COMMUNICATIONS
LINE: Sony, Panasonic, Microtime, 3M, Tektronix, Fuj, JVC, Quanta, Minicom. 8100 Uithorn Road, Largo, Florida 33751 (813) 536-9424 Contact: Dave Smith, V.P.

GEORGIA
C. M. ALLEN CO., INC.
LINE: Hand tools. 6145 Barfield Rd. NE Suite 190 Atlanta, GA 30328 (404) 256-0610 Contact: Charles Allen, Pres.

BBA, INC.
LINE: P.O. Box 2606 312 Highway 74 South Peachtree City, GA 30269 Contact: Ron Baker

BROADCAST COMMUNICATIONS ASSOC.
LINE: Mosley, Urban, Audionics, LPB, Cableaf, Phelps Dodge. P.O. Box 2606 Peachtree City, GA 30269 (404) 487-9559

DOMINTER, INC.
LINE: Audio visual and video equipment, communication systems design & installation. 6000 Peachtree Rd., N.E. Atlanta, GA 30341
200 SERIES PRODUCTION SWITCHERS

PolyKey® Effect System

200 Series Features:

- Advanced, state-of-the-art production switching system, offering one, two or three PolyKey® Effect Systems (PKES).
- Includes a 5-level processor with the following features:
  - 4 input buses
  - Manual or auto transitions
  - Video key plus title key over/under
  - Black/white/color border edging
  - Chroma key standard
  - Rotary and spin wipes

Every 200 Series switcher also has a Downstream Transition Unit which includes:

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- Fade-to-black with pulse processing
- DSK with border edging and color
- Pointer Generator

JUNE 1982/BROADCAST COMMUNICATIONS

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177
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VDA 100A
- 1 loop-thru input, 6 outputs
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(717) 399-2651

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LINE: Audio and RF broadcast equipment.
- 3405 W. Balmoral
  Chicago, IL 60652
  (312) 784-2257
  Contact: Tom Harley

Ancha Electronics
LINE: Pulse generators and distribution equipment, switchers, audio and video distribution, routing switchers, SMPTe time code generators, black and white color monitors, audio consoles, and tape equipment.
- 189 Gordon St.
  Elk Grove Village, IL 60007
  (312) 437-7712
  Contact: F. Geyer, TV Sales Mgr.

Audio Resources, Inc.
LINE: Crown International, dbx, linie Electronics, Electrovoice, Ortan Corp.
- 825 N. Cass Ave., Suite 205
  Westmont, IL 60559
  (312) 655-1180
  Contact: Wayne Hrabak, Pres.

Behrends, Inc.
541 N. Franklin
Chicago, IL 60610
(312) 527-3060
Contact: Jack Behrend, Pres.

Columbia Video Systems
LINE: Video equipment, lighting, microphones, cabinets, consoles, headphones.
- The Columbia Building
  1741 Second St.
  Highland Park, IL 60035
  (312) 433-0010
  Contact: Gene R. Kahn, V.P. Mkt.

Victor Duncan, Inc.
LINE: Full line of broadcast equipment.
- 200 E. Ontario
  Chicago, IL 60611
  (312) 321-9406
  Contact: Gene R. Kahn, V.P. Mkt.

Joseph Electronics, Inc.
LINE: Sony & Panasonic exact replacement parts, test equipment.
- 8830 N. Milwaukee Ave.
  Niles, IL 60648
  (312) 597-4200

Kapco Communications
LINE: Video editing, processing systems, controlling on CCTV systems.
- 5221 N. Elston Ave.
  Chicago, IL 60630
  (312) 545-2554
  Contact: Kenneth Rubel, Pres.

William M. Linz Assoc., Inc.
LINE: Telex, Bogen, Mohawk wire, Pomona, 986 Waber.
- 821 Skokie Blvd.
  Northbrook, IL 60062
  (312) 498-9690
  Contact: Bill Linz, Pres.

Mesomet, Inc.
LINE: Color radar, satellite receivers, lighting directors, weather data computer, forecasts consulting to management.
- 35 E. Wacker Drive
  Chicago, IL 60601
  (312) 263-5921
  Contact: Dr. Walter Lyons, Pres.

Newman/Lustig & Associates
1050 N. State Street
Chicago, IL 60610
(312) 642-5364
Contact: Michael Lustig, Partner

Ottawa Equipment Co.
LINE: Microwave General, Phelps Dodge, Broadcast Electronics, Airphone Intercoms, Cablewire Systems, Fidelipac, Micro Communications.
- 6838 N. Ottawa Ave.
  Chicago, IL 60631
  (312) 774-5115
  Contact: Gordon Du Vail, Pres.

Theodore Pappas & Assoc.
LINE: Tie recorders, signal processing equipment, professional microphones, radio horns, micro computer system, speakers, parametric equalizers.
- 5216 W. Diversey Ave.
  Chicago, IL 60639
  (312) 695-3288
  Contact: Terry DeRouin, Pres.

Paul Mar, Inc.
3318 Commercial Ave.
Northbrook, IL 60062
(312) 498-1020
Contact: R. Menary, Pres.

George Pettit Co., Inc.
LINE: Communications, meters & test equip, MATVs, PA horns, mike stands, frequency meters, crystals, logic probes, switches, turntables & speakers.
- 5300 A McDermott Drive
  Berksley, IL 60163
  (312) 261-0342
  Contact: George Pettit, President

Polyline Corporation
LINE: Reel-to-reel tape, cassettes, C-10-C-90, leader and splicing tape, empty reels & boxes.
- 1233 Rand Road
  Des Plaines, IL 60016
  (312) 298-5300

Roscor Corporation
LINE: Ikekawa, Sony, Panacon, JVC, Hitachi, Quanta, Control Video, Convence Corp., Harris Video Systems.
- 8100 W. Oakton St.
  Morton Grove, IL 60053
  (312) 539-7700
  Contact: S. A. Detich, V.P.

Rose Group
LINE: JBL, Teac, Tascam, Maxell, Urei, Detalabs, Sound Technology, Soundcraftmen.
- 3333 Commercial Ave.
  Northbrook, IL 60062
  (312) 291-2265
  Contact: Bill Steffen, V.P.

Sheubers Case Co., Inc.
P.O. Box 3506
Chicago, IL 60639
(312) 227-0027
Contact: P. H. Kretz, Pres.

Sono-Mag Corporation
LINE: Exporter for products of Audicord Corporation.
- 1833 West Hoeye Avenue
  Normal, IL 61761
  (309) 452-6013
  Contact: Stephen S. Sampson, Exec, VP

BROADCAST COMMUNICATIONS/JUNE 1982
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The new VTE-101 provides a built-in diagnostic panel for ease of calibration and a microprocessor controlled printer to provide more meaningful outputs. Our VTEs have been known to pay for themselves faster than originally estimated. Why not order yours now? Satisfaction guaranteed! To find out more, call Sid McCollum, our National Sales Manager.

- Full Cycle Clean & Evaluate 2.7 minutes
- Fast Clean & Rewind Cycle 1.8 minutes
- Ruggedized for 24 Hour Operation
- Proven Safety and Reliability for Tapes

Recortec
475 Ellis Street  Mtn. View, CA 94043
Tel (415) 962-0220  TWX 910 339 5022

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www.americanradiohistory.com
MICHAEL SCOTT CO., INC.
LINE: Professional and commercial sound equipment.
P.O. Box 394
Wellesley Hills, MA 02181
(617) 235-0102
Contact: Michael Scott, Pres.

VF SALES, INC.
LINE: Audio equipment.
181 Worcester Rd.
Nabotz, MA 01760
(617) 235-8544
Contact: Victor Faucon, Pres.

F. M. VALENTI, INC.
LINE: Panasonic CCTV, Comprehensive Video, Smith Victor, Echolab, Hitachi, Maxell, Knox, Sharp, Visual Methods, ZeiMARK.
16 Saddle Club Rd.
Lexington, MA 02173
(617) 881-0089
Contact: Fran Valenti, Pres.

MICHIGAN
AUDIO DISTRIBUTORS, INC.
Ampex, Audionetics, Broadcast Electronics, Crown, S.E.E.V., WIE, Moseley, Otari, QEI, Shure, Sony, UREI.
2342 S. Division
Grand Rapids, Mi 49507
(616) 453-0510
Contact: Dave Veldsma, Pres.

CM SALES
LINE: Otari, dbx, Studiomaster, Soundcraft, Hitachi Denki, Audio Technica, Calzone, Celec Gauss, AB Systems, 2221 Lakeshore W. Bloomfield, MI 48033
(313) 236-2397
Contact: Casey McWilliams, President

CRUISE COMMUNICATIONS CO.
LINE: DVS, Sony, Panasonic, ColorTrak, Sharp, Cesar, American Data, 3M Tape, 3M Minicom, Videodex, Wintrol.
4903 E Dawn Ave.
East Lansing, MI 48822
(517) 332-3579
Contact: William H. Cruse, Pres.

VICTOR DUNCAN, INC.
22380 Howard
Macomb Heights, MI 48071
(313) 596-1900
SEE AD ON PAGE 172

H. M. DYER ELECTRONICS, INC.
LINE: Video and audio distribution, amplification, processing, etc. Video switching, video delays, studio and video routing, RF monitoring, transmitter controls, digital effects.
31185 Ten Mile Rd.
Farmington Hills, MI 48024
(313) 478-2157
Contact: Mike Dyer, Pres.
SEE AD ON PAGE 199

FANTASSE LIGHTING

404 N. River
Ypsilanti, MI 48197
(313) 462-0865
Contact: Stefan Gray, Pres.

GENERAL TELEVISION NETWORK
13225 Capital Avenue
Oak Park, Michigan 48237
(313) 548-2250
Contact: Rick Hippler, Pres.

NORWOOD SCROGGS COMPANY
LINE: Electronic components: heat sinks, caps, fuses, keyboards, power supplies, cabinets, magnetic shielding, RFEMI filters, PC boards attenuators, squarerotary switches.
2221 Arbor Hills Rd.
Jackson, MI 49201
(517) 750-1170
Contact: Woodie Scroggs, Owner

O'HARA ASSOCIATES
LINE: Audio equipment, AC/DC power supplies, FET preamps.
30000 Weidlerman Drive
Mt. Clemens, MI 48043
(313) 791-7140
Contact: Bob O'Hara, Mgr.

RAACO MARKETING
LINE: Noritronics, H.E. Electronics, Sony Professional.
4329 Orion Road
P.O. Box 410
Rocheester, MI 48063
(313) 852-5200
Contact: E.R. Riddelhor, VP

SOUND SOLUTIONS, INC.
LINE: NEC, Broadcast Electronics, miscellaneous audio lines.
7641 19 Mile Rd.
Sterling Hts., MI 48077
(313) 759-7020
Contact: Dave Hill, Pres.

THALNER ELECTRONICS
LINE: Sony, Panasonic, JVC, Hitachi, CMX, Ikegam, PFinished, ISI, Sharp, Harris and Dynali.
7235 Jackson Road
Ann Arbor, MI 48103
(313) 761-5060
Contact: Karl Couuyoumalan, Sales Manager

VIDICOM ENGINEERING INC.
LINE: Video production equipment and services for business & industry.
P.O. Box 306
County Road 652
Mattawan, MI 49071
(616) 669-3375
Contact: John Lepley, Sales Mgr.

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LINE: Communications equipment, 115 Bellarmine
Rochester, MI 48063
(313) 375-0420
(500) 21-2233
Contact: Roger Webster, Owner

WOLF ASSOCIATES
LINE: Television lighting equipment, dimmer control systems, lighting distribution equipment.

Continued on page 152

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the state-of-the-art video fluid head designed to support your ENG- and EFP-cameras
Now ready to go into operation.
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featuring:
Center of Gravity Compensation
4 step Dynamic Counterbalancing Control
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The rock-steady, silky-smooth cameraman's fluid head, doing everything in
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Associates, AudioGraphex, digital mix
effects, TV cameras, flame syn-
chronizers, S/T, remote pickup,
mikrowave, transmitters, studio equip-
ment, towers, monitors, remote con-
trol, patch panels.
P.O. Box 322
Totowa, NJ 07511
(201) 256-0455
Contact: Herb Holtzberg, Pres.

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switchers, audio recorders, test equip-
ment.
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(201) 460-0800
Contact: Saul Raden, Pres.

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LINE: Elscophor large screen television
projectors.
32 Fairfield Place
West Caldwell, NJ 07006
(201) 575-8000
Contact: Len Blascovich,
Prod. Mgr.

LANDY ASSOCIATES, INC.
LINE: Ikegami, Ampex, Conrac,
Datatek, Leitch Video, O'connor, VVC,
Panasonic, Peter Lisand, Quick Sat,
RTS Systems, Recortec, Porta-Pattern,
Kotel, Tektronix, Thomson-CSF, Video-
tek, Vinten, Image Video, etc.
1890 E. Marston Pike
Cherry Hill, NJ 08003
(609) 224-4669
Contact Jim L. Landy, Pres.

NEUTRIK PRODUCTS
LINE: Connectors, audio equipment.
91 McKee Drive
Mahwah, NJ 07430
(201) 529-3800
Contact: Paul Roland,

WEATHER RADIO
Model CRW

Price $300.00
Sensitivity. 2.8 microvolts for 12 dB quieting. All 3 frequencies. Alert tone
demutes receiver, closes relay and gates audio to 600 ohm rear
terminals. Another set of rear terminals has continuous 600 ohm audio
output. Double conversion crystal controlled, crystal filter in first I.F.,
ceramic filter in second I.F. Dual gain control FET front end. 50 ohm coaxial
input. Adjacent channel (25KHz) down to 70 dB, 15 dB audio output. 3/4" H, all
metal enclosure. In stock—available for immediate delivery.

GORMAN REDLICH MFG. CO.
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ATHENS, OHIO 45701
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JUNE 1983/BROADCAST COMMUNICATIONS

EBS EQUIPMENT
Required for L.P.T.V.

Model CEB Encoder-Decoder
Price $380.00
Model CE Encoder
265.00
Model CD Decoder
205.00
Encoder FCC Type Accepted. Decoder FCC Certified
Exceeds FCC Specifications
Receiver can be supplied to drive Decoder.
$100.00
All interconnections to the EBS equipment are made through a barrier
terminal block. No special connectors necessary. In stock—available for
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503 Stonelhurst Ct.,
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(201) 767-1006
Contact: Bill C. Ebeli, Pres.

VISION-SOUND PROFESSIONAL AUDIO, INC.
LINE: Harrison Systems, recording &
post-production consoles; Studer
Revox, tape recording equipment.
110 Grand Avenue
Englewood, NJ 07631
(201) 871-4101
(800) 526-4710 E. of Ohio
Contact: Michael Salafia, Pres.

NEW MEXICO

DYMA ENGINEERING
LINE: Ikegami, RTS, Videotek, Ross,
BE, Video Data, Lenco, Ampex.
213 Pueblo Del Sur
P.O. Box 1097
Taos, NM 87571
(505) 759-8866
Contact: C. Cunningham, Pres.
SEE AD ON PAGE 19!

NEW YORK

ADCOM COMM., INC.
LINE: Videomedia 2.4, Henssepic, EMS,
Sony, JVC, Quanta.
555 West 57th St.
New York, NY 10019
(212) 265-1760
Contact: Richard Alexander,
Sales Manager

ADWAR VIDEO CORPORATION
LINE: Video equipment, microphones,
lighting, transfers, editing, dubbing,
modifications.
100 Fifth Avenue
New York, NY 10011
(212) 891-0878
Contact: Jon Burris, Salesman

Continued on page 184
JULIES RACINE & CO., INC.
LINE: Stopwatches, chronographs, stop clocks.
85 Executive Blvd.
Elmsford, NY 10523
(914) 592-4760
Contact: Roger S. Smith, VP

KOPPE RADEN CORP.
LINE: Audio video broadcast communications equi.
34 South Broadway
White Plains, NY 10601
(914) 682-8038
Contact: Lorraine Raden, VP

RAVEN SCREEN CORP.
LINE: Projection screens.
124 East 124th St.
New York, NY 10035
(212) 534-8408
Contact: Martin Soss, Pres.

ALAN SARFY & ASSOC., INC.
28 Margaret Court
Great Neck, NY 11024
(516) 496-6770
Contact: Alan Sarcy, Pres.

THE KEN SCHAFER GROUP
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10 E. 49th St.
3rd Floor
New York, NY 10017
(212) 371-2336
Contact: Paul Auerbach, Dir. of Sales

SIGMUND LONDON, INC.
27-16 41 Avenue
Long Island City, NY 11101
(212) 786-1800
Contact: Stephen London, Tresa.

SINGER PRODUCTS
LINE: Wide line of broadcast products for all applications.
875 Merrick Avenue
Hollbrook, NY 11744
(516) 683-3000, ext. 602
Contact: J. Biocchi, GM/Broadcast

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315 West 43rd St.
New York, NY 10036
(212) 974-6000
Contact: Hy Roth, VP Sales

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LINE: Sony, Panasonic, JVC, RCA, Quasar, 3M, RDK.
404 Park Ave, South
New York City, NY 10016
(212) 679-9683
Contact: Andy Wander, Sls. Mgr.

TEAM ELECTRONICS, INC.
LINE: RCA, Ampex, G7, Toshiba, Hitachi, Panaonic, EEV, Ampex, Scotch, 3M.
24-18 Queens Plaza South
Long Island City, NY 11101
(212) 537-9200
Contact: Fred M. Samuel, Pres.

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(A subsidiary of Schneider Corp. of America)
LINE: Exclusive distributor Schneider television Lenses, ENG, EFP, Studio, field, dslrscope Lenses—1", ½", ⅛", ⅛".
400 Crossways Park Drive
Woodbury, NY 11798
(516) 496-5000
Contact: Bob Jones, Sls. Mgr.
SEE AD ON PAGE 141

TELESO INTERNATIONAL
LINE: Radio and television studio and transmitting equipment.
125 Mineola Avenue
Roslyn Heights, NY 11577
(516) 494-3822
Contact: Gerald Lainer, Pres.

TELEVISION EQUIPMENT ASSOCIATES
LINE: Matthew, Rocal Acoustics, etc.
Box 393
South Salem, NY 10590-0393
(914) 783-8893
Contact: Bill Pepier, Pres.

TEMTRON ELECTRONICS, LTD.
LINE: Transmitting tubes, camera pick-up tubes, studio lights, semiconductors.
15 Main St.
East Rockaway, NY 11518
(516) 599-0400
Contact: Ed Kramer, VP Mktg.

TESCO ASSOCIATES
LINE: Test equipment, scopes, generators, cabinets, batteries, rec.
2002 Teal Ave.
Syracuse, NY 13206
(315) 463-4560
Contact: Ted Hendel, Owner

UNISTAGE, INC.
LINE: Yamada, JBL, Eventide, Crown, AKG, Orbn, Averil, Clearcom, dbx, Spectranics.
330 Greene St.
Buffalo, NY 14204
(716) 853-6500
Contact: Robert Lovejoy, Mgr. Pro-Sound

VIDEO COMPONENTS, INC.
LINE: Video accessories.
601 S. Main St.
Spring Valley, NY 10977
(914) 356-3700
Contact: Dick Tuchten, Pres.

WESTEC AUDIO VIDEO INC.
LINE: AmpicoScull, Audiotronics, BTX, ATI, EEV, Fidelipac, ORB, Spec-
tra Sounds.
1841 Broadway
Suite 1203
New York, NY 10023
(212) 566-1662
Contact: R. Maltland, Pres.
901 W. 2nd Street
P.O. Drawer K
Winston-Salem, NC 27108
(919) 722-9131
Contact: Reed Clark, Mgr., Video

SOUTHEASTERN SIGHT &
NOHGMARION SERVICES, INC.
LINE: RF & studio equipment for radio stations.
800 Carrmel Road
Charlotte, NC 28211
(704) 529-2311
Contact: Bob Cauthen, Gen. Mgr.

SOUTHERN COASTAL MARKETING
SERVICES, INC.
LINE: TV, home video, broadcast, CED, friends.
BOB'S ELECTRONICS INC.
LINE: Unsold stock, closeouts, miscellaneous.
800 3rd Ave.
New York, NY 10017
(212) 733-0600
Contact: Bob's Electronics, Inc.

OKLAHOMA
WALTER S. BREWER CO., INC.
LINE: Electro Controls (lighting control systems), Bardwell 1 McAlister (light-

R.E. INSTRUMENTS
LINE: Fiber optics, fiber optic transmitters/receivers, digital modulators, demodulators.

OKLAHOMA
WALTER S. BREWER CO., INC.
LINE: Electro Controls (lighting control systems), Bardwell 1 McAlister (light-

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LINE: RF & studio equipment for radio stations.
800 Carrmel Road
Charlotte, NC 28211
(704) 529-2311
Contact: Bob Cauthen, Gen. Mgr.
DOUG BROWN ENTERPRISES, INC.
LINE: Audio equipment, supplies, turnkey design and installation services.
1703 East Skelly Drive
Tulsa, OK 74105
(918) 747-3616
Contact: D. C. Brown, Pres.

DELCOM CORP.
LINE: Hitachi, Sony, Panasonic, Isi, Convergence, Micromax, Harris, For-A, Quantel, Laird.
8019 S. 66 E. Ave.
Tulsa, OK 74145
(918) 494-9500
Contact: Sam Pate, President

SATELLITE SYNDICATED SYSTEMS
LINE: WTBJ, Atlanta.
8252 South Harford - 74136
P.O. Box 45684
Tulsa, OK 74145
(918) 681-0881
Contact: Sel Kremer

OREGON
VIDEO BROKERS, INC.
10110 SW Nimbus Ave. B-1
Portland, OR 97223
(503) 820-9021
Contact: Van M. Faulk, Sls. Eng.

VIDEOSONICS, INC.
LINE: Television systems equipment & design.
821 S.E. 14th Ave.
Portland, OR 97214
(503) 232-4632
Contact: George Mortin, Sls. Mgr.

PENNSYLVANIA
A & T SALES CORP.
LINE: Speakers, amplifiers, receivers, and blank tape.
1000 Valley Forge Circle-109B
King of Prussia, PA 19406
(215) 285-2028
Contact: Milt Diens, Pres.

ALCARE COMM., INC.
LINE: Scott Time Lapse Weather Scan Box in addition to television programming.
1503-05 Walnut St.
Philadelphia, PA 19102
(215) 588-6010
Contact: Frank Beazley, Chmn.

ALPHA VIDEO ELECTRONICS
LINE: Cameras, monitors, test equipment, VTRs, character generators, TBC, mikes, switchers.
28 East Mall Plaza
Carnegie, PA 15106
(412) 279-6169
Contact: H. B. Lassige, Pres.

AUDIO INNOVATORS, INC.
LINE: The professional audio division of Audio Innovators Inc. carries more than 75 lines of pro audio equipment and accessories.
216 Blvd. of Allies
Pittsburgh, PA 15222
(412) 621-1950

BROADCOM T.M.
LINE: Cartridge machines; amplifiers; equalizers; audio delay equipment; transmitters; mixers; studio furniture; noise reduction systems; tuntables; headphones; mikes; monitoring devices.
Tilghman at Jefferson Allentown, PA 18102
(215) 437-0607
Contact: Bill Davies

BRUSH MAGNETIC HEADS
3rd & Reagan Streets
P.O. Box 638
Sunbury, PA 17801
(717) 286-5611
Contact: Bob Trachtenberg, VP

CERCONE VINCENT ASSOCIATES
LINE: Strand Century, Mike Richardson, Bardwell & McAlister, Lowell, Teatronics, O&E, Oram, ClearComm, Mathews, Uni-Sel, Rosco, Lee, Union Connector, Avril Cases.
2741 Noblestown Road
Pittsburgh, PA 15205
(412) 922-0901
Contact: Mark McGinnis, Sales

GEORGE M. CONEEN CO., INC.
LINE: Wire & cable, microphones, monitor speakers, PA & pro sound speaker systems, audio amps, audio consoles, EO.
P.O. Box 251
Springfield, PA 19064
(610) 544-5694
Contact: George Coneen, Sales

GRUVER RECORDING & SERVICE CO.
LINE: Used broadcast equipment, cassette tapes, NiCad batteries, beautiful music and special format cassettes.
214 N. Chestnut St.
Palmyra, PA 17078
(717) 838-6973
Contact: Gary L. Gruver, Owner

JOA CARTRIDGE SERVICE
LINE: Fidelac, Capitol tape cartridges, 3M, Norotonics products at discount prices.
448 E. Hancock St.
Lansdale, PA 19446
(215) 362-8796

LERRO ELECTRICAL CORP.
LINE: VTRs, cameras, monitors, editing systems, character generators, bet-tyenchar systems, mobile TV vans, professional audio and video equipment.
3125 N. Broad Street
Philadelphia, PA 19132
(215) 233-8200
Contact: Louis Lerro

LOSTROM ELECTRONICS, INC.
LINE: Advance, Fujif, Hitachi Denki, JVC, Dosco, Sony, Sonitron, Video Data, Winsted, World Video
Empire Building
Glassport, PA 15045
(412) 461-2116 or
(412) 672-2554
Contact: Tom Mobbserger, Sales

ROBERT MEYERS ASSOCIATES
613 W. Cheltenham Ave.
Melrose Park, PA 19126
(215) 224-1683

RICHARD S. PASS ASSOCIATES, INC.
27 Oxford Drive
Langhorne, PA 19047
(215) 757-8100 or
(703) 370-9888
Contact: Richard Pass, President

PIERCE & PHELPS, INC.
LINE: CCTV, audio visual equipment and supplies.
2000 N. 59th St.
Philadelphia, PA 19131
(215) 879-7171
Contact: Frank Brady, Sales Mgr.

