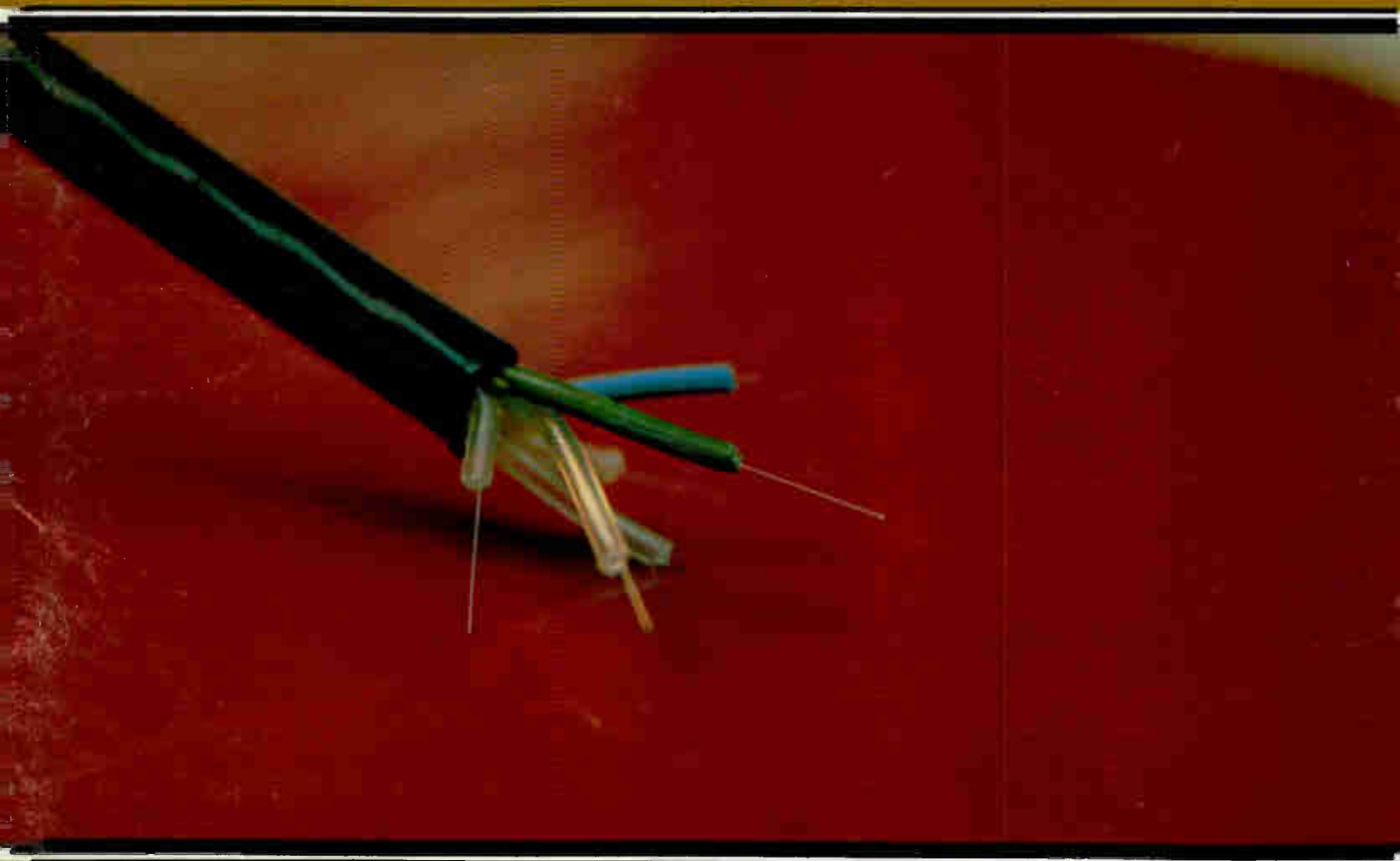


# CableVision's Tech Review

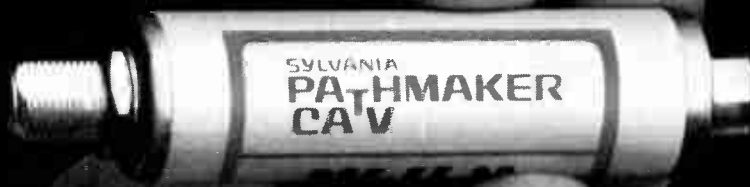
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# Tech Review

## Contents

Cliff's Notes .....	page 4
What's New	
Line Equipment/Amplifiers .....	page 12
Line Equipment/Headend .....	page 14
Line Equipment/Miscellaneous .....	page 16
Earth Stations .....	page 19
Local Origination/Studio .....	page 24
Test Equipment .....	page 29
Construction Equipment .....	page 34
Security/Traps and Converters .....	page 37
Cable Interference Chart .....	page 42
Books and Literature .....	page 46



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**CLIFF'S NOTES:**



**Cliff Schrock  
Editor**

**This Is Your Magazine**

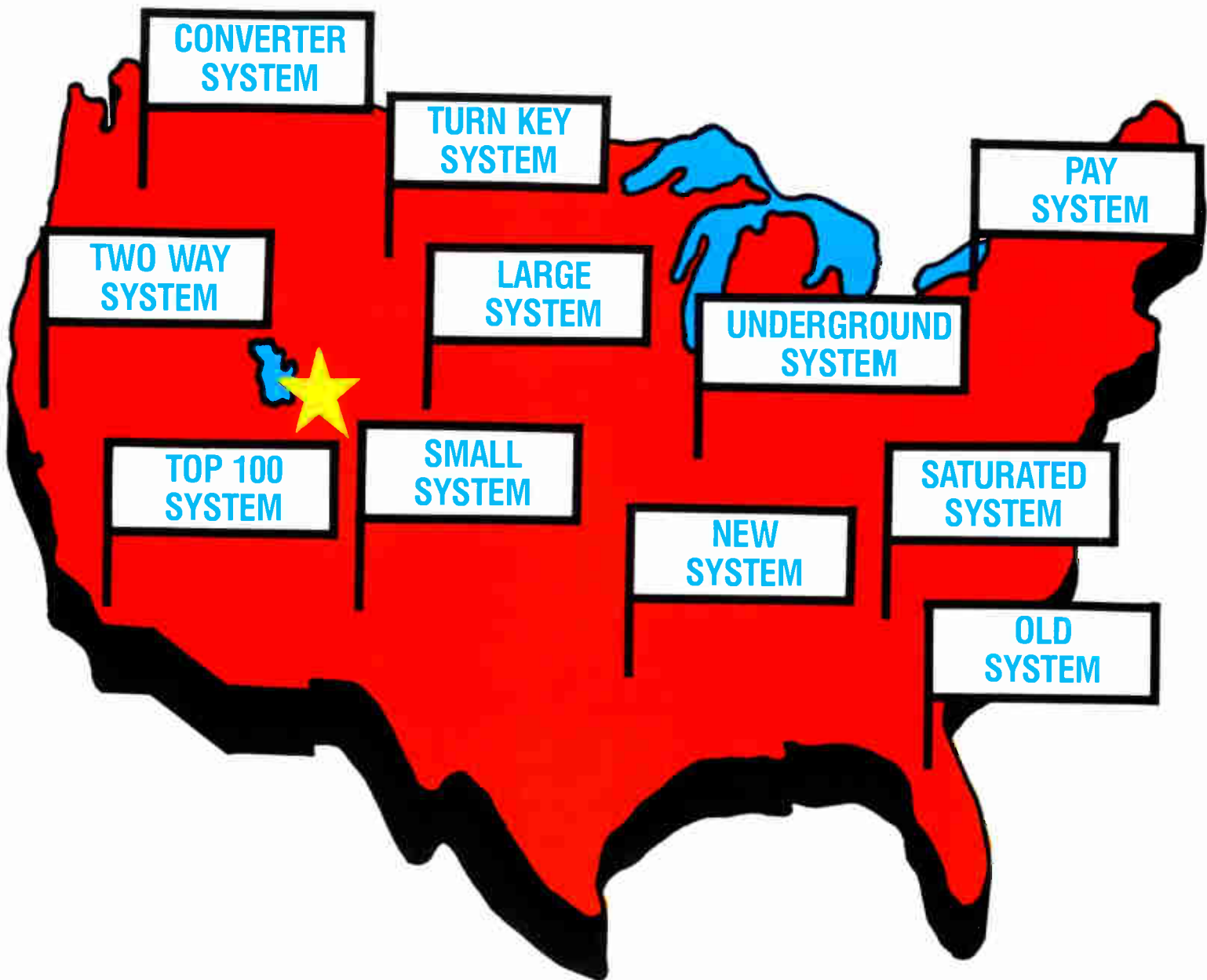
All I can say is, I'll bet you never saw anything like this before . . . unless you remember those old science fiction magazines that offered two stories in one. The *CableVision* staff has always recognized the technical side of the industry. We originally decided to produce *CableVision's Tech Review*—a kind of "what's new" in CATV.

Somewhere right in the middle of us trying to put together the "what's new" issue, Judy Baer, staunch supporter of integrity, purity and idealism in technical journalism (and publisher/editor of *Communications/Engineering Digest*) was sitting in Washington thinking about how much fun it might be to publish a magazine with time to think, instead of spending 20-hour days writing, selling, subscribing and all the other crud that goes along with the joy of owning your own book.

Judy talks to Bob and asks "what's new?" Bob talks to Paul, Paul to Cliff—and voila!!! *CableVision* gets the production headaches and Judy is free to devote herself to all of that neat stuff she never had time for before.

*CableVision* and *C/ED* now are coming from the same house. Judy's goal was to produce the finest technical journal in the industry and that will not be forgotten. She has been trying to shake off the "SLM and baling wire" technology of the past 20 years. In these past five years the cable industry has made tremendous advances in the areas of distribution, testing, two-way, earth stations, MDS, addressable taps . . . and now optical fiber. The education process must be continual and a good technical magazine is an essential ingredient to industry growth. *C/ED* will basically remain the same with sophisticated technical articles and pieces on engineering management. It will remain the official journal of the Society of Cable Television Engineers. It will cover topics such as Signal-to-Noise Measurements and Non-Linear Distortions in depth and in special issues that will virtually become textbooks for the industry. Test equipment reviews and complete coverage of the industry trade shows are part of the future. Large issues, coverage in detail, more technical articles, more technical news and more color. A magazine that the industry can be proud of and that engineers and technicians can use for day-to-day system operation, research, development and professional growth.

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The professional biweekly, out front in Cable TV.

## **CableVision's Financial Report**

The in-depth semi-monthly newsletter of cable finance.

## **Communications/Engineering Digest**

The monthly standard of broadband technical information.

## **CableVision's Tech Review**

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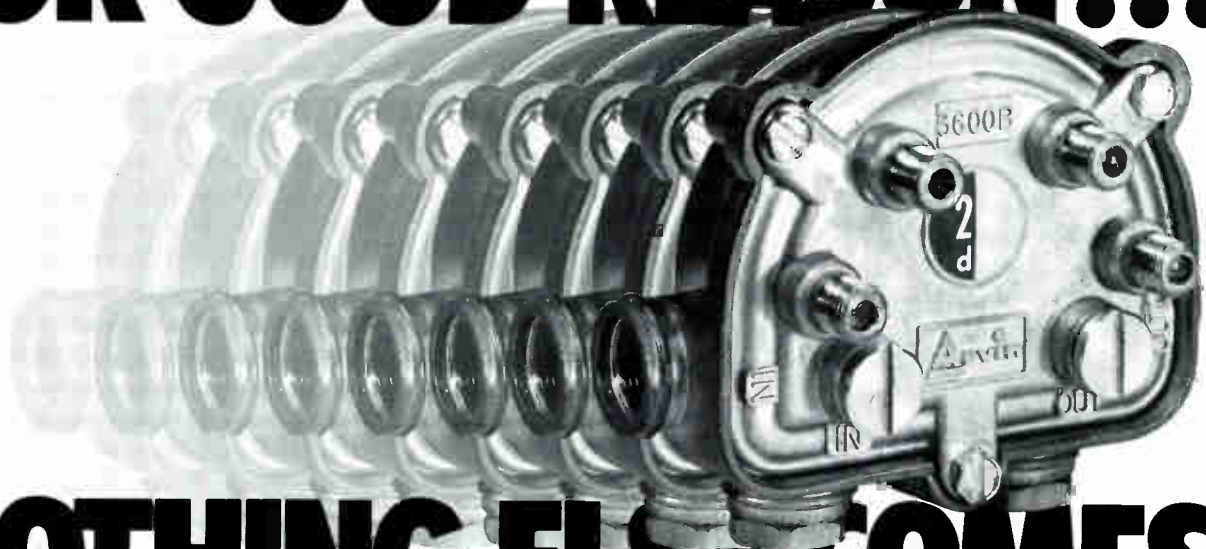
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- 11 33 55 77 99
- 12 34 56 78 100
- 13 35 57 79 101
- 14 36 58 80 102
- 15 37 59 81 103
- 16 38 60 82 104
- 17 39 61 83 105
- 18 40 62 84 106
- 19 41 63 85 107
- 20 42 64 86 108
- 21 43 65 87 109
- 22 44 66 88 110

August 1976

## Advertiser's Index

### TECH REVIEW

Arvin Systems	7
Broadband Engineering	14
CableEquities	24
Cable Instruments	33
Cable TV Supply	4
Cerro Communication Products	19
Control Technology	33
Delta Benco Cascade	47
Glentronics	48
GTE Sylvania	1
Jackson Communication Corp.	39
Jerrold	37,41
LRC	29
MSI	5
Oak Industries	25
Pro-Com	31
RCA	22,23
Sadelco	38
Scientific-Atlanta	21
Systa-Matics	8
Times Wire & Cable	35
Tomco	17
Toner	45
TV Microtime	19
Wavetek	49

### C/ED

Andrew Corporation	2
Avantek	34
Broadband Engineering	6
Comm/Scope	8
Gamco	35
LRC	12
Microdyne	17
Microwave Filter	5
Sadelco	15

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Just circle the number on the Tech Review card which corresponds to the number of the product reviewed in this special "What's New" section of Comm/Eng digest . . . . Cliff Schrock will see to it that you get details FAST! And, while you're at it, subscribe to C/Ed—If you're in cable, you need C/Ed to keep moving . . . .

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# LINE EQUIPMENT/AMPLIFIERS

## AEL/Line Extender

A low cost, hybrid line extender amplifier, series M4X, is introduced by AEL Communications Corporation (AELCC), the CATV subsidiary of American Electronic Laboratories, Inc. (AEL). The series features extended bandwidth, high gain and flat response.

Covering the 50-300 MHz range, the M4X series offers optional features of Automatic Gain Control and return transmission capabilities in the 5-32 MHz range. These and other optional combinations may be selected at time of order.

The operational characteristics of 29 dB gain and +0.25 dB flatness provide the system with high quality balanced signals of sufficient strength to accommodate very wide subscriber coverage. Designed with top-of-the-line push/pull hybrid integrated circuits, the series delivers low distortion at high output levels. Excellent heat sinking and overvoltage protection assures long reliable operating life.

The M4X series is housed in a die cast aluminum housing of proven weather and radiation resistance.

**Circle Reader Service #1**

## Broadband Engineering/Mod Kits

What do you do with an old Starline I amplifier? Trade it in? . . . Wrong! You get one of Bob Savard's mod kits for \$35 and update all the semiconductors. You can convert that old Starline to modern specs in about 30 minutes, and if you consider the time it takes to change-out a housing, not to mention the cost of getting a new amplifier, Broadband may be offering the bargain of the century.

The actual change involves switching the old MHz transistors for the new GHz types, then rebiasing the whole works. This will result in a better noise figure, less power dissipation and better crossmod numbers. Broadband also has other kits for different models and manufacturers.

**Circle Reader Service #2**

## C-COR/Supertrunk System

The new Supertrunk system by C-COR Electronics, Inc., is built around the Supertrunk amplifier model T-071. This amplifier is optimized for 16dB spacing to realize the theoretical advantages of improved performance at reduced spacing.

On a 44 mile trunk, excellent performances of 50 dB carrier-to-noise ratio and -63 dB cross modulation is realized. These results are for eight channels in a bandpass of 40 to 120 MHz using one inch low loss coaxial cable. The trunk amplifiers are housed in rugged weatherproof casting and feature modular design with excellent heat transfer properties. Dual pilot automatic level control using modulated pilots is provided. An interstage response adjust network enables touch-up alignment to achieve ultra flat response in long cascades without affecting second order characteristics. Discrete solid state devices (individual transistors) are used since it is impossible to provide the resulting performance with commercially available hybrid units.

**Circle Reader Service #3**

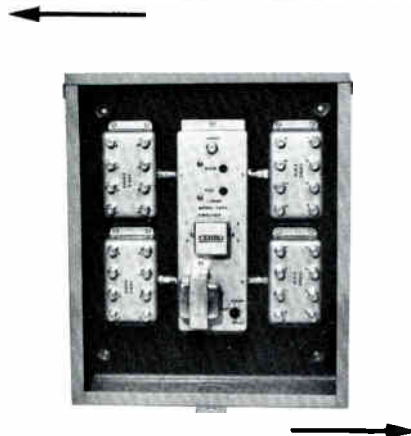
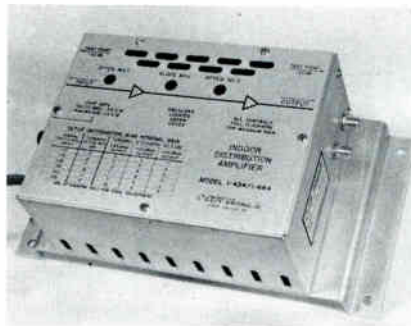
## C-COR/Indoor Amplifiers

A new multi-channel, highly reliable Indoor Amplifier is available from C-COR Electronics, Inc. The extremely low operating temperature and high quality hybrids insure high reliability. This amplifier is part of the high quality, high performance distribution amplifier family, Models D-4XX and E-4XX, recently announced by C-COR.

With premium cost services such as pay-TV, quality pictures with high reliability are a necessity for continued customer satisfaction and cable company profitability. The I-4XX family of indoor amplifiers meet that need.

Features that describe these units and indicate the many different applications include: 41 dB gain with two hybrids for flexible distribution; two-way filters and reverse amplifier option; powering voltages of 30, 60, 115 or 230, 50 to 60 Hz; and plug-in fixed or thermal bandwidth limiting equalizers with bandwidths of 220 MHz, 245 MHz, 270 MHz, and 300 MHz.

**Circle Reader Service #4**



## Cerro/Distribution Center

Cerro Communication Products has been well known for their wire products; however, they also produce a rather complete line of other CATV peripheral products such as splitters, taps, and baluns.

Cerro now has available Internal Distribution Centers (IDC) designed primarily for apartment house and hotel distribution systems. The IDC concept is unique in that the amplifier is designed with ports spaced so that splitters up to 8 ports can be mounted along side as shown in the picture. This concept allows individual subscriber run so that all connections can be made through one box. Each unit can be setup in a locking housing and can serve up to 32 subscribers. Clearances are maintained so that traps can be accommodated on all of the tap ports. The Cerro system represents a logical approach to the problems of providing connections in high density complexes.

**Circle Reader Service #5**

# LINE/AMPLIFIERS - CONTINUED

## Delta-Benco-Cascade/ Feedforward Ultralinear Wideband Amplifier

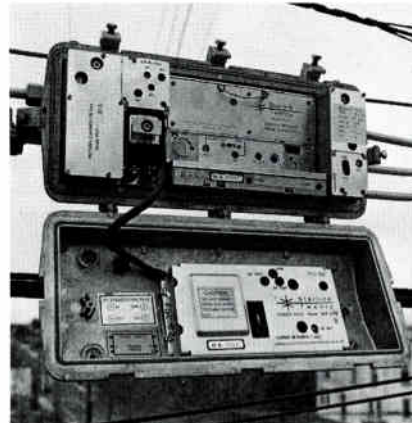
DBC is producing a series of ultralinear wideband 40-300 MHz CATV amplifiers. Model No. 734-204-XX, providing 18, 35, 40 to 52 dB of gain. The use of feedforward linearization techniques and a patented post distortion network provides improvements of 25 dB in intermodulation distortion over present state-of-the-art CATV hybrid amplifiers. The units feature a maximum noise figure of 8 dB, 75 ohm input/output impedance with a 16 dB minimum return loss,  $\pm 0.5$  dB gain flatness and a wide range of gain and tilt control. Excellent regulation and minimum heat dissipation is provided by a switched mode power supply, operating from 120/240 volt line power, or optionally, from 30/60 volt cable power. Stable operation is maintained over a broad temperature range  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .

Designed primarily for CATV applications, the units will deliver more than 1W in a single TV channel operation, and may be used in TV Translator applications, for laboratory RF power sources and many other uses.

**Circle Reader Service #6**

## Starline/20-300A Amplifier

Jerrold's Starline 300A is a 40 to 300 MHz main station amplifier designed for 18 to 25 dB spacing. Jerrold claims the unit provides the best system performance in the cable industry, and system stability is unmatched at room temperature. With claims like that—what more can we say? For additional information about Starline 20/300A . . . superior performance plus more dB's per dollar . . . please contact your Man from Jerrold.



**Circle Reader Service #7**

## Magnavox/ Economy Mainstation

Small CATV systems with an eye towards economy, and operators wishing to extend their present plants now have a low-cost, state-of-the-art mainstation designed especially for them—the Magnavox 4-M Microline Series.

Designed for use outside densely populated areas, the 4-M Microline can be used for trunk, bridging or distribution service, extending its adaptability far beyond "make do" line extenders. It is available in many options of voltage and gain characteristics including either manual gain or AGC.

Employing the basic broadband circuitry of the MX-404, which has proven highly dependable in several thousand installations, the 4-M makes available the performance of modern field tested hybrid IC's to budget-minded smaller system operators. In a price range comparable with older discrete component units, the new mainstations will accommodate growing CATV systems over a longer period of time without risking obsolescence.

**Circle Reader Service #8**

## Sylvania/ Amplifier Improvements

This company's traditional line of modular amplifiers have all been updated using the TRW hybrids. In addition they have gone to a one piece casting which makes the modules literally ingress-resistant. (That's a new engineering term we've just made up!) Their amplifiers have always been interesting.

Of particular interest, I think, is the "plug-in" approach to line extender gain requirements and cable compensation for temperature variations. The Model 211 amplifier module contains thermal compensation to correct for attenuation changes in the typical cable spacing (approximately 12 dB) associated with a distribution amplifier having a 28 dB nominal gain. The Model 231 provides an additional gain of 6 dB (34 dB nominal) with thermal compensation for approximately 18 dB of cable. Even more gain may be obtained with the use of the Model 255, and this unit may be automatically controlled for both level and slope.

**Circle Reader Service #9**

## What's New at TRW?

We'd have to devote an entire issue to TRW to do this company justice with their continued contributions to the cablevision industry in the area of hybrid semiconductors and amplifiers. Of course, the hybrids sit back in the dark corners of an amplifier and when they work you never even see them. Just to give you an idea of what TRW has done over the last five years, they've made 24 major improvements of hybrids for cable amplifiers. Late last year they shipped their 500,000th hybrid. Most amp manufacturers are now exclusively using TRW's hybrids. In spite of this performance, their goals for next year are: higher reliability, higher power and lower dissipation (at lower cost?).



**Circle Reader Service #10**

## Triple Crown/Line Extender

Application of the DL 332 represents a new concept in CATV operation offering to both large and small systems an efficient method of centrally controlling amplifier operating levels within the limits established by system designer.

It is a fully automatic line extender, to be set for desired output level in system workshop, using laboratory instruments to assure continuous operation in its location at the designed levels.

Level adjustment in the field, often resulting in misadjustment due to inaccurate field strength meter, is not recommended. The DL 332 is fitted with two indicators, (LED), extending through cover plate, to provide adequate check as to proper function of the amplifier after installation.

**Circle Reader Service #11**

# LINE/HEADEND - CONTINUED

## CATEL/Video FM System

CATEL's new VFSM-2000 System represents a major innovation in the CATV-CCTV industry. Taking advantage of the long recognized qualities of FM (remember Major Armstrong?), the CATEL system enables you to build noise-free super-trunk systems with extraordinary distance capabilities. Tests have been made comparing a traditional super-trunk run—then changing over to FM modulation on the same trunk. Improvements in the picture quality have been startling. The new FM system has all sorts of possibilities in long-haul coax distribution of pay-TV signals.

**Circle Reader Service #12**

## CATEL/ FM Transmission System

What can we say about CATEL? Frank Genochio is always doing something different. The latest is an FM transmission system that will improve the sound on a TV program by plunking it down in the middle of the FM band. If you have a stereo sound available on pay-TV programs or can get direct live sound from a local studio, the system works best. If, however, you're stuck like 99%



of us with a standard off-air television feed, you can use a little synthesizer from CATEL to make a stereo effect and then go through the FM transmission system. All the subscriber has to do in his home is tune his stereo to the proper channel and enjoy glorious soothing living stereo sound. We understand that Gill Cable has been using one of these FM transmission systems and are quite pleased.

**Circle Reader Service #13**

## RCA/Modulators

The CTM10 TV Modulator is something else! It is totally state-of-the-art and a beautiful rig. It's a companion to the HSP1 Signal Processor and it features IF switching, phaselock capabilities, high output operating levels and remote DC power inputs. Since it is a plug-in type instrument you can alter the configuration later as applications change. It comes stocked with six modules; metering; phase equalization; audio; video; and output converter. The phaselock module is optional

**Circle Reader Service #14**

## Parts Problems ??!!

Write or call today for your copy of Broadband's new 1976 high reliability replacement components catalog. All manufacturers listed.

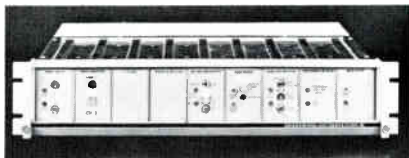
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## Scientific-Atlanta/ Demodulator

The Model 6250 Television Demodulator provides precision demodulation of any transmitted television signal. It is capable of both synchronous and envelope detection by selecting the appropriate plug-in module. The 4.5 MHz aural sub-carrier may be generated by mixing the phaselock synchronous oscillator with the sound IF. The phaselock oscillator approach provides superior signal-to-noise ratio. Envelope delay in the unit



matches that of the average television home receiver, and perfectly cancels predistortion from the TV transmitter. The 6250 is very sensitive for direct off-air reception. Input sensitivity of 100 uv and noise figure of 6 dB low band and 7 dB highband, response of  $\pm 5$  dB to 4.18 MHz, differential gain of  $\pm 2\%$ , differential phase of  $\pm 5\%$  makes it a super demodulator.

**Circle Reader Service #15**

## TOMCO/Headend Standby

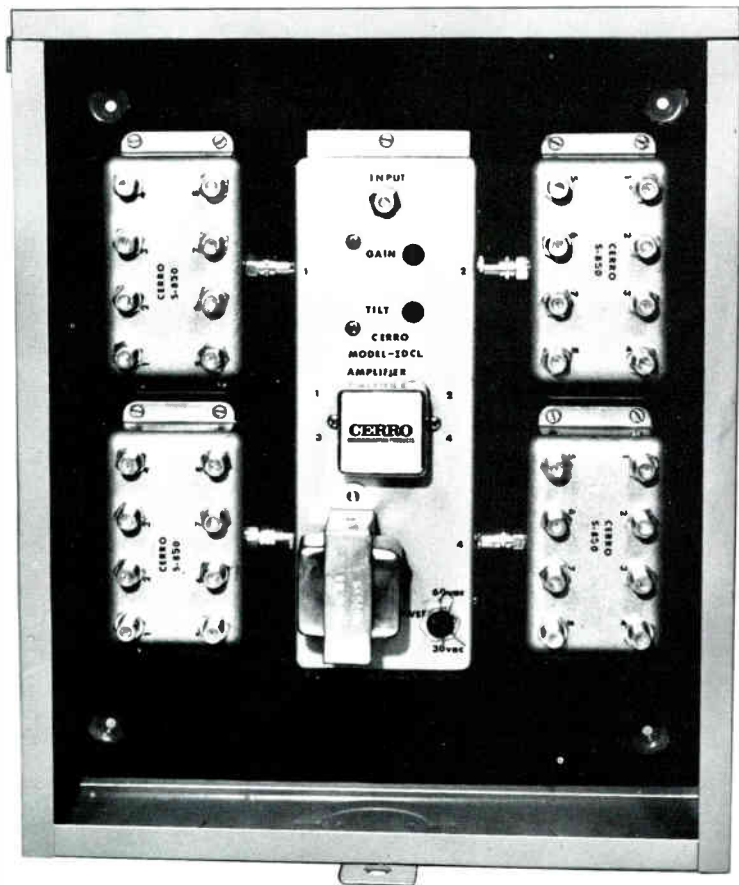
TOMCO is the originator of the headend standby system, SR-1000 and 2000. One of these gadgets in your headend is capable of instant substitution in case of a processor failure. Any input or output channel can be selected. The SR-2000 can be remotely controlled using a standard telephone touch-style system. A Model 3000 will be available in a couple of months and it will use a synthesizer to generate any standard cable channel or off-air UHF channel. Price will be under \$2,500 according to the company. The TOMCO standby system represents one more thing to consider when designing your system for maximum reliability and redundancy.

**Circle Reader Service #16**



# NEW!

## MULTI-OUTPUT DISTRIBUTION AMPLIFIERS



### EACH UNIT SERVES UP TO 32 SUBSCRIBERS

- EASY CONNECT/DISCONNECT FROM CENTRAL POINT
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### 28dB GAIN, 47dBmV OUTPUT

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- PUSH-PULL IC CIRCUITRY (40-300 MHz RESPONSE)
- 10dB GAIN & TILT CONTROLS
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## LINE/MISC.-CONTINUED

### Arvin/Directional Tap

Arvin 3600B taps may not look much different at first glance, but once you get past all of the standard features like changeable tap covers, aerial or underground cable entry, etc., you will find a number of improvements that might mean the difference between a tap either lasting for 20 years or being a headache. It is the small features that make the difference, and the Arvin taps abound in these features, such as: seizure screw goes directly to tap cover circuit, (meaning no intermediate connectors to fail.) The seizure screw cannot shear the center conductor, (even those delicate copper clads). And the taps are coated with a polyurethane compound that will resist the weather, even salt spray, like no other unit in the industry. In addition to all of these mechanical features, the taps offer excellent electrical performance, a high hum rejection, good isolation and do everything else you would expect out of a good tap.

**Circle Reader Service #17**

### C-COR/Transient & Surge Protector

Transient and surge protection at the ac power supply is the function of the new transient suppressor, models TS-60 to TS-60-M offered by C-COR Electronics, Inc., State College, PA. The unit is applied at the output terminals of 60 volt and 30 volt ac power units to eliminate both power company surges and overvoltages generated by all ferroresonant supplies upon turnon. The operation therefore eliminates the need of a time delay relay as an added bonus to its surge and transient protection. The firing voltage is 90 volts nominal and it limits the supply output voltage to 111 volts peak which is below the firing voltage of the gas diodes normally utilized on the coaxial inputs to amplifiers. The TS-60 is designed to mount inside the ac power supply enclosure and is simply connected across the supply output terminals. The TS-60-M is enclosed in the weatherproof housing and should be inserted in the coaxial cable output of the power supply, providing additional RF isolation as well as its transient and surge protection function.

**Circle Reader Service #18**

### Fluke/System

This system is a major innovation in CATV technology. It combines the best of all worlds. Wireless T/C telegraphy and modern coax technology have finally joined hands. Measurements have been unparalleled throughout pre-production and pilot line stages of manufacturing. Advanced techniques in material useage have been applied to this innovative engineering breakthrough. Industry has been wanting such a unit for years but just hasn't known how to ask for it. Finally, after extensive market research and customer input, an inexpensive system that meets every possible demand has been produced. Reported performance in the field has been good. The unit has a very long shelf-life and has exceeded all of the company's original expectations.

**Circle Reader Service #19**

### Glentronics/Automatic Reset Current Limiter

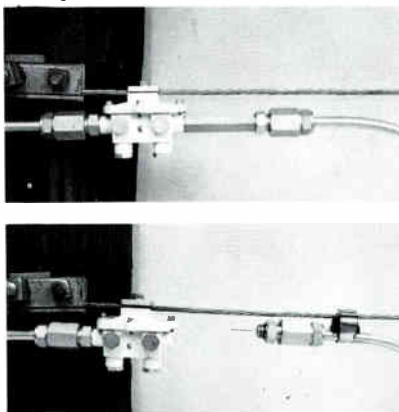
You might not think much of an automatic reset for your power supplies until you have to get up in the middle of the night, find the bad supply, climb the pole and change the fuse. The time saved during an outage, not to mention your own time, could make this new option to the Glentronics power supplies pay for itself.

This new circuit limiter has a built in time delay so that the power will be reset after a surge or momentary short. If the line remains shorted the limiter will continue to protect the power supply until the problem is rectified.

**Circle Reader Service #20**

### Gilbert Engineering/Cable Extensions

Have you ever stripped off a piece of coax, and "son of a gun!" (or some words to that effect) the cable is too short? Also, when you change from those old large housing amplifiers to the new small housings, chances are the cable will be too short. Gilbert has the answer, with its new cable extensions. The gadgets are available for all standard types of cable and beyond that I'm going to let the pictures do the talking.



**Circle Reader Service #21**

### Gulton E.M. Div./Standby Power

Power outages have caused many a technician a sleepless night, especially since a local outage can affect the entire trunk from that point onward. Gulton makes a number of battery operated power supplies and now announces a new member of the family, for a new low price, the EMNB113A standby power system.

This compact unit features completely solid state and PC board construction for trouble-free maintenance. It will deliver either 30 or 60 volt, 12 amp square wave power to the CATV cable in the event of utility power failure. The normal CATV power supply (ferroresonant regulator) is included as standard equipment. The EMNB113A protects your trunk amplifiers from power spikes, high voltage transients and lightning. It is also overload protected and short-circuit proof. Alarm lights indicate unit readiness and normal or standby operation. The durable case is constructed to accept a variety of automotive and stationary type batteries for variable standby times. Pole and pedestal mounted versions are available.

**Circle Reader Service #22**

# introducing...

## the **Model SR-2000**

# Remote Standby Receiver



### FEATURING:

- Touch-Tone® Link input/output channel selection
- Total bypass of faulty processor
- Expandable control unit to switch RF, video, and more
- Ultra-high isolation switches
- Crystal controlled converters

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## LINE/MISC. - CONTINUED

### GTE Sylvania/Taps

GTE's entry in the tap market presents a few different twists. They offer a two or four-way tap that can be bolted onto a single standard housing. (We've heard that before also!) But, they've got a protective center conduction-seizure system that features a chamfered capture-screw. (Which sounds like a lot of fun.) That theoretically will give copper-clad center conductors a little more chance of survival without breaking. In addition, they have the lowest insertion loss and the best hum mod spec (-65 dB down from 0 dBmV level carrying six amps) that we've seen. Tap-to-tap isolation is better than 30 dB. A complete selection of tap plates is available.

**Circle Reader Service #23**

### LRC/New Connectors

LRC is producing a new series of "Seala-Matic" connectors for .412 and .500 cable. They feature an integral mandrill which is nice if you've even been up a pole, taken apart a fitting and had all the parts fall out onto the ground. The connectors are available with either a splice or a bulkhead fitting. All LRC connectors feature 6262 AL clear erudite coatings, stainless sleeves, Neoprene O rings, positive stops, captive parts and controlled O ring compression. Besides that, all the connectors are reuseable.

### LRC/"F" Fitting

What can you say about an F fitting? I made the mistake of asking John McQuaid of LRC that question and he really came unglued. The new LRC F fitting has an attached ferrel and is hex-crimped to bonded foil RG 59 or 6 drop cable. This permits maximum contact around the connector and a super-strong fitting that can stand up to 40 lbs. of pull. John claims it's radiation-proof and if that's true, a whole bunch of test equipment manufacturers will be out of the signal leakage business. That's what you can say about an F fitting!

**Circle Reader Service #24**

### Microwave Filter Co./ Miscellaneous Filters

In addition to traps, MFC makes a complete line of filters for almost every conceivable application. One of their newest products is a CB trap which features a 70 dB notch, +4 MHz around the 27 MHz Citizen's Band. Microwave Filter Co., Inc. has other filters such as co-channel eliminators, sound reducers, UHF bandpass, FM bandpass, channel-droppers, low and high-pass and CB/Amateur isolators. We're willing to bet you could ask MFC for any kind of filter and they can come up with one for you.



**Circle Reader Service #25**

### Prodelin/ Air Dielectric Cable

There are not too many people using pressurized air dielectric cable these days in CATV because of the cost, but if you ever needed to build a really rugged system, or had a high moisture station, Prodelin does make the hardware.

Spir-O-Line CC, a broad-band, air-dielectric, corrugated-copper coaxial cable, has been developed to provide improvements in flexibility, phase stability, constant VSWR values, maximum power handling, low attenuation, eliminating connector disconnect problems, and no periodicity.

The feature which makes these improvements possible is a corrugation-compression technique applied to the outer conductor which mechanically grips the dielectric tubes and locks all components together.



**Circle Reader Service #26**

### RMS/UNITAP

The new RMS UNITAP system has a lot of people in the industry excited, especially competitors building other taps. The UNITAP features one body and changeable tap plates (seems like I've seen this someplace before), with either two or four fittings per plate. The tap plates are all color coded and available in values from 4 to 35. (Of course, everybody knows what that means.) One major innovation is built-in test points and a unique tap body with holes for either aerial or underground mounting. It looks like the goal of RMS with this tap is a "one-style will do all" concept. Don't forget RMS makes a whole bunch of other stuff like splitters, attenuators, indoor amplifiers, line stretchers and connectors wall plates.

**Circle Reader Service #27**

## Tech Review will be back . . . . with its "What's New in CATV

Let us know about your new products and services.

\* Send us your press releases

\* Include glossy photos if possible.

or call our Technical Editor

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# EARTH STATIONS-CONTINUED

## Andrew/4.5 Meter Earth Station Antenna

Andrews now has a 4.5 meter earth station antenna with a cassagranian feed. It was demonstrated at the Newspaper Publisher's Association in Las Vegas, NV and brought down a front page of the *Wall Street Journal* via WESTAR I. This antenna with its excellent design has very high sidelobe suppression, high gain and will be a major positive factor in the small earth station race. Don't you think the Commissioners might have read that issue of the WSJ.



**Circle Reader Service #31**

## Andrew/TV Receiving Earth Station

The Andrew earth station antenna terminal is designed to receive network quality television signals. The earth station consists of an ESA10-46, 10-metre antenna with mount, low-noise pre-amplifier and receiver.

The antenna has aluminum reflector panels which are easily aligned at installation to achieve required surface accuracy on-site. A dual reflector feed system provides high antenna efficiency (51 dBi gain at 3.95 GHz), superior cross-polarization discrimination, receive and transmit capability and 360° polarization adjustment. The steel back-up structure assumes maximum rigidity under severe wind-loads.

The low-noise pre-amplifier is located immediately behind the feed. The receiver is fully tunable over the entire 3.7 to 4.2 GHz band. Thus, crystals are not required for changes in satellite transponder frequencies. The receiver down converts the satellite signals to baseband video and audio. Network quality signal-to-noise of 56 dB can be achieved. The earth station can be provided with fully automatic, redundant, electronic equipment.

**Circle Reader Service #32**

## Farinon/SHL

SHL is a new concept meaning Studio Headend Link. One way to stretch your dollars and increase your pay cablevision capability is to use short-haul microwave. That way you get those fringe areas in town, or maybe share your expensive earth station cost with the guy down the road. Farinon, of course, makes the microwave systems to deliver the signal but, now they're promoting their 4.5 MHz Aural Carrier Generator. By using this generator you can eliminate one of the demod-remod steps. Thereby, you deliver a cleaner and more marketable product. (The picture is what we mean when we say product.) In addition, the aural generator has an extra 15 kHz channel that can be used for basic housekeeping functions.



**Circle Reader Service #33**

## Andrews/Auxiliary E.S. Units

Andrew offers a completely automatic redundant TV receive only earth station incorporating the satellite receiver switching unit. The unit will automatically switch low noise amplifiers and receivers, should there be a failure. If there is a temporary loss of video due to problems at origination, there will be an eight-second delay before switching occurs.

The Remote Channel Selection Unit (RCSU) offered with the Andrew TV receive only earth station provides four thumbwheel switches and a position pushbutton to remotely switch channels of the satellite receivers. An additional auxiliary pushbutton permits the use of a serial data stream to remotely change receiver channel.



**Circle Reader Service #34**

## ITT/Earth Stations

ITT's been making earth stations for a bunch of years before cablevision people even knew about such a thing. They build modular receivers for earth stations in house, however, they will also provide the entire installation for you on a turnkey basis. Their receivers are extremely durable and the two they offer to the CATV market are the same as used in the INTELSAT systems for the government. (We don't know which government.) ITT has recently made some minor improvements to their receivers and the proof shows up in the specifications and performance. Don Buscher of ITT told us that ITT's goal is to provide adequate margin against fades and rain and things that go bump in the night, to provide a truly reliable earth station installation capable of expansion for other services. They provide both single and dual conversion, modular receivers.

**Circle Reader Service #35**

## Prodelin/15' Earth Station Antenna

A new addition to the MASAR\* fiberglass reinforced antenna line is a 15-foot diameter parabolic reflector for operation in frequencies up to 14 GHz. F/d is 0.4. This antenna is available for point-to-point microwave as well as earth terminals.

These 15-foot MASAR antennas are supplied in two sections for ease of shipping



**Circle Reader Service #36**



# Across the country our earth station helps make pay TV really pay.

If you've been waiting to find out how those CATV systems who've invested money in earth stations are faring before you make an investment of your own, the systems already using ours have excellent news for you.

It pays rather well from indications.

They've been telling us the programming is in demand, and the picture quality is good, and their revenues are up.

And from looking at orders we've been getting lately, they must have told others of their good fortune as well. We're now installing new earth stations on a regular basis of two a week.

So if you don't want to wait any longer, we'll tell you how simple we make it for you to install an earth station.

Our earth station consists of an antenna, its associated feed and mount, and a low noise amplifier and receiver. We install it by adding onto your existing CATV system, properly interconnecting everything for optimum performance. Without duplicating or replacing anything you already own.

It's extremely simple to operate and maintain. And of course fully backed by our CATV technical and service organization. We have eight sales and service offices throughout the United States, with emergency assistance available 24 hours a day.

To start the ball rolling, send us your coordinates. The sooner we can plan your Scientific Atlanta earth station, the sooner we can load it onto one of our trailer trucks. And get you rolling. Write or call Jay Levergood collect at (404) 449-2000.



## A partial listing of CATV systems with an S.A. earth station installed.

UA Columbia	Ft. Pierce, Fla.	TelePrompTer	Tacoma, Wash.	Midwest Video	Bryan, Tex.
American Television & Communications	Jackson, Miss.	TelePrompTer	Tuscaloosa, Ala.	Cox Cable	Saginaw, Mich.
UA Columbia	Ft. Smith, Ark.	TelePrompTer	Gadsden, Ala.	TelePrompTer	Galveston, Tex.
UA Columbia	Laredo, Tex.	TelePrompTer	W. Palm, Fla.	UA-Columbia	Yuma, Ariz.
TelePrompTer	Eugene, Oreg.	TelePrompTer	Rock Island, Ill.	Liberty Communications	Birmingham, Ala.
TelePrompTer	Mobile, Ala.	TelePrompTer	Great Falls, Mont.	Summit Communications	Winston-Salem, N.C.
TelePrompTer	Fairmont, W. Va.	TelePrompTer	Rochester, Minn.	TelePrompTer	Portsmouth, Ohio
Eastem Microwave	Hookstown, Pa.	South Florida Cable	Bonita Springs, Fla.		
TelePrompTer	Florence, Ala.	TelePrompTer	El Paso, Tex.		

**Scientific  
Atlanta**

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 Europe: Hindle House, Poyle Road, Colnbrook, Slough, SL30AY, England, Telephone Colnbrook 5424/5, Telex 848561  
 Canada: 678 Belmont Avenue West, Suite 103, Kitchener, Ontario, Canada N2M-1N6, Telephone 519-745-9445

# EARTH STATIONS - CONTINUED

## Scientific Communications Inc/ GaAs FET Preamp.

There is never a lot you can say about a preamp for an earth station until someone announces a preamp for the unbelievable price of \$985. This looks like a real nice inexpensive unit for the 3.7-4.2 band. It has a 2.7 dB noise figure and 30 dB of gain. The model SCF-395-30 is fitted with SMA fittings on both ports and will go a long way toward bringing the price of the earth station down.



Circle Reader Service #37

## Radio Mechanical Structures/TVRO

Radio Mechanical Structures offers a complete 11 meter earth station for CATV operators. Their whole strategy is based upon conservative engineering, hence we have 11 meters instead of 10, cassagrain instead of horn, and other niceties such as high-wind loading, excellent signal-to-noise ration and high sidelobe suppression. These guys know what they're doing. They've delivered INTELSAT and DOMSAT systems and their prototype is being used for in PBS networking system. They offer complete turnkey systems.



Circle Reader Service #38

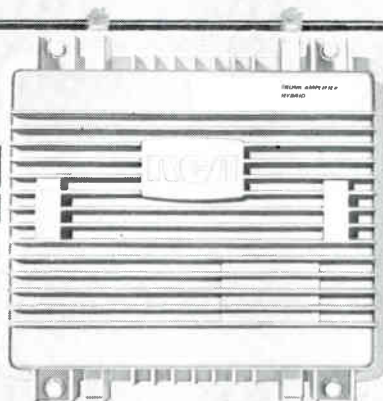
## RF Systems/ 10 Meter Earth Terminal

RF Systems of Cohasset, Mass. has announced availability of a new polar mounted 10 meter satellite earth terminal, designed to meet the requirements of high quality video reception from any domestic satellite. The terminal features 50.6 dB gain, all-aluminum construction for low weight and reduced maintenance costs, plus the ability to rapidly change from one satellite to another. The design of the new polar mount features considerable cost savings. The antenna is available either alone or as part of a complete system.



Circle Reader Service #39

At RCA  
It's . . .  
Growth Through  
Better Products



# RCA

# EARTH STATIONS - CONTINUED

## Scientific Atlanta/ Microwave Relay Test Set

Scientific-Atlanta, Inc., is now in production on its Model 4680 Radio Performance Analyzer. Model 4680 performs baseband and if tests on microwave radio relay systems. Baseband amplitude response, noise power ratio, and spurious tone search tests can be made in less than five minutes.

The Model 4680 performs the measurements normally made with a combination of a selective level meter, white noise test set and if spectrum analyzer. Therefore, it provides substantial equipment cost savings in addition to greatly reducing testing time.

Function front panel controls reduce the possibility of operator error. The transmission performance of the FM/FDM microwave radio relay system is rapidly measured. Test results are recorded on an X-Y Plotter.



**Circle Reader Service #40**

## Scientific-Atlanta/ Protection Switch

Scientific-Atlanta's Model 411 Video Protection Switch provides automatic redundancy switching to protect against the failure of an LNA or a video receiver. Operating levels of the receiver are monitored to a logic system to accomplish the fail-to-standby switching. Status lights display which component has failed. Remote manual switching can also be accomplished using a standard touch-tone type telephone system. When you've got 35,000 customers watching pay-TV (especially during a sports event) it pays to have something like this around.

**Circle Reader Service #41**

## Microdyne/Receiver

The 1100-TV(RVT) is a unique, low cost modular solid state receiver meeting or exceeding all reliability and technical requirements for Satellite Television Receiving Systems. A patented voltage tuned, four-pole cavity preselector permits either local or remote tuning across the 3.7 to 4.2 GHz band. The receiver's modular RF tuner is mounted at the antenna so that TV signals can be down converted to 70 MHz and fed directly to the demodulator in the local terminal to minimize cable distribution losses.

Other features include MTBF in excess of 12,000 hours, no crystals required, DC to 8.0 MHz video response, and TTL compatible ether local or interface. Threshold normally occurs at 8 dB C/N ratio.



**Circle Reader Service #42**

## RCA New Product



## The New RCA CTM10 Modulator Line

The RCA CTM 10 Color Television Modulator is a companion unit to the RCA HSP1 Signal Processor designed for maximum interface compatibility with the processor. Common functions such as IF switching options, operating levels, phase-lock capability, and DC auxiliary powering are similar in both products. The design of RCA's new modulator allows the operator to specify the configuration best suited to his application, then later add or modify through the various plug-in options available.



# LOCAL ORINATION/STUDIO

## Arvin/Duplication Switcher

Non-duplication switching need not be complicated or expensive with the Arvin Model DCP-6000. The unit uses a unique photo-optical scanning disc that is programmed with little stock on discs. The programmer contains a digital clock and can be programmed for a seven day period. As an option to the single channel switcher, up to seven channels can be switched into one for special applications. The switcher will handle any signal in the DC to 300 MHz range and is available in a 19 inch rack-mounted configuration.

The Arvin switcher can be expanded to accommodate any number of channels. For added flexibility, a telephone line remote control is available.

**Circle Reader Service #43**

## Cable Instrument Co./ Duplication Switcher

Cable Instrument Co. has been producing programmers to eliminate program duplication for quite some time and their model 2D has kept the best of the old while adding some new features to make it one of the smartest programmers on the market.

Non duplication switching is loaded with headaches, such that you almost need a full time person standing by in your headend . . . or one of Frank Hensley's model 2D's. Just to give you an idea of the power of this device, we will list some of its logic. First it detects simultaneous programs by looking at the sinc. When programming goes to local, a time delay prevents premature switching except during half hour program changes. A sense and release is activated after ten seconds if a station goes off the air. Overrides are provided for manual control.

The new model 2D uses plug in modules instead of the old hard wired ones, an electronic clock, and has a built in battery to keep the clock going in case of a power failure.

**Circle Reader Service #44**

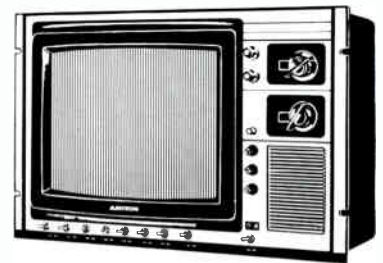
## Amtron Corp./ Color Monitor

A multi-function color video monitor/receiver, specifically designed for cablecasting monitoring, is announced by Amtron Corporation, Aptos, California.

Designated the STR-12, the new unit is equipped for rack-mounting (12¼-inches of standard rack space) and includes a full complement of front panel mode controls for convenient quality check of system signals. Included as standard are separate red-blue-green set-up gun controls, switchable internal/external sync, and selector for all-channel TV reception or direct video/audio inputs.

Picture display may be switched from normal raster to underscan or horizontal/vertical scan delay (pulse cross) with automatic brightness compensation. Horizontal and vertical lock controls are also included on the front panel.

The STR-12, along with other Amtron monitors, features an improved Trinitron (TM Sony) single-gun color system with new black guard grille for brighter, sharper pictures under all ambient lighting conditions.



**Circle Reader Service #45**

## ARTHUR BAUM ROBERT BAUM

### familiar names?

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through **equity financing** they provide brokerage/management services today.

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# Oak puts profit into Pay TV

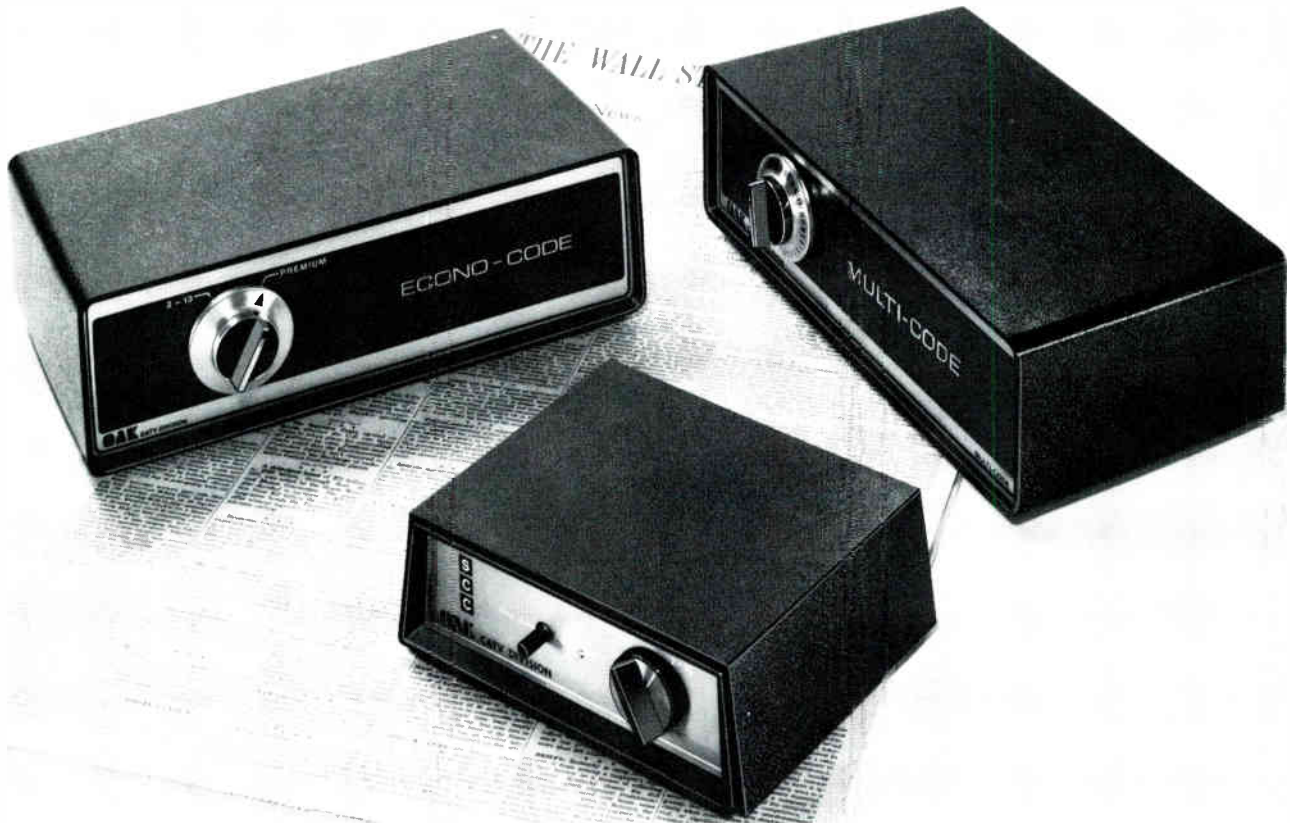
Oak designs with your bottom line in mind! These Oak Pay TV products help you increase subscriber revenue, without excessive equipment cost or rebuild, without sacrificing channel capacity or requiring dedicated channels, and with minimum headend equipment investment.

You can choose the Econo-Code single channel converter-decoder, the SCC single channel converter, or the Multi-Code multi-channel

converter-decoder. With the Econo-Code or Multi-Code, you're sure of secure scrambling, unscrambling with perfect picture quality, and headend control of the scrambled signal. A single detented rotary selector on each unit controls both standard and premium channel selection, with automatic unscrambling of premium channels. The SCC converts one mid-band channel to Pay TV and allows for fine tuning of "premium" viewing.

All Oak units are housed in attractive, compact cabinets with leatherette-type finish, and are manufactured in Oak-owned facilities.

Our knowledgeable field engineers will help you decide which approach, and which terminal type, is most appropriate to the needs and profitability of your system. For literature or technical advice, call the Oak CATV Division today, or your nearest Oak sales office.



## **ECONO-CODE**

### **Single Channel Converter-Decoder**

Increases revenue in 12-channel or other non-converter systems. Oak provides scrambler and modulator for headend control of video scrambling. Two-position switch allows selection of standard or premium channel.

## **SCC**

### **Single Channel Converter**

Adds a channel for subscription Pay TV by converting one mid-band channel to Channel 3 or 4 utilizing a mid-band modulator. Simple to connect, simple to use: two-position switch selects standard or premium channel.

## **MULTI-CODE**

### **Multi-Channel Converter-Decoder**

Decodes channels specified by the system operator for secure scrambling. Incorporates an Oak Jewel Case AFC remote or Trimline AFC varactor converter to provide basic converter functions. Economical scrambler and modulator are provided for headend control of video scrambling.

# **DAK Industries Inc.**

**CATV DIVISION / CRYSTAL LAKE, ILLINOIS 60014**

Telephone: 815-459-5000 ■ TWX: 910-634-3353

# L.O./STUDIO - CONTINUED

## Cohu/Telecine Film Island

Cohu's CAT (Cohu Automatic Telecine) is a complete ready-to-use-telecine film island with full NTSC color output, and can handle 35mm slides, 16mm motion picture film plus has provisions for Super 8 film. The system features a color encoder/image enhancers/auto balance, instant paint which provides the user the capability to manually adjust ratios of red, green, and blue colors and Cohu's color comp which enables the user to individually adjust both hue and saturation of reds, yellows, greens, cyans, blues, and magentas in the picture. These are all features normally found only on film islands costing several times as much as the CAT.

The CAT represents the first time a television manufacturer has offered the broadcast community an automated, single-tube telecine system with the same capability as costly three-tube film islands for under \$20,000.

Incidentally, the CAT pictured with the CAT does not come with the new film chain (thank goodness) but is a full time resident of the San Diego Zoo, and as you can see, wasn't too happy about having his picture taken.

**Circle Reader Service #46**



## CVS/Time Base Corrector

The CVS 520 is high performance digital time base corrector. It is designed to handle segmented (Quads, IVC 9000, etc.) and non-segmented (Helical, U-Matic, etc.) video signals principally for broadcast and other high level studio systems. The CVS 520 utilizes a 9 bit, 4 times subcarrier, PCM digital sampling technique.

Specifications include:

Signal-to noise greater than 60dB;  
Differential phase less than 2°  
and

Differential gain less than 2%

The CVS 520 standard features include:

Line by line velocity correction in all color modes;

Automatic direct/heterodyne

color switching;

Video level meter;

Built-in drop-out compensator;

Built-in adjustable proc amp and

Front panel primary and secondary controls.

The active video portion of the last 8 lines of vertical blanking may be individually selected to pass vit, vir, and other test signals.

**Circle Reader Service #47**

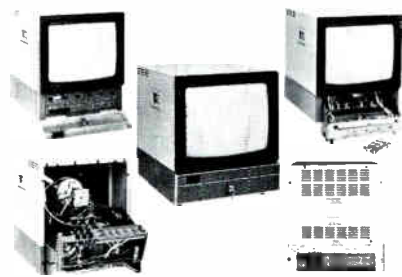
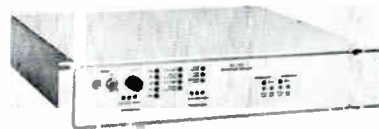
## Dynair/Chroma-keyer

The new Dynair in line SE-362A Chromatech is especially unique for cable TV type operations since it was designed so that one and two tube color cameras (typical of many L.O. operations) can be utilized as a video source. Since the unit is inline, it can be used in post production applications, either with or without the use of a switcher.

By using proportional keying techniques, the Chromatech can "soft" combine two NTSC encoded sources into a single picture.

In addition, Dynair offers a complete line of video equipment including switchers, distribution equipment, and modulators and demodulators.

**Circle Reader Service #48**



## Electrohome/ Color Monitors

A new family of color TV monitors to serve the professional needs for Broadcast and Industrial installations have been announced by Electrohome Limited, Kitchener, Canada. Available in 17-inch (shown) and 25-inch screen sizes, the solid state designs feature RGB/NTSC/PAL convertability via optional plug-in p.c. boards. A luminance comb filter assures full bandwidth response and also eliminates cross color interference in the chroma display. Signal processing circuitry is front accessible while DC coupled operator controls permit remoting any or all primary functions. Excellent tracking and separation of all three operating range channels is highlighted as is full active convergence for enhanced resolution. The power supply design allows asynchronous operation and "multiple clamping" assures maximum hum rejection. Full resolution is maintained at high brightness levels. Optional accessories include ceiling and wall mounts or rack mount kits for 17-inch models.

**Circle Reader Service #49**

## L.O./STUDIO - CONTINUED

### MSI/Character Generation Systems

MSI has been offering news and weather systems to fill channels for years, but the insides are continually being improved. New services are also being added, so when I asked Joe Burdett, "How many channels can you fill?" he answered, "How many do you want?" Well, that about sums up their custom character generating systems. This year they added a TV Guide option channel. And with all the information available in the TV guide, they now offer to do all the non-duplication switching with the information available. They also can offer; a news selector system that pulls from both AP and UPI by category (sports, stocks, news, etc.) Local advertising can be set up on one channel including pictures and messages, and a consumer guide option is available.

The MSI system uses a little disc to store all the information, and the disc can store 8,000 lines of information. If that isn't enough, the system can handle up to 16 discs. Talk about capability!

**Circle Reader Service #50**

### Systa-Matics/ Time Base Corrector

Systa-Matics has broken the price barrier and turned a few heads with their new under \$3,000 TBC. So all you guys sitting out there with your moderate-priced local origination VTR's can get rid of the squiggles. The RAIM 1000 features LRL's, (little red lights). Other features include instant picture lock-up in a quarter second, full picture correction above and below the head switch; true picture resolution without loss of crispness and bunch of other stuff.



**Circle Reader Service #51**

### System Concepts/ Character Generator

The System Concepts Quantum II character generator was designed to handle all of your extra channel requirements. With the capability of handling multi-color displays and a variety of different character fonts, the microprocessor controlled unit can be programmed for just about any normal or special programming your system may require.

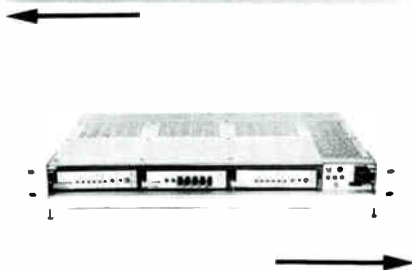


**Circle Reader Service #52**

### Tektronix/Color Picture Monitors

While you may only be able to afford one of these monitors in your whole system, this is the standard from which you compare all other monitors. The improved 670A Color Picture Monitor uses a 17" Sony Trinitron-type picture tube and produces color pictures that look like you're really there. Just to give you an idea of what their sort of quality means, there will be less than 1% change in raster size in going from full black to full white. Monitors are factory-set so that white output is at D6500°. The monitor features reduced scan mode, built-in hum bucking transformers and optional outputs are provided so that a standard oscilloscope can be used as a high-quality vectorscope.

**Circle Reader Service #53**



### TeleMation/Rack Frame

A new rack frame for mounting a limited number of distribution amplifiers and associated terminal equipment is now being manufactured by TeleMation, Inc. The RF-175 Rack Frame, which includes its own power supply, reduces the cost of installing TeleMation's "525 Series" video, pulse, and subcarrier DA's and sync generator equipment when only three or less of these items are required. Because the 525 Series modules are inserted horizontally, the RF-175 requires only 1 3/4 inches of vertical rack space.

The RF-175 is also being offered in two dedicated sync generator configurations—the TSG-175 consisting of a TSG-525 Sync Generator with space for plug-in addition of a GL-525 Genlock Accessory and BD-525 Bar Dot Generators and the TSG-176 consisting of two TSG-525's and one CO-525 Automatic Sync Changeover.

The compact design of the RF-175 makes it ideal for use in remote vans, small studios, or any location where a limited amount of terminal equipment is required.

**Circle Reader Service #54**



## L.O./STUDIO-CONTINUED

### TRI/Portable Console

The PPC-1 System is a small, portable color production console that includes a 5-inch monitor for multi-camera preview monitoring, a high-quality six-input vertical interval switcher, a five-input audio mixer, sync generator and all necessary intercom amplifiers, pulse distribution amplifiers, etc.

The two preview monochrome monitors and single trinitron color monitors are positioned for correct operator's viewing and are shielded by a neutral density shade filter to allow glare free operation in full sunlight. The broadcast vertical interval switcher features the finest solid state crosspoints, input clamping, mixing amplifiers, heavy-duty fader bars, Clare-Pendar switches and modular electronic construction.

The PPC-1 is totally self contained in a rugged "3 suiter sized suitcase," it may be AC or DC powered for field operation and is easily handled and transported in a car, airplane or by other common transportation means.

**Circle Reader Service #55**

### VICON/Switcher

VICON Industries, Inc. has a two-position model V152VS vertical interval switcher that provides switching only during the interval between frames and eliminates VTR or monitor jitter and roll-over when cameras are switched. Integrated circuit design provides vertical interval switching in less than one microsecond, centered on the vertical "back porch" of the sync signal. A two-position switch permits back and forth switching between cameras and VTR or monitor. The model V152VS is offered in attractive ComPacLine rack or desk top mount. The unit represents a degree of switching technology that equals broadcast quality equipment within reach of the user of CCTV for surveillance and other uses.



**Circle Reader Service #56**

### VICON/Monitor Mount

VICON Industries, Inc. has available a new high styled monitor mount especially created for interiors where decor is a factor. The mount features brushed chrome surfaces on supporting members and is rated for loads up to 150 pounds. The model V1500MM is of special interest to architects and decorators, with special colors available on request, monitors up to 25 inches wide by 22 inches high may be accommodated at adjustable viewing angles.



**Circle Reader Service #57**

## TEST EQUIPMENT

### Avantek/TDR

The Model CA-100A Time Domain Reflectometer is a nifty gadget that Avantek has been promoting quite successfully over the past few months. It is a simple little device that can be used to locate faults in cables, giving an indication with lights. Distance to the fault is measured off of a big dial. The price and performance are just about right for most CATV applications. Avantek also has a twenty minute color tape available which demonstrates how to use the unit. All things considered, how can you go wrong?



**Circle Reader Service #58**

### KAY/Cable-Sweep

The 9059 generates a flat, ALC'd sweep from 1 MHz to 300 MHz. The sweep duration time (scan rate) is variable from 2.5 ms to 3 ms.

The time between each sweep can be varied from 1 sweep or scan every 20 ms (50Hz) to 1 sweep or scan every 8 seconds, for simultaneous sweeping.

The 9059 has Start/Stop frequency controls. To adjust the 9059 to sweep over a given band width, the Start/Stop controls are simply set to the two band edge frequencies. Recessed front panel controls are provided so that the 9059 can be easily calibrated. A CW output is available when initial levels are being set. The sweep level is generally set to 15 dB above the CATV carrier signals. (This level is +45 dBmV.) A 41 dB precision attenuator is available as an option on the 9059 to adjust the RF level. The 9059 has a +60 dBmV RF output from 1 MHz to 300 MHz, ALC'd flat to  $\pm 25$  dB.

The 9059 has other features such as a built-in RF detector and optional frequency markers which make it a good general purpose sweep generator.

**Circle Reader Service #59**

### KAY/Spectrum Analyzer

Originally designed to fill the need for a VHF spectrum analyzer for CATV measurements, this improved analyzer is receiving wide acceptance to fill the need for a high performance low cost analyzer for spectrum analysis in the MF VHF frequency range.

The 9040 spectrum analyzer is available self-contained in the 9011 power supply with X and Y outputs for independent use with any storage oscilloscope.

The unit is also a compatible plug-in for the Tektronix 5103N and 5403 series of oscilloscopes and the KAY 9000AS split screen storage main frame.

The 9040 features phase locked operation with 1 kHz resolution in the 1-300 MHz frequency range. The 72 dB dynamic range with sensitivity to -50 dBmV's 75 ohm, -100 dBm 50 ohm is displayed in either 10 dB/div or 2 dB/div. Scan width is variable from 3 kHz per division to 30 MHz per division with excellent linearity. Scan speed is variable from 40 sec. per scan to 60 Hz in addition to a one shot sweep for use with XY plotters.

**Circle Reader Service #60**

## TEST EQUIPMENT- CONTINUED

### Jerrold/Levelite

A lot of system engineers have said "... just give me a little box that the installer can take into the house and plug onto the cable that says 'yes it's good' or 'get help.'" Jerrold's new Levelite indicator attempts to do this. It incorporates a selective amplifier that responds all the way to VHF high band TV signals. Two LEDs, one red and one green, tell you: No. 1 if your battery is okay and No. 2; if there's a TV signal.



Circle Reader Service #61

### KAY/Attenuators

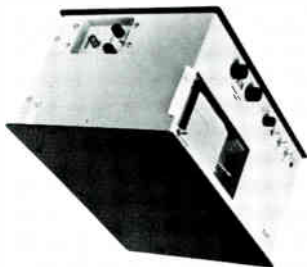
The KAY Models 2000 and 2100 are electronically controlled attenuators. They are continually variable with up to 70 dB attenuation. Controlled with 0 to approximately 12 V DC Supply, they're available in either 50 or 75 ohms, and cover the 2-500 MHz range.

Circle Reader Service #62



### KAY Elemetrics/ Chart Recorder

Every year the 24 hour testing requirements come around with more people wishing there was an easier way. KAY has one. The 9021 Digital Chart Receiver and Recorder can be set out in the field to make unattended CATV measurements. A built-in timer can be set for one-quarter, half or two hour intervals. The chart serves as permanent record. The unit can be used to measure system frequency response, carrier levels by wideband spectrum analysis and spurious signals such as co-channel. Power can come from a standard 12V automobile battery.



Circle Reader Service #63

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# TEST EQUIPMENT-CONTINUED

## GAMCO Industries/ Filter Tester

A complete, self-contained, test station for the field testing of any pay-TV traps, the unit is battery powered for portable use, or can be operated from 110 VAC 50/60 Hz for lab or office operation.

The tester signifies a "go" or "no go" situation for quick, easy evaluation of the trap. The test unit may be calibrated to check minimum notch depths from 40dB to 70dB, with an accuracy of +2dB.

### Specifications:

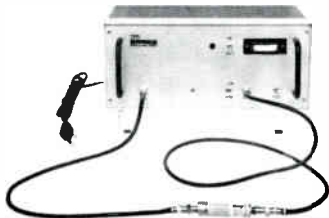
Frequency, any (1) one channel from 50 to 300 MHz

50 to 300 Mhz (multi channels available).

Stability, .01% crystal controlled

Output level, +60 dBmV min.

Test range, -40 to -70dB



Circle Reader Service #64

## Mid State Electronics/ "Cuckoo" Radiation Tester

Everybody is looking for an easy way to satisfy signal leakage compliance and Larry Dolan, innovator of other wild and woolly test equipment has come up with a beautiful and inexpensive (which is part of what makes it beautiful) box so that you can outfit your whole army of technicians and hunt down those leaky cables. The Model ST-1 is a rack unit you mount in your headend that produces a warbling tone in the 86 to 110 MHz band. So far, conventional. The trick is that they lower the level 5 dB every third of a second in rapid sequence, over a 25 dB range. Out in the field all you need is an inexpensive transistor radio and you'll hear a series of "pings" depending upon how close you are to the fault. When you're far away you'll hear one "ping" and the closer you get the more pings you'll hear in succession. The unique thing about the system is that you have high sensitivity and can still pinpoint the fault. Price of the headend unit is under \$300.



Circle Reader Service #65

## PECA/Sweep System

Just about the time people start thinking that simultaneous sweep testing is a dead issue, Ralph Douglass starts producing a self-contained sweep receiver that REALLY works. The SRS/350 Sweep Recovery System features bias detectors, post-amps, marker systems, video filter, all self-contained and optimized so that you can align the system with virtually no customer interference. PECA can also provide a rack-mounted sweep generator for your headend. After being harangued about the rack-mounted receiver, Ralph has redesigned the box in a portable battery operated version. Now, all you need is a portable battery operated oscilloscope. That'll give you a complete, relatively low-cost system sweep set-up. If you're one of those people who don't believe that simultaneous sweep can work—don't make any bets. This one works beautifully.

Circle Reader Service #66

## Sadelco/Porta Bridge II

The original Porta Bridge was an extremely popular device with cable people. The new second generation model has a new bridge with extended frequency range from 5 to 300 MHz. Just in case you don't remember the old bridge, it has a built-in noise source and can be used with a FSM to check return loss on just about anything you might find around the cablevision system like headend processors, amplifiers, taps, baluns—you name it.



Circle Reader Service #67



## Sadelco/Digital FSM

Harry Sadel is one of the last of the true craftsmen. So, when he announced his digital FSM, a bunch of people got excited. Sadelco's Model Digit-Level 100 provides a Super Large 3 Digit read-out, which indicates in 0.1 dB steps and automatically adjusts intensity for ambient light conditions, plus a unique In-Line Analog Meter for easy tuning. This truly Digital SLM is accurate within  $\pm 1$  dB from 54-300 MHz, plus 5-54 MHz with optional adaptor. The Digit-Level 100 has a 90 dB Dynamic Range and 0.1 dB Resolution. Power is provided via Ni-Cad batteries and/or AC. Other design features include a Built-In Speaker and a Dual Schottky Diode high efficiency peak detector. The Model Digit-Level 100 is a compact, light-weight, portable SLM, housed in a durable carrying case. This unit has some neat things about it that don't show on the specs. For instance the detector doesn't have to have a conversion factor applied to make S/N measurements since it reads true across from the low end to the high end of the "scale." Another nifty feature is that when switching the pads in and out the digital read-out automatically adds and subtracts the pad values on the read-out.

Circle Reader Service #68



## TEST EQUIPMENT- CONTINUED

### Scientific Atlanta/ Microwave Relay Test Set

Scientific-Atlanta, Inc. is now in production on its Model 4680 Radio Performance Analyzer. Model 4680 performs baseband and if tests on microwave radio relay systems. Baseband amplitude response, noise power ratio, and spurious tone search tests can be made in less than five minutes.

The Model 4680 performs the measurements normally made with a combination of a selective level meter, white noise test set and if spectrum analyzer. Therefore, it provides substantial equipment cost savings in addition to greatly reducing testing time.

Function front panel controls reduce the possibility of operator error. The transmission performance of the FM/FDM microwave radio relay system is rapidly measured. Test results are recorded on an X-Y Plotter.

**Circle Reader Service #69**

### Telonic Altair/Attenuators

Two 75-ohm attenuators have been added to Telonic Altair's product line. The 8145J bench mount rotary model is designed primarily for laboratory and manufacturing applications, especially in the CATV industry. A new 75-ohm addition to Telonic's 8200 series is a fixed coaxial type.

The bench-type unit attenuates from 0 to 80 dB in 1 dB steps and covers a frequency range from DC to 10 GHz. Insertion loss is a low .4 dB maximum and power rating is 5 watts average, 1,000 watts peak.

The new fixed attenuator also features a power rating of 5 watts and a flatness of  $\pm 3$  dB maximum through 10 dB values. It is available in attenuations of 3, 6, 10, 20, 30, 40, 50 and 60 dB. Frequency range is from DC to 1 GHz.



**Circle Reader Service #70**

### Tektronix/Cable Tester

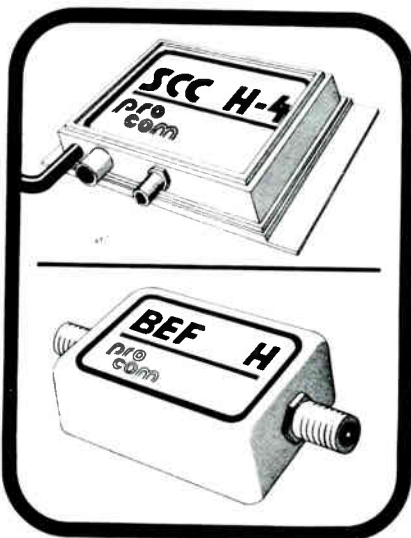
If the term TDR scares you and you immediately envision a piece of test equipment half the size of a refrigerator and as complicated as the cockpit of a 747, Tektronix's new cable testers are just the thing for you. They have managed to combine all the measurement power of the best TDR's into a simple little portable gadget you can carry around with one hand. The 1502 and 1503 cable testers were designed for the rugged outdoor environment. Waterproof (they'll float if dropped in a mud puddle), lightweight, battery powered and they have a MIL-Spec plastic case.



**Circle Reader Service #71**

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## TEST EQUIPMENT - CONTINUED

### Texscan/ Tuned Freq Counter

When the frequency testing requirements were first established in 1972, many engineers were naive in thinking that they would just get a frequency counter and connect it to the cable, not realizing that the counter could not separate all the signals. So all kinds of other schemes were contrived to measure frequency. Now Texscan has announced a counter that can be connected directly to the cable. The TFC-7 contains a tuned rf section, a sinc stripper and a highly accurate frequency counter. Included is a aural if so that the 4.5 MHz sound carrier can be measured at baseband. Operation is simple and effective.



Circle Reader Service #72

### Tektronix/ Sweep Generator

The 1 to 400 MHz Sweep Generators available from Tektronix represent a slightly different approach in sweepers. The units are small plug-in modules that fit into the rest of the Tek family of modular units. The sweep generators can talk to the frequency counter giving you a continuous variable market, a digital voltmeter can measure the output levels and an oscilloscope can be plugged in along side the sweepers. This sort of flexibility adds up to give you one of the nicest sweep bench set-ups possible. When configured as shown in our photo above, you can snap on the front cover, pick the whole works up in one hand and carry the entire set-up into the field. (Which is really spiffy if you'd ever want to impress your date, you know, kind of sweep her off her feet!!) They've got built-in crystal markets, built-in attenuators, good FM stability and a complete time base.



Circle Reader Service #73

### Texcan/VSM-2

The VSM-2 is a portable battery-operated spectrum analyzer designed for signal strength measurements in the 4 to 1,000 MHz frequency range. Optimized resolution bandwidths are provided for accurate level measurements and the dial calibration in general design makes the unit nice to have around a cable system. Amplitude measurement range is -50 to +52 dBmV.



Circle Reader Service #74

### Wavetek/Synthesizer

Wavetek rocked a few of the larger test equipment manufacturers back onto their heels last year when they introduced their 1-525 MHz synthesizer. And, at less than half the price of any other unit on the market. This year they've unveiled a new version of the Model 3001 which sports, among other things, better than 60 Hz FM stability and a vernier to swing the frequency between the 1 kHz detented steps. This new synthesizer can be used for all sorts of things around the headend and on the test bench, like marking frequencies, aligning processors and traps, checking processor sensitivity, measuring frequency, etc.



Circle Reader Service #75

### Wavetek/Test Set

The 1067/75 CATV test set is a "Measurement by Comparison" Test Set providing all sweep signals, electronic switching and attenuation for *loss* or *gain* measurements of active or passive CATV components. The addition of optional, return loss bridges, wide band amplifiers and tunable bandpass filters, allow the measurement and evaluation of return loss and pay-TV traps.

Measurement range is 60 dB in 0.1 dB steps and electronic tilt/loss compensation is provided for both the "Known" and "Unknown" ports to provide correlation of better than 0.1 dB.

The test set is comprised of two separate instruments, electrically and mechanically coupled together. The sweeper portion is the Model 1053 and supplies the power supply and timing signals for the comparator portion. The 1063 comparator portion provides the switching, attenuation and "port compensation" and may be used not only with the 1053, but with any Wavetek sweeper.

Circle Reader Service #76

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# TEST EQUIPMENT - CONTINUED

## Wavetek/ Multi-Channel Widget

The Wavetek 1402 Sweep Generator is a departure from conventional sweep generators in that the center frequency control has been replaced with a multi-position switch. Using this switch you can select any TV or mid-band channel one at a time. This is especially nice for converter manufacturers and repair shops. The 1402 incorporates a marker system to identify the exact center of each channel. An optional 2.5 MHz additional marker when used in conjunction with the internal marking scheme, will identify the exact FCC specified minus-one-to-plus four megahertz of picture carrier positions.



Circle Reader Service #77

## VIZ/VOM/Vavavoom

Just in case you've never heard of VIZ before, they're the company that's acquired the RCA test instrument line. The WV-518B Volt Ohmmeter is one of several new products you'll be seeing from VIZ. This little battery operated VOM has all the normal stuff you'd expect plus fuse protection against burnout, a mirror scale taut-band meter and color coded scales. The ABS plastic case is pretty rugged and makes the meter a nice thing to use around power supplies and telephone poles where it might accidentally be dropped. Every field technician should have one of these in his kit to trouble-shoot power supplies, identify cable drops, check regulators and all that kind of thing. This great VOM sells for under forty bucks.

Circle Reader Service #78

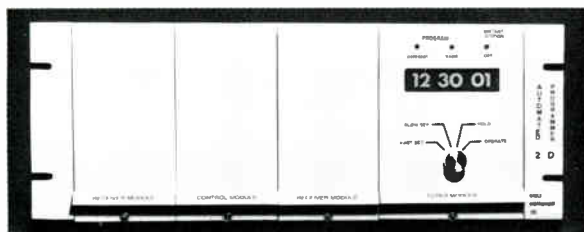


## LENCO/Video Noise Meter

Lenco produces a Model VNM-428 Video Noise Meter that permits the rapid, accurate measurement of signal-to-noise in any standard video waveform, using only a general purpose oscilloscope with a bandwidth of at least 5 MHz. Typical applications include evaluation and measurement of television cameras, video tape machines, cable television systems, and microwave systems. Stable design and built-in calibration insure accuracy to better than  $\pm 0.5$  dB throughout the range of 20 dB to 55 dB, with the SNR shown directly on a large LED display. A newly developed technique makes possible highly precise measurements of noise without interrupting system operation or requiring the use of an oscilloscope with vertical-interval capability. The noise on a signal is compared with itself and with a variable calibrated reference. The results are converted to a logarithmic scale and displayed on the digital meter as signal-to-noise ratio in dB.

Circle Reader Service #79

## AUTOMATIC NON-DUPLICATION

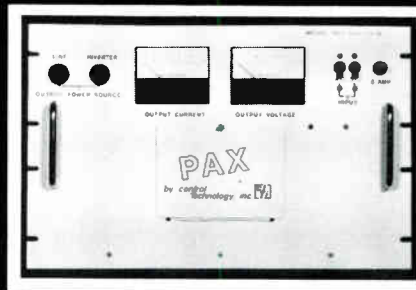


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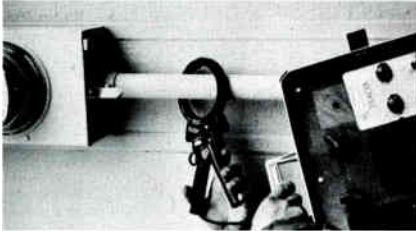


# CONSTRUCTION EQUIPMENT

## Aqua-Tronics/ Tracer/Locator

The new Aqua-Tronics Inductive Coupler locates a selected pipe or cable buried in crowded joint trenches or with other lines under concrete floors, even when they are grounded to a common junction. The IC-49 singles out the target line by inducing its own transmitter's identifiable tone on the line with no physical connection. Since no ground plates or rods are needed, confusing ground currents are eliminated.

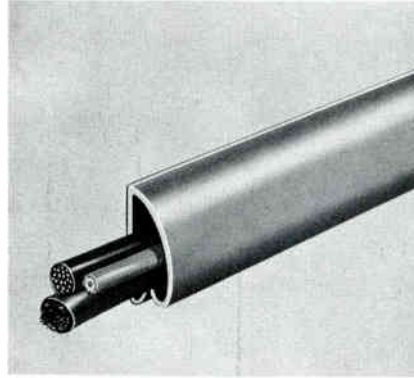
Tests and field reports indicate most locations are made in half the time of a conventional conductive trace. Other useful features include no scratching through insulation, no 60 Hz interference pickup, and no interference created on a working telephone cable. It is available as a complete system or as an accessory to the Aqua-Tronics A-6 Tracer.



**Circle Reader Service #80**

## Dek/Cable duct

Dek offers several sizes of dekdut in Series 041 to house and protect cable runs. It's adhesive backed and mounts quickly to clean, smooth surfaces. Supplied in standard four foot lengths, dekdut is easily cut to shorter lengths and the light gray duct may be painted any color. This series is suited for virtually any type of electrical/electronic equipment application.



**Circle Reader Service #81**

## Burnup and Sims/ Rodder-placer

With more and more cable systems going underground, and the use of conduit becoming more prevalent, quick methods are required for placing cables in conduit. The old grease and hand feed methods are out!!! The new "rodder-placer" is an attachment to be built onto a medium size truck. It contains a hydraulic boom and bull wheel. A self contained air supply is used to blow a rabbit down the conduit. The rabbit and air supply can pull a substantial winch line, so the next step is to connect the cable at the other end and winch it back thru. The manufacturer claims that you can save up to 250% over the old ways of placing cable, and after seeing it in action, I have to believe the claim.

Burnup and Sims also makes a number of other devices to aid cable construction including cable reel trailers and earth boring machines for laying cables under roadbeds.

**Circle Reader Service #82**

## Davis/Compact Trailer

Davis Manufacturing Division of J.I. Case, Wichita, Kansas, now has available a small, compact trailer for transporting the Davis two-wheel drive trencher line.

This compact utility trailer is of tubular construction with leafspring suspension, standard tail and brake lights. A fold-down ramp provides easy loading and unloading.

It weights 350 pounds and has a payload of 1,150 pounds. The ball-hitch arrangement is for a 1½ inch ball with dual safety chains.



**Circle Reader Service #83**

## Dynatel/Cable Locator

Have you ever lost a cable, or had one of the other utilities cut up your service because you didn't know exactly where it was? You only need to make the mistake a couple of times and you would of paid for one of these cable locators.

The Model 500 hand held cable locator from Dynatel Corporation is designed to simplify the positive location, path tracing, and depth measurement of buried CATV cable and drops.

Features include one-hand operation with fingertip adjustment controls, integral meter, monitor speaker and earphone jack.

The Model 500 also, features an innovative tracer tone transmitter and DYNA-COUPLER® system to make it extremely simple to place tracer tone on the CATV cable or drop, without distributing the shield bond or ground. In operation, the Model 500 is immune to AC power line interference and will not noise up the CATV line under test.

**Circle Reader Service #84**

## Cablematic/Coring Tool

With the introduction of a guide and a re-designed coring blade, the new tool by Utility Tool Corp. offers a faster and more efficient coring operation. The coring of the coaxial cable makes it possible to insert the stainless steel sleeve which gives additional strength to the cable sheath for connector retention. The coring blade is designed for most recognized aluminum sheathed coaxial cable of 75 ohm impedance with either foam polyethylene, foam polystyrene, