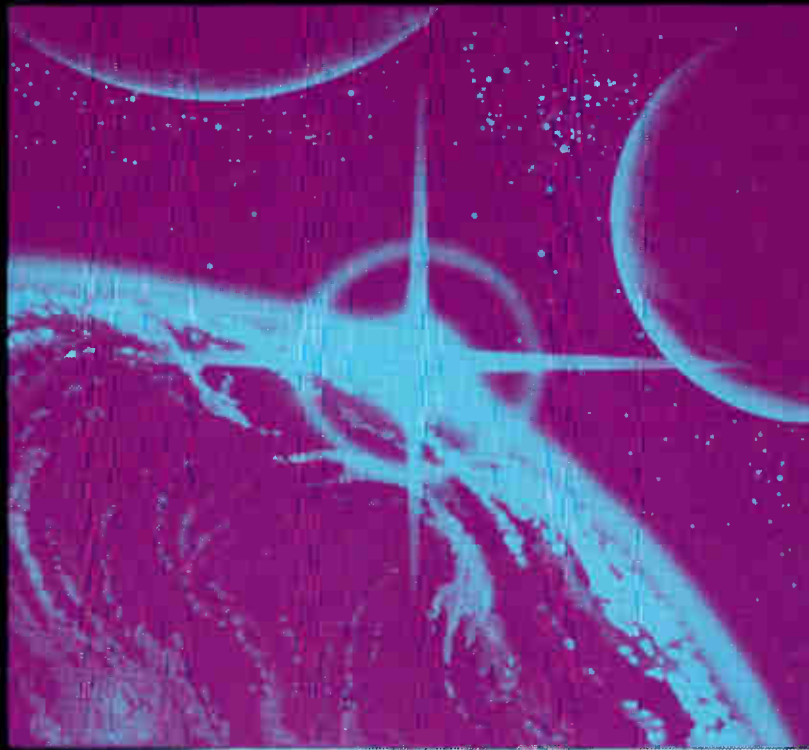


CATJ

OFFICIAL JOURNAL OF THE COMMUNITY ANTENNA TELEVISION ASSOCIATION
DECEMBER 1983



PROGRAMMERS: THE EXTRA OPERATIONAL SERVICES

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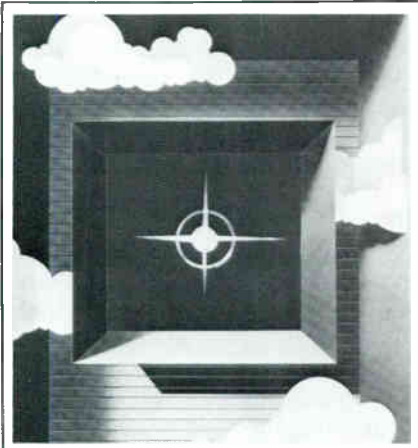
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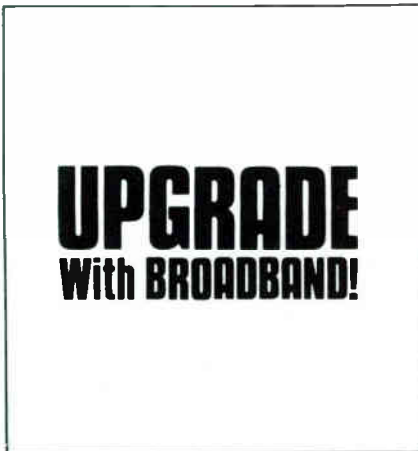
ZENITH® CABLE PRODUCTS

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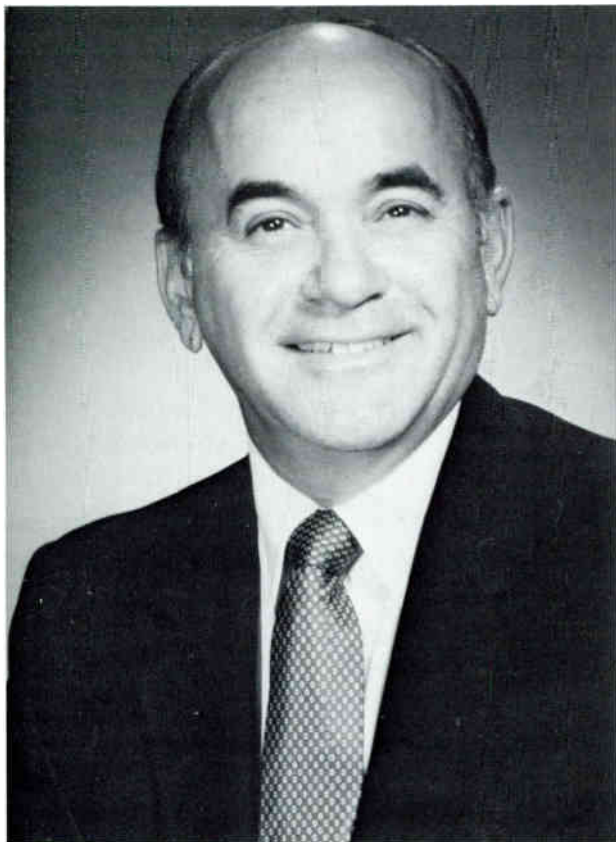
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ON THE COVER

The December cover illustrates the satellite signals bringing world happenings through the windows of our homes as CATJ salutes the programmers and begins a series of their extra-operational functions.



Peter Athanas
President of CATA

There is a very healthy trend sweeping the larger corporations in the cable television industry. The Multiple System Operators are finally realizing that no matter how large they might be — no matter how many franchises, or systems they own, and no matter how many subscribers are ultimately served, those systems and subscribers are as diverse as is this country of ours. Attempting to ignore those differences — to manage from a centralized location is an invitation to disaster at renewal time.

The trend is a simple and logical one. Local managers are being given more authority to run their systems independently, or at least with more freedom than in the past. They are allowed to respond to differing local conditions within much more broadly worked guidelines rather than the old rigid mold of "corporate policy". Hopefully the management changes have come in time. The good, informed managers at the local level in these newly "decentralized" MSO's will now have the opportunity to remedy the bad feelings and limited response these companies have generated in the past to local needs and desires. Localism in cable television is the name of the game — and that is particularly true at renewal time.

WHO'S RUNNING THE STORE?

As most of you know, the Community Antenna Television Association has been preaching the "gospel" of localism for a long time. We recognized years ago that a "corporate response" from New York or Denver was simply not going to be very popular with most local officials, regardless of what the response actually was! In fact, it was not popular with local managers either. An increasing complaint we heard in the formative years of CATA was that local managers of MSO cable systems were considered little more than low-level technicians and "firemen" for whatever problems arose at the local level. When problems did pop up, as they always do, the corporate response was the "send someone from New York" (or Denver, Atlanta, Washington etc.). That usually made things worse, not better.

Now the "new realism" that is sweeping the cable industry has given more authority and managerial importance to the local cable office. This is a very healthy trend, and it must be supported at many levels. One of the primary areas in need of support is the education of local cable managers. It is no longer the case that the "front office" is the only place that needs to know about what is happening in Washington, or what the latest trends are, or where the competition is coming from. Local system managers must know all these things and more.

The local manager is finally becoming what he or she should have been all along, the principal interface not only with cable subscribers, but also with local government officials. It is vitally important for the health of the individual company and the industry as a whole that our cable managers are prepared for that task. That is where CATA comes in. We focus on the local management of cable television systems. We specialize in explaining to the public, cable operators, and local officials what is really going on in this tumultuous business. The CATAcable — our newsletter, is specifically designed to let the people who really need to know what is going on find out — and then they are able to convey that information to local officials, who could just as easily be our best friends as our major adversaries. The educational role CATA plays has been found invaluable by many cable system owners for years, and now some of the largest Multiple System Operators are finding the same thing. They are assuring that their local managers get the CATA-

cable each month so that they too can become functioning ambassadors for the cable industry.

Decentralization has meant that more responsibility has been handed to local managers — and they have responded by seeking more information in order to intelligently exercise that responsibility. Unfortunately in some cases the “decentralization” has either not gone far enough, or it has gone too far — the result is the same — the inability to make some needed decisions.

Let's take two examples. First, the one we were just talking about: joining CATA. There are many local managers from MSO-operated systems who have told us they would love to be members of CATA, but that that decision is not up to them — it is up to the “front office”. When we go to the top people, however, they duck their responsibility by saying that it is an issue to be taken up by the local managers at their next budget meeting — in other words the corporate decision is avoided by making it a budgetary decision. Local managers are placed in the position of seeking the most income, or in-

centive, by increasing the bottom line for **THIS** year or **THIS** quarter. Long-range planning is not something that can be done in a budget meeting — yet that is the excuse we hear most often when it comes to larger companies either doing, or not doing something.

The same situation holds true for carrying C-SPAN, or cooperating with CCI, the new Council for Cable Information. In each case, in some companies, the “decentralization” trend has also led to the avoidance of corporate policy and long-term planning in favor of imposing misplaced responsibility, masked by budget and compensation considerations, on local managers.

As we have often said, we are in favor of decentralized management — or more accurately, we are in favor of giving local cable system managers as much responsibility for local affairs as possible. But that does not mean there is no corporate responsibility or role in setting the long range policy of the industry — and supplying the tools for local management to work well. □

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The Community Antenna Television Journal (CATJ)—ISSN-0194-5963—is published monthly by Television Publications, Inc., 4209 N.W. 23rd, Suite 106, Okla. City, OK 73107. Subscription price: \$18.00 per year, \$22.00 per year Canada, Mexico, and foreign is \$25.00 per year. Second class postage paid at Oklahoma City.

POSTMASTER: Send address change to 4209 N.W. 23rd, Oklahoma City, OK. 73107.

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H A R D W A R E

By: Steven K. Richey, President
TelTran, Inc.
Azle, Texas

VERTICAL INTERVAL SWITCHER

This month as promised we will show you how to start building the hardware to insert Local ads on your cable system.

The first piece of hardware that we will discuss is the **Vertical Interval Switcher**.

If a Vertical Switcher is not used most sets will roll at least one frame when the video is switched and some sets will lose vertical lock for 2-3 seconds. By switching during the vertical blanking Interval of the Video you are switching to you can get a roll free switch 50% of the time and the rest you will get a 1/2 frame roll. If you watch the networks during prime time when they switch to Local such as

News Breaks you can see the same 1/2 frame roll, I never noticed it before I built my first switcher.

To understand how the switcher works lets first look at a block diagram of the switcher, (**Figure 1**).

Video from the unused input is selected by IC2 and routed to Q4 a common base amplifier where it is amplified and fed into the base of Q6. Q6 is used as a sync stripper and both the horizontal and vertical sync are present at the Emitter of Q6. We use a 2.2K resistor and a .01 capacitor in a RC low pass filter to filter out the horizontal sync pulses and isolate the vertical pulses.

IC1a and b functions as amplifiers

and additional filters. The .01 capacitor and 10K resistor on the input of IC1c from a pulse generator keyed by the sync pulse stripped from the Video. IC1d inverts the pulses so that a positive pulse is placed on pin 2 of IC4a. As long as pin 1 of IC4a is low, the output on pin 3 is low, when the control voltage is applied, the shaped sync pulse are passed through IC4 and to the set input of IC5. IC5 is a set, reset, flip flop which works in such a way that when the reset is low and a high appears on the set, the output goes high and stays high. The output goes high coincidentally with the input pulse (**Figure 2**). The output voltage and the inverted voltage are

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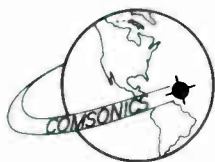
RF Attenuator

Sniffer is the ORIGINAL field proven RF leakage detection system. There is no more accurate or economical way to quickly troubleshoot and pinpoint RF/EMI leakage in your cable system. The convenient, light-weight Sniffer system includes a signal source, and sensing unit, detector, plus a magnetic-mount monopole whip antenna to allow drive-through monitoring at speeds of 25 to 40 MPH.

Leakage costs you signal quality, subscriber revenues and wasted man-hours. But when you've got the Sniffer by ComSonics . . . you've got the original and the best defense!

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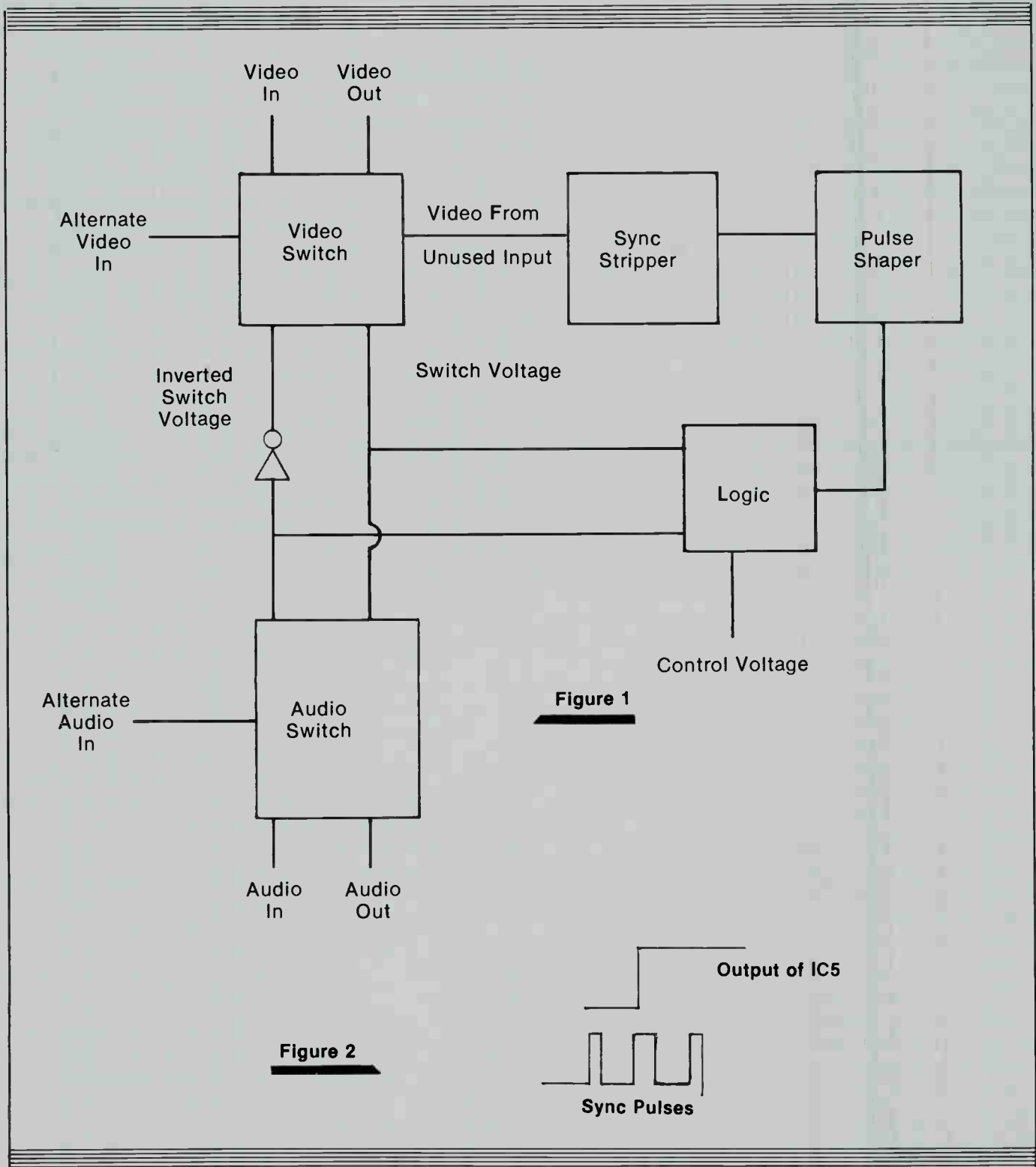
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We're selling more PIII coaxial cable than ever because we're making it better than ever. And our new anti-corrosion, Double-Clad™ center conductor treatment is just the latest improvement.

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Our advanced extrusion technology has created a micro-cellular foam polyethylene dielectric with improved uniformity of cell structure. The result is a cable that's easier to handle and tougher to damage, with superior structural return loss performance.

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We're continually improving quality and maintaining competitive prices. That's why PIII continues to be your best buy in coaxial cable.

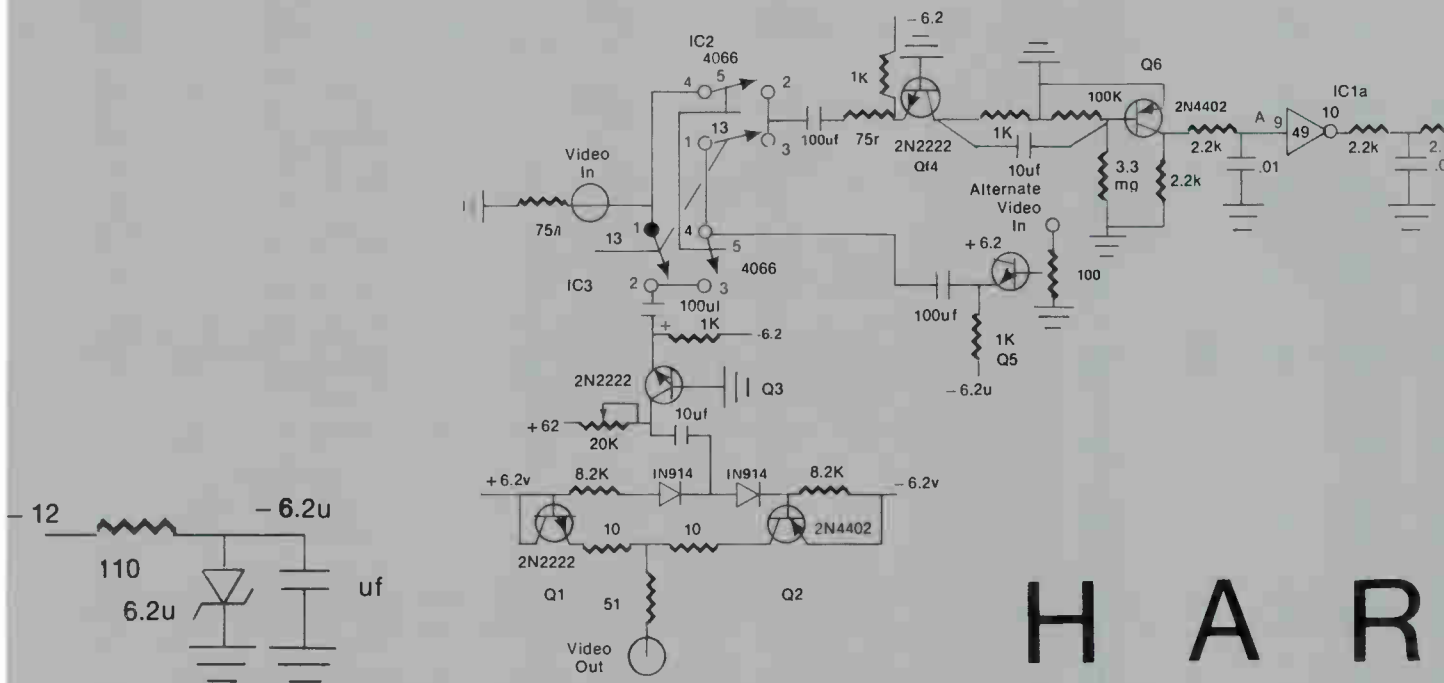
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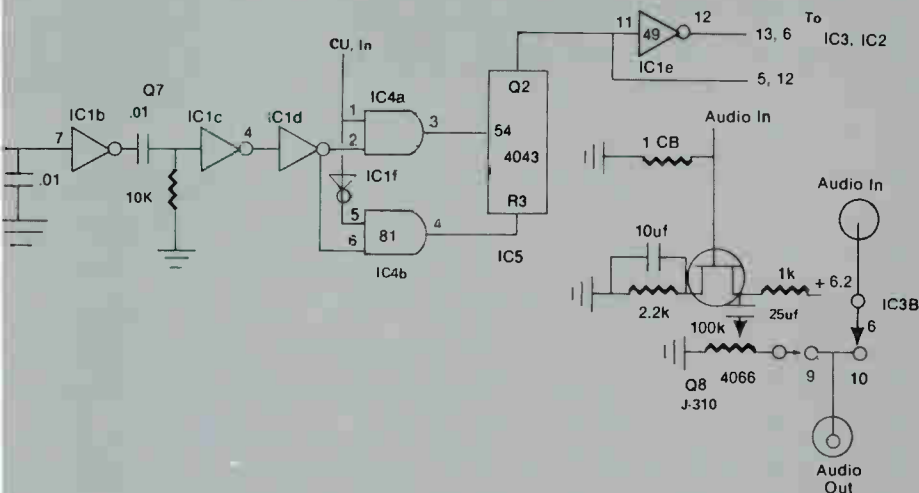
The Weather Scan III comes complete with Sony AVC-1400 camera with separate mesh vidicon and 2:1 interlace sync. Includes Time, Temperature, Barometric Pressure, Wind Velocity, Wind Direction, plus four card holders. Compact cabinet is just 28" wide, 23" deep and 14" high. For complete information call or write.



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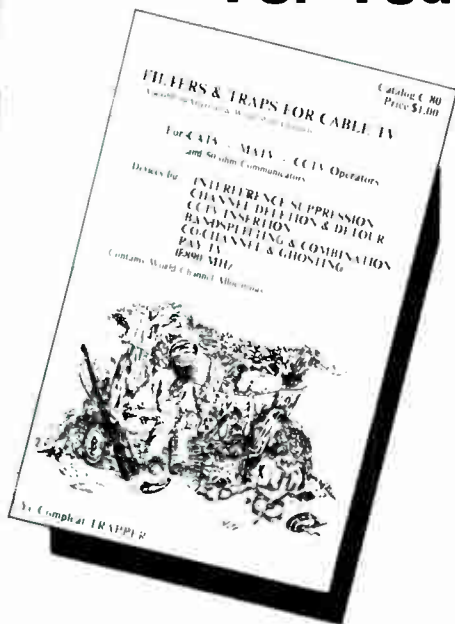
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H A R D W A R E

This series on Advertising with local ads on your cable system was instigated as a result of the wide acceptance of this session as taught by Steve Richey, President, TELTRAN, Inc., Azle, Texas, at CCOS '83. It was directed by the CATA Board of Directors that this information be presented in CATJ for the benefit of its readers as a further step to verify the CATA and CATJ philosophy of editorial content prepared and designed to assist the cable operator in his system management and efficiency. Local advertising sales can generate added revenue for cable system. Last month, Mr. Richey presented the first of articles in this series and proved that local advertising can indeed be a profitable venture.

This month's segment continues with the development of the instructions for building the hardware to insert the ads into cable systems.

fed back to the Video Switch IC2e and IC3 where the alternate video source is coupled to the output and the unused video input is then directed to the sync stripper.

You need to note at this time that the control voltage can go high at any point during the video frame, but the output of IC5 which controls the switch can only go high and switch at the beginning of the Vertical Interval.

When the control voltage is turned off, the opposite happens; the output of IC4a goes low and because of the inverter, IC1f, pin 5 of IC4b goes high and the sync pulses are directed to the reset on IC5 where at the next pulse, the output of IC5 goes and stays low causing the Video Switch to switch back to its original position; again this happens at the beginning of the Vertical Interval pulse.

The Audio is amplified in FET Q8 and then switched simultaneously with the Video in another portion of IC3b.

The switches, both Audio and Video, are made by conforming 4066 Analog Switches into DPDT Switches; the 4066's have an on resistance of 90 ohms and a very high impedance when off.

Q5 provides a buffered input for the alternate video along with a level control so that the two Videos can be level matched.

Q3 is a common base Video amplifier with adjustable gain to overcome the insertion loss of the switch, and Q1 and Q2 form a push-pull output stage to provide up to 2 volts of undistorted Video out into a 75ohm load.

Next month we will discuss a crystal controlled DTMF (Tone) decoder. If you have any questions write them to me in care of CATJ, 4209 N.W. 23rd, Oklahoma City, OK. 73107, and I'll work with you for a solution.

Be back next month!

PERSONAL SERVICE

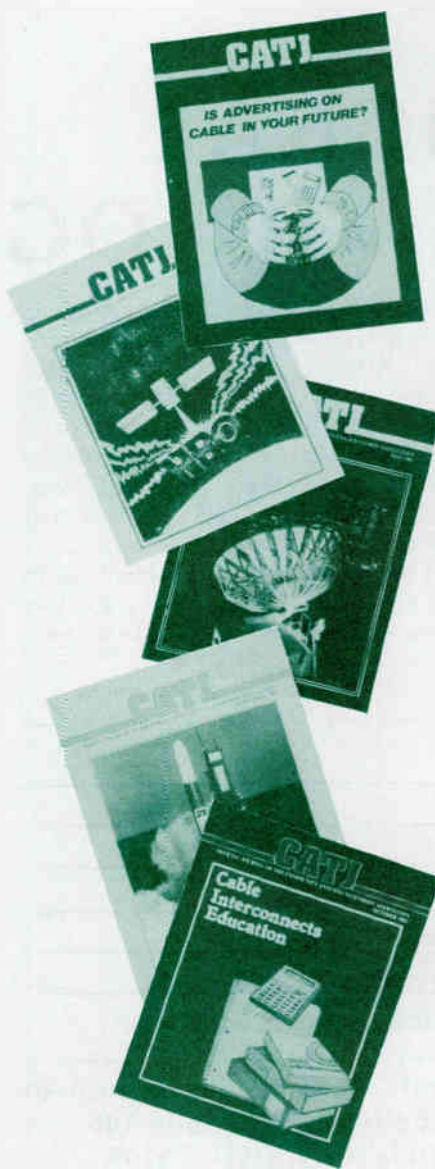
When buying or selling a cable television system, you want to utilize the services of a broker who leaves no doubt that he is concentrating his efforts on your transaction and your needs, one who stays in close contact with you and keeps you fully apprised of his progress. You demand and deserve the kind of personal service, responsiveness, and intense effort that only comes with a company such as ours. We invite you to call for more information and look forward to hearing from you. **CHARLES GREENE ASSOCIATES, 5775 PEACHTREE-DUNWOODY, BLDG. E, SUITE 200, ATLANTA, GEORGIA 30342, (404) 256-0228**



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ZIP _____ PHONE _____

TITLE MANAGER CHIEF ENGINEER

- CHIEF TECH INSTALLER BUSINESS OFFICE
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 OTHER

SIGNATURE _____

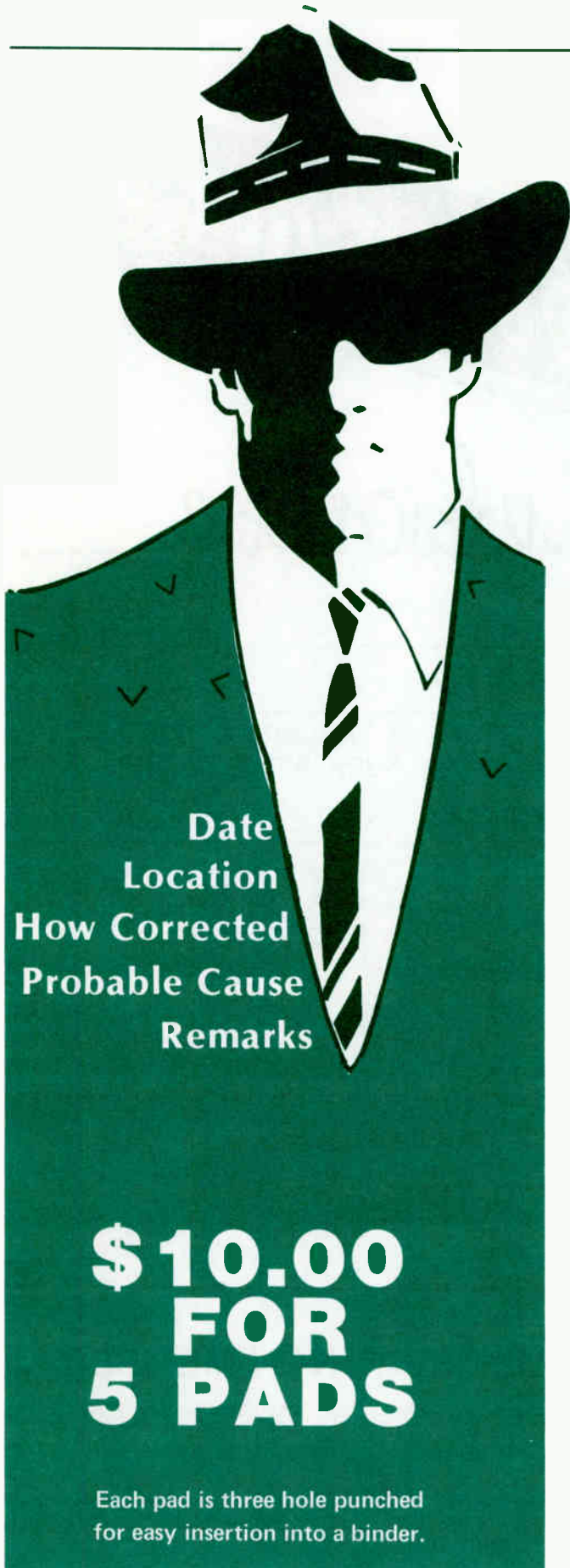
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- (Must Furnish System Name)
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Detection and Correction

SIGNAL LEAKAGE LOG

This Signal Leakage Log satisfies the requirements of the FCC Rules and Regulations, Part 76, Subpart K, Paragraph 76.610(d). Although the log is intended for recording cable television signal leakages in the Aeronautical frequency bands (108-136 MHz and 225-400 MHz), it may be used by cable system operators to record all system signal leaks and insure an effective on-going signal leakage detection and correction program.

When using this log for recording signal leakage in the Aeronautical Frequency Bands, the log sheet must remain in the file for a minimum of two years.

NAME _____
 COMPANY _____
 CITY _____
 STATE _____ ZIP _____
 QUANTITY (SETS OF 5) _____
 AMOUNT ENCLOSED _____

* Check must be enclosed with order

Community Antenna Television Assoc.



4209 N.W. 23rd, Suite 106
Okla. City, Okla. 73107

A Comprehensive Approach

By Glyn Bostick
 Microwave Filter Company, Inc.

PHASE CANCELLING WIDEBAND INTERFERENCE

Last Time

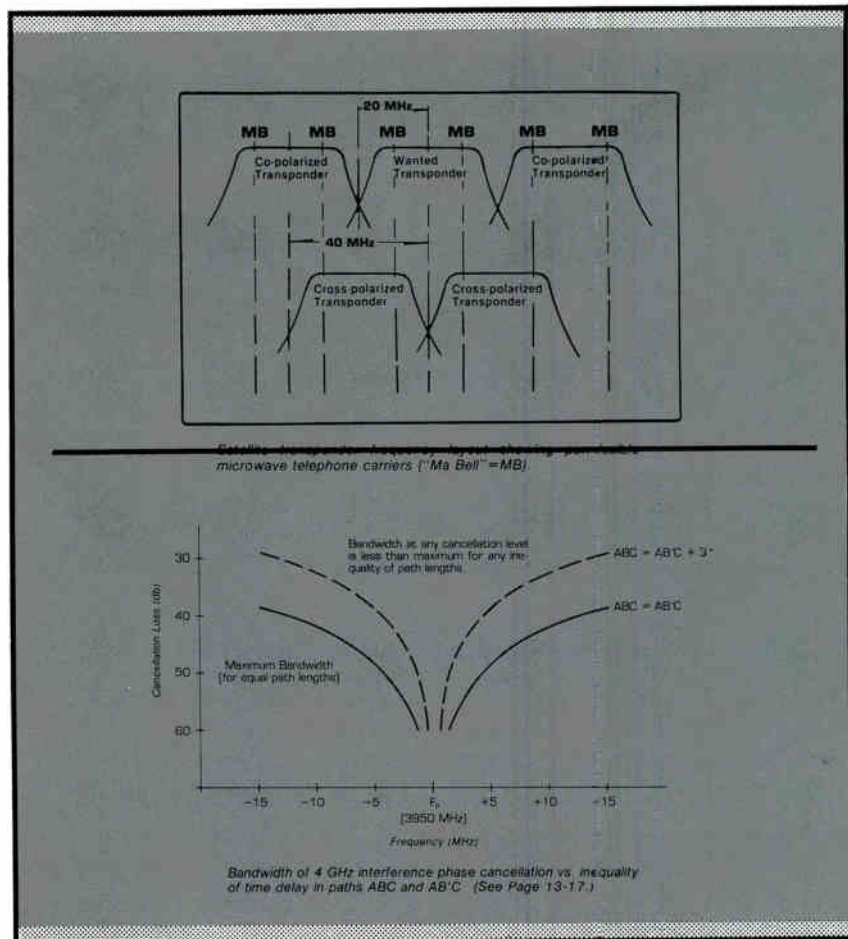
We discussed methods for shielding the antenna site with blocking screens. Where technically and economically feasible, this approach is superior to putting filters in the system: all frequencies are blocked with one device versus applying a separate filter to each undesired carrier.

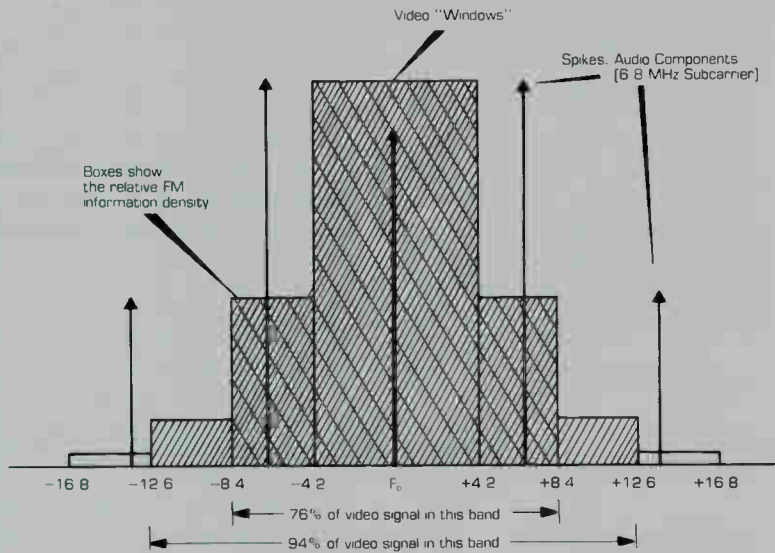
This Time

We discuss suppression of the wideband interfering carriers which cannot be trapped out without destroying much of the desired information within the bandwidth of the desired transponder.

This method may also be applied to the usual narrowband interference carrier, in preference to filtering, to produce better quality reception: little or none of the desired information is trapped out in the process of removing the interference.

We covered this method in principle in an earlier issue (CATJ, March, 1982). Since that time, my colleagues and I have been perfecting the system in the field and have some hard data for you — especially as to its effectiveness in suppressing interference over wide bands.

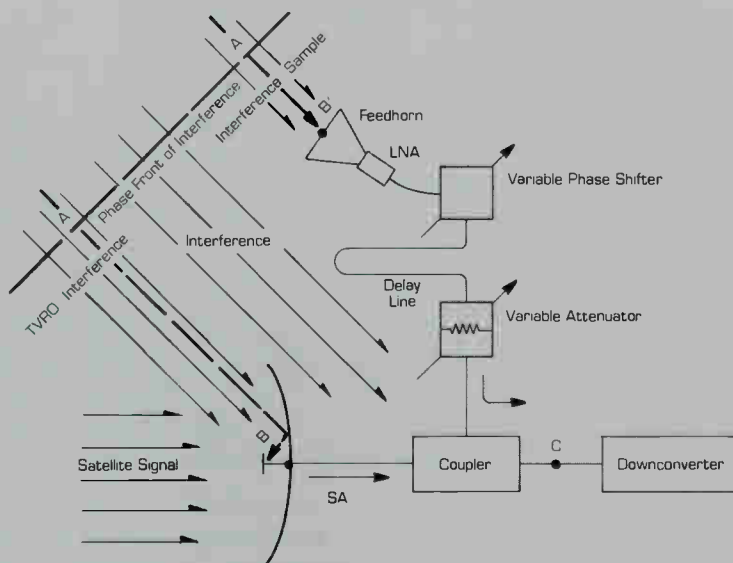




Spectral layout for satellite TV FM signal. The 40 MHz transponder bandwidth contains the FM TVRO signal, but the signal energy is not evenly distributed across the band. About 94% of the video signal energy is contained within a 25.2 MHz band and about 76% is contained within a 16.8 MHz band.

Note that the region around ± 10 MHz is relatively low in information content. For this reason, narrow traps can be used to remove TI. The traps must be narrow to preserve the nearby information rich regions.

When the offending TI energy is located within the information rich region (wideband TI such as digital data, video feeds, out-of-band spurious, etc.), a trap to remove it would also disrupt the desired signal. Therefore, a different approach must be considered.



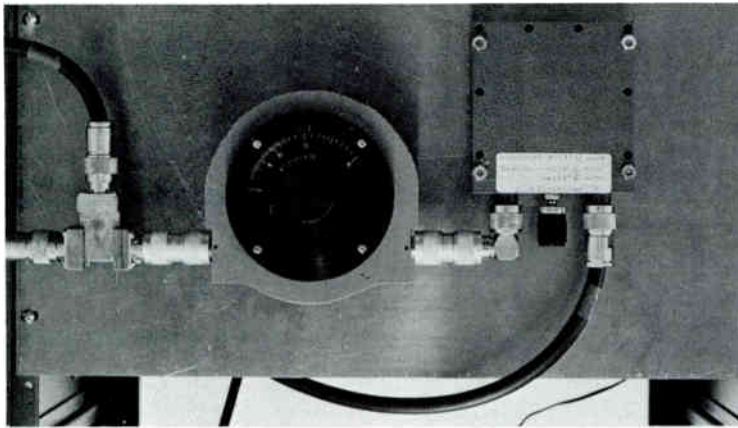
Schematic of a TVRO system with a microwave interference phase canceller in place.



Microwave interference phase canceller attached to a TVRO system. The standard gain feed horn (with LNA) is pointed directly at the microwave interference.

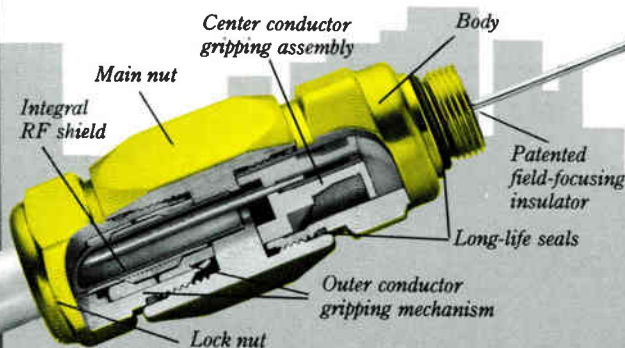
Interfering carriers: "Narrow" and "Wide"

The 4 GHz interference carriers ("Ma Bells" or MB, for short) appear at the common bandedge of two adjacent transponders. The most common format is FM with 3-5 MHz deviation bandwidth. Depending on their level (relative to the received satellite signal) IF traps (between downconverter and the receiver) or Microwave traps (between the LNA and downconverter) are effective suppressors. Although traps also remove some of the desired information, damage is slight since information density at +10 MHz or -10 MHz (the position of the interfering carriers) is low.



Phase cancellation control panel, showing adjustable attenuator, phase shifter and two-way power divider, used to combine the TVRO and canceller circuit outputs.

Superior signal integrity, no added cost. Armex connectors.



Armex CATV FIVE pin type connectors feature a patented field focusing insulator that assures **42 dB minimum structural return loss from 0 to 500 MHz**, a 20% improvement over most other designs. Result: less signal amplification will be required for a given length of cable run.

For information on the full line of advanced Armex Cable Connectors, write: Armex Cable Corporation, 2700 E. Nine Mile Road, Warren, MI 48091, or call (313) 755-2030.

ARMEX CABLE-TV
HARDWARE 

Wideband carriers, such as for digital data, video feeds, etc., while in the minority, are becoming more and more common. In some cases, the interference bandwidth approaches 20 MHz and obviously cannot be trapped out without removing a substantial amount of the desired information in the transponder bandwidth. Among the defenses discussed thus far, only the blocking screen is an effective counter to wide band carriers — if feasible under the circumstances, they simply prevent the interference from reaching the TVRO.

Microwave Phase Cancellation

The phase cancellation method is illustrated in the schematic diagram. In principle, it is the same method used in CATV systems for eliminating co-channel interference. The system components (test antenna, phase shifter and variable attenuator) must now be suitable for microwave frequency: 3.7 - 4.2 GHz.

The reader can build confidence that the cancellation technique will work for the TVRO by noting that the CATV co-channel is **precisely** the same problem as wide-band microwave interference within the desired transponder band. In co-channel, two channels of the **same** allocation are competing for reception and we want to "phase out" the undesired one.

Field trials of the microwave phase cancelling method have shown that it is easy to obtain at least 20 db of cancellation of the interference over 20 MHz bandwidth. It is theoretically possible to obtain 40 db of cancellation over a 20 MHz band but this requires patient attention to detail, particularly equality of time delay in the two paths. For the typical case, where the method is applied carefully, about 30 db of cancellation can be expected.

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Complete System Monitoring/Control

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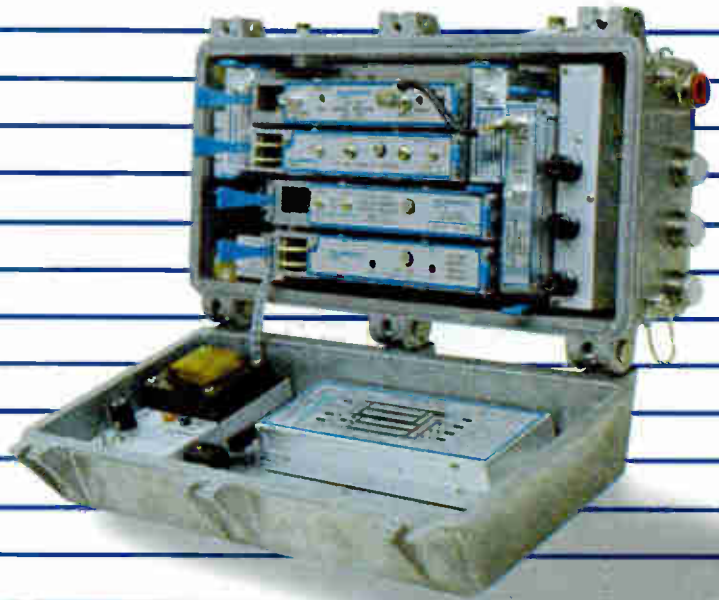
Variety of Split Bandwidths

Interchangeable Plug-in Modules Optimize

Performance/Cost Trade-offs

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Terminating or Intermediate Bridging



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Multipurpose and Trunk/Bridging Amplifiers

550 MHz Distribution Equipment

Standby Power Supplies

Vital Signs Status Monitoring

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Sweep Systems

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Character Generators



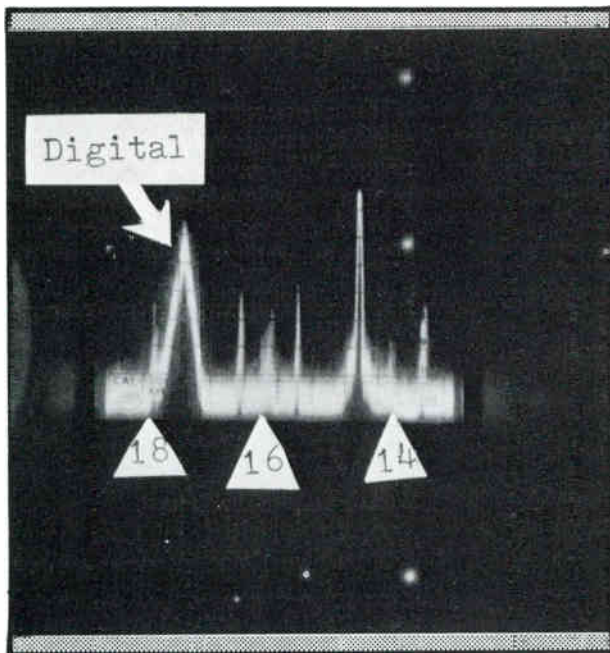
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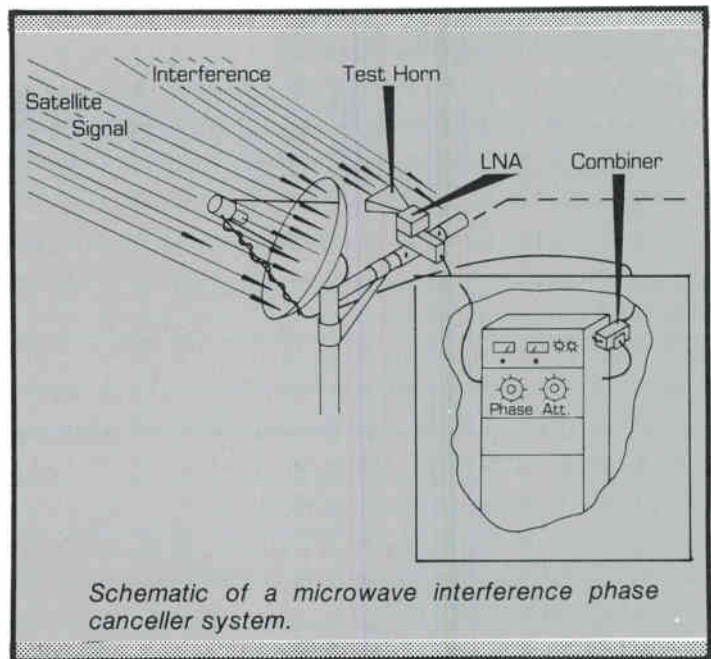
Texscan El Paso Division, 1440 Goodyear Drive, El Paso, Texas 79936, (915) 594-3555

Texscan Theta-Com CATV, 2960 Grand Avenue, Phoenix, Arizona 85017, (602) 252-5021 • Texscan Instruments, 3169 North Shadeland Avenue, Indianapolis, Indiana 46226, (317) 545-4196 • Texscan Compuvid, 3678 West 2150 South, Unit 2, Salt Lake City, Utah 84120, (801) 974-5380 • Texscan GMBH Peschelanger 11, D8000 Munchen 83, Munich, West Germany, 089-6701048 • Texscan Instruments Limited, One Northbridge Road, Berkhamsted, Hertfordshire, England UK, 04427 71138 • In Canada: Toronto (416) 674-1525; Montreal (514) 335-0152

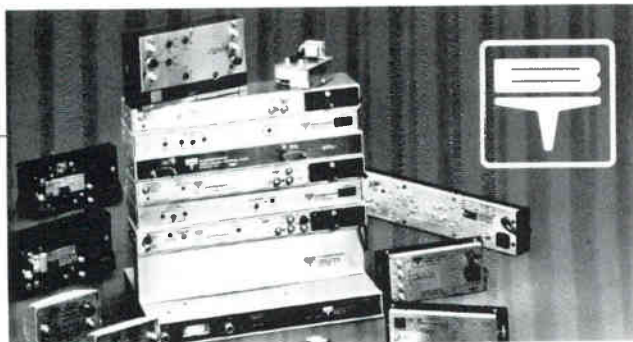
WorldRadioHistory



Spectrum photo of a sector of the TVRO band. Satellite signals for transponders 14, 16, 18 are labelled. A wide band, digital carrier is also labelled. The 3 additional spikes are narrow band "Ma Bells".



Schematic of a microwave interference phase canceller system.



Look to us for high quality B-T no-wait CATV equipment.

We have it in stock for immediate delivery. Or pick-up.

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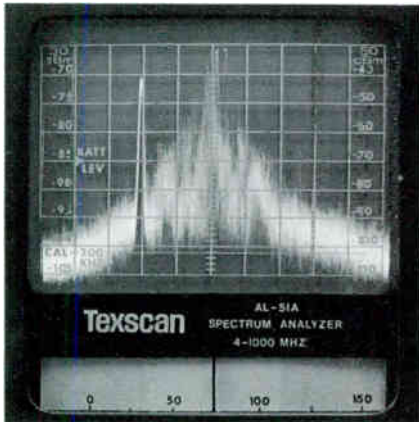
(501) 793-3816

Economics

Compared to filters and screens, the price tag for the phase canceller is expensive. The major cost is component price for the antenna, LNA, microwave phase shifter and microwave variable attenuator. Using published microwave component catalogs as a guide, it is estimated that a set of parts would cost about \$1500. Add to this the cost of miscellaneous material such as cables and connectors and the labor necessary to install and adjust the system, the real cost might be about \$2500. This compares with about \$500 for a screen, if feasible on the site, about \$200 for a pair of IF traps or about \$600 for a typical microwave trap which would block 3 to 6 carriers at the downconverter.

To add to the cost of this method, a separate system (Antenna, LNA, phase shifter, attenuator, coupler) is needed for each separate interfering carrier. Therefore, the cancellation method should be considered only where the channel has strategic CATV importance (key or pay channel) and cannot be abandoned, and has wide-band interference which cannot be screened out.

It is also becoming attractive to broadcasters because the suppression



Spectrum Signal (center) and a narrow band interference carrier (10 MHz to left of center) are shown at 1F.

does not remove any of the transponder spectrum, as does the system filters. Hence the effects of the interference can be almost totally removed to restore reception to highest quality.

An additional application is the removal of harmonic transmission. Third harmonic transmissions are sometimes received from airport radar or other equipment operating in the 1.2 - 1.4 GHz band. Their third harmonic transmissions are not coherent with the TVRO band and therefore may land in the center of a transponder channel where desired information is dense. Under these circumstances, traps (microwave or IF) are not feasible. Phase cancellation can remove this type interference and restore good quality.

Component Specifications

A previous installment on this method (CATJ, March, 1982) gave a list of suggested components. Let's bring this up to date by listing specific components the writer's associates have used to make this system work in the field:

Antenna

A pyramidal, standard gain horn (15-20 dbi) has been found suitable. It should terminate in a WR229 waveguide flange for direct connection with a standard LNA. Several manufacturers make standard gain horns, but few make one for the 3.7 - 4.2 GHz range with the CPR229 waveguide flange. Among those who do:

WAVELINE INC.
160 Passiac
Fairfield, NJ 07006
(201-226-9100)

MICROWAVE FILTER COMPANY
6743 Kinne Street
East Syracuse, NY 13057
(315-437-3953)

LNA

Any standard LNA should do. Our team has good luck with the California Amplifier 30 db gain C-band LNA.

Directional Coupler

This should be coaxial coupler (type N) with a coupling factor of about 10 db and directivity of about 20 db. Suitable models can be found at: NARDA MICROWAVE — 516-433-9000
MICROLAB — 201-992-7700

Variable Attenuator

This should have type N connectors and be suitable for the 3.7 - 4.2 GHz range. It should be changeable over at least a 30 db range. A unit found suitable for this application is ARRA model #4674-40N. (Telephone number 516-334-8770).

Phase Shifter

This should have type N connectors and have at least 360 degrees of phase change at 3.7 GHz. Our field team uses SAGE LABS model #6506. (Telephone number 617-653-0844).

Next Time

THIS CONCLUDES THE FILTERED EARTH STATION SERIES.

Hope it helped. Next time we will return to the CATV TECH's FILTER COOKBOOK and discuss filtering techniques you can use in conjunction with your system's efforts to increase "outside sales" to multi-tenant hook ups — motels, hotels, apartment complexes, hospitals, etc.

Acknowledgement

Thanks go to Carol Ryan, for again making order out of deadline chaos, Ron Mohar for the photo of the wide band interference carrier, and to Dave Skeval and Steve McIntosh for some quick photo processing to meet this issue.

NOTE:

Some of the above material was condensed from the ASTI HANDBOOK for Avoidance/Suppression of TI by The MICROFILCO PRESS a division of Microwave Filter Company, Inc. □



GATV EMERGENCY ALERT SYSTEMS

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Model 3000R-71

- Security Access
- Local Control
- FCC Registered Coupler

Several different Override Systems are available.



Model 3000P-9 PROGRAM TIMER

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SWEEPING YOUR SYSTEM SHOULD SOLVE PROBLEMS, NOT CREATE THEM

Now you can sweep your system without interfering with your data or video

If you are running any kind of data on your cable system—for addressable converter or institutional network applications—it could be in danger of interference from high-level sweep systems. Only the patented AVANTEK low-level sweep system can monitor your entire operation without taking a bite out of your bytes. It won't disrupt your digits, or violate your video.

The low-level test signal is non-interfering, with the response displayed on the portable track-

ing receiver. There's nothing to it—at least as far as the video and data signals are concerned.

Split frequency systems need two pilots

If your data is being transmitted on cable bi-directionally, the new AVANTEK MC200 Split Pilot Converter is a natural extension of the sweep tester. It allows easy selection of different pilot frequencies so you can test in both directions.

If your cable system is seeing digits, you should be seeing your nearest Avantek representative. Call today.

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CO-OP

MARKETING

FOR 1984

In 1984, HBO will be presenting a blockbuster programming lineup and backing it up with the strongest marketing support yet. HBO is taking a major step by offering every affiliate marketing funds that will expand their existing basic subscriber base, and supplement that expansion with increased pay sales.

The HBO/Cinemax™ national co-op promotions for 1984 include eight proven promotions. Four programs are designed specifically to increase your basic penetration and four others are designed to generate new pay sales.

Your System Is the Winner

Any way you look at it, these HBO/Cinemax co-op promotions are bound to make your system a winner. Each of these proven programs is offered at different times of the year to ensure maximum flexibility, and each comes with free sales incentives for your staff and free retention materials for your new subscribers. And to make these programs as cost-efficient and trouble-free for your system as possible, HBO pays from 40% to 70% of the cost of each promotion and administers every one from start to finish.

For Your Homes-Passed Promotions

■ **The Check Offer** is a direct mail promotion, customized to your system, that features three checks good for discounts on installation of basic and HBO (plus Cinemax, if offered) and for the third month of service. Because of their high perceived value, these personalized checks are an effective tactic to get the most price-resistance nonsubscribers into an economical level of cable and pay. New subscribers can be upgraded to additional pay services at a later time.

■ **The Total Package Direct Mail** promotion employs research findings to educate and inform the potential subscriber and overcome the most common misperceptions of and objections to cable TV. It includes a colorful brochure explaining the benefits of your cable service — convenience, value, variety

The HBO/Cinemax co-op promotions will help you build your subscriber base and follow through with new pay sales.

and quality — as well as a buyer's guide that answers commonly asked questions about cable. This package can be customized to promote all your basic and pay services or specific packages.

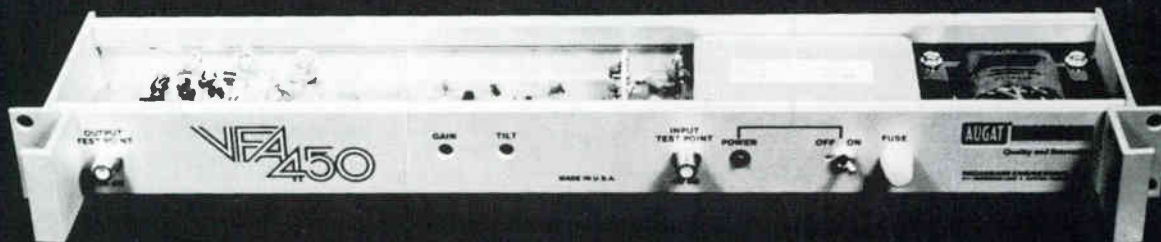
■ **The Door-to-Door Direct Sales** promotion employs two surefire tactical approaches to help open

Each of the HBO/Cinemax co-op promotions is offered at different times of the year to ensure flexibility.

doors and motivate your direct sales force: a high-value *consumer sweepstakes*; and an employee *sales incentive program for your sales reps*. You also receive free retention materials for your system.

■ **The Direct Response TV** promotion uses hard-hitting 60- and 90-second commercials to sell your system's cable offerings. Four satisfied subscribers explain how cable has enriched their lives. And each ad also features a discount on installation and a premium offer. An around-the-clock 800-number forwards responses to your system. ►

Looking for a 450 MHz rack-mounted head-end amp? Need a 450 MHz instrumentation amp?



With Broadband's VFA-450 you get both.

Broadband's new VFA-450 is a rack-mountable, wideband amplifier designed to help you in several ways:

As a two-way head-end amplifier: You can use it in your system's head-end to buffer your head-end equipment. At the same time it can provide for sweep or other signal injection and recovery of return signals in sub-, mid-, or high-split trunk systems.

As a one-way head-end amplifier: By simply removing the plug-in filter or terminating the return recovery port, you can convert the VFA-450 to one-way operation.

As an instrumentation amplifier: The VFA-450 is perfect for sweep systems, bench-test situations and field sweep applications. For field sweep use it can be powered by 24 to 30 volts DC.

The unit is available in any gain from 20 to 40 dB. Higher gain versions are suitable for use in distribution systems where rack-mounting is called for.

Broadband-engineered and guaranteed, the VFA-450 is equipped with push-pull hybrid circuitry to deliver maximum output with minimum distortion. Tough and dependable, it offers state-of-the-art performance and flexibility.

For additional information on specifications or pricing, call us toll-free at 800-327-6690, or write Broadband Engineering, Inc., P.O. Box 1247, Jupiter, Florida 33468.

Features

- Forward bandwidth to 450 MHz.
- 20 to 40 dB gain.
- Push-pull hybrid circuitry.
- Sub-, mid- and high-split capability through use of plug-in diplex filter at output.
- Capable of full channel loading at design bandwidth.
- Plug-in pads and equalizers.
- Variable gain & slope controls.
- -20 dB test points at input and output.
- Response equalization for flatness adjustment.
- -12 dB directional coupler for insertion of sweep or other signals at the output.
- 120 volt AC or 24/30 volt DC powering. DC powering may be connected permanently as standby power in case of AC power failure.
- ± 2 dB flatness.
- Return loss 18 dB minimum.
- Three levels of surge protection.

Distributor inquiries are invited.

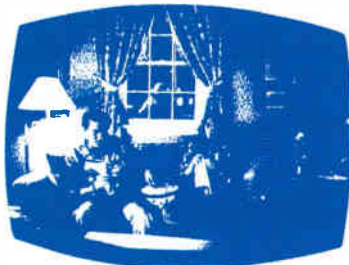
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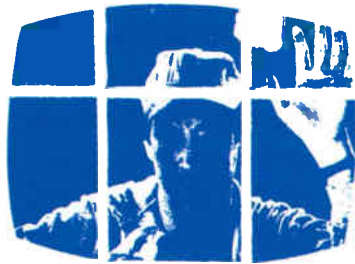
Quality and Innovation



Voiceover: Why is Charlie watching Home Box Office the hard way?



Voiceover: Maybe he thinks he can't afford HBO's first-run, first-rate entertainment.



Voiceover: If only Charlie knew about our money-saving, free-gift offer.



Voiceover: Then he could enjoy movies like *The Verdict*, *An Officer and a Gentleman* and more, uncut and uninterrupted by commercials.



Voiceover: Plus exclusive HBOOnlys™ movies now showing nationwide on HBO and on no other national pay cable TV service like *Sophie's Choice*.



Voiceover: And Charlie could enjoy all these programs in the comfort of his own home, 24 hours a day.

Wife: Honey, it's Charlie!



Husband: Charlie, you should join the 11 million people who have HBO in their own homes for just pennies a program. All it takes is a phone call.



Husband: It's a lot easier, Charlie. Here's the number to call.

Upgrade Promotions

■ The **Preview** can help turn your basic-only viewers into HBO and Cinemax subscribers by giving them a "free sample" of what they're missing. The HBO and Cinemax Previews come with everything you need to publicize them, including tailored direct mail and retention materials. And both are offered twice a year.

■ The **Check Offer** direct mail promotion, mentioned earlier, can also be tailored to offer checks good for a discount on HBO and/or Cinemax installation and increase pay penetration among price-conscious subs. Checks good for a discount on the third month of cable help minimize downgrades during that critical period of service.

■ The **Direct Response TV** promotion, designed to encourage your current cable subs to sign up for HBO or Cinemax, delivers a sales message via 60- and 90-second commercials. Designed to run on basic cable avails and L/O channels, these ads feature a discount on HBO or Cinemax installation and a free premium. Your system's telephone number is prominently displayed.

HBO pays from 40% to 70% of the cost of every promotion.

■ The **Special Events Programming** promotions offer your system an opportunity to capitalize on HBO's star-tudded exclusive programs. Four times in 1984, HBO will stage co-op acquisition promotions wrapped around outstanding special events like last year's *Kenny Rogers Live In Concert* simulcast. You'll receive details of each promotion approximately eight weeks in advance.

So, if you'd like to build your subscriber base and follow through with new pay sales, contact your HBO Regional Representative for detailed information. With the HBO/Cinemax co-op promotions backing your system, 1984 will be your biggest sign-up year ever! □

HBO/Cinemax Co-op Structure for 1984 Promotions

NON-CABLED HOMES PASSED

CO-OP PROMOTION	HBO'S CONTRIBUTION	AFFILIATES' CONTRIBUTION
Check Offer Direct Mail	<ul style="list-style-type: none"> ■ 35¢ direct mail ■ \$5 third mo. discount per new sub (retention cost) ■ Sales incentives at system level 	<ul style="list-style-type: none"> ■ 15¢ direct mail ■ \$5 third mo. discount per new sub (retention cost)
Total Package Direct Mail	<ul style="list-style-type: none"> ■ 20¢ direct mail ■ \$1.50 premium per new sub ■ Free retention ■ Sales incentives at system level 	<ul style="list-style-type: none"> ■ 20¢ direct mail ■ \$1.50 premium per new sub
Door-to-Door Direct Sales	<ul style="list-style-type: none"> ■ 10¢ per home canvassed for sales rep incentive ■ National Sweepstakes (2 @\$50M each) ■ Free retention 	<ul style="list-style-type: none"> ■ 10¢ per home canvassed for postcard
Direct Response TV	<ul style="list-style-type: none"> ■ 50% media ■ \$2 premium ■ 800# charges ■ Free retention ■ Sales incentives at system level 	<ul style="list-style-type: none"> ■ 50% media ■ \$2 premium

UPGRADE

CO-OP PROMOTION	HBO'S CONTRIBUTION	AFFILIATES' CONTRIBUTION
The Preview	<ul style="list-style-type: none"> ■ 20¢ direct mail ■ All other program costs—(800#, bill stuffers, ad kits, radio and TV spots) ■ Free retention 	<ul style="list-style-type: none"> ■ 35¢ per home telemarketing and/or equiv. media costs
Check Offer Direct Mail	<ul style="list-style-type: none"> ■ 35¢ direct mail ■ \$5 third mo. discount per new sub ■ Sales incentives at system level 	<ul style="list-style-type: none"> ■ 15¢ direct mail ■ \$5 third mo. discount per new sub (retention cost)
Direct Response TV	<ul style="list-style-type: none"> ■ \$2 premium ■ Free commercial ■ 800# charges ■ Free retention ■ 50% media (if aired on broadcast) 	<ul style="list-style-type: none"> ■ \$2 premium ■ 50% media (if aired on broadcast)
Co-op Support of Special Programming Events	<ul style="list-style-type: none"> ■ 50% media ■ 50% consumer offer ■ Free retention ■ Sales incentives at system level 	<ul style="list-style-type: none"> ■ 50% media ■ 50% consumer offer

TECHNICAL SUPPORT
FOR OPERATORS:

A Cornerstone of Showtime/The Movie Channel Inc.'s Philosophy

In the cable television industry, which tends to glorify the most visible personalities, the work of the engineer often goes unnoticed. In this environment, however, a group of dedicated engineers at SHOWTIME/THE MOVIE CHANNEL Inc. has distinguished itself. On call 24 hours a day to assist cable systems in trouble, they have earned an industry-wide reputation for consistently going above and beyond the call of duty.

The group consists of three regionally based field engineers — Mike Aloisi in the East, Lynn Watson in the Central states, and Bob Vogel in the West — and is unique within the pay tv programming world. SHOWTIME/THE MOVIE CHANNEL Inc. boasts the only regionally-based technical support service in the industry.

The engineers assist systems with problems in system security, telethons, launches, low pay penetration, TVRO and signal distribution. At times, they also expedite the delivery of critical equipment through close contact with manufacturers; arrange for bulk rates on equipment and services for affiliates; arrange the loan of equipment from one operator to another; rent character generators, modulators, and receivers to affiliates; aid systems during severe weather situations; and advise on sun outages.

According to Stephan Schulte, Vice President of Operations and Production Services for SHOWTIME/THE MOVIE CHANNEL Inc., and the man to whom all three report, "Because the



Standing: Mike Aloisi, Eastern Zone; Lynn Watson, Central Zone.

Seated: Bob Vogel, Western Zone; Stephan W. Schulte, Vice President, Operations and Production Services.

engineers are regionally based, rather than corporately based out of New York headquarters, they are very familiar with, and accessible to, the affiliates in their regions. To us, this is a highly important aspect of the program."

The engineers will assist any affiliate in their region, but because of the large engineering staffs employed by most MSO's, they more frequently service the smaller, independent systems. Says Schulte, "The smaller systems might have the technical knowledge, but perhaps not the means to acquire test equipment or consulting services. SHOWTIME/THE MOVIE CHANNEL Inc. offers these services free, and that is a real asset for the operators."

Watson, Vogel, and Aloisi, who at various times describe themselves as technical consultants, engineers, marketers, public relations men, hand-holders, and savers-of-the-day, are officially titled, "managers of engineering services."

In Schulte's words, they are "repositories of information." The engineers attend all cable conventions to see the latest technological innovations first-hand. Based on what they learn, they can continually make informed recommendations concerning equipment and procedures. This is especially important to the non-MSO affiliates, who are often unable to attend industry gatherings.

All three engineers are outfitted with sophisticated, portable test equipment, for use on "troubleshooting" visits to affiliates. The equipment helps solve difficult headend and distribution problems, among others. Says Schulte, "This is an important resource for the cable operator. Test equipment is expensive, and certain problems cannot be properly solved without it. We help provide a solution."

SHOWTIME/THE MOVIE CHANNEL's program of engineering support also extends back to New York headquarters. At an Engineering Test Lab on the

premises, a full-time project engineer tests and evaluates security equipment and subscriber terminals for affiliates.

Technical Information Bulletins are written every month by the engineers. In the form of single-page flyers, they are included in SHOWTIME/THE MOVIE CHANNEL's monthly affiliate mailings. Topics have included: closed captioning distribution, "bird in the box," earth station monitoring protection, stereo synthesis, and sun outages. Says

specific services it offered the operator, and included a Technical Profile, to be filled out by the affiliate and returned to SHOWTIME. All Technical Profiles were then entered into a computerized data base at SHOWTIME headquarters, to be instantly accessed by the engineers when advising affiliates on referendums or equipment changes. (The computerized information is kept continually up-to-date, with each new SHOWTIME, and now THE MOVIE CHANNEL, affiliate filling out a Profile prior to launch.)

found a freight company in Hawaii that would send a boat to retrieve the dish." After the dish was picked up in Atlanta, the boat returned to Kauai by way of the Panama Canal, Los Angeles, and Honolulu. Kauai Cable TV received it in four weeks, rather than the usual two to three month wait.

Vogel went to Hawaii in person, visiting all three affiliates on Kauai. "I had never seen damage like that before," Vogel recalls. "I helped wherever I could, and worked with the systems to get the situation back under control."

Vogel was helpful in another interesting situation. A hearing impaired subscriber in California, aware that SHOWTIME closed-captioned some of its programming, sent a letter to the network's headquarters inquiring why he could not receive his closed captioning. The letter was forwarded to Bob Vogel, who visited the system to investigate the problem.

"I examined the headend, and realized that in the scrambling process, the closed captioning was being lost," said Vogel. He went to the manufacturer of the scrambling equipment, and advised them that there was a problem with their product. According to Vogel, the manufacturer is currently developing new equipment that will not delete the closed captioning.

"When the new equipment is implemented in a couple of systems," said Vogel, "we will evaluate it and make recommendations to all affiliates currently using the old scrambler."

Mike Aloisi, in the East, has been involved in many launches and telethons, and along the way has actually built three local origination studios: laying out the plans, ordering the equipment, interfacing the studio with the cable system, and finally training the system's staff to run the studio.

He related one case in which time was of the essence. "One of our affiliates planned to conduct a SHOWTIME telethon the day after the 1982 NCTA convention, and they needed an LO studio. I flew directly from Las Vegas, where the convention was being held, to

SHOWTIME

Lynn Watson, "The bulletins deal with technical considerations for the delivery of our signal, and we know they are useful to operators."

SHOWTIME/THE MOVIE CHANNEL Inc. also provides a hotline at its Vernon Valley RCA uplink facility. "Any affiliate who senses a problem," says Bob Vogel, "is encouraged to call."

The regional engineering program, which launched officially in March 1982, actually began in 1978 when SHOWTIME first went on the satellite. As Schulte recalls, "At the time, many of us who were new to the industry sensed a technical void, which needed filling, at many cable systems around the country. Cable was just too young to have at its disposal all the needed technical expertise regarding satellite transmission.

"At first it was a concept," Schulte explained. "Then we began doing certain things for affiliates, such as negotiating bulk agreements with earth station manufacturers. With the help of Bill Riker, who is now Director of Engineering for the NCTA, we hired our regional engineers, and by March 1982 we were on our way to providing a real support program to our affiliates."

It formally began with a mailing to all SHOWTIME affiliates around the country. The mailer described the new program, outlined the

Today, it's the people that make the program really work. Watson, Vogel and Aloisi all have strong technical backgrounds, and all have earned their stripes on the cable system side of the business. Their hands-on experience with cable system engineering, they believe, was a vital prerequisite to the work they do now. They believe also that the individual situations they have dealt with as regional engineers best illustrate the nature of their jobs.

Bob Vogel feels his experience with Hurricane Ewa is a good example of his role as a troubleshooter. He recalls, "When Hurricane Ewa struck Hawaii last fall, our three affiliates on the island of Kauai were hit very hard. I called to see if they needed assistance, and learned that one affiliate in particular, Kauai Cable TV, had been severely affected. Their dish had been rendered completely unusable by the storm, and there was no chance of repair."

Vogel became part of a team effort to locate a new dish and expedite its shipment to Hawaii. The only manufacturer who had one ready for shipment was Scientific Atlanta. The question became one of logistics: how to get the dish to Kauai as soon as possible?

"We investigated various options," said Vogel, "and finally

SHOWTIME E SUP

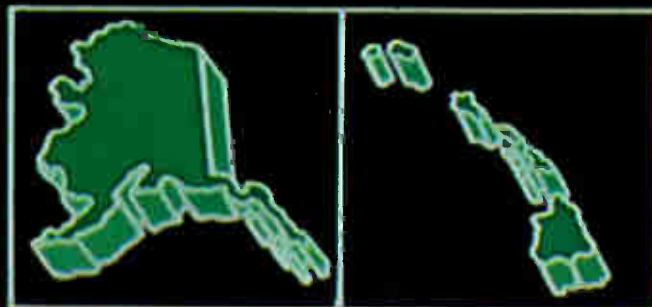


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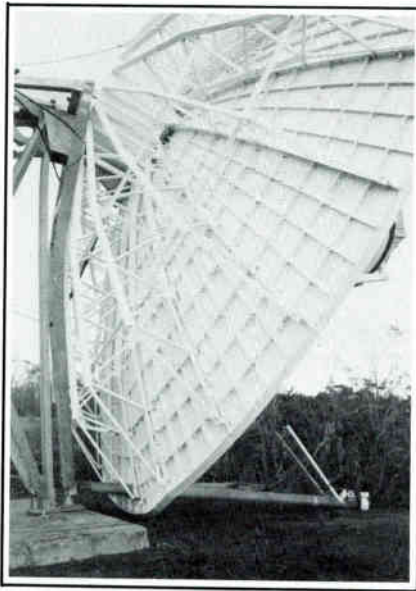
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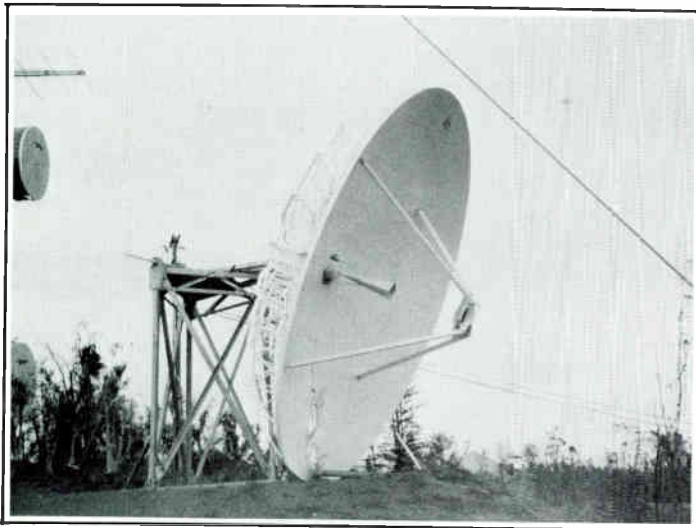
Mississippi, where the system was located, and we began to put the studio together. We completed it in one day, and the following day, we did the telethon." Aloisi said that when he left he felt confident the staff could run the studio on its own.

"Many systems," said Aloisi, "hire outside video companies to produce their telethons. These outfits usually have little knowledge of cable system distribution, and too often the end result is an expensive telethon of relatively poor quality. We're very glad when affiliates call on us to assist. It helps assure a better quality telethon, and helps avoid last-minute panic situations."

Lynn Watson, who was recently appointed Associate Director of CATA, has dealt extensively with



Earth station dish after Hurricane Ewa. Note mounting bolt through dish and bend of rear support struts.



Ten meter earth station dish after Hurricane Ewa, Kauai Cable TV, Lihue, Kauai, Hawaii 12/10/1982

problems of system security. He says, "With the advent of multi-pay, the prime question for many affiliates has been how to secure multiple pay services from subscriber theft."

Watson, as well as the other engineers, will analyze a system, taking into account all factors which make it unique: addressability, size, economic feasibility. They will then assist the system in developing an effective anti-theft program. According to Watson, they also conduct electronic auditing, and advise systems about current laws concerning theft of service.

"I believe," said Watson, "that our regional engineering group is unique because of the in-depth way in which we work with affiliates. Our concern doesn't end with uplink and downlink problems. We go into cable systems, analyze their security systems, build studios, help them run telethons. We even answer the phone at cable stores!"

"I think of myself as part technical consultant, part public relations man, part marketer," said Watson.

Jack Heim, SHOWTIME/THE MOVIE CHANNEL Inc.'s Vice President of Sales and Affiliate Management, agrees. "There are times," Heim said, "when the closing of a sale hinges on technical considerations — questions concerning the delivery and security of our signal. The regional engineers will visit a system and work with the technical personnel to resolve any questions or problems they might have."

According to Heim, "The regional engineers have been very instrumental in concluding certain agreements."

Of the regional engineering program as a whole, Stephan Schulte says, "Our affiliates are just that — our affiliates — and it is important to provide them with the best possible support services. As an industry, we tend to focus heavily on marketing support, but there are other areas which are equally as critical. Our team offers essential technical support to a great number of affiliates. I'm very proud of them and the work they do." □

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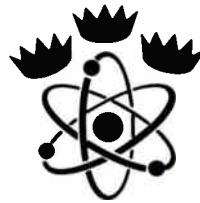
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If you want the most cost-effective, high quality television reception and distribution equipment available, without the unnecessary bells and whistles, call us first ... because we are!



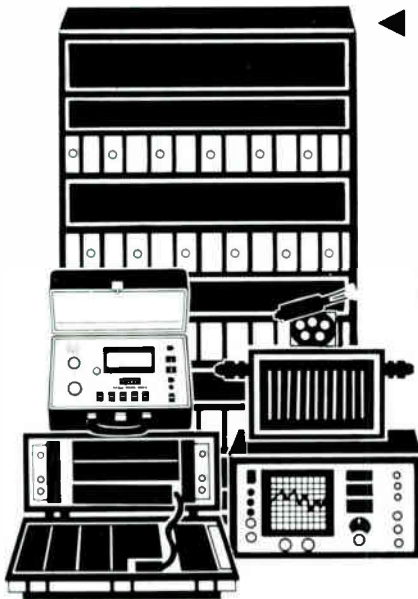
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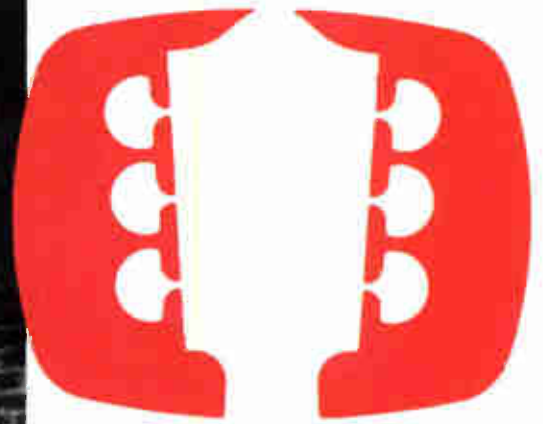
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**THE NASHVILLE
NETWORKSM**

OPERATORS:

**“The Promotion
of the Year”
Contest**

The Nashville Network (TNN) has launched “The Promotion of the Year” contest, a major opportunity for operators to compete for \$8,000 in cash prizes. The contest is open to all TNN affiliates who submit their TNN promotional packages for judging by December 31, 1983.

The contest, conceived by Group W Satellite Communications, TNN’s marketing end, has been created for the more than 1238 TNN affiliate systems, offering a wonderful opportunity for TNN affiliates to show their successful efforts in increasing TNN awareness. Everything from down home

Photo Courtesy of The Nashville Network

country parties to telethons on broadcast stations have been done. The submissions to date have been unusually original and demonstrate the unlimited promotability of TNN. In addition, this program allows TNN the opportunity to share successful promotion ideas among affiliates.

All promotions will be judged on their creativity and the ability to achieve their objective; i.e. publicity, community good will, retention of service, and employee incentives.

The prizes for "The Promotion of the Year" are:

- 1st place - \$5,000
- 2nd place - \$2,000
- 3rd place - \$1,000

All promotions submitted should include details of the promotion as well as any advertising campaigns, press kits, or collateral materials used. All promotions since the TNN launch qualify for "The Promotion

of The Year," and do not necessarily have to promote The Nashville Network exclusively.

All submissions should be sent to:
The Nashville Network
PROMOTION OF THE YEAR
Box 10210
Stamford, Connecticut 06904

So, cable operators, if you have executed an unusual promotion for TNN, get your materials together and submit the project as indicated above for competition in the **PROMOTION OF THE YEAR** contest — those nice cash prizes could be very helpful.

Selection of winners will be made around mid-January, and CATJ will carry a full report of the winners with information concerning their particular promotions that won them the coveted prize. Perhaps this report will give the cable operators some food for thought for next year's contest and they can begin to make their own plans for competition during 1984. THE NASHVILLE NETWORK has commented that the entire at the present time have included some very unusual and exciting promotions, and they are very pleased with what they've seen so far. This promotion is designed to assist the smaller operator who doesn't have access or inclination to advertising agencies to develop their promotions, and to encourage them to develop their original ideas. Look forward to reading the follow-up on this promotion contest as CATJ will detail the winners and their ideas. Cable operators can begin developing their own campaigns for 1984.

Remember, if you are going to participate in TNN's **PROMOTION CONTEST OF THE YEAR**, the deadline for submitting your entry is:

DECEMBER 31, 1983

For more information, contact Julie Minor, Director of TNN Promotions, at The Nashville Network, (203) 965-6225. □

TERRESTRIAL INTERFERENCE.



ASTI is the first complete professional handbook on the avoidance, diagnosis and suppression of microwave *terrestrial interference* (TI) at TVRO earth stations. This 250 page comprehensive volume was compiled by an engineering team headed by Glyn Bostick, President of Microwave Filter Company, with valuable input from many

industry leaders such as California Amplifier and Scientific Atlanta. The result of their effort is an in-depth exploration of such topics as equipment selection for minimizing TI susceptibility, use of natural and artificial shielding, system filtering, and many other cost effective techniques! Send this coupon now to receive our free brochure on ASTI, and get TI out of the picture!



BANISHED.



- YES!** Send me the Free brochure on the ASTI Handbook!
 YES! Send me the ASTI Handbook. My payment of \$125 is enclosed: Check Money Order
 Name _____ Phone _____
 Company Name _____
 Address _____
 City/State/Zip _____

Send to: CATJ Magazine,
4209 N.W. 23rd St., Suite 106, Oklahoma City, OK, 73107

EDITOR'S NOTE

ATTENTION ASSOCIATE MEMBERS:

Comments from the various vendors who have had material presented in the NEW PRODUCT REVIEW Section of CATJ have been most encouraging and complimentary, indicating a good response to the information on new products and/or services. CATJ encourages you Associate Members who have not yet taken advantage of this section to plan your material so that specifications and details concerning your new products can be highlighted in this section. Those companies who have used it have been very pleased with the sales leads derived from being in print here — take advantage of this offer. If you have information you would like to have featured in this NEW PRODUCT REVIEW section, contact Celeste Rule Nelson (405) 947-4717 to work out the details.

What's required? First you must be a current Associate Member of CATA to take advantage of this one-time presentation in this section. Next, the material must be submitted, complete with diagrams, photographs, graphs, etc. ready for duplication into our print style. This can be a very commercial approach, in fact, we urge that this material be a good SALES pitch for your company. The editorial staff will be happy to work with you in cooperation for certain dates or ad presentations and in combination with other editorial materials; consider this opportunity seriously and make the necessary phone calls to make the appropriate arrangements. You won't be sorry — this has worked very well for those companies previously presented and featured.

CATJ has had requests for CCOS information for coming years. For your convenience, listed below are the dates and locations for CCOS meetings for the next two years; information will soon be announced for 1986 and 1987 sites.

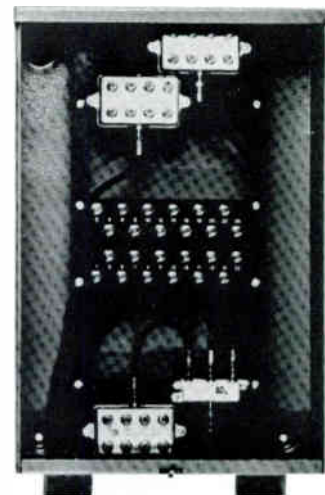
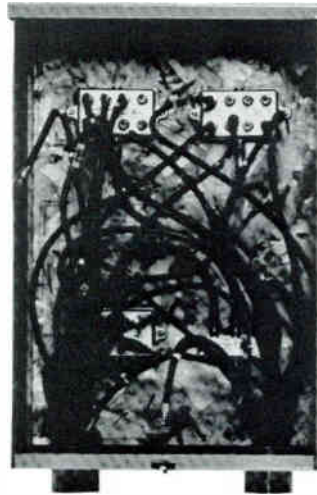
Travel arrangements for Osage Beach, Missouri, will be complete soon and details printed in CATJ as the registration opens.

CCOS 1984
July 15-19
Osage Beach, Missouri
Tan-Tar-A Resort

CCOS 1985
June 16-20
Nashville, Tennessee
Opryland Hotel

Exhibit space at CCOS is open only to Associate Members. Registration is available at lower rates for CATA members.

For Information Call Or Write
CATA, INC.
4209 N.W. 23, Suite 106
Oklahoma City, OK 73107
405/947-4717 □



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CWY created a way to make tangled, inefficient multiple dwelling enclosures orderly, secure and easy to service... the revolutionary new Omni-Rack™ system.

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Broadband Replacement Electronics are available for a wide range of CATV equipment

Our growing line of replacement electronics is designed to upgrade most of the more popular CATV trunk amplifiers, bridgers and line extenders produced over the past 15-20 years.

All Broadband replacement units are manufactured with the latest 300 and 400 MHz push-pull hybrids for state-of-the-art performance. In converting your modules from single-ended or discrete transistor push-pull to push-pull hybrid circuitry, you get immediate use of nine midband channels without respacing. You might also pick up additional superband channels, if your passives pass the higher frequencies.

Despite increased channel loading, a Broadband upgrade improves your system's performance specs. Noise figures are generally in the 6 to 8 dB range and gains run from 25 to 48 dB with excellent distortion characteristics. With the added reliability of hybrid circuitry, your system maintenance is reduced.

Replacement electronics are available in several configurations. For some equipment we manufacture a complete module that you simply plug into the old housing. For the

most part we offer half-and full-board modifications for installation in the original modules.

Installation is simple and quick. It can take anywhere from 30 minutes to an hour and a half per module and may be completed by your technicians or recycled through us for factory installation and alignment.

The full range of Broadband Replacement Electronics is summarized in the accompanying product listing. For additional information on specifications and pricing, call us toll-free (800-327-6690).

Features:

- Push-pull hybrid circuitry.
- 300 & 400 MHz bandwidths.
- 35 & 54-channel capacities.
- Performance equalling new amplifiers.
- Excellent surge protection & heat transfer.
- Proven design concepts.
- Reduced component count for increased reliability.
- Highest quality components, readily available.
- Double-sided fiberglass circuit boards.
- Ease of installation.
- High cost effectiveness.

Installation: As easy as plugging in a spare module

Upgrading your system with Broadband Replacement Electronics is easy and quick. No construction work. No cable splicing. No relocating of amplifiers. Your system stays put.

All you do is replace the guts in your amplifiers with our electronics and you're in business. And you don't have to be a graduate engineer to get the job done.

Most replacement electronics can be installed in less than an hour. They come in a range of configurations from half-board modifications to complete, ready-to-use modules.

New full-board modifications make it easier . . .

Now our new full-board modifications make installation easier than ever before. Designed for certain Jerrold and Sylvania systems, there's no need for cutting or shaping any part of the circuit board. You'll find descriptions of the full-board modifications and the equipment they're designed for under this brochure's product information.

Installation procedure is simple . . .

and depends on the type and vintage of your equipment. For the

newer, modular equipment, such as the Jerrold* Starline 20® push-pull series, we offer several options. The installation procedure for each is as follows:

Full-Board Modification

1. Remove old circuit board.
2. Install new circuit board in original module.
3. Reassemble module.
4. Install module in test housing.
5. Complete final alignment. (Since we pre-align all full-board modifications at our factory, this step should pose no problems.)

Half-Board Modification

1. Remove old circuit board.
2. Cut away part of the circuit board with a hacksaw.
3. Remove input transistor and replace with a new one.
4. Make biasing changes.
5. Install input section of old board.
6. Install new printed circuit board. Drill two holes to mount hybrid.
7. Reassemble module.
8. Complete final alignment.

Ready-to-Use Module

1. Remove old module.
2. Install new module.
3. Align.

For the older, non-modular equipment, such as the Jerrold* Starline 1® series, the upgrade process goes like this:

1. Scrap the old circuit board and power supply.
2. Keep the small board holding the equalizer, if it's still in good condition.
3. Install replacement boards in module.
4. In a fully-loaded station you'd have a new trunk amplifier board with a single push-pull hybrid gain block and associated tilt and gain circuitry.
5. Install new bridger, AGC board, and power supply.

Install new equalizers . . .

Regardless of the upgrade procedure you follow, you should remember to install new equalizers if you plan to use any part of the superband.

Increase power supply . . .

If your system is 30-volt powered and you wish to keep it that way, you may need some additional power supplies after upgrading. This is because hybrid amplifiers may use somewhat more power than older discrete transistor amplifiers.

If you switch to 60-volt powering during your upgrade, no additional power locations should be needed. If you plan the change to 60 volts carefully, system down-time should be minimal.

Big tip: Start at the head-end!

Okay, you want to upgrade. Makes good sense. Super concept. But where do you start? We've found that the simplest and most effective order would be as follows:

- Upgrade your spare modules — trunk, bridger and line extenders.
- Starting with the first amplifier out of the head-end, replace your trunk and bridger modules with your upgraded spares — in sequence. Install new equalizers at the same time if you are using all or part of the superband.
- After installing each new unit, sweep or balance it with a field strength meter for proper levels and alignment. (Our units are all swept before shipping, but you'd be smart to take this precaution.) To balance your upgraded amplifiers properly, have a carrier at the highest frequency you'll be using.
- After completing one or more trunk stations, install the upgraded line extenders associated with the upgraded trunk amplifiers.
- Upgrade all the modules you've removed to date and repeat the process until you've completed your system.

You set the pace . . .

This is the painless approach to adding channels and improving system performance. You need not shut down your system. You upgrade on your own schedule — as quickly or as gradually as you wish. And the results are immediate. As you complete the upgrade, you'll see your system performance improve — and you'll get

fewer service calls!

We can help!

If you don't have the people to do the upgrading, send your modules to us. We'd be glad to complete the installation and alignment. As you receive your upgraded modules, plug them into your housings and send us the modules you remove.

Keep repeating this cycle until your system has been totally upgraded. Our turnaround time would be roughly two to four weeks in upgrading your modules and can be faster in an emergency.

**Have unique requirements?
Give us a call: 800-327-6690**

Question: Why upgrade when I'll only have to rebuild later anyway?

Answer: What kind of service do you plan to give your subscribers in the meantime? While waiting to rebuild, you could be plugging in our replacement electronics, increasing channel capacity. The new channels could be generating new income — income you'll need to rebuild. You can upgrade immediately on a small investment. By the time you're forced to rebuild, you may even be able to afford it!

I understand that replacement electronics are nothing but old modules rigged with used components.

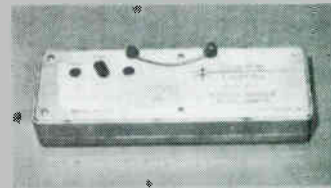
Wrong. We use completely new electronics, from circuit board to hybrid. The only thing used about replacement electronics is the housing you plug it into.

Upgrading sounds fine, but I'd rather install all new amplifiers and other equipment. I'd feel a lot better.

You might feel better, but your financial people wouldn't when they saw the difference in cost. Performance-wise, there's little difference between a new amplifier and one upgraded with state-of-the-art hybrid electronics. Rationalizing the

difference in cost could be difficult (if not impossible).

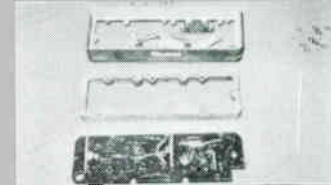
Upgrading made easy with a Broadband full-board modification:



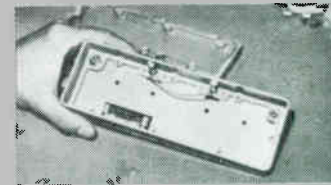
Original module..



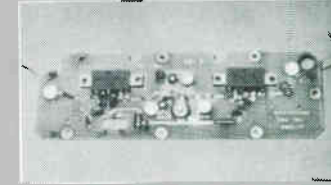
Removing printed circuit board from original module.



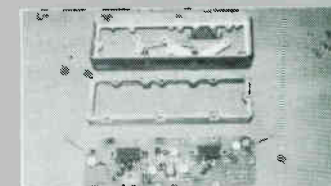
Original module completely disassembled.



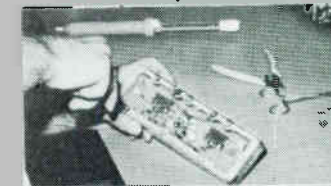
Original module with new heat-sink installed.



New Broadband two-hybrid full printed circuit board.



New printed circuit board with original module before assembly.



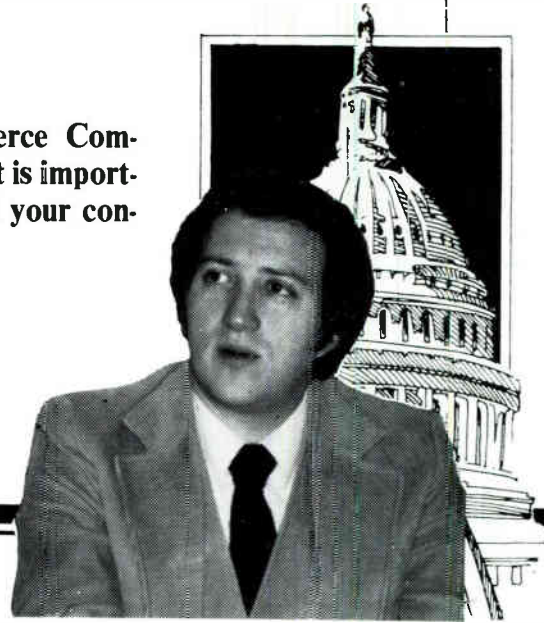
Completing assembly of module after modification.

BULLETIN: As CATJ Energy and Commerce Committee after recess. It is important that you contact your congressman now!

was going to press, H.R. 4103 was passed by the House Telecommunications Subcommittee! It will go to the Full

Washington Update

Steve Effros, Executive Director, CATA



It should come as no surprise to anyone that the big cities do not like the cable deregulation bill now being debated in the House. Even though the "Wirth bill" pretty much follows the lines of S.66, a bill that was drafted following the guidelines of the now famous "NCTA/NLC Compromise", the cities now want to make major changes. Actually, they never really supported S.66 either, and anyone who is surprised that they have taken this political tack really doesn't understand what is going on.

It is somewhat ironic that the cable industry is always being blasted by the cities for wanting to "bail out" of our agreements with them when the best evidence to date is that it is the city officials who have no compunction about backing out of "deals" when it suits their political needs. We fully expect that when the National League of Cities has their annual conference in New Orleans over Thanksgiving that they will formally repudiate the "Compromise" as well. Actually, they have not done that yet. All they have done is say that the language of H.R. 4103 cannot be supported.

This all happened during testimony before Congressman Wirth's subcommittee on Thursday, November 3. The hearings were held, in essence, to allow all of those who did not like the bill to have their say. The Subcommittee was determined not to fall into the same trap that was set for Senator Goldwater last year when he had legislation ready and then had to pull it back for another set of hearings because the cities complained that they had not had a chance to comment. They sure got their chance this time! It was not what one would call a "balanced" panel. But that is not the fault of the subcommittee — they were besieged by city officials all over the country wanting to testify against the bill. Of course the cable industry was represented. NCTA and CATA were there — and two major MSO heads got to give the NCTA point of view. But that was not really what the hearing was for — so we all sat back while everyone took pot-shots at the bill. The complaints were totally predictable, and nothing new. The city folks, aided by Congressman Bryant from Dallas — who introduced his own city drafted bill — yelled and screamed about "bail-outs" and the "sanctity of the contract" — Why, they said, should we "let someone out of a deal" that "they made willingly"? Well, we might ask the same question to them about the NLC/NCTA agreement,

but it wouldn't do much good — they were doing a lot of talking, and very little listening.

In fact, the bill does not "bail out" anyone. It doesn't let anyone "out of" a "deal". The bill follows traditional common-law precepts that when there are "changed circumstances" then the contract has to take those new circumstances into consideration. There is nothing really new about that concept. The only change would be a procedural one — the cable operators and the cities would have to sit down and negotiate and then, if that was not successful, the issue would go to binding arbitration instead of the present situation where everyone winds up in Court! No "bail out" — no major elimination of provisions from existing contracts — in fact almost everything in existing contracts is grandfathered! With the exception of promises that were extracted that are totally unrelated to cable television, such as building libraries or child care centers for the right to get the franchise, everything else is grandfathered.

Naturally those of us who tried to point that out didn't get terribly far. The same was true for rate regulation. It was a vital power of the city, according to those testifying — even though no one could come up with any evidence that cable operators have been abusive in those areas where there was no regulation! CATA took our traditional position that the government has the burden of proof to show that regulation is necessary, not the other way around! There is no such proof when it comes to rate regulation. The most honest statement with regard to rate regulation came from Mayor Royer of Seattle, the head of the NLC, when he described rate regulation as a major "enforcement tool" used by franchising authorities. If you just change the word slightly to "extortion tool", you would have it right. There is little dispute that in most cases cable operators get their rate increases — eventually. Rep. Bryant immediately pounced on that as proof that there was no problem. But of course despite lots of public statements by cities that they need rate regulation to protect the public from excessive rates — in fact what that regulation is used for is to extort other concessions from the cable operator in exchange for a needed, and proven rate increase!

This same line of reasoning goes for renewals as well. Yes, we do get renewed — but at what price? The answer is

that the bidding process constantly forces the price up for no good reason other than that the city can play that game. The subscriber is the one to ultimately lose — or everyone loses when the promises are not fulfilled and the relationship with the city is poisoned, the cable operation is imperiled, and the subscriber gains nothing! Something **MUST** be done about the process that has got us all stuck on this treadmill — H.R. 4103 does something. Not as much as we would like, but at least it does something!

What is the impact of the NLC finally showing its true colors? Well, we don't think it will be much. After all, they have never really supported any cable bill, so now that they are saying so, it doesn't change things that much. The cities like being both judge and jury. They wrap themselves in the role of being the "representative" of the public at the same time they object to provisions of the bill that would allow the public to know how much of their cable bill is due to a franchise fee imposed by those self-same "representatives"! It is not at all a new situation that an attempt at the Federal level to bring some order out of the present chaos would be objected to by those whose job it is to administer the chaos! This debate has been going on since the FCC first studied the appropriate relationship between the Federal, State, and local governments regarding cable television in the early '70s. The players are still making the same arguments. It is time for Congress to step in and clean up the process — no one else will, or can.

Where do we go from here? Well, there are several things happening at once. First, as we mentioned, the cities now have their own bill to push — the Bryant bill (H.R. 4299 — we will give you more details in the next issue). Also, Congressman Al Swift from Washington has introduced a bill that is identical to the Wirth bill, but it eliminates one definition — the one on telephone service. This is an attempt to take the data transmission issue between cable and telcos out of the bill. One way or another that may happen. If it does, the co-sponsors of those two measures (which both adequately deal with the city issues) comprise a majority of the full Commerce Committee. That means we have made some progress, at least on some parts of the bill — but we are far from being out of the woods yet. **THE MAGIC NUMBER IS 218!**

Why 218? Because that comprises a majority of the House of Representatives. We are now going to have to go after each member, vote by vote, to get this bill adopted. There is only one way to do that: **YOU** have to do it! The objective: to get at minimum 218 members of the House of Representatives to Co-sponsor H.R. 4103! You can start on that project right now. Contact your Congressman. **Call, write, telegram, visit,** (they will all be home starting in December) **grab on, and don't let go!** Don't stop until they agree to become a Co-sponsor, and then make sure they do it, and notify us as well. When we get 218 Co-sponsors, one by one, we will have our bill. That's the only way to do it. What are you waiting for? You now have a definable job, and one that can be accomplished in any District in the country on a one on one basis. Folks will sign on to this bill once they fully understand what the problem is, and what the bill will really do, and not do — the problem now is that lots of them have been hearing from city folks who

don't really understand the bill themselves! If you need any help in explaining the bill, let the Washington CATA office know and we will help you. It is now time for a "full court press". 218 is the magic number.

One cautionary note. The NAB has finally shown up with its proposal to get the Must Carry rules written into this legislation. It doesn't make any sense, and even if it were written in, we still think those rules violate the First Amendment, but be prepared for that type of a move by the broadcasters. We'll just have to deal with that as it happens.

If you haven't gotten the message yet, we will give it to you one last time: You must now get to work on your local representative and get him or her to sign on as a Co-sponsor to H.R. 4103 — **NOW**.

COPYRIGHT HEARINGS PUT CABLE LEGISLATION ON "FRONT BURNER"

Put simply, they were the best copyright hearings we have attended in eight years. The "Kastenmeier Subcommittee" held some hearings late in October on H.R. 2902 — The Synar Bill, and H.R. 3419 — The Hall Bill. Now as we all know from much bitter past experience, testimony on copyright tends to be rough. There are always strong charges and counter-charges being made, and the Subcommittee members in many instances don't seem to know the details of the bill, they just know who they are "for" or "against" — right? Not this time.

To begin with, this hearing was only a panel of those supporting the bills. The opposition, interestingly, has not really coalesced against these bills to date. So charges and countercharges were not the order of the day. But of much greater interest was the fact that more subcommittee members showed up for this hearing than any in recent memory, and they were well briefed on the issues, pro and con. There was a real dialogue and considerable intelligent discussion regarding the bills. It was like a breath of fresh air! Don't misunderstand all this. It does not mean there was unanimous approval of the bills we are proposing that would correct the results of the CRT's 3.75% "penalty fee" as Roy Bliss of United Video dubbed it, but it does mean that there was an intelligent interchange, and the possibility that we could talk based on the facts rather than on personality differences. Much of the credit, we think, has to go not only to Chairman Kastenmeier, who obviously understands these issues now better than anyone in Congress, but also to the new Subcommittee Staff Chief, Mike Remington, who, while not taking a position on the bills, has made it clear that he sees his job as making sure the members are informed, and that they are well briefed on all sides of the issues. He has clearly done that, based on the evidence of the hearing. Everyone who witnessed it said it was a remarkably well run and informative hearing.

What is even better, from CATA's point of view, is that there appeared to be a growing consensus among the members that something, indeed, needed to be done. Whether it was the Hall Bill or the Synar Bill or a combination of both is not the issue. We at least have reached the point where there is a recognition that the result of what the CRT did was to create copyright policy itself rather than carry out the policies created by Congress. It looks like we may just be able to get Congress to reassert its authority over the CRT on this issue. We will keep you informed. We do not expect anything more to happen on these two bills in the House until after the Christmas break, but, just as with the deregulation bill, 218 is the Magic Number. You can start working on your Congressman NOW! And by the way — there is no reason to "pick one" of the two pieces of legislation to get your Congressman to support — that is, deregulation or copyright. They have nothing whatever to do with each other, and they are both worthy of support. Go to it.

GUESS WHO SAID THIS!

We'll give you the quote first. "Mini-FCC's, disguised as Public Utility Commissions, Cable Franchising Authorities and Public Health and Radiation Authorities are now ready and willing and even able to fill any vacuum created by FCC unregulation . . . It is entirely appropriate, in these days of federal forbearance, to pre-empt the states from entering those areas. Unless we take that task,

the marketplace will be strewn with local regulatory waste and abuse. New technologies will grind to a halt and competition will disappear very rapidly as nationwide communications systems attempt to overcome dozens . . . of varying standards and philosophies . . . Frankly, I believe we can either pre-empt now or pre-empt later when local regulators strangle innovative local communications service and the federal government has to step in to protect the national communication system."

Sound familiar? It's what CATA has been saying since it was formed almost ten years ago. Simply put, if you eliminate a rule, you also have to make sure someone else doesn't come along, and create the rule again at some other level of government.

Who said it? James McKinney, the Chief of the new FCC Mass Media Bureau.

QUOTE WITHOUT COMMENT

From an article in the Wall Street Journal on 10/7/83 about AT&T gearing up for a Congressional battle over telephone legislation;

"AT&T will spend \$1.5 million on its lobbying efforts this WEEK." (emphasis ours — and that's NOT a typo!)

WATCH OUT FOR THE FCC FINES FOLKS

That's not the "fine FCC folks", that's the FCC Fines Folks — you know, the ones who are now freely handing out fines for violations of the few remaining FCC rules. And they are doing it more and more these days! We have recently been notified of two different situations where small cable operators have been assessed fines for not following the Commission's rules. The first one has to do with signal carriage. When the Commission finally gets around to ruling on a signal carriage case, you MUST take them seriously! When they say you MUST carry a signal and you keep on filing pieces of paper trying to avoid that carriage after all your proper remedies are exhausted, they don't look too kindly on the excuse that you are just a "small operator" and didn't understand the rules. Someone who tried that recently got hit with a proposed \$5000 fine. This is not to say that you shouldn't use every LEGAL step you have — but once you have played all your cards, don't try to keep the game going.

Another situation just came up, and this one may affect a lot of small operators. The Commission's Equal Employment Opportunity forms (395) MUST be filed, even if you have fewer than five employees! You do not have to file an EEO plan, and you do not have to fill out the entire form — but you DO have to check the little box that says you have fewer than five employees and sign it and send it back! One small operator didn't realize that recently and wound up with a whole stack of proposed \$1000 fines on his desk. Now whenever you get a fine assessed you can appeal it and you can seek to solve the problem. But why get into the problem in the first place?



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This software operates on the following TRS-80 Microcomputers:

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DISCOUNTS

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(Spanish versions available) — offer expires February 1, 1984

HELP!

Cable operators commonly complain that one of their biggest problems is trained personnel — CATA developed the Basic and Advanced Technical Training Seminar program to help cable operators in their plight to provide education and

training on these two levels.

CATA's Director of Engineering, Ralph Haimowitz, now needs some guidance from the cable operators; information is needed to make the plans for the 1984 circuit of technical training sessions.

Please complete this questionnaire and return to CATA at the address given — it will be very much appreciated and the information is very necessary to make appropriate and convenient plans.

1. Are you interested in having scheduled Basic or Advanced sessions? Or both? For yourself? For your employees? How many?

2. Is there a certain time of year that would be the most convenient for your areas?

3. Four day sessions will be planned for the Advanced course — is a Monday, Tuesday, Wednesday, and Thursday schedule all right? Or is Wednesday, Thursday, Friday, and Saturday better? Any other suggestion?

4. Three day sessions will be planned for the Basic Course — is Monday, Tuesday, and Wednesday better? Or Thursday, Friday, and Saturday? Any other suggestions?

5. Would a cooperative session bringing together several cable systems' personnel be a possibility for your area? That would mean our coming to your location at your request.

6. How far are you willing to travel or to send your employee(s)?
_____ Up to 200 miles _____ Up to 500 miles _____ Over 500 miles

7. Is there a particular locale that you would like to recommend for either an Advanced or Basic seminar?

8. Do you have any particular requests or suggestions as plans are made for future seminars?

9. Please make any comments or suggestions that you might have:

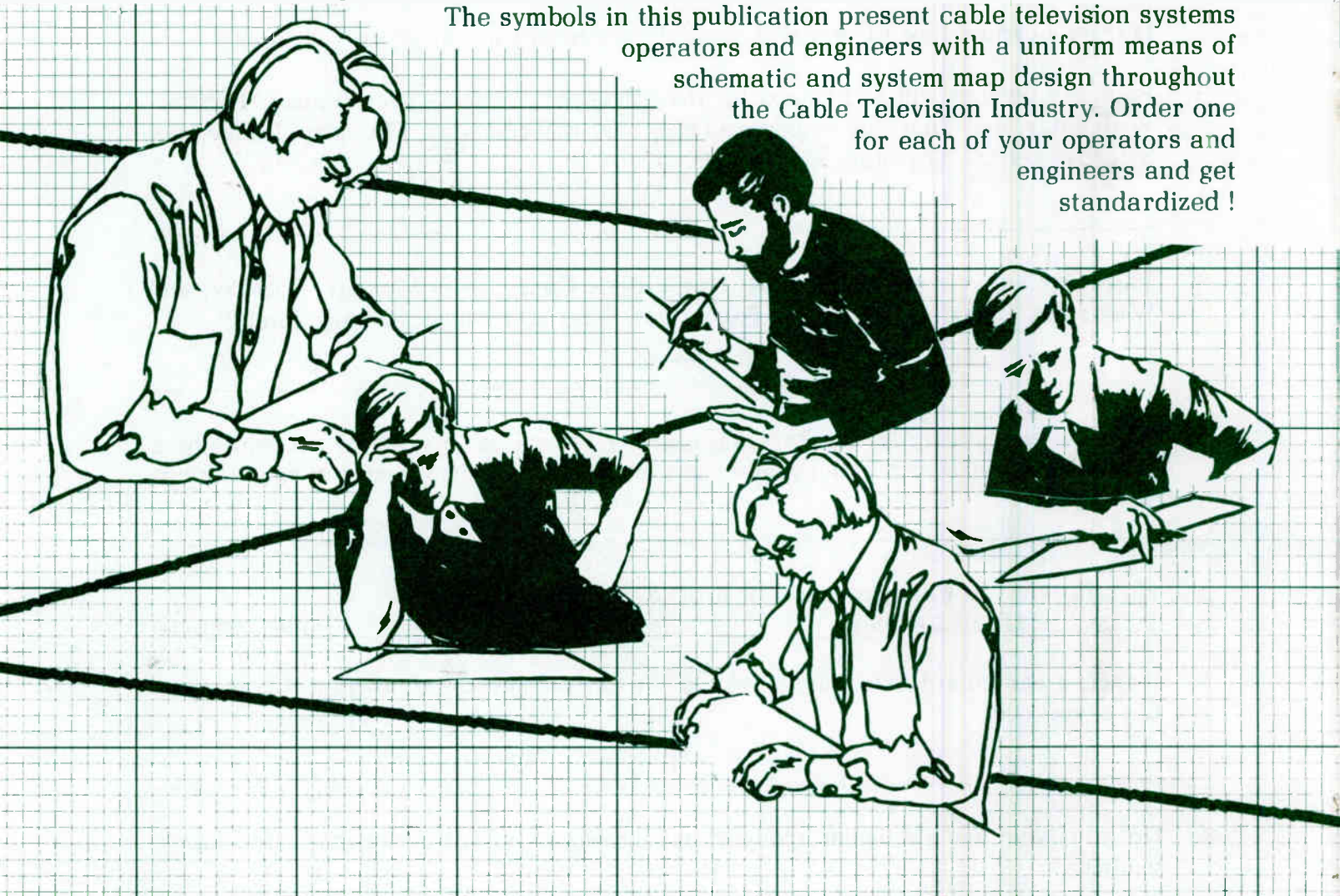
COMPLETE AND RETURN TO: CATA
4209 N.W. 23rd, Suite 106
Oklahoma City, OK. 73107

STANDARDIZE

WITH THE NATIONAL STANDARDS FOR CATV SYSTEMS — GRAPHIC SYMBOLS

In order to help you standardize your grid and map preparation Television Publications is now offering a brochure of National Standards for CATV systems Graphic Symbols.

The symbols in this publication present cable television systems operators and engineers with a uniform means of schematic and system map design throughout the Cable Television Industry. Order one for each of your operators and engineers and get standardized!



YES! I WANT THE NATIONAL STANDARDS FOR CATV SYSTEMS — GRAPHIC SYMBOLS GUIDE

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On the same note, consistent with the request made by the members at the last annual membership meeting during CCOS-'83 at Hot Springs, we have been looking into the best way to assure that all cable operators could get up-to-date copies of the FCC cable rules for their files. It

"... the first thing the inspectors from the FCC ask for when they visit your system is to see a copy of the rules!"

sounds like a simple task, but it isn't. Trying to keep things up to date and printing them, etc., can become a major problem. As we noted before, other cable groups have tried it before and abandoned the effort.

CATA hopes that we have found the solution. We spoke to the folks at Titsch Publications. You know, Cablevision, CableFile, etc. We knew that they printed the rules each year as part of the CableFile book — but that is too expensive a tome, although well worth it for those who need it, for every cable operator in the country. They have now agreed to publish a separate little booklet of just the rules you need to keep at your system. The booklet will be kept updated, either on an as-needed basis or semi-annually or quarterly, and they assure us that the price will be in the under \$25 range — hopefully in the \$10 to \$15 range which would make it an excellent buy and one we would encourage all cable operators to make. After all, as we have been told time and again, the first thing the inspectors from the FCC ask for when they visit your system is to see a copy of the rules! CATA has now found someone who will help us assure that cable operators will no longer need to be faulted on that count! Thanks to the Titsch folks, and watch in the near future for an announcement about the specifics of this publication.

THE VIDEOTEXT/TELETEXT BALLYHOO

It's happening again. We watched it in the big cities with cable, and now, hot on the heels of those disasters comes the entrepreneurial mad rush for "teletext". The result is likely to be the same too.

Videotext, of course, is the linking up of homes with two-way interactive data capability (teletext is one-way data via broadcast television or MDS). Now this can be done over the telephone line or cable. The big news right now, after some big companies have spent millions and millions of dollars on research in this field, is that we are finally going to get our first full scale test of the idea. It's called Viewtron, and it will be done in the Miami, Florida area with equipment and marketing done by a joint venture of Knight-Ridder newspapers and AT&T.

What is going to be offered to the lucky folks who will have to spend \$600 for a home terminal and at least \$25/month for access and telephone charges? Why late breaking news, shopping at home, home banking, and other "transactional services" of course! In other words, the same stuff the cable industry has been talking about for years, but has yet to find any really eager buyers for yet!

The "gurus" of the videotext industry have already made a few conclusions — and all this should be tempered by your knowledge that these same "gurus" make their living as consultants hawking the videotext "industry" (which does not exist yet — except for the consultants). First of all, cable is out and telephone is in. The technology for cable videotext is not in place, they say, but it is ready to go in for telephone (at \$600 a crack). Second, there is a substantial audience out there anxious to get videotext for some very specific uses — the top one being comparative shopping guide. Note this is not shop-at-home, this is the price comparison type of information that would be "kept up to date" and become a new type of specific price daily "yellow pages". We think that is a great idea, but who is going to input all that data? If you think all the store merchants want to do it for you for free, we think you have a major surprise coming!

Another "wanted" service that videotext can provide is a type of electronic mail — but it seems to us that we already have a dozen ways to do that now — MCI is selling that concept on a mass scale now, so is The Source, and Comuserve, and we bet there are lots more. Anyone with a computer terminal is besieged with the advertising brochures now — why do we need videotext?

Our conclusion to date is that this is a case of technology attempting to run the marketplace rather than consumer demand. The same thing happened in the urban cable



fighters. The fact that we can do something with technology does not necessarily mean that the consumer is willing to pay the price for it!

Now we are not saying the experiments should not be tried, and we are not saying that this whole thing is doomed to failure. All we are saying is that these "new" technologies, and "new" services should be looked at with a very jaundiced eye. We are confident, as is their wont, that the mass media will grab onto videotext just as it did to cable and, more recently, home computers and blow it all out of proportion. The shake-out from that overexpec-

There are going to be two basic kinds of DBS, the high powered and the low powered types. The low power ones will be selling first since the satellites are already up there for that service. The high power satellites go up over the next couple of years. From our point of view it doesn't really make much difference. Both will be competition. What will they offer? You can bet that movies and sports will be part of the package. So will some sort of satellite news. Then they will offer a range of other stuff as well — children's programming, etc. But they have a distinct advantage. First, they don't have anywhere near the capital

"The consumer is the voter, and they vote with their dollars."

tation in the cable industry is still going on. It is just starting for computers — and it looks like once again there are those creating the same pratfall for videotext. It's a shame. Our grandmother used to say that "...even a donkey doesn't trip over the same stone twice." But it looks like we are heading for number three and that doesn't count cellular radio (4) LPTV (5) and of course STV!

Our message, we hope, is clear. Technology is great. But the technology does not guarantee success. The consumer is the voter, and they vote with their dollars. If the product (not the delivery technology) is not in demand, or the price for that product is not right, it doesn't really make a whole heck of a lot of difference what technology is used. Let's all remember that and keep our focus in the cable industry on what OUR consumers really want, and then let's be sure to give it to them.

DBS IS ABOUT TO TAKE OFF — WHAT DOES IT MEAN FOR CABLE OPERATORS?

If you only have a twelve channel system and you are not already well into the planning stage for an upgrade, you better get moving fast! That's the bottom line, we think, on Direct Broadcast Satellite.

expense we have to get to the same number of subscribers. Second, they are "sexy" — they are the "new" technology — we suddenly become the "old" technology. And third, they don't have any of the regulatory burdens we do — no franchises, no access channels, free studios, etc. Also, of course, they only have six or so channels.

Now that last point is the key. If they only have a total of three to six channels can they effectively compete with cable? The answer is no, so long as the cable operator has enough operational channels to support enough specialty programming that the public wants. (We wonder what the broadcasters will say about must-carry on DBS? — After all, won't people have to rely on their old antennas again if they are not on cable? Won't the A/B switch, which the broadcasters say doesn't work, become vital to them?)

Cable has a better package of more programming at probably a better overall price than DBS will be able to offer, at least until several of the DBS folks get together and offer a larger service on a joint basis (something we suspect will eventually happen). But for now — so long as the cable operator upgrades the system to keep up with the actual program choices available — including some of the specialty types of programming that will never achieve a "DBS slot" like C-Span, we will have the competitive edge. Let's keep it that way. There is no question that DBS will probably present the most serious competition the cable industry, and particularly the non-major-urban area cable industry, has ever experienced. Be prepared. □



The U.K.'s First Major Cable and Satellite Television Exhibition

It takes a brave man to say that cable TV in Great Britain will prove a commercial success. It would seem to require a fool to back his prediction with money. Birmingham, England in mid-September seemed to attract a few brave men. And perhaps some with a lot of faith in their view of the future. There was much money in evidence, too.

The Thatcher government sees **Information Technology** as the key to economic recovery and industrial growth. Accordingly considerable governmental encouragement and assistance is being given to related industries. I.T.'s umbrella takes in just about everything from the domestic video recorder and the home computer via tele-shopping and banking to computer networking and direct broadcasting satellites.

Cable TV carries the I.T. banner this year, with the publication of a government White Paper and the announcement of 12 initial franchises for the provision and operation of pilot cable TV projects, to be awarded

in time for a 1984 start. The Cabling of Britain is the eventual aim, with much talk of "Wideband", "Fiber Optic", "Switched Star" and (especially) "Interactive". During 1984 a new regulatory authority, something after the style of our Independent Television Authority, will be established to oversee and regulate cable TV.

By the closing date of August 31st, a total of 37 applications were in for the 12 pilot franchises. The targeting of these prospective operations includes inner city areas, London's dormitory towns and a varied range of provincial towns and cities. Consortia include the names of banks, insurance and investment corporations, press, advertising, film and TV companies, electronics manufacturers, telecommunications bodies, universities, industrialists and entertainers. The optimum size has been suggested at 100,000 homes passed, at a cost per system of £20-30M (\$30-45M), the cable operator leasing the system from the "cable provider".

S.J. BIRKILL ON
EXPERIMENTAL TERMINALS

Photo 1: Satellite TV Antenna Systems' dish farm at CAST-83. We'll get the Harris logo right way up too, next time!

Photo 2: Now for that last half dB! Adjusting Cassegrain subreflector trim on the S-A 7 meter antenna.



Emphasis is heavily upon the fostering of new technology, and the would-be cable giants, carried along by the techno-euphoria encouraged by the Department of Trade and Industry, talk glibly about remote meter reading and intruder alarms, electronic shopping, downloading of telesoftware for the home computer and a host of other trendy things. Entertainment is what will sell cable, in the short term at least — the British public will not pay good money for all this clever data flow if it comes on the back of just another TV channel (or 30 channels). A good proportion of the people (schoolboy computer geniuses apart) have been bored for too long by the gimmicks of technology — the TV fare must capture the imagination enough to change viewing habits before cable is accepted.

Into this environment came **CAST-83**, an exhibition (with associated conference) apparently designed to convince the financial backers that a bonanza was just around the corner. There was certainly serious investment here — the equipment, the booths and the trimmings were to a high professional standard, enough to do justice to an IBC or NAB show.

Most of the hardware outfits were

there — the British giants: British Aerospace, BICC, Marconi (Ferranti did not exhibit); the transatlantic collaborations Plessey Scientific-Atlanta, Racal-Oak, GEC Jerrold; equipment manufacturers from Germany, France, Belgium, Italy, Spain, Japan and the USA, a cluster of Dutch and a suite of Canadian companies as well as British firms large and small with a stake in cable. The centerpiece of the show was a full scale model of the ECS satellite. Several cable and satellite journals were represented. British Telecom showed off their capabilities with a large number of live feeds relayed into the hall via landline.

A few companies already have experience in pay-TV and cable relay systems licensed as experimental projects over the past few years. SelecTV plc, Visionhire, Radio Rentals and Rediffusion had a presence at CAST-83, and their names naturally feature among the consortia bidding for next year's pilot operations. Visionhire and Rediffusion also make up **United Cable Programmes (UCP)**, in partnership with Rank, Trident, UIP and Plessey. UCP aims to provide a premium movie-based entertainment channel by early 1984, to be known as **Television Entertainment Network (TEN)**.

The competition is another consortium, **Television Entertainment Group (TEG)**, formed of Goldcrest Film & TV, CBS, Columbia Pictures, HBO and Twentieth-Century Fox, with a very strong-looking movie channel on offer.

Satellite Television plc is the only British company (indeed the only European company) currently programming to cable via satellite. With new aggressive Australian management imported by Rupert Murdoch's News International, an expanding schedule and the go-ahead now to provide service back into the U.K., SATV look set for a bright future. A new addition to their schedule is **Cable Countdown**, an hour per evening of rock promo films and videos, with a resident DJ. Programmer here is **CableMusic**, an offshoot of the Virgin Records empire.

The original concept of **CAST-83** had given equal weight to satellite TV (looking forward to **DBS**) and cable, but the heavy cable interests ensured that (this time around at least) satellites played but a supporting role to cable, as a means of delivering program channels to cable systems both at home and across Europe. This will have pleased Eutelsat, Europe's satellite governing body comprising the members states' post and telecom-

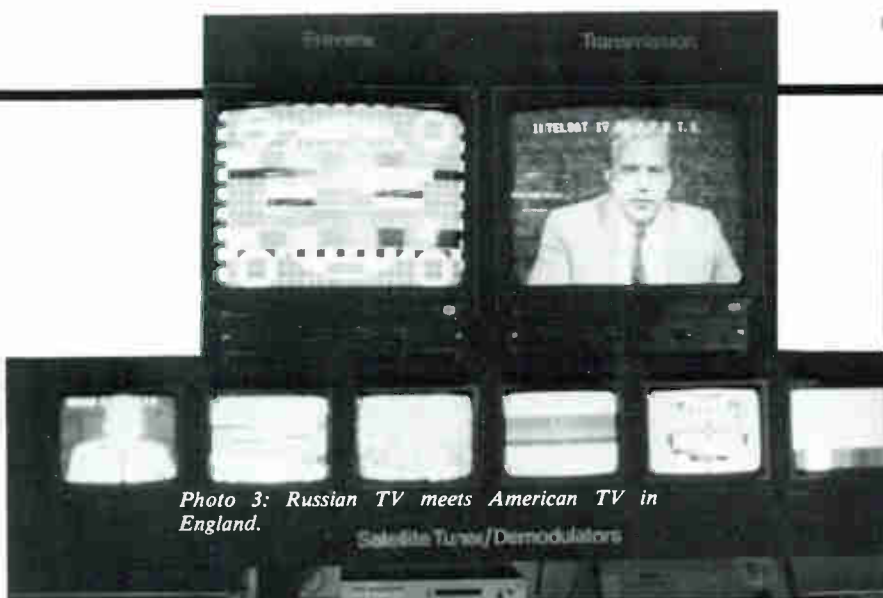


Photo 3: Russian TV meets American TV in England.



Photo 4: Centerpiece of the show: full size model of the newly-launched ECS-1 European Communications Satellite.

munications authorities, who fear the public demand for direct satellite TV channels and work constantly to prevent the emergence of a DBS, official or otherwise, "before its time".

The satellite presence at the show was nonetheless evident everywhere, and my company, **Satellite TV Antenna Systems Ltd.**, contrived to place satellite-delivered pictures on a large proportion of the TV monitors around the hall. Eighteen other exhibitors took feeds from our receivers. We were not the only company with operating satellite TV hardware, there being a total of 15 dishes set up in the National Exhibition Centre's "staff car park" throughout the show, perhaps the largest independent satellite "antenna farm" ever assembled in the U.K.

Six other companies were showing their parabolic wares: GEC McMichael had a pair of 3-metre Andrew dishes (one with uplink capability) aligned on OTS. M/A-COM showed a 3-metre Prodelin and Marconi had a 3.7-metre Precision antenna, also on OTS. Megasat were to have demonstrated the Simulsat system but the antenna failed to arrive from the USA in time for the show; they settled for a static exhibit of a 0.9m DBS-type dish. Salora (Finland) showed a 2-metre Gorizont system while Tratec (Holland) had 1.8m OTS

and 1.2m Gorizont systems operating, plus a 0.9m dish on display. British Telecom had an assignment elsewhere preventing the appearance of their transportable terminal.

Satellite TV Antenna Systems' display was nothing if not ambitious. With the co-operation of several other exhibitors, notably Michael Cox Electronics, Collins Communications and Raydex International, we had contrived to assemble a complete satellite to cable head-end. Up to seven simultaneous live satellite TV feeds (from six antennas) were to be assembled, processed, switched, combined with broadcast and promotional feeds and delivered by a 14-channel VHF cable system to the stands of participating companies around the hall.

The satellite feeds had to be selected in accordance with the terms of the company's development/demonstration receiving permit, requiring prior agreement with the broadcasters and the Home Office. Satellite TV PLC and Racal-Oak required encrypted baseband feeds of the "Satellite" service on OTS. Applied Video Systems wanted a channel of 525-lines NTSC colour video. The remaining "subscribers" were expecting VHF systems "I" channels of 625 PAL.

We elected for our NTSC channel to demonstrate reception of the US **Armed Forces TV Service (AFRTS)** feed via Intelsat. This C-Band link operates at a downlink EIRP of some 20 dBW to the UK, necessitating a minimum G/T of some 27 dB/K for usable reception, even with threshold extension. (Full-transponder deviation and NTSC color set a minimum IF noise bandwidth requirement of between 20 and 25 MHz near to threshold, before truncation noise becomes objectionable on saturated titles). This dictated we erect the 7-meter Scientific-Atlanta antenna, with 70 Kelvin LNA.

Demodulation was via an AVCOM COM-66T receiver (with threshold peaking), an Earth Terminals (Washburn PLL design) receiver also being available. As each has its own downconversion scheme, signals were split at 4 GHz, the AVCOM IF of 270-770 MHz and the ET IF of 70 MHz being conducted separately into the hall. The ET receiver allowed monitoring of the ABC, CBS and Brightstar feeds while the AVCOM looked at AFRTS. An AVS standard converter provided the 625 PAL version for distribution. Identification was provided by a Cox title generator, and monitors on the stand showed the pictures before and after conversion.

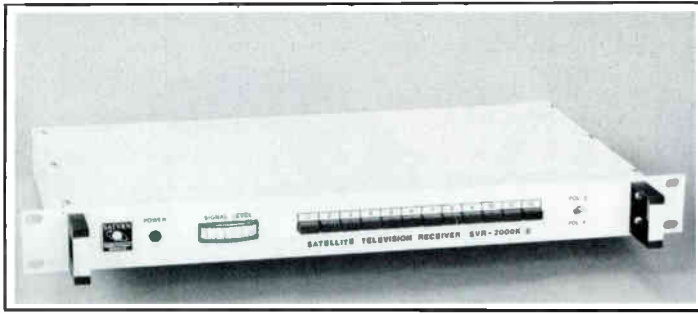


Photo 5: The new SATVRN receiver provided SATV's OTS feed throughout the show. The North American version, SVR-2000C/A, to be released early in 1984, features dual 4 GHz/12 GHz capability and is optimized for CATV and SMATV applications.

A 20-foot ADM antenna with 75K LNA gave us Intelsat domestic lease TV capability. That meant (during the day) a choice of Morocco or Saudi Arabia (both SECAM) or Argentina (PAL-N). Morocco was covering the Mediterranean Games at the time, so became the natural choice. A second COM-66T was used, with our SCPC audio modifications, and SECAM-PAL conversion was provided by a Cox transcoder.

For USSR TV we chose to use our trailer-mounted Harris 3-meter "Delta Gain" antenna. The patented quasi-Gregorian optics give a particularly high G/T capability which we optimised with yet another 75K LNA. This enabled the Intersputnik (northern hemisphere) channel to be received above threshold, as well as the Euro-spot Moscow-1 service on the Atlantic Gorizont. The SATVRN-modified Gillaspie receivers were used for their Moskva compatibility. Signals were fed to the hall at 70 MHz IF. Again Cox transcoders delivered PAL video.

At 11 GHz we required a particularly high signal to noise ratio, as we were supplying Satellite TV plc's feed for the press launch of their new three-hour schedule, featuring "Cable Countdown". The 3-meter Andrew antenna was employed here, with a choice of NEC LNB and DX LNC feeding 900-1450 MHz IF into the prototype tuner-demodulator unit of our new SATVRN SVR-2000K/E cable-grade receiver (our own LNB not yet having completed development). Back-up was provided via a Galt 1.8m antenna and DX receiving system, normally set to the cross-polarised OTS transponder 4 used by Antenne-2 of France.

A second Galt 1.8m antenna and DX receiver were standing by in anticipation of the appearance of "Euro-TV", which director D.F. Minning

had hoped to have operational in time for the show, via an Intelsat V Ku-Band spot beam uplinked from Norfolk, VA. In the event he was unable to launch the service at that time.

Antenna assembly began on site a week before the exhibition was to open. At that time I was putting the finishing touches to the prototype receiver, and did not arrive at the N.E.C. until the Friday, 2 days before the opening. By that time the 7m S-A antenna was fully assembled and approximately aligned to its satellite.

Realistically, with the size and timescale of the operation we had to expect some small problems. The 20-foot ADM was nearing completion but something didn't look right: the hub had been mounted "wrong way round" to the polar axis, with the result that the built-in 7-degree declination angle was positive, not negative. Not only that, but the base of the mount had been aligned not north/south, but towards the chosen satellite, some 31° west of south. The polar mount would not track the orbit in this state, indeed it was doubtful whether it could be adjusted even to see the required satellite, at an elevation of 25.4°. In view of the advanced state of assembly it was agreed to complete the antenna and consider alternatives, rather than dismantle and start again which would have taken us into the first day of the show.

As I had feared, the northern legs of the mount reached their full extent at an elevation angle of 30°; it was never designed to handle that extra 14°. The only way now was to hire a crane, left the entire reflector, slide it (northwards) off the polar axis, rotate the reflector (including hub) by 180° and slide it back on. By now it was late Friday evening and our riggers were overdue for their return to

Wales.

Somehow goodwill prevailed. Saturday morning saw an augmented crew (including willing hands from "rival" exhibitors) surrounding the 20 foot dish as it dangled more or less horizontally 10 feet above ground, collecting rainwater. There were tense moments before it was safely re-threaded onto its mount and made secure. The crane was then employed to drag the complete assembly around on its base frame of RSJs, until the polar axis was aligned true north/south.

ADM president Jamie Gowen then arrived on the scene fresh from the USA. He acknowledged the antenna's assembly instructions didn't emphasize correct hub-to-axis assembly, and that a non-technical crew could easily fail to appreciate the declination factor. Indeed this had occurred a few times in the USA. He resolved to label the hub on future production models.

Jamie took over the fitting and powering of the antenna's east/west actuator and control box. In the space of an hour we were taking very interesting comparative measurements of AFRTS on the 7m and 20ft antennas. With Jamie were Bob Cooper (Coop's Satellite Digest) and Andy Hatfield of AVCOM. Andy was interested to see our modified version of his receiver tuning the six SCPC sound channels from Moroccan TV. Bob set out with our Mike Aarons to optimise subreflector spacing on the 7m S-A. Rival publisher David Wolford (SatGuide, Orbit) stopped by to watch the fun, and Bob Luly was a surprise visitor. Others from the US included Bob Taggart (Chaparral) who delivered copies of my book (now only \$30!) and Peter Sutro (Patmar), to whom thanks for getting the LNAs to us on time. It all came together on the day. □

Distributors	Manufacturers	Service Firms
D1—Full CATV equipment line	M1—Full CATV equipment line	S1—CATV contracting
D2—CATV antennas	M2—CATV antennas	S2—CATV construction
D3—CATV cable	M3—CATV cable	S3—CATV financing
D4—CATV amplifiers	M4—CATV amplifiers	S4—CATV software
D5—CATV passives	M5—CATV passives	S5—CATV billing services
D6—CATV hardware	M6—CATV hardware	S6—CATV publishing
D7—CATV connectors	M7—CATV connectors	S7—CATV drop installation
D8—CATV test equipment	M8—CATV test equipment	S8—CATV engineering
D9—Other	M9—Other	S9—Other

Associate Roster

Note: Associates listed with * are Charter Members.

Alpha Technologies,
1305 Fraser St. D-G,
Bellingham, WA 98225
206—671-7703
(M9, Standby Power
Supplies)

Av-Tek, Inc.,
Box 188,
Aurora, NE 68818
402—694-5201
(M8)

* **C-COR Electronics, Inc.,**
60 Decibel Rd.,
State College, PA 16801
814—238-2461
(M1, 4, 5, S1, 2, 8)

Comm/Scope Company,
P.O. Box 1729
Hickory, NC 28603
1-800—438-3331
(M3)

AMCOM, Inc.,
Bldg. E, Suite 200,
5775 Peachtree-
Dunwoody Rd., N.E.,
Atlanta, GA 30342
404—256-0228
(S9, Brokering &
Consulting)

BEI
P.O. Box 937,
Olathe, KS 66061
800—255-6226
(M9 Character
Generators)

CCS Cable
P.O. Box 14710,
Phoenix, AZ 85063
602—272-6855
(M3)

**Communications Equity
Associates,**
851 Lincoln Center,
5401 W. Kennedy Blvd.,
Tampa, FL 33609
813—877-8844
(S3)

* **Anixter Communications**
4711 Golf Road,
Skokie, IL 60076
312—677-2600
(D1)

**Ben Hughes
Communications**
P.O. Box AS,
Old Saybrook, CT 06475
203—388-3559
(M6, 9)

CableBus Systems,
7869 S.W.
Nimbus Avenue,
Beaverton, OR 97005
503—543-3329
(M1)

**Comprehensive Cable
Enterprises**
206 Westminster Ct.
Madison, WI 53714
608—249-3442
(S1, 2, 4, 5, 7, 8, 9)

Apple/Store
Rte. #1, Box 156,
Beaver Dam, WI 53916
414—885-6249

Blonder-Tongue Labs, Inc.,
1 Jake Brown Rd.,
Old Bridge, NJ 08857
201—679-4000
(M1, 2, 4, 5)

Cable Graphic Sciences,
7095 N. Clovis Ave.,
Clovis, CA 93612
209—297-0508
(M9 Character
Generators)

**Computer Video
Systems, Inc.,**
3678 W. 2105 S. Unit 2,
Salt Lake City, UT 84120
1-800—453-8822
(M9)

The Associated Press,
50 Rockefeller Plaza,
New York, NY 10020
212—621-1513
(S9 Automated News
SVC)

**Broadband Engineering,
Inc.,**
P.O. Box 1247,
Jupiter, FL 33458
1-800—327-6690
(D9, M4, S9)

Cable Health Network,
1950 Spectrum Circle
Suite B-310
Marietta, GA 30067
404—952-4620
(S4)

COMSEARCH INC.,
11503 Sunrise Valley
Drive,
Reston, VA 22091
703—620-6300
(S8, S9, Earth station
placement frequency
coordination)

Automation Techniques,
1846 N. 106th E. Ave.
Tulsa, OK 74116
918—836-2584
(M9)

Budco, Inc.,
4910 East Admiral Place,
Tulsa, OK 74115
1-800—331-2246
(D9, Security &
Identification Devices)

Cable-Text Instruments,
Div. of Telpar, Inc.
P.O. Box 796
Addison, TX 75001
214—233-6631
(M9 Generators)

Avantek, Inc.,
481 Cottonwood Dr.,
Milpitas, CA 95035
408—946-3080
(M8, 9 TVRO
Components)

CATEL,
4800 Patrick Henry Dr.,
Santa Clara, CA 95054
408—988-7722

Capscan, Inc.
P.O. Box 36,
Adelphia, NJ 07710
1-800—CABLETV or
222-5388
(M1, 3, 4, 5)

ComSonics, Inc.,
P.O. Box 1106,
Harrisonburg, VA 22801
1-800—336-9681
(M8, 9, S8, 9)

Associate Roster

DF Countryman Co.,
1821 University Ave.,
St. Paul, MN 55104
612-645-9153
(D1, S1, 8)

The Disney Channel
500 S. Buena Vista,
Burbank, CA 91521
213-840-5080
(S4)

Ditch Witch,
P.O. Box 66,
Perry, OK 73077
1-800-654-6481
(M9)

The Drop Shop Ltd., Inc.
Box 284,
Roselle, NJ 07203
1-800-526-4100 or
1-800-227-0700 (West)
(D3, 4, 5, 6, 7, 8, 9,
M5, 6, 7, 8, 9 Plastics)

Durnell Engineering Inc.,
Hwy 4 So.
Emmetsburg, IA 50536
712-852-2611
(M9)

Eagle Com-Tronics, Inc.,
4562 Waterhouse Rd.,
Clay, NY 13041
1-800-448-7474
(M9 Pay TV Delivery
Systems & Products)

Eastern Microwave, Inc.,
3 Northern Concourse,
P.O. Box 4872,
Syracuse, NY 13221
315-455-5955
(S4)

**Electroline TV
Equipment, Inc.,**
8750-8th Ave.,
St. Michel,
Montreal, Canada
H1Z 2W4
514-725-2471
(M4, 5, 7, 9, D7, 9)

**Electron Consulting
Associates,**
Box 2029,
Grove, OK 74344
918-786-5349
(M2, D1, S1, 8)

Elephant Industries,
P.O. Box 3626
N. Ft. Myers, FL 33903
813-995-7383
(M9)

ESPN,
ESPN Plaza,
Bristol, CT 06010
203-584-8477
(S9)

**Franey & Parr of Texas,
Inc.,** (Formerly Doherty &
Co.),
One Turtle Creek Village,
Suite 524,
Dallas, TX
214-528-4820
(S9, Insurance)

**Gardiner Communications
Corp.,**
3506 Security St.,
Garland, TX 75042
214-348-4747
(M9 TVRO Packages, S1,
2, 8)

General Cable Corp.,
1 Woodbridge Center,
P.O. Box 700
Woodbridge, NJ 07095
1-800-526-4385
(M3)

Gilbert Engineering Co.,
P.O. Box 23189,
Phoenix, AZ 85063
1-800-528-5567 or
602-245-1050

**Group W Satellite
Communications,**
41 Harbor Plaza Dr.,
P.O. Box 10210,
Stamford, CT 06904
203-965-6219
(S4)

H & R Communications,
Rt. 3, Box 102G,
Pocahontas, AR 72455
1-800-643-0102
(M2, D1, S2, 3, 8)

Harris Corporation,
P.O. Box 1700,
Melbourne, FL 32901
305-724-3401
(M2, 9, S2)

**Heller-Oak
Communications,**
105 W. Adams St.,
Chicago, IL 60603
1-800-621-2139 * 7600
(S3)

Home Box Office, Inc.,
12750 Merit Dr.
Dallas, TX 75251
214-387-8557
(S4)

* **Hughes Microwave
Communications Products,**
3060 W. Lomita Blvd.
Torrance, CA 90505
214-517-6233
(M9)

Ind. Co. Cable TV, Inc.,
P.O. Box 3799
Hwy. 167 N,
Batesville, AR 72501
501-793-4174
(D1)

* **Jerry Conn Associates,
Inc.,**
P.O. Box 444,
Chambersburg, PA 17201
1-800-233-7600
1-800-692-7370 (PA)
(D3, 4, 5, 6, 7, 8)

**KMP Computer
Services, Inc.,**
703 Central Ave.,
Los Alamos, NM 87544
505-662-5545
(S4, 5)

Karnath Corporation,
2001 Westridge,
Plano, TX 75075
214-422-7981 or 7055
(S1, 2, 8, 9)

Katek, Inc.,
215 Wood Ave.,
Middlesex, NJ 08846
201-356-8940

**Klunness Electronic
Supply,**
P.O. Box 547,
107 Kent Street,
Iron Mountain, MI 49801
1-800-338-9292
1-800-682-7140 (Mich)
(D1, 8, S2, 8)

LR Electronics, Inc.,
901 South Ave.,
Horseheads, NY 14845
607-739-3844
(M7)

Lash-Ade Company,
P.O. Box 147,
Guntersville, AL 35976
205-582-6333
(M9 Cable Protector,
S9 Equipment Repair)

Larson Electronics,
311 S. Locust St.,
Denton, TX 76201
817-387-0002
(M9 Standby Power)

Lemco Tool Corporation,
Box 330A,
Cogan Station, PA 17728
1-800-233-8713
(M8, 9 Tools)

**Lindsay Specialty
Products, Ltd.,**
50 Mary Street West,
Lindsay,
Ontario, Canada K9V 4S7
705-324-2196
(M1, 2, 4, 5, 7, 9)

M/A Com Prodelin, Inc.,
P.O. Box 100
Claremont, NC 28610
704-459-9762
(M2, 3, 7, S2)

Magnavox CATV Division,
100 Fairgrounds Drive,
Mantius, NY 13104
1-800-448-5171 or
1-800-522-7464 (N.Y.)
(D4, 5, 7, M4, 5, 6, 7, S3, 8)

**McCullough Satellite
Equipment,**
Route 5, Box 97,
Salem, AR 72576
501-895-3167
(M2, 9, D3, 4, 6, 7)

Microdyne Corporation,
471 Oak Road,
Ocala, FL 32672
904-687-4633
(M9 Satellite TV
Receivers)

Distributors	Manufacturers	Service Firms
D1—Full CATV equipment line	M1—Full CATV equipment line	S1—CATV contracting
D2—CATV antennas	M2—CATV antennas	S2—CATV construction
D3—CATV cable	M3—CATV cable	S3—CATV financing
D4—CATV amplifiers	M4—CATV amplifiers	S4—CATV software
D5—CATV passives	M5—CATV passives	S5—CATV billing services
D6—CATV hardware	M6—CATV hardware	S6—CATV publishing
D7—CATV connectors	M7—CATV connectors	S7—CATV drop installation
D8—CATV test equipment	M8—CATV test equipment	S8—CATV engineering
D9—Other	M9—Other	S9—Other

Note: Associates listed with * are Charter Members.

* **Microwave Filter Co.**,
6743 Kinne St., Box 103,
E. Syracuse, NY 10357
1-800-448-1666
(M9 Bandpass Filter)

**Mullen Communications
Construction Co., Inc.**,
P.O. Box 1387A,
Green Bay, WI 54305
414-468-4649
(S2)

**National Farmers Union
Property & Casualty Co.**,
12025 E. 45th Ave.,
Denver, CO 80251
303-371-1760
(D9, Insurance Service)

North Supply Company,
600 Industrial Pkwy.,
Industrial Airport, KS
66031
913-791-7000
(D1, 2, 3, 4, 5, 6, 7, 8)

Octagon Scientific, Inc.,
476 E. Brighton Ave.,
Syracuse, NY 13210
315-476-0660
(M9)

Phasecom Corp.,
6365 Arizona Circle,
Los Angeles, CA 90045
213-641-3501
(M1)

**Power and Telephone
Supply Company, Inc.**,
530 Interchange Drive
N.W.,
Atlanta, GA 30336
1-800-241-9996
(D1)

Quality RF Services, Inc.,
825 Park Way, Suite 3,
Jupiter, FL 33458
305-747-4998
(M4, S9)

RMS Electronics,
50 Antin Place,
Bronx, NY 10462
1-800-223-8312
1-800-221-8857 (Poleline)
(M4, 5, 6, 7, 9)

Sadelco, Inc.,
75 West Forest Ave.,
Englewood, NJ 07631
201-569-3323
(M8)

Scientific Atlanta, Inc.,
3845 Pleasantdale Rd.,
Atlanta, GA 30340
404-449-2000
(M1, 2, 4, 8, S1, 2,
3, 8)

**Showtime Entertainment,
Inc.**,
1633 Broadway,
New York, NY 10019
212-708-1600
(S4)

**Southern Satellite
Systems, Inc.**,
P.O. Box 45684,
Tulsa, OK 74145
918-481-0881
(S9)

**Superior Electronics
Center**,
2010 Pine Terr.,
Sarasota, FL 33581
813-922-1551
(M4, S9)

TVC Supply Co., Inc.,
1746 E. Chocolate Ave.,
Hershey, PA 17033
717-533-4982
(D1, 2, 3, 4, 5, 6, 7, 8)

Teledac, Inc.,
1575 Taschereau Blvd.,
Longueuil,
Quebec, Canada J4K 2X8
514-651-3716
(M9 Character
Generators)

Tele-Wire Supply Corp.,
7 Michael Ave.,
East Farmingdale,
NY 11735
516-293-7788
(D1, 2, 3, 5, 6, 7, 8, 9)

* **Texscan Corp.**,
3169 N. Shadeland Ave.,
Indianapolis, IN 46226
317-545-4196
(M9 Bandpass Filters)

* **Theta-Com CATV**,
2960 Grand Avenue,
Phoenix, AZ 85061
602-252-5021
(M1, 4, 5, 7, 8)

* **Times Fiber
Communications**,
358 Hall Avenue,
Wallingford, CT 06492
1-800-243-6904
(M3)

Tocom, Inc.,
P.O. Box 47066,
Dallas, TX 75247
214-438-7691
(M1, 4, 9 Converters)

* **Toner Cable
Equipment, Inc.**,
969 Horsham Rd.,
Horsham, PA 19044
1-800-523-5947
In PA. 1-800-492-2512
also 1-800-523-5947 (PA)
(D2, 3, 4, 5, 6, 7)

**Triple Crown
Electronics, Inc.**,
4560 Fieldgate Dr.,
Mississauga, Ontario,
Canada L4W 3W6
416-629-1111
Telex 06-960-456
(M4, 8)

**Turner Broadcasting
System**,
1050 Techwood Dr.,
Atlanta, GA 30318
404-898-8500

Tyton Corp.,
P.O. Box 23055,
Milwaukee, WI 53223
414-355-1130
(M6, 7)

United Press International,
220 East 42nd St.,
New York, NY 10017
212-682-0400
(S9 Automated News
SVC.)

United Video, Inc.,
3801 South Sheridan Rd.,
Tulsa, OK 74145
1-800-331-4806
(S9)

Viewstar, Inc.,
705 Progress Ave.,
Unit 53,
Scarborough,
Ontario, Canada M1H 2X1
416-439-3170
(M9 Cable Converter)

Vitek Electronics, Inc.,
4 Gladys Court,
Edison, NJ 08817
201-287-3200

**Walsh, Walsh, Sweeney
& Whitney, S.C.**
P.O. Box 1269,
Madison, Wi. 53701
608-257-1491
(S9)

**Warner Amex Satellite
Entertainment Corporation**,
1211 Avenue of the
Americas,
New York, NY 10036
212-944-4250
(S4)

* **Wavetek Indiana**,
5808 Churchman,
Beech Grove, IN 46107
1-800-428-4424
TWIX 810-341-3226
(M8)

Weatherscan,
Loop 132,
Throckmorton Hwy.,
Olney, TX 76374
817-564-5688
(D9, Sony Equip. Dist.,
M9 Weather Channel
Displays)

Western Towers
Box 347,
San Angelo, TX 76901
915-655-6262/653-3363
(M2, 9 Towers)

Winegard Company,
3000 Kirkwood Street,
Burlington, IA 52601
1-800-523-2529
(M1, 2, 3, 4, 5, 7)

Zenith Radio Corp.
1000 N. Milwaukee Ave.
Glenview, IL 60025
312-391-8195
(M1, 6) □

Showcase

STAR EXPANSION TOGGLER SCREW ANCHOR

North Supply announces the Toggler Screw Anchor by Star Expansion Company. This new screw anchor will accept any size screw from #6 to #14, and works in drywall, wood, concrete, masonry or acoustic tile, regardless of wall thickness. Fast and easy to install, the Toggler Screw Anchor requires one size hole; 5/16" drilled or routed with awl. Available in three sizes, boxes of 100 each.

North Supply, a subsidiary of United Telecommunications, Inc., is a leading international distributor of communications equipment, security and alarm systems, and electrical products through its 11 distribution centers located throughout the United States.

For further information contact, North Supply Company, Chris Watkins, 600 Industrial Parkway, Industrial Airport, Kansas 66031.



MAGNAVOX CATV INTRODUCES REBUILD ANALYSIS SERVICE

Magnavox CATV Systems, Inc. recently announced its new Rebuild Analysis Service — a service designed to help cable systems assess their existing equipment and then rebuild and upgrade it with advanced, state-of-the-art technologies.

The new service, the first of its kind in the cable TV industry, consists of three stages:

- * Paper Study — a Magnavox Applications Engineer gathers information about the present system, then performs a system engineering analysis and a detailed map analysis.

- * Field Study — a Field Engineer from Magnavox' Technical Service department makes an on-site evaluation of the system.

- * System Design — a new system is designed using updated technology.

Magnavox CATV created the Rebuild Analysis Service to save system operators time and money in the analysis and construction phases of rebuilding. Existing cable equipment is rebuilt in conjunction with new cable products using advanced technologies. A rebuilt system

can achieve higher frequencies, expanded channel capacity, more services to subscribers, and overall, a more cost-effective system performance.

For more information about Magnavox' Rebuild Analysis Service, call: (800) 448-5171 or (800) 522-7464 (in New York State).

HARRIS ANNOUNCES KU-BAND SATELLITE EARTH STATION

Harris Corporation, Satellite Communications Division, Antenna Operations, announces a complete Ku-Band Satellite Earth Station Antenna Product Line. Currently in production are 3 Meter, 6.1 Meter, 5 Meter (Mobile), and 8 Meter Antennas. These units will be available for delivery starting in December 1983.

The reflector/pedestal system utilized for this new product line employs the latest "State-of-the-Art" methods in design and manufacturing techniques for advanced structures for an earth station terminal. This design offers several advantages over the conventional mount. Its main features are as follows:

- a. High stiffness/weight ratio reflector structure, reducing cost, handling and high wind problems.

- b. Low maintenance bearings on the elevation and azimuth axes.

- c. Simplified foundation design, reducing the complexity of design and minimizing the volume of concrete required.

- d. Reduced installation time.



Harris uses a unique shaping technique for the main reflectors and sub-reflectors. This technique provides optimum antenna efficiency and sidelobe performance.

Options offered include deicing, computer controlled motor drive systems, and turnkey installation.

Harris Corporation is a Fortune 250 producer of "State-of-the-Art" information processing and communication equipment for the worldwide information technology market. For more information, contact Rod Hurlburt at 214-984-0555 or write Box 1277, Kilgore, Texas 75662.

SCIENTIFIC ATLANTA INTRODUCES NEW 4.6-METER EL/AZ EARTH STATION MOUNT AND DUAL-BEAM FEED

Scientific-Atlanta, Inc., has introduced a commercial quality elevation-over-azimuth mount for its popular 4.6-meter earth station antenna. The new antenna mount is designed for rapid, accurate pointing and reduced cost installation. The foundation does not have to be aligned to a specific heading to achieve complete 360 degree azimuth coverage from any location in the contiguous United States. Minimum site preparation is required, and installation errors associated with foundation centerlines are eliminated.

A cast pier foundation kit is also available as an economical alternative to a concrete slab foundation. The pier foundation is designed for steady 100 mph windloads. It consists of three cast pier inserts bolted into a triangular steel framework. The framework is lowered into three augered holes containing prepared re-bar cages. The holes are then filled with concrete.

Complete specifications on the Series 8346 4.6-meter elevation-over-azimuth antenna can be obtained by writing to Scientific-Atlanta, Inc., Box 105027, Dept. A/R, Atlanta, Georgia 30348. The Series 8346 has a standard prime focus feed, with Cassegrain and dual-beam feeds offered as options.

Scientific-Atlanta, Inc., has also introduced a dual-beam prime focus feed assembly to receive signals simultaneously from two adjacent C-band satellites separated by 4 degrees of geosynchronous arc. The dual-beam feed is available with Scientific-Atlanta's 4.6-meter and 5-meter earth station antennas. Easy-to-install retrofit kits are also available for installed 4.6 or 5-meter prime focus or Cassegrain single-satellite antennas. The retrofit kit consists of the dual-beam feed assembly, two feeds, spars, reflector center plate and all mounting hardware.

The dual-beam, dual-polarized feed is designed for optimum gain and sidelobe

performance. Gain at midband with a 4.6-meter dual-beam feed earth station is 42.4 dBi minimum. With a 5-meter dual-beam feed antenna, gain at midband is 43.4 dBi minimum. Both antennas are FCC licensable.

Complete specifications on the Series

8346 4.6-meter elevation-over-azimuth antenna and information about the dual-beam feed are available by writing to Scientific-Atlanta, Inc., Box 105027, Dept. A/R, Atlanta, Georgia 30348 or calling (404) 925-5778.

MIDWEST CORPORATION ANNOUNCES M1

Midwest Corporation has announced their new M1 Mobile Production System and a 3-meter Delta Gain deep-dish antenna. The M1 Mobile Production System is the all-in-one mobile unit that makes the tough job of on-location shoots easier for the cable operator. The M1 modular mobile unit is a totally integrated mobile system, designed to maximize the cable operator's investment. It serves both as a conventional mobile unit, and also as a portable production studio which yields studio quality on location. It includes two color camera systems with a complete support equipment package. The state-of-the-art equipment is housed in a heavy-duty, fully air conditioned, color-coordinated van; built with custom cabinetry, a full security system, and a weatherproof exterior signal panel. Standard equipment also includes two VTR's and TBC's, an edit controller, production switcher, character generator, waveform and picture monitoring, pulse distribution system and audio facilities.



The 3-meter Delta Gain antenna, also featured in the Midwest booth, provides a measured efficiency of 78% (23% better than any alternative antenna), and noise temperatures at higher elevations of less than 25°K. It provides the same performance as many larger deep-dish antennas, but costs up to 20% less in many cases. It comes in single feed, dual feed, or switchable configurations, and because it's smaller and lighter than 4.5-meter models, significant savings — even in shipping costs — are apparent immediately to the cost-conscious cable operator.

Midwest Corporation, one of the nation's leading suppliers to the cable communications industry, is more than just one of the world's largest video equipment suppliers. It is also a true "systems" company, with the ability to integrate the technologies of the world's leading manufacturers into comprehensive systems packages for cable operators and broadcasters. With a history of 20 years of dynamic and innovation to keep up with an ever-changing industry, Midwest designs and distributes teleproduction systems, control systems, transmission systems, CATV components and systems, video, audio, and RF components as well as mobile systems.

For more information, contact Midwest Corporation at P.O. Box 226, Clarksburg, WV 26301 or call their toll-free number 800-624-3845.



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Guam Cable TV
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Agana, Guam 96910 Tel (671) 477-9334



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- 2.) Associate Members — pay an annual fee.
- 3.) Individual Members — pay an annual fee.

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