PROCESSING PLUS
LINE: Distributor of broadcast equipment, audio processing specialist, and audio engineering consultants.
IMP-3, Apax, Fidelac, Scotch 3M.
59 Brookside Road
P.O. Box 3303
Wescosville, PA 18106
(610) 398-3337
(800) 523-9936
Contact: Allan Winkler, VP/Sales
SEE ADS ON PAGES 162, 164

RABAL ASSOC., INC.
LINE: Video delay lines (1H & 2H), tape cleaners.
Box 114
Huntington Valley, PA 19006
(215) 947-4825
Contact: Allen S. Katz, Pres.

RO-CEL ELECTRONICS, INC.
LINE: Altair, JBL, Crown, EVK, AKG, Bi-Amp.
731 Butler St.
Pittsburgh, PA 15223
(412) 781-2326
Contact: Don Rosenberger, V.P.

TONER CABLE EQUIPMENT
LINE: Specialty in earth stations, towers, antennas, headends and apartment house amplifiers.
969 Horsham Road
Horsham, PA 19044
(215) 333-9597
In Pa call (800) 492-2512

VAL-TRONICS
Penn Park Bldg.
Pittston, PA 18641
(570) 665-9937
Contact: Milan J. Krupa, Sales Manager

RHODE ISLAND
WRH BROADCAST SUPPLY
5 Industrial Way
Riverside, RI 02915
(401) 434-6272
Contact: Warren Harrist, Pres.

TEXAS
AUDICON MARKETING GROUP
1200 Beechwood Avenue
Nashville, TN 37212
(615) 256-6900
Contact: Claude Hill, President

AUDIO ARCHITECTS, INC.
LINE: Sound Workshop, Tascam, Otari, JBL Audio & Design Recording, Tangent, Ursa Major, AKG.
112 Space Park Drive
Nashville, TN 37211
(615) 331-3247
Contact: Allen Rumbaugh, Sales Manager

BARRY TRADING COMPANY
LINE: FM antennas, transmitters
P.O. Box 609
Lebanon, TN 37087
(615) 444-0305
Contact: William O. Barry, Owner

BROADCAST DISTRIBUTORS
LINE: 80 leading lines of audio & radio equipment.
3000 Keith St., N.W.
Cleveland, TN 37311
(415) 472-8200
Contact: Thos. Duncan, Mgr.

BROADCAST EQUIPMENT & SUPPLY CO., INC.
LINE: Broadcast Electronics, EV, Shure, Russco, Ampro, LPB, Switchcraft, Teac, Revox, Stanton, Microtrak, Fidelac.
Rt. 1-Wearren Pike
Bluff City, Tennessee 37718
(800) 251-0487 or
(615) 878-2551
Contact: Clifton Droke, Sls. Mgr.

PHASE AUDIO
LINE: Audio equipment, Audiotronics, JBL.
151 N. Angelus
Memphis, TN 38104
(901) 726-1900
Contact: Bill Kenner, Sls. Mgr.

JOHN W. GARDNER, INC.
D/BL/D.T. H.E. CO.
28 Music Square East
Nashville, TN 37203
(615) 320-0080
Contact: Sales Manager

REDWOOD MARKETING GROUP
LINE: Redwood, Research param equalizer, R. Barth KG audio, V311, Musicoder, Wolkie test and measuring equipment.
820 Redwood Drive
Nashville, TN 37220
(615) 331-4743
Contact: Terry L. Hill, Mktg. Dir.

VALLEY PEOPLE, INC.—RETAIL
2820 Erica Place
P.O. Box 2608
Nashville, TN 37204
(615) 383-4737
Contact: Bob Todrak, Exec. VP

ABADON / SUN, INC., dba AS
P.O. Box 8520
MISS ANYTHING? If you missed the category you were looking for, turn to the General Index on page 38. This index will tell you WHERE TO FIND IT: the page that the category is listed on, and all advertisements in this issue which feature products in this category.

FIND SOMETHING? If you found the right product and are interested in making a sales contact, use this section as a guide to dealers, distributors, and reps, or turn to the alphabetical listing of Manufacturers and Service Companies.

Tell them you read it in THE DIRECTORY.
NAB '82 unveils a record number of new products

PART 2

The 1982 version of the NAB convention has been committed to memory, but not yet laid to rest. If your memory isn’t so good (or if you didn’t make it to the convention), this second in a series of NAB review articles will fill in the blanks.

With a record number of exhibitors showing this year, it was necessary to split our coverage into two issues. This way you’ll have a more complete record of what was introduced at the convention.

Meanwhile, this convention won’t be laid to rest until the next one comes ‘round. There were too many major issues that were left hanging. Take teletext, for example. It’s another victim of the FCC’s marketplace concept. Instead of affecting a standard, they sidestepped the issue.

AM stereo is another example. We may never know who had the best system. In this case we may just see who can bring the greatest influence to the marketplace.

Other standards were at issue, but their immediate impact will be of much less importance. Still, equipment manufacturers were offering both improved products at improved prices. Business was as brisk as it was serious.

As we return once more to the exhibit hall, remember that this issue is the annual Directory of Equipment, Services & Suppliers. The Action Cards can be used throughout the next 12 months. If you need further information on any of the ads or products described in this issue, circle the appropriate numbers on the Action Card, put a stamp on it, and drop it in the mail.

AKG ACOUSTICS—Microphones, reverberation units, headphones, and phono cartridges were on display at the AKG booth. Among this company’s professional products are “Golden Diaphragm” stereo condenser microphones, polydirectional studio condenser microphones, modular condenser microphone system, prepolared condenser microphone series, the “Performing Arts Series” microphones, exclusive two-way dynamic microphones, dynamic microphones, paging and communications microphones, and torsional transmission line reverberation systems.

AKG’s completely modular C-450 condenser microphone system comprises a basic preamplifier with interchangeable capsules, and accessories, each with different characteristics.

Circle (273) on Action Card

ACCURATE SOUND—Staying on top of the state-of-the-art in high-speed duplication is Accurate Sound’s way of doing business. This year they introduced the System 200 high-speed duplicator.

The System 200 offers a crystal-referenced design, a servo-controlled capstan, and the unit is very compact. This system design eliminates the capstan-roller and the need for mechanical brakes. Tape duplication speeds available are 60, 120 and 240 inches per second.

The master can be either ¼-inch or ¾-inch tape, and in either two or four channels. According to the company, tape duplication speed accuracy is down to 0.05 percent maximum, and flutter is listed at below 0.15 percent RMS.

Slave units can handle 250-mil cassettes or ¼-inch reel-to-reel tapes.

Circle (274) on Action Card

ALLIED BROADCAST EQUIPMENT—This company offers a comprehensive line of radio broadcast equipment.

Circle (275) on Action Card

AMBER ELECTRO DESIGN—The hottest product at the Amber Electro booth was the model 3501 distortion and noise measuring system. Successor to the popular 3500, this new instrument provides the highest performance distortion measurement commercially available with typical system (oscillator and analyzer) level of 0.0005% (-106 dB). It is also an extremely sensitive true RMS noise meter able to measure to -120 dBm with and without weighting. Comprehensive filtering allows compliance with FCC, NAB, IHF, and other standards.

Circle (276) on Action Card

AMCO ENGINEERING—New from Amco were economy EMI cabinets designed to meet FCC/EMI regulations. Also shown was a new line of computer desk cabinets and consoles.

Circle (277) on Action Card

AMPEREX—Ampex showed their full line of Plumbicon® television camera tubes, ranging in size from the hybrid ½-inch Diode Gun™ 80XQ to the 30mm high-resolution Diode Gun Frog Head 45XQ. This includes the ½-inch ENG XQ1427, the ½-inch EF7 Diode Gun XQ3427, the XQ1070, XQ1069, and XQ2070 Diode Gun 1-inch families, and the 30mm XQ1410/1415 families.

Circle (278) on Action Card

ANGENIEUX—Angenieux unveiled their new 15x9 all-weather 9-135mm, f/1.5 zoom lens with diascopic for
automatic ENG/EFP cameras. This lens features a new diopter design for precise registration even under field conditions.

With a photometric factor of 1.1 and an aperture of f/1.5, this lens is unique in the ENG/EFP field. In addition to its low light level capability, a built-in 2X range extender turret allows instant changing of the focal length range from 9-135mm to 18-270mm. Further versatility is achieved by the use of front optical attachments giving the lens an extreme focal length range of 7.2mm to 450mm. Minimum object distance of this new lens is 51 inches. At 270mm FL, the smallest object that will fill the screen is only 18x24.

Circle (279) on Action Card

ANTIOPV VIDEOTEX—The Antiopex exhibit this year leaned toward exhibiting the established Antiopex teletext operations in Los Angeles, San Francisco, and elsewhere. Their booth had a series of U.S. made color TV receivers, arranged in a pseudo living-room with comfortable couches. Visitors to the booth could pick up the remote control units, and call up teletext pages from CBS’ Extravision, NBC’s Tempo, KCET’s NOW Electronic Magazine, and KPIX’s Direct Vision. The teletext signals were brought in by phone line, and updated on a three-hour sequence.

Tony Barnet, president, and Marvin Segel, marketing manager, of Antiopex & Telematics Corporation, agreed that teletext was still in the investigative phase among broadcasters. The standards dilemma in the teletext field still inhibits any major purchases, except among those avant-garde stations that want to experiment with this new medium.

However, Segel did find a very high interest by current users of Antiopex equipment, in the new United DRC (soft alphabet) equipment now operating in NTSC. This was the first display of a new keyboard editing console that does the finer graphics Antiopex is capable of. The show equipment will go to KCET in Los Angeles for a few weeks, then on to the NCTA show in Las Vegas.

Circle (280) on Action Card

APERT-HERZOG—This company, located in San Jose, California, displayed digital video processing equipment and the new TDAC-1. The TDAC-1 (travelling digital-to-analog converter) is an 8-bit digital-to-analog converter in a probe for observation of address ramp functions, video waveforms, etc.

Circle (281) on Action Card

AGFA-GAVERT—This New Jersey company displayed their ¾-inch U-Matic cassettes dubbed the KCA-60, KCA-90, and KCS-20 Mini. The company also showed their ¼-inch videocassettes, the Beta L500, and the VHS T120. Other tapes included their Studio Mastering Tape designed for SMPTE lock-up.

Circle (282) on Action Card

ARRIFLEX—A complete line of ARRIFLEX daylit HMI lights and accessories were exhibited at this booth. Included in this line are the 200W AC/DC portable HMI light; AC lights in 375- to 6000-watt sizes for 120V/220V AC operation; a complementary system for distribution boxes, various outputs, and voltages; and shipping and storage cases.

Circle (283) on Action Card

ARVIN/DIAMOND—Arvin/Diamond introduced the Sat-Weather System, which provides direct conversion of weather data to color video, including satellite-generated infrared signals.

Circle (284) on Action Card

AUBURN INSTRUMENTS—Auburn Instruments featured their new MG/1 two-wire machine control system which eliminates cumbersome and time-consuming wiring of multi-conductor cables and connectors, and makes delegation of control possible with simple single-pole switching. The MG/1’s basic features include 8 commands, 8 return tallies and DC power on a two-wire bus; two 4-button remote units which combine to control 8 functions; master/slave and gang start capabilities; and reliable opto-isolated machine interface (relays optional).

Circle (285) on Action Card

BGW SYSTEMS—The BGW 250 and 750 Series power amps employ fully modular construction, fool-proof speaker protection, and one-piece construction. According to the company, the 250 Series uses three times as many output devices as the competition, enabling it to last three times longer. The 750 uses a heavy-duty rear-mounted two-speed industrial fan to move large volumes of air in from the back, over the internal circuitry and up through exhaust ports.

Circle (286) on Action Card

THE BTX CORPORATION—The new BTX Shadow is a fully intelligent interface for audio, video, and film transports. It provides the production and post-production industries with

Continued on page 192
new capabilities for complete, economical, multi-machine control.

Circle (287) on Action Card

WILLIAM BAL CORPORATION—A new design in heavy-duty shipping cases for video cameras and player/recorders was the highlight at this booth. Several cases are available. Also, the company has complete in-house design service for custom-case interiors.

Circle (288) on Action Card

BASYS—Peter Kolstad and company were showing a full line, including NewsFury, CartFury and Clip Fury. The Basys booth was a mob scene. In fact, all the newsroom computer vendors were enjoying heavy traffic.

Basys just sold a big system to KRON-TV in San Francisco, and apparently word of that sale has changed the company's image as a network-only vendor. In fact, Basys is developing some revised formats for KRON to meet the specific needs of a large-market TV station.

Circle (289) on Action Card

BEAVERONICS—Beaveronics markets three standard video production switching systems: the J&D 712, the BI-154, and the BI-156. With the appropriate options, the user can customize these switchers to meet specific requirements. In the case of the BI-154 and BI-156 systems, most of the options can either be ordered initially or added at a later date since, for many of them, removable control panel cover plates and wired rack frames easily accommodate this modular expansion when desired.

Circle (290) on Action Card

BELDEN—Belden is the sole distributor of Lee Filters color media. Lee Filters are made from a tough polyester base, and they offer excellent consistency. They will not only stand up to the hottest quartz lights, but will always retain the highest degree of optical clarity. Lee Filters are available for immediate delivery through Belden's dealers across the U.S. and Canada.

Circle (291) on Action Card

BELL HELICOPTER—Being shown in the Bell Helicopter was a TV system specially designed for operation in the noisy environment of an airborne helicopter.

Circle (292) on Action Card

BIRD ELECTRONIC—Bird introduced the Digital Hi-Power wide-range RF Calorimeter (1000 W to 80 kW). Conveniently portable, it measures RF power quickly with precision, after simple set-up. Other advantages include automatic processing of all sensor inputs, displaying of power directly without charts or calculations, and accuracy of ±3% of reading.

Circle (293) on Action Card

BRITISH VIDEOTEX & TELETEXT—The British have been among the leaders in the development of teletext and videotex systems, and this booth provided American broadcasters an opportunity to see these systems first-hand. This display featured Logica's new Context teletext system, as well as Jasmin Electronics' new JTS4 teletext generation system.

Circle (294) on Action Card

BROADCAST AUDIO—There was no lack of excitement at this booth because Broadcast Audio introduced the System 14 digitally-controlled audio console. Digital slide faders and digitally controlled CMOS high-resolution logarithmic audio attenuators reduce signal paths, and do not exhibit the disadvantages associated with VCA's.

Also on display was the Broadcast Audio line of accessory amplifiers: the

Circle (134) on Action Card

Please send me further details and full technical specifications.

Name

Position:

Studio/Company

Address

Phone:  

1905 RIVERSIDE DRIVE

GLENDALE, CALIFORNIA 91201

PHONE: (213) 841-0970

Circle (134) on Action Card

BROADCAST COMMUNICATIONS: JUNE 1982
BA-235/435 monitor amplifier; the BA-5x4 distribution amplifier; and the BA-205/405 phono preamplifier.

Circle (295) on Action Card

BROADCAST SYSTEMS—Shown for the first time at NAB was the Broadcast Systems pre-wired audio patch panel. This new product greatly simplifies the proper installation of audio circuits to a patch panel removing hours of tedious on-site labor previously required in wiring up patch panels and “T” blocks, as well as providing a professional looking, easy-to-maintain audio jack field installation.

Circle (296) on Action Card

BROADCAST TECHNOLOGY—Highlighted was the new DC Controlled Equalizer. The EG3501 and EG3502, when used together, form a 10-band graphic equalizer. Either card can be used as a 5-band graphic with center frequency points 2 octaves apart. Both offer differential bridging inputs and are capable of driving 600-ohm loads differentially to +20 dBm.

Also new was the model VU3772, a VU and peak level indicator that consists of 20 LED segments in a 1.5-inch by 3.375-inch panel. The electronics that drive the VU3772 bridge a 600-ohm line differentially and can be adjusted for O VU from -20 to +8 dBm.

Both the DC Controlled Equalizer and the VU and Peak Level Indicator—as well as other units in the line—are designed to be used with their new self-powered, rack mount enclosure.

Circle (297) on Action Card

BROADCAST VIDEO SYSTEMS—The EV4060 color signal monitor shown at this booth offers many attractive features, including full broadcast specifications; A-B inputs with buffered video output; and sharp, high-brightness trace. The EV4060 is switchable between waveform and vector display; mounts beside all popular half-rack pix monitors; and is ideal for mobile and studio applications. The EV4060 is available now, and is priced at $4500 (FOB Buffalo, New York).

Circle (298) on Action Card

CMC TECHNOLOGY—This California-based company offers quad video head refurbishing services. CMC refurbishes Ampex Mark XX, Mark XV, Mark X, Mark III, and RCA High-Band. And, the company offers refurbishment of these units in either All-In or Ferrite materials.

Circle (299) on Action Card

CABLEWAVE SYSTEMS—Among their transmission lines, Cablewave was showing the FLC 7/8-inch foam coaxial cable that’s been designed for lower attenuation than previous foam coax cables. These cables have low loss characteristics that are almost as low as those for air dielectric. Of course the FLC cables don’t require pressurization.

Circle (300) on Action Card

CENTRO—Vans aren’t just vans any more. Centro is proof of that. When Centro builds a van they spend as much time on rebuilding the vehicle as they do setting it up for the electronics. Van ride and handling characteristics are modified to accommodate the new configuration the van will have when it is completely outfitted with EFP and ENG equipment. Centro also installs their own custom air conditioning system because the original van design does not call for cooling the equipment racks that will be installed.

Circle (301) on Action Card

JOHN CHILES—New at this booth was an on-board-type battery pack which complements almost all existing industrial and professional cameras not utilizing on-board packs. Variable voltage and amp ranges provide for the

Continued on page 194

At Broadcast Technology . . . . . . There’s A Lot More Behind Us!

Looking behind our Model 9101 five card, one-unit high enclosure will tell you immediately that this is part of a most unique and versatile self-powered Signal Processing System with barrier-type terminals. By simply plugging in any of the BTI Series 3000 Cards, the system becomes a D.A., Switcher, an Intercom, an Equalizer, one or more Line, Power, or Pre-Amplifiers.

The VU/Peak Level Indicators provide continuous in-line displays of VU and Peak information over a wide range of “0 VU” for all system configurations.

What’s behind Broadcast Technology is more than meets the eye. We are seasoned audio professionals who are committed to technical excellence in the design and manufacture of audio components and systems.

There is also more behind our products as evidenced by our exclusive 5 Year Performance Warranty.

Look at us, and then look behind us. You’ll find a lot more at Broadcast Technology.

broadcast technology inc.
33 Comac Loop, Ronkonkoma, NY 11779 (516) 588-6565

Circle (135) on Action Card
proper adaptation to all camera makes and models. John Chiles also introduced a new modular-type battery system which can be custom engineered to meet individual requirements concerning amphere hours and voltage specifications.

Circle (302) on Action Card

CHRISTIE ELECTRIC—The 20-minute miracle was the talk of the Christie booth. They were referring to their "burping" charger and battery system that gives a full recharge in under 20 minutes with longer battery life for NiCad batteries. The burping is accomplished with reflex negative pulses interjected between the positive pulses. By doing this, Christie finds they can use larger charging currents all the way to a full charge, thus cutting down the charge time. They also displayed a new AC/DC K51 camera-mounted power supply.

Circle (303) on Action Card

CLEAR-COM—System II Intercoms feature increased station capability, higher output levels, and a very stable side tone. The system will operate from 12 volts on remote assignments. They also showed a new custom line of double muff headsets, the CC-75B and the CC-240B.

Circle (304) on Action Card

COLORADO VIDEO—This manufacturer of video instruments for data acquisition, processing, transmission and display introduced Compressed Video, the transmission of still pictures over ordinary telephone circuits. The term "compressed video" refers to frequency or bandwidth compression, and the process involves stretching out the picture in time, so that approximately one minute is required to transmit a single image.

Circle (305) on Action Card

COLOGRAPHICS WEATHER SYSTEMS—The LiveLine System III from Colographics is an ultra high-resolution weather graphics computer system featuring one of the highest picture resolutions in the industry; 760 x 480. This system combines in one package weather animations, the first national and regional radar pictures in full color, and automatic weather updates from WSI. Color digital weather satellite pictures are also automatically ingested and displayed.

The System III stores 100 graphics at any time on an 11-megabyte hard disc system. Over 4,000 color choices in high resolution are user-selectable. Automatic sequencing permits recall live on the air of any selection of graphics, radar, and weather satellite pictures.

The LiveLine System III is available for delivery 30 days after order. The complete system price is $39,000, including delivery and training.

Circle (306) on Action Card

COLORTRAN—A new high-efficiency spotlight family was introduced by Colortran. Called the 1 kW and 2 kW Fresnels, the units represent a new advance in performance in compact, professional lighting equipment. The Fresnels are designed in manual- and pole-operated versions, and employ a new steel and aluminum construction to provide maximum cooling and structural strength.

Circle (307) on Action Card

COMPREHENSIVE VIDEO—Comprehensive's new ULTRA-BOOM allows the user to vary camera height, pan, and tilt simultaneously in one smooth, continuous motion. This is made possible by ULTRA-BOOM's counter-balanced parallelogram design.

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which is invaluable for getting "above the crowd", to achieve dramatic camera movement effects in commercial productions, to create "dolly shots" while remaining stationary, and many other applications. The ULTRA-BOOM mounts on tripod or camera truck.

Circle (308) on Action Card

COMPUTER GRAPHICS—IMAGES®, an Image Manipulation and Graphics Enhancement System, was one of the hits among the graphics crowd. IMAGES is a computer-based graphics system which allows an artist to draw directly in an electronic medium, maintaining the precision, comfort, and quality of conventional methods, while providing the speed, versatility, and processing power of a computer-controlled video medium.

Circle (309) on Action Card

COMTECH DATA—The emphasis at the Comtech booth was their satellite equipment lineup. Among a variety of products, the company showed their new model 650 satellite video receiver with a 24-channel LED readout, an agile cable modulator dubbed the CDM 1155 (it handles 59 channels), and their 5-meter satellite earth terminals for both audio and video receive installations. The dishes are easily convertible to circular polarization and/or 12/14 GHz.

Circle (310) on Action Card

CONRAC—Conrac showed a full line of professional broadcast color and monochrome video monitors for studio and teleproduction applications. Among the featured monitors was the 6100 Series master color monitors. These top-of-the-line monitors feature automatic stability of color temperature reference, precise colorimetry, and switchable comb filter. The series was designed to satisfy the most critical demands for signal evaluation in broadcasting and teleproduction.

Circle (311) on Action Card

CONTRO VIDEO—The hottest product at this booth was the new Lightfinger™, a microprocessor-based, multiple-machine, SMPTE time code editing system that is completely controlled through an interactive CRT. The system starts out as a two-machine editor, but is expandable into a data-based multi-machine system that controls time base correctors, color correctors, audio mixers, and every other removable parameter required in high-level editing.

What's unique about Lightfinger is the CRT itself, which serves as the control panel. By utilizing the CRT control, Lightfinger gives the editor all of the capabilities of a computerized editing system, without the large, complicated, and cumbersome keyboard. Unnecessary functions are eliminated from the CRT, being displayed only as they are necessary for a particular editing procedure.

Circle (312) on Action Card

CUSTOM BUSINESS SYSTEMS—The CBSI broadcast business computer system is designed especially to handle the requirements of radio stations. It uses heavy-duty, business-quality, American-made Wang computers in either floppy-diskette or hard-disc configurations. Both versions can assemble and print a 24-hour program log for a busy station in less than 10 minutes, maintaining separation, proper dayparting, desired rotation, and

Continued on page 196
numenlous priority levels. CBSI allows locally designed and easily changeable TAP plans and dayparts, spot clusters and fill orders, package billing, or rate per spot.

Circle (313) on Action Card

dbx INCORPORATED—The two newest additions to the dbx line were unveiled at the NAB convention: the model 610 Autographic Computerized Room Equalizer and the model 907 Stereo/Gated Compressor Slave.

The model 610 is a microprocessor-controlled room equalization system designed for professional applications like broadcast or recording studio monitor equalization and fixed or portable sound reinforcement system equalization. The model 610, using its own calibrated microphone, pink noise generator, real time analyzer, and digitally-controlled filters, can automatically equalize an area for flat or specified response in less than 15 seconds.

The model 907 Stereo Gated Compressor Slave is designed to work with the model 903 compressor/limiter. While the 903/907 combination offers all of the features of the 903, it adds a sophisticated high-speed release gate and true dual RMS-detected stereo compression.

Circle (314) on Action Card

DATAMETRICS—On display in this booth were SMPTE time code generators, readers, character generators, vertical interval tune code readers, and generators.

Circle (315) on Action Card

DATATEK—One of the features of the Datatek booth was the Identification of Source (IDS) system which is made up of a family of plug-in modules designed to insert identification codes into a line in the vertical interval of a television signal; to read the codes, generate alphanumeric characters, and key the source ID characters into the active portion of the signal for display on picture monitors. A delete module can be used to delete the vertical code where desired. The family of IDS modules include the D-657 encoder, D-658 reader, D660 deleter, and D-659 alphanumeric display unit.

Circle (316) on Action Card

DELCOM—The hot product at the Delcom booth was the AE-3 auto effects interface. The AE-3 auto effects interface combines the editing capabilities of the Convergence ECS-103 with the special effects of the ISI 902 production switcher, resulting in greatly expanded post-production techniques. All equip-

UMBLECTICS—The SMPTE time code generator, character generator, and vertical interval tune code reader are all covered by the IDS system.
DIGITAL COMMUNICATIONS—Ma-Com DCC Inc. of Germantown, Maryland, presented the MAESTRO™ digital audio satellite receiver. This is a complete 3-meter satellite terminal designed for the reception of high-quality digital audio channels for radio networking. MAESTRO™ users can select from multiple 15 kHz circuits; all channels are useable for stereo. The 3-meter system is totally integrated and can be installed without any extensive ground preparation or technical know-how. Each system is made of 3-meter antenna, receive feed, and pedestal; 120°K low noise amplifier; microstrip down converter; digital program terminal (DPT); and interconnecting cables and connectors.

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VICTOR DUNCAN— Victor Duncan is a full-service company, supplying a wide range of broadcast equipment. Their expert staff can work with you to design the system you need. And they also Continued on page 198
feature a rental department. For more information, contact one of their three offices, located in Dallas, Chicago, and Detroit.

Circle (321) on Action Card

EEG ENTERPRISES—Closed captioning was demonstrated in this booth. EEG has a deep line of captioning equipment that includes the encoder disc reader model MCZ-210, the tele-copy-floppy model MCZ-TC, and the dual computer model MCZ-DP. The company also has a new line of video decoders and test encoders to go along with their Line 21 Simple Encoder.

Circle (322) on Action Card

EG&G—EG&G, Electro-Optics, based in Salem, Mass., displayed aircraft avoidance lighting systems for towers and other tall structures. These systems (high-intensity, capacitor-discharge, xenon-strobe type) are approved to FAA Advisory Circular AC150/5345-43.

Circle (323) on Action Card

EASTMAN KODAK—"FutureVision" was the theme of the two-story exhibit presented by Eastman Kodak. The ground floor featured Kodak's latest in film and video technologies, including the Eastman color high-speed negative film 5293/7293.

Due to the film's broad latitude, it can be exposed at very low light levels, creating many opportunities for originating programs at locations which were impractical or impossible to use before. It also presents opportunities for reduced lighting, power, and associated costs.

In the 16mm format, the high-speed film provides a magazine and documentary crew with opportunities for traveling lighter and moving faster, in addition to recording images at extremely low light levels.

Circle (324) on Action Card

ECHO SCIENCE—Echo Sciences' newest television tool, The Frame Bank, was introduced. Retaining all the same features of its predecessor, the EFS-1A, it has been made even more productive, reliable, and economical. Also introduced was the Image Maker, a high-band, color disc recording system that uses state-of-the-art electronics and an exclusive Discassette recording medium to perform a number of professional television production tasks from still frame storage to special effects. The Image Maker's functions include variable speed operation from freeze frame to real time, random access of as many as 512 frames on line, and the ability to preset 84 locations.

Circle (325) on Action Card

ELECTRO IMPULSE—This company displayed high-power RF loads, attenuators, baluns, and wattmeters.

Circle (326) on Action Card

EVENTIDE CLOCKWORKS—One of the more popular attractions at NAB '81 was Eventide's Timesqueeze™. And at this year's show, Eventide produced another winner with Timesqueeze Jr.™. The new Timesqueeze Jr. is an economical solution to time compression for television broadcasters, commercial producers, and filmmakers. The running time of audio, video, and film program material can be altered without editing or deleting material. Modular in design, this system consists of the PTC960 Precision Tape Controller and the H949 Harmonizer. And making time changes is simple: enter the percentage of time change desired on front-panel thumb-wheel switches on the PTV1090, and Timesqueeze Jr. does the rest. When the H949 is not being used for time compression, the har-
monizer, by itself, is a superb audio production tool—for pitch change, delay and reverb, flanging, repeat, and time reversal. Timesqueeze Jr provides full 15 kHz bandwidth and 96 dB dynamic range. The system provides all the control signals that are needed for operation with most 1-inch VTRs, film chains, and audio tape recorders. Units to be controlled must be specified when ordering.

Circle (327) on Action Card

FARRTRONICS—The M81 intercom system was shown by Farrtronics. This system, designed for television or radio use, features self-contained amplifiers in each station; line-level, direct audio switching with a cross-connect point; and totally passive matrix. The system connects to matrix via standard 25 pair cable and connectors. Each station is powered separately, with this decentralized approach allowing for maximum reliability. Interfaces are available.

Circle (328) on Action Card

FILM/VIDEO EQUIPMENT—This company's featured products were the Wide Eye I and Wide Eye II wide-angle adapters for video lenses. The Wide Eye I has a conversion factor of 6.4, and the Wide Eye II has a conversion factor of 5.1. These adapters can, for example, change the focal length of a 10-140 mm zoom lens to either a 6.4 mm or a 5.1 mm wide-angle lens. They are excellent for use in news or production.

Circle (329) on Action Card

FINNTEK—This company, located in Riverton, Utah, displayed audio consoles, audio test generators, and video test generators.

Circle (330) on Action Card

FLASH TECHNOLOGY—This company specializes in obstruction lighting. Featured at NAB was an obstruction warning beacon system controller for use as part of an FAA L-856 obstruction lighting system. The ElectoFlash™ Controller SC-205 controls flashing operation of beacons, monitors flashing operation of beacons, activates a remote failure alarm, offers optional output and test functions by addition of plug-in modules, and mounts in conventional rack cabinet.

Circle (331) on Action Card

GARNER INDUSTRIES—Garnet premiered its 1100 tape erasers, featuring a one-pass, endless belt operation that allows complete erasures at the rate of 13 reels per minute. Made of heavy-duty aluminum, the Garnet 1100 has an internal fan for heat dissipation and an automatic thermal cutoff switch to prevent overheating. The eraser carries Garnet's one-year guarantee.

Circle (332) on Action Card

GENERAL ELECTRIC—Two new families of GE Quartzline® tungsten halogen lamps for Fresnal spotlights used in studio, theater, and display lighting were announced, both having a longer life and/or higher light output, plus more constant color and light output throughout the life than the incandescent lamps they can replace.

Circle (333) on Action Card

THE GERSTENSLAGER COMPANY—As the networks begin to replace portions of their remote fleets now 15 to 18 years old, Wayne Bayer in the Gersten slager booth was looking forward to one of their better years for broadcast vehicles. Already under construction is one W-33798 curb-side expandable, semi-trailer style unit for NBC with four similar units for CBS in the engineering phase. Also in the works for CBS is one of the V-5138S modular body units in which cable operators have been showing a lot of interest.

Circle (334) on Action Card

GLENTRONIX—Introduced by Glentronix was the model PC12 precision impulse clock, designed to operate with Torrey Controls & Engineering model CLK-2 and CLK-5 clock drivers. Features of the model PC12 include low power consumption, super-quiet movement, and jump second hand. It is resettable without being removed from the wall, and is designed to operate on standard 12 V alternate polarity pulse systems.

Circle (335) on Action Card

GORMAN REDLICH—Updated versions of the company's EBS encoders and decoders were shown. All equipment is in stock and available for immediate delivery. Prices are as follows: model C.E.B. encoder/decoder, $345; model C.E. encoder, $250; model C.D. decoder, $195; modified AM/FM tunable receiver, $100. Encoders are FCC type-accepted.

Circle (336) on Action Card

GOTHAM AUDIO—Included in this display were Neumann microphones, EMT Broadcast equipment and reverbation units, Digiphon audio storage systems, Telefunken tape machines, Telecom noise reduction systems, TTM frames, and NTP meters.

Circle (337) on Action Card

GREAT AMERICAN MARKET—New at NAB was STARSTROBE 2, a new version of the popular STARSTROBE. STARSTROBE 2 features a rugged, attractive, contoured housing, and a durable, clear molded one-piece lens cap. The cap is secured to the body by two set screws so that it can be easily removed and colored with lamp dip or gel. The new unit also incorporates an electronic circuit that operates on most AC dimmers as well as the main line. The unit's variable speed rate is designed to strobe at approximately 60

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flashes per minute when 120 volts are applied. Lowering the voltage will slow the flash rate.

Circle (337) on Action Card

DAVID GREEN BROADCAST CONSULTANTS—Being shown in the David Green booth was the Composite Processor from Modulation Sciences. This unit delivers up to 6 dB more RMS modulation with less audible distortion per unit loudness than compressor/limiters. Even a station with the latest integrated compressor/limiter/stereo generator can add significantly to its loudness.

Circle (338) on Action Card

GREGG LABORATORIES—Gregg Laboratories has developed an all-new AM audio processing system which will solve bandwidth reduction problems, as well as loudness and audio quality problems faced by broadcasters. The 2540 AM audio broadcast processor is offered to the broadcaster as a complete AM broadcast audio processing system available in one complete package. The 2540 includes a broad-band gain control, band-limiting filters, specialized equalization, a symmetry synthesizer, a five-band compressor, a five-band clipper, low-pass filters, a transmitter phase/amplitude corrector, and two line amplifiers. The system may be divided in two using the optional mainframe to house the broad-band gain control in the event an STL is utilized. The 2540 is in stock and ready for immediate delivery.

Circle (339) on Action Card

HM ELECTRONICS—Well known in the field of wireless microphones, HM’s Dynamic Expansion Systems were featured, including the 22E, 25E, 22EF, and the 25EF. The sound quality of these systems comes from a new approach to the compression technique for noise reduction. Unique signal processing in the transmitters softly compresses the input signal, providing optimum modulation. A companion expansion circuit is included in the receivers, which precisely tracks the transmitter compression, resulting in an undistorted, virtually noise-free dynamic range of 100 dB.

Circle (340) on Action Card

HARRISON SYSTEMS—Well-known for their music recording consoles, Harrison Systems introduced the TV-3 series mixing console as a new solution to TV stereo sound. The TV-3 offers VCA grouping and automation in several variations as options.

Conductive VCA faders, full functions, automation control, three-band equalization, filtering, and patch point and phase reversal switching are all available on the TV-3.

Harrison also unveiled the DS-1, a versatile, multi-channel audio-level metering system. Based on a powerful Z8000™ high-resolution color videographics processor, this new metering system offers a practical, cost-effective addition to a pointer or discrete bar graph audio-level metering system.

Circle (341) on Action Card

HOWE AUDIO/BCP—The Howe Series 2000 Phase 0 Chaser is an electronically controlled, precision, time-delay network which corrects for the relative phase-errors between the left and right channels of a stereo audio signal. This provides for optimum combining of left-plus-right signals for monaural compatibility. No other audio parameter is affected.

The Series 2000 features a dual-response, error-correction feedback loop having a long-term correction of phase of plus or minus 360 degrees and instantaneous correction to plus or minus 20 degrees. (This accurately characterizes stereo tape cartridge playback conditions). Measurements are at 10 kHz. Other features include a voltage-controlled time-delay network modeled to within 1% of “real world” time delay errors; and a wideband phase-error detector accurate to within 0.5% at all frequencies from 20 Hz to 20 KHz.

The Howe Series 2000 is available as a module for multiple use (either for individual tape playback systems or connected in series to achieve greater phase-correction range).

Circle (342) on Action Card

HUGHES HELICOPTERS—The Hughes’ 300C/ENG helicopter drew the attention of crowds of exhibit viewers. Described as the most cost-effective ENG system available, Hughes offers it under the industry’s best warranty.

Circle (343) on Action Card

IGM COMMUNICATIONS—IGM’s brochure at their exhibit booth asked, “Are you ready for the new satellite music service?” Their answer: “We are.” As sales representative Nick Solberg explained, “The equipment doesn’t know what it’s listening to,” so it can interface with satellite, live assist, or other automation equipment.

There were no new showings by IGM, so the company concentrated on its reliable Instacart and the Go-Cart 24, 42, and 78 cartridge players, claiming the fastest access time in the automation industry.

Circle (344) on Action Card

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Another feature at the IGM exhibit was the “Basic A” programming controller. Since the “Basic A” is programmed in simple English, it allows the station program director more flexibility than he has achieved with other automation controllers, the company says.

Circle (344) on Action Card

IMAGE VIDEO—This Canadian company offered several products, including routing switches, master control switches, machine assignment systems, and automation systems. Image Video custom designs switches and control systems for television and radio.

Circle (345) on Action Card

INTERNATIONAL TAPETRONICS—This company returned with their standard line of audio tape recorders, but the Series 99 underwent some modifications since the last NAB convention, and the 99B includes these improvements: a bottomed solenoid that’s easier to adjust; a less complicated, easier to adjust splice locator; lower THD and better response electronics; a higher slew rate; an improved erase coil; azimuth control routing; and a more accurate splice detector filter.

ITC claims theirs is the only totally compatible system for automatic azimuth/phase control. The 99B includes a built-in test generator that allows stand alone evaluation.

Circle (346) on Action Card

JBL (JAMES B. LANSING SOUND)—A variety of JBL monitor speakers for stations and recording studios were on display, and one of the featured products was their JBL 4411 control monitor. It’s a three-way system with the drivers arranged in a closure cluster to permit close-in monitoring. The monitor includes a high-frequency dome radiator, mid-frequency driver, and a low-frequency driver. The 4411 could set the standard for today’s compact studio monitors.

Circle (347) on Action Card

JAMIESON & ASSOCIATES—This Minneapolis-based firm offers consulting information, including development of business plans, A/V and media usage planning, and satellite communication; facility design services including the planning, design and equipment specification of broadcast and non-broadcast facilities, radio stations, training spaces, theaters, etc.; and consultative and production services in all major media formats.

JATEX—The Jatex VSEC-62TMX A/B roll editing controller has recently been expanded to a full computer-assisted system that will operate on Jatex Scene-Dex time code or on SMPTE code. Regardless of the time code chosen by the purchasing agency, the VSEC-62TMX delivers such standard features as interface to any ¼-inch, ¾-inch, 1-inch, or 2-inch editing player/recorder with no VTR modification or kits; three separate and independent transport controls; self-contained VTR status display (no CRT needed); return to edit; random access search; auto tag; LAP time display; and more.

Circle (348) on Action Card

JEFFERSON DATA SYSTEMS—Jefferson Data was showing its enhanced System 90 traffic, sales, and accounting system. Emphasis is on fast delivery of data for quick response to availability requests and inquiries regarding accounts payable. Jefferson Data also showed a station-rp interface and an automatic switching interface for other manufacturers.

The folks from Charlotte, N.C., did not bring their ENP electronic newsroom system, although Bill Ballard was on hand to talk to the many interested parties. ENP is now being used to produce all news shows for WBTV, Charlotte.

Circle (349) on Action Card

KAMAN SCIENCES—Kaman has complete computer systems for television and radio in the areas of sales, traffic, billing, accounting, film inventory and amortization, cartridge and news inventory programs.

Circle (350) on Action Card

KINGS ELECTRONICS—Kings Electronics manufactures connectors, panels, and accessories for the broadcast industry.

Circle (351) on Action Card

KLEIGL BROTHERS—The Entertainer introduced by Kleigl is a portable memory lighting control console which provides proportional patching of dimmers to 12, 24, 36, or 48 group masters, and up to 48 memories within a simple two-settne preset system. Playback functions provide flash button operation of memorized “looks,” and chase and latch functions with level controls. Other features include simultaneous manual and group controller operation, and optional library storage and hard copy printer.

Circle (352) on Action Card

LTM CORP. OF AMERICA—Highlighted at this booth was the Micro Set Lighting System (MSL) 250 which

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utilizes fiber optics. The MSL 250 System is in three parts: the power supply (ballast), the light box, and the Cable Micro Lights (CML).

Circle (355) on Action Card

LW INTERNATIONAL—Exhibited by LW International was the Athena 6000 telecine projector for on-line and film-to-tape transfer.

Circle (354) on Action Card

LAIRD TELEMEDIA—Film chain and previously introduced character-generator products were on display in Laird Telemedia's booth, but the attention was centered on this year's new introduction, the 7200 COMMUNICATOR character generator. This is their first high-resolution generator with features such as 4 resident fonts out of 128 available, 35ns resolution, 32 resident colors out of 32,000 possible, dual 8-inch disc drives and a 100-row resident memory.

Circle (355) on Action Card

LARCAN COMMUNICATIONS—Larcan, formerly known as Canadian General Electric, came to NAB '82 with a new 30 kW low-band TV transmitter and a new 25 kW FM transmitter.

Circle (356) on Action Card

LeBLANC & ROYLE COMMUNICATIONS—This is one of the largest companies in Canada engaged in the design, manufacture, and erection of communications towers. LeBlanc & Royle also installs microwave antennas, broadcast antennas, and transmission lines.

Circle (357) on Action Card

LEITCH VIDEO—Leitch Video manufactures NTSC video synchronizing equipment, NTSC video calibration test generators, video/pulse processing, equalizing, and distribution amplifiers, master clock systems, and PAL/SECAM equipment. Among their products is the SPC-130N, an NTSC source synchronizing pulse generator. The SPC-130N is used primarily as a slave generator at picture source locations.

Circle (358) on Action Card

LEXICON—The Lexicon model 1200 audio time compressor provides a significant new capability: it allows you to play back recorded audio tape or videotape and film faster or slower without altering the original pitch.

With this remarkable audio processor, you can speed recorded materials up or slow them down, and get broadcast-quality sound, free of distortion. The 1200 makes it "pushbutton easy" to shrink or expand recorded material to meet allotted time requirements. Time-consuming editing and expensive re-takes are eliminated.

Circle (359) on Action Card

LOWELL-LIGHT—Lowell Light featured the new Lowell DP, a 1,000-watt focusing spotlight. This new fixture, an updated version of the popular Lowell D light, features a 7.1 (150 to 1,050 foot candle) focusing range, built-in receptacle for new Lowell DP umbrella and gel frame, improved 4-way barndoor system, and a comfortable new pan/tilt handle.

Circle (360) on Action Card

McINNIS-SKINNER & ASSOCIATES—The jubilant folks at McInnis-Skinner arrived at the NAB fresh from announcing the first sale of their NEWSCAN newsroom computer system to WBNS-TV in Columbus, Ohio.

The firm showed both NEWSCAN and their popular WEATHERSCAN system. The graphics for WEATHERSCAN have been improved, and the product is getting almost as much attention as a graphics system as it is in its primary role as a means to illustrate TV weather.

Circle (361) on Action Card

MATTHEWS STUDIO EQUIPMENT—New from Matthews was the Video Matth-Pak, an assortment of Matthews equipment designed for effective video lighting control. The Matth-Pak offers video lighting control to the professional with the maximum of ease. Three cases, portable and lightweight in design, permit the mobility required in today's location video lighting.

Also new this year were additions to the Matthews Tuglic Crane, a portable, lightweight crane system designed for video applications.

MAXELL CORP. OF AMERICA—Maxell introduced a high-quality one-inch broadcast tape that is expected to be widely used at production houses as well as by television station engineers. The new tape is characterized by high signal-to-noise ratio; low chroma noise; low dropout rate; high color stability; and excellent audio quality. The new Maxell tape will be available in a shelf box and plastic shipper. It will be ready in commercial quantities by mid summer and will come in three lengths: 30, 60, and 90 minutes.

Circle (362) on Action Card

MEAD DATA CENTRAL—NEXIS is a computer-assisted information retrieval service that provides instant access to the full text of stories from leading newspapers, magazines, wire services, newsletters, and other information services. This firm was showing its enhanced on-line data retrieval system. Mead brought its new "VBIQ" terminal with soft-touch keyboard.

Circle (363) on Action Card

MICRO COMMUNICATIONS—Circular waveguide transmission line developed for UHF-TV was featured at the Micro Communications booth. Some noteworthy features of the new transmission line are greater efficiency than either coax or rectangular waveguide, and the cylindrical shape reduces drag coefficient which lowers the wind load.

Circle (364) on Action Card

MICRO CONTROL—The booth included a line of studio to transmitter links and subcarrier equipment. The STL system is a wideband composite/narrowband single and dual-channel capacity operating on 10 watts. The frequency models available include 900 MHz, 215-235 MHz, 300-325 MHz, 450-470 MHz, and 1.2 GHz. The subcarrier system includes the PLG-10 generator, and the PLR-10 receiver, using PLL circuitry.

Circle (365) on Action Card

MICROYNE—New from Microyne

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was the model 1100-TVR X-24 B-2 electronically tuned satellite TV receiver complete with internal polarization switching and two audio demodulators. This frequency-synthesized, 24-channel receiver can be tuned manually using front-panel controls, or remotely via a BCD interface. A front-panel digital display indicates the locally or remotely selected channel. Unique threshold circuitry (patent pending) is a standard feature that assures optimum FM demodulator C/N performance. Other features include automatic antenna polarization selection; digital channel display, and optional audio subcarrier demodulators. The receiver is also available with switchable IF bandwidths and automatic video polarity reversal.

Circle (386) on Action Card

MODULATION SCIENCES—Eric Small burst on the NAB scene in Dallas with a new company that was promoting and selling a legal composite processor. According to Small, it's a new type of processor which delivers up to 6 dB more loudness while still complying with FCC regulations, and it produces less audible distortion per unit loudness than standard limiter/compressors.

Circle (387) on Action Card

NADY SYSTEMS—The newest addition to their product line is the Nady Wireless Communicator System, comprised of three units: the RT-201, a miniature push-to-talk two-way transceiver that attaches to the body and allows hands-free communication between two or more parties; the T-201 transceiver/transmitter with the same housing and circuitry as the RT-201; and the R-1000, a miniature pocket FM receiver that is compatible with the RT-201 and T-201 systems.

Circle (388) on Action Card

NORTRONICS—Unveiled this year was the PF-298 Professional Head De-gausser. It is designed with a super high-flux coil-core to demagnetize heavy duty 2-inch tape heads and guides. With a peak magnetic field strength of 1000 gauss, the PF-208 is one of the most powerful handheld degaussers currently on the market.

Circle (389) on Action Card

FRED NUDD COMPANY—This company designs, manufactures, and installs broadcast and communications towers and monopoles. Fred Nudd also provides tower repair, modification, and engineering services.

Circle (390) on Action Card

OAK COMMUNICATIONS—This California-based company offers subscription television equipment, technology, and expertise to UHF station owners across the U.S. The licensing agreement calls for Oak to install, service, and maintain the STV equipment, prepare technical and business manuals; train STV operators and service men; and provide additional technical know-how as required.

Circle (370) on Action Card

O'CONNOR ENGINEERING—Displayed with O'Connor's camera support equipment, the Hydro-Pod model 102-B gives the cameraman several advantages over traditional tripods. The Hydro-Pod levels and locks hydraulically on any terrain up to 40°. The center column is hydraulically adjustable from 30 to 60 inches, and is hydraulically balanced so that it can handle its own weight and the weight of the camera and head up to 100 pounds on the column. The Hydro-Pod weighs only 20 pounds and folds to 36 inches long with a single centered handle.

Circle (371) on Action Card

PEP INC.—PEP demonstrated their new line of premium ENC power packs featuring the heavy-duty and lightweight on-board batteries, and the new 3-pound HAC3 on-board adapter.

Circle (372) on Action Card

QEI—The QEI model 691 FM monitor offers features in a single 10¼-inch-high, standard rack-mount unit. When combined with a single-trace oscilloscope, the model 691 becomes a spectrum analyzer. Front panel switches allow selection of either 240 kHz or 600 kHz bandwidth in the spectrum analyzer mode. A vector display function is also available for stereo phase adjustments and continuous monitoring of the off-air signal. Bessel null calibration of the monitor is easily accomplished with the built-in calibration oscillator and low-frequency oscilloscope.

Circle (373) on Action Card

QSI SYSTEMS—At the heart of the QSI Demod 400, exhibited at NAB, is a QSI-designed sync generator with switch-selectable original or replacement sync burst, and blanking. The user has full control of burst gain and phase, sync level, and set level in process mode. Vertical blanking ends at line 10 for preservation of any test signals or data transmitted with original programming. The price of the Demod 400 is $1895.

Circle (374) on Action Card

R-COLUMBIA PRODUCTS—New from R-Columbia Products was a wireless base station that interfaces existing hard-wired intercom systems to FM wireless intercom headphones. The new System 50 base station provides full duplex intercommunication between a producer, director, etc. (wearing a R-Columbia FM wireless intercom headset) and camera, lighting, and/or sound equipment operators who communicate via existing hard-wired intercom systems like Clear-Com, RTS, etc. Within its range (150 yards), the System 50 provides crystal-clear two-way voice communication between studio, stage, and/or set management personnel, and technical operators without using wires.

Circle (375) on Action Card

RANK PRECISION—Scotty Campbell of Rank Precision was very pleased with both traffic this year and with the response to two new options for their popular MK III flying spot film scanner: an X-Y Zoom and a Varispeed control.

The X-Y Zoom extends production versatility by allowing the user to alter the position and size of the picture being shown. Zoom range is 4:1 in and out. Anomalous and non-anomalous controls are provided with preset format ratios for 1.85:1, 1.66:1 and variable. A joystick adjusts position, and automatic blanking to the image position is provided. The TOPSY automation system can program X-Y Zoom functions automatically.

Varispeed gives scanner users the ability to precisely alter film running times. It provides speed control in 64 discrete steps from 16 fps to 30 fps with fixed speeds of 18 fps and 34 fps in the 525/60 version. Interface to audio pitch correctors is provided.

Circle (376) on Action Card

SAKI MAGNETICS—Saki supplies ferrite heads for Ampex, Scully, Studer, and most professional recorders.

Circle (377) on Action Card

SCIENTIFIC-ATLANTA—This booth was what you'd expect, but S-A was pushing digital audio this year, and they did it with a 3-meter earth station. This earth station is designed for reception of media information broadcast via satellite using digital data techniques. It's been designed to receive high-speed TDM digital data at about 9 m/s, de-modulate, and then multiplex the data into the desired audio and data channels. That's new.

Circle (378) on Action Card

SCRIBE RECORDERS—Last fall Frank Beeman surveyed B&NDA Conference delegates asking what radio people

Continued on page 204
needed in a rugged, reasonably-priced cassette recorder. Beam...
which specializes in head refurbishing services, introduced a warranty extension on VMI strong-back ferrite heads to 36 months retroactive to June 30, 1981. VMI also announced that they will be refurbishing and repairing 1-inch and ¼-inch heads by mid-year.

Circle (398) on Action Card

WILKINSON ELECTRONICS—A longtime builder of AM and FM transmitters, including low-power solid-state rigs, Wilkinson showed a lineup of transmitters with the new, modern look. Known for their reliability, the transmitters on display included 10- to 250-watt rigs in the low-power FM solid-state class, and four rigs in the 500- to 2500-watt FM group (using solid-state excitors and power supplies). In the FM high-power FM line, Wilkinson rigs range from 5,000 to 30,000 watts. The AM solid-state rigs hit 125 and 250 watts, while the higher power models handle 1, 3, 5, and 10 kW.

Circle (397) on Action Card

WOLD COMMUNICATIONS—Wold was promoting its Woldcom transportable uplinks. Wold has acquired 4 transponders on Westar IV to expand its newsfeed and syndication services. The satellite company was also promoting the Wold Satellite TV Network, which distributes programming for syndicators.

Circle (398) on Action Card

WOLF COACH—This company custom builds mobile units for the broadcast, production, and cable industries. Wolf Coach can handle anything from basic vans for single-camera local access programming, to 42-foot trailers for complete multi-camera production.

Circle (399) on Action Card

ZENITH RADIO—On display in the Zenith booth were multi-channel STV and tiered teletext decoders.

Circle (400) on Action Card

The following companies also exhibited at NAB '82. For more information on these companies, circle the appropriate number on the Action Card in this issue.

ADC PRODUCTS—Enclosed video jackfield. (Circle 228)

ADVANCED DESIGNS—Weather presentation system. (Circle 160)

ADVANCED MUSIC SYSTEMS—Digital reverberation system. (Circle 161)

PETER ALBRECHT—TV studio machinery control. (Circle 162)

ANVIL CASES—Full line of heavy-duty rack-mount cases. (Circle 229)

APHLEX SYSTEMS—Aural exciter that restores presence, clarity, naturalness, and definition to sound. (Circle 164)

ARBEN DESIGN—Set design. (Circle 163)

TOBY ARNOLD & ASSOCIATES—Music formats.

AUDIOCO—Videocassette tape loader/reloader designed for loading tape directly in U-matic, VHS, and Betamax cassettes. (Circle 246)

AUDIO KINETICS—Synchronizer for controlling up to three video/audio tape transports. (Circle 165)

AUDIO TECHNICA—Phantom power shotgun microphone. (Circle 230)

BIW SYSTEMS—Complete line of optical fiber cables. (Circle 166)

BILL BLACK & ASSOCIATES—Turnkey newsgathering vehicle, the Mobile-Cam One. (Circle 167)

BROADCAST CARTRIDGE—Audio cartridge reconditioning. (Circle 231)

BRYSTON MANUFACTURING—Power amplifiers. (Circle 227)

CBS RADIO—New network for 18-34 market. (Circle 169)

CAMBRIDGE PRODUCTS—Fast-fit connector. (Circle 232)

CANTON AUDIO—Conductive thermo-plastic shielded microphone cables. (Circle 170)

CELESTIAL MECHANIX—Radio promotion services. (Circle 233)

CENTURY 21—Automation equipment and music formats. (Circle 171)

CLYDE ELECTRONICS—Full line of broadcast equipment, including Alpha modular mixer. (Circle 172)

COLUMBINE SYSTEMS—Computer packages to handle all business functions, plus music inventory and rotation, sales analysis, media inventory, and more. (Circle 247)

COMPUCON—Engineering services. (Circle 173)

COMPUR—Real-time animation system. (Circle 174)

CONCEPT PRODUCTIONS—Program formats designed for use on automated systems. (Circle 175)

CONTINENTAL RECORDINGS—Single packages for radio. (Circle 176)

COOL LIGHT—Mini-Cool 250-watt light. (Circle 177)

PETER DAHL COMPANY—High-efficiency modulation transformers and reactors for 1 kW and 5 kW AM transmitters. (Circle 234)

DATA COMMUNICATIONS CORP.—Business computer system. (Circle 235)

DATUM—Model 9400-830 VBI data encoder and associated reader. (Circle 178)

DE WOLFE MUSIC LIBRARY—Library of sound effects for production uses. (Circle 236)

DRAKE-CHEVROLET—Radio formats. (Circle 179)

DYNAMIC TECHNOLOGY—Datamate lighting control equipment, remote control and data transmission equipment, and distribution equipment. (Circle 180)

EAGLE CORP.—ENG suburban truck and ENG/EFP van. (Circle 237)

ECHOLAB—SE-3 production switcher. (Circle 238)

EIGEN VIDEO—Videograph, an artist-oriented illustration and animation system for video and slide production. (Circle 248)

ELECTRO CONTROLS—A new patching system using custom keyboard and CRT terminal to assign and display control-dimmer cross connections. (Circle 249)

EMCOR PRODUCTS—The 10 Series of cabinets. (Circle 181)

ENVIRONMENTAL CONTAINER SYSTEMS—The ECS transportable electronics enclosure. (Circle 182)

EXCALIBAR INDUSTRIES—VTR case. (Circle 183)

FIBERBILT—Carrying and shipping system for photographic equipment. (Circle 250)

FIRSTCOM—Production and commercial library. (Circle 184)

FITZCO SOUND—Professional mixing console for large-scale reinforcement and remote applications. (Circle 251)

FORT WORTH TOWER—Guyed and self-supporting towers, and factory-fabricated communications buildings. (Circle 252)

FOSTEX—Recorder/reproducer featuring 9 tracks on ¼-inch tape. (Circle 253)

GECER COMPUTER—Poly Morphic System 8810. (Circle 185)

GOLDEN IMAGE—Syndicated TV commercials for radio stations. (Circle 254)

GRUMMAN AEROSPACE—Combination synchronizing generator/processing amplifier for a subcarrier/horizontal sync-timed broadcast facility. (Circle 186)

HARDING INDUSTRIES—Package cushioning products. (Circle 187)

IMMIG BROADCAST SERVICES—Turnkey broadcast systems. (Circle 255)

INNOVATIVE TV EQUIPMENT—Fluid heads featuring adjustable counter-balance. (Circle 188)

INTERACTIVE MARKET SYSTEMS—Computer time-sharing services. (Circle 189)

INTERACTIVE SYSTEMS—Super Edit, a complete editing system operating program. (Circle 190)

INTERRAND/TELESTRACTOR—Telestrator 440, a new product designed for real-time television programming plus quick pre- or post-production anima—

Continued on page 206
tion and graphics effects. (Circle 191)

**INTERFACE DATA SYSTEMS**—Model 2000 station automation system and new machine control unit. (Circle 192)

**INTERFACE ELECTRONICS**—Battery-operated portable professional 8-in/2-out stereo mixer. (Circle 193)

**JENEL CONSULTANTS**—Video Frame Storer which permits inexpensive storing of color video signals on removable discs. (Circle 239)

**JENSEN TOOLS**—JTK-85 installer's tool kit. (Circle 194)

**KLARK-TEKNIK**—Stereo and surround sound delay unit. (Circle 195)

**KOBOLD LICHT**—DLF 200 S Unit featuring lockable pivoting bracket which permits inclination within 270°. (Circle 196)

**LEADER INSTRUMENTS**—NTSC vectorscope. (Circle 258)

**LEMO**—Connectors for broadcast and recording applications. (Circle 256)

**LIBRA PROGRAMMING**—Computer broadcast system for traffic, sales, general ledger, and payroll. (Circle 197)

**LIGHTNING ELIMINATION ASSOCIATES**—Protective device that guards your sensitive equipment against all types of powerline irregularities. (Circle 259)

**LIPSNER-SMITH**—CF-100 ultrasonic film-cleaning machine. (Circle 240)

**LIVE SOUND**—Syndicated radio formats. (Circle 199)

**LOGICA**—Teletext system based on the BBC Ceefax system and Flair videographics system. (Circle 260)

**MAGNASYNC/MOVILA**—Film-tape unit. (Circle 261)

**MAGNUM TOWERS**—Fabrication of radio and TV towers, and related hardware. (Circle 241)

**THE MANAGEMENT**—Computer software programs for radio station traffic and billing. (Circle 242)

**MINOLTA**—Lumiance and chroma meters. (Circle 199)

**KEITH MONKS AUDIO**—Record cleaning machines. (Circle 262)

**MOTOROLA**—Microprocessor-controlled, portable base/repeater featuring 35 watts in repeat mode. (Circle 263)

**MUSIC DIRECTOR PROGRAMMING SERVICE**—Complete line of Joel Whitburn's Record Research Books. (Circle 200)

**NOVA**—Tape cassettes that fit all formats and all videotape recorders. (Circle 264)

**NTI AMERICA**—Animation system which converts analog signals into digital and stores the code on a disc. (Circle 257)

**NAUTEL MAINE**—Modular 5 kW AMPFET 5 AM broadcast transmitter. (Circle 201)

**NETWORK PRODUCTIONS**—Whisper Disc, a new form of record with brighter, clearer, and quieter sound. (Circle 202)

**NEUTRIK**—Professional connectors for broadcasters.

**NYTONE ELECTRONICS**—Flying Spot Scanner System. (Circle 203)

**OLESEN**—The Wizard computerized lighting control console. (Circle 204)

**PACE**—Micro portable desoldering/soldering system. (Circle 205)

**PARSONS**—Cases with recessed wheels and handles. (Circle 243)

**PETERS PRODUCTIONS**—Music formats. (Circle 206)

**THE PHOEBUS CORPORATION**—Ultra Quartz lamp. (Circle 207)

**PORTA-PATTERN**—Test charts and chart systems for studio, EFF, and ENG applications. (Circle 265)

**POWER OPTICS**—Synchronized background equipment for chroma key. (Circle 266)

**PROCAR®**—Audio cartridge that exceeds type AA cartridge standards. (Circle 267)

**PUBLISON AUDIO**—Stereo audio computer. (Circle 208)

**QTV/TELESYNC**—Cueing equipment, console transport, and conveyor transport for studio and on-location prompting. (Circle 268)

**QUAD-EIGHT**—Consoles designed for TV post-production audio enhancement. (Circle 269)

**RADICOM**—Computer system for handling all business functions. (Circle 209)

**ROSCO LABS**—Fog/Smoke Machine for theater and television applications. (Circle 270)

**HOWARD W. SAMS**—New catalog, Silent Salesman, that allows you to present your total product line. (Circle 271)

**SOUNDCRAFT**—Stereo mixer. (Circle 272)

**SPECTRUM**—Anализация and design of high-quality communications systems. (Circle 273)

**STANTRON**—Rack cabinets, console cabinets, turret cabinets, bench cabinets, and accessories. (Circle 244)

**STEPHENS ELECTRONICS**—Professional recorder/reproducers. (Circle 222)

**SYMETRIX**—Hybrid telephone interface. (Circle 211)

**SYSTEM ASSOCIATES**—Brokers for used broadcast equipment. (Circle 212)

**TAMRON**—Lens for 2½-inch color separation prism-type cameras. (Circle 213)

**WILLIAM B. TANNER CO.**—Music IDs and background music. (Circle 214)

**TECHTRAN INTERNATIONAL**—This company featured a portable video unit for sales and training presentations. (Circle 215)

**TELESCRIPT**—Terminal-prompter combination which can be applied to newsroom word processing. (Circle 216)

**TELFAX**—Miniature telephone remote unit. (Circle 217)

**TENNAPLEX SYSTEMS**—UHF combiner package for satellite receive/terrestrial rebroadcasting. (Circle 218)

**THEATRE SERVICE**—Cyclorama curtains. (Circle 219)

**THEATRE VISION**—Turnkey studio installations. (Circle 220)

**TRIDENT USA AUDIO**—Expandable audio consoles. (Circle 221)

**TWEED AUDIO**—Custom consoles for radio and television. (Circle 168)

**UNI-SET**—Studio and news set designs. (Circle 223)

**UNITED RESEARCH**—Solid-state erase/play/record amplifier. (Circle 224)

**UTILITY TOWER**—Tower sections. (Circle 225)

**VLADIS-GOTTSCHALK**—Video matting. (Circle 226)

**WEATHER STATION**—Complete television weather program with high-quality color animation. (Circle 245)

**BROADCAST COMMUNICATIONS**/JUNE 1982
ARIZONA:
PHOENIX (Chapter 9)—Dalies Electronics sponsored their Ninth Annual Pizza & Beer Party for the chapter members. New officers are Bill Beckner, chairman; Bill Strube, vice-chairman; and Pat Porter, secretary.

CALIFORNIA:
EUREKA (Chapter 71)—James Thibodeaux of Videomedia/SED demonstrated and discussed the Hitachi VCD-1000 CCD color camera.
FRESNO (Chapter 66)—Mac Meahafey of RCA demonstrated and discussed the TK-86 and TK-710 ENG cameras.
LOS ANGELES (Chapter 47)—John Sullivan of Econco Tube Rebuilders led a discussion on the techniques of lowering the cost of staying on the air (without rebuilt tubes, of course). Also, members discussed the highlights of the NAB convention in Dallas.
NORTH VALLEY (Chapter 83)—Jim Wilson of Alamo Communications in Anderson gave an overview of the communications equipment and theory in use today by many services, and explained proper installation and service on the equipment.
ORANGE COUNTY (Chapter 77)—Ed Gordon, national SBE board member, provided a detailed update on SBE’s national doings and presented the new promotional videotape that will be available to all chapters from the national office.
SACRAMENTO (Chapter 43)—Dave Erickson, of the FCC field office in San Francisco, talked about some of the effects that deregulation will have upon broadcasters—not the least of which is the need for local frequency coordination. New officers are Dave Porte (KXTV), chairman; Ken Blue (Sacramento State University), vice-chairman; and Ken Noland (Tandem), secretary.
SAN FRANCISCO (Chapter 40)—A review of the 1982 NAB convention technical sessions and equipment exhibits was conducted.

COLORADO:
DENVER (Chapter 48)—Bill Harris discussed the SBE Certification Program plus the entry-level “Broadcast Technologist” and explained that details on this level have been mailed to all SBE chapters. New officers for Chapter 48 are Chuck Wiltman (KIMN-KYGO), chairman; Paul Mottola (KBP), vice chairman; and Cary Nakashima (KFTM-KBRU), secretary-treasurer.

CONNECTICUT:
CONNECTICUT VALLEY (Chapter 14)—Bill Bansavage and his staff conducted a tour of their plant in Manchester. Multi-Circuits produces circuit boards of all types and is the fourth largest producer of boards in the country.

FLORIDA:
JACKSONVILLE (Chapter 7)—There was a presentation by US JVC (southeastern division), and a possible by Southeast Electronics and Gray Communications. Several ENG-type cameras were demonstrated, as well as a new model of a VHS recorder with stereo audio.

ILLINOIS:
CHICAGO (Chapter 26)—Bill Carpenter of Ampex presented a program on “How Cost Effective Technical Changes Allowed the Introduction of a Lower Cost 1-Inch Type C Recorder, the Ampex VPR-80.” This recorder is designed to be a more economically priced machine than the VPR-2 series, but more useful than the 3/4-inch machines.
QUAD CITIES (Chapter 65)—Bob Henson of Leno presented a presentation on subcarrier to H-phasing of RS-170A and the Leno FVS-430 Videoscope.

INDIANA:
INDIANAPOLIS (Chapter 25)—Bob Griffiths of Teletum discussed “Fiber Optics Applications for Broadcasters” with a demonstration over 300 feet of line. New officers are Steve Brant (Midwest Corp.), chairman; Doug Garlinger (WHMB-TV), vice-chairman; Norm Birnbaum (WTHR-TV), secretary; and Otis Robinson, Jr. (WRTV), re-elected treasurer.

KANSAS:
KANSAS (Chapter 3)—Gene Beaver of the Sedgwick County office of Civil Preparedness conducted a tour of the police and sheriff radio dispatch area and described the operation of the 911 emergency phone number.

MARYLAND:
BALTIMORE (Chapter 46)—Leonard Kahn, president, Kahn Communications, gave a presentation on AM stereo and summarized the various marketplace systems offered. He also discussed the technical developments of AM stereo receivers both on and off the drawing board.

MICHIGAN:
SOUTHEASTERN MICHIGAN (Chapter 82)—Ed Portman of Detroit Edison described how they are set up and the types of transmission systems used. He also discussed procedures during power outages and how to interface with Detroit Edison lines. This was a joint meeting with AES.

MINNESOTA:
MINNEAPOLIS/ST. PAUL (Chapter 17)—A joint meeting with the local chapter of the Audio Engineering Society featured a Nortronics presentation of the manufacture of tape recording heads, along with discussion of the pros and cons of various head types. Bruce Larsen of Nortronics conducted a tour of their manufacturing facility.

MISSOURI:
KANSAS CITY (Chapter 59)—Phil DeSantis of Lexicon gave a presentation on "Audio Time Compression & Expansion." He demonstrated the operation of the Lexicon model 1200 audio time compressor working in conjunction with a 1-inch Type C video recorder.
ST. LOUIS (Chapter 55)—Chris Kreger & Joe DeAngelo of Harris Broadcast Products discussed their new line of AM transmitters. The transmitters include a fully automatic control and diagnostic system that is operated by two microprocessors.

NEW YORK:
CENTRAL NY (Chapter 22)—David Schirman, audio technician working for Syracuse State (Theatre Group), discussed and demonstrated the use of Pressure Zone Microphones (PZM) manufactured by Crown International.
NEW YORK CITY (Chapter 15)—Review of the NAB convention was conducted. New officers are Herb Squire (WHN Radio), chairman; Richard Silvera, vice chairman; and David Bain, treasurer.
NORTHEAST NY (Chapter 58)—Tom Oliviero and Bert Hilaire of Chyron discussed the operation of the latest Chyron character generation equipment.

OHIO:
CENTRAL OHIO (Chapter 52)—William L. Ammons of Broadcast Electronics gave a slide presentation and talk on FM exciters; he also discussed practical RF elimination techniques for the broadcast engineer. New officers Continued on page 208
are John Battison, chairman; John Cooper, vice-chairman; and Rick Farquhar, sec/treas.

NORTHEAST OHIO (Chapter 70) — The program was presented by the Midwest Teleproductions. They are a complete television production house, with a mobile truck which was on display. Midwest handles all television feeds from the coliseum for all cable broadcasts of any sporting event from the coliseum to ESPN and the USA Cable nets.

SOUTHWESTERN OHIO (Chapter 33) — Bill Brock of Pacific Recorders & Engineering Corp. gave an interesting talk on recorders and audio systems.

OKLAHOMA:
TULSA (Chapter 56) — Jennifer Lloyd, assistant safety director for the American Red Cross of Tulsa, presented a program on CPR.

 PENNSYLVANIA:
PHILADELPHIA (Chapter 18) — Phil Gant, Larry Will, and Glenn Romans discussed the ideas and equipment presented at the NAB.

PITTSBURGH (Chapter 20) — Ted Washburn of Fujinon Inc. presented a program entitled “Zoom Lenses, The Quiet Front End of Camera Technology”: a detailed presentation of the structure and uses of zoom lenses for ENG, studio, and other applications.

TEENNESSEE:
MEMPHIS (Chapter 61) — A tour of the satellite dish at WLVS was conducted.

TEXAS:
CENTRAL TEXAS (Chapter 79) — Sandra Morris of the Dallas office of the FCC discussed the role of the FCC. The major topic was the FCC is no longer the “bad guy”; instead, they want to work with the broadcaster in any way they can to resolve problems, questions, etc.

NORTH TEXAS (Chapter 67) — Leo MacWilliams, stage manager, Dallas Communications Complex, conducted a tour of this rental, television, and film sound stage complex. New officers are Gerry Dalton, chairman; Clyde Miller, vice-chairman; and Josh Socolof was re-elected sec/treas.

SOUTH TEXAS (Chapter 69) — Joe DeAngelo and Jack Ducart of Harris Broadcast Products Division presented a program on AM stereo.

VIRGINIA:
RICHMOND (Chapter 60) — A field tour of WWBT-TV was conducted.

TIDEWATER AREA (Chapter 54) — Art Constantine of Fidelipac presented a program on cartridge tape alignment techniques and characteristics of the new “Master Cart II” tape cartridge.

WASHINGTON:
SPokane (Chapter 21) — T. O. Jorgensen, chapter member, gave a report on tube rebuilding techniques and recommended procedures in the use of rebuilt tubes.

TRI-CITIES (Chapter 51) — Don Eckles of Cascade Broadcasting discussed their new 1/4-inch videotape machine. The videocassette is not much larger than an audio cassette box.

WISCONSIN:
FOX VALLEY (Chapter 80) — Peter Thorpe of Robert Jones Consulting Engineers gave a talk on Alaskan radio stations and demonstrated the use of minicomputers in designing directional antenna arrays. Bob Corjance of the Harris Corp. updated the group on AM stereo progress.

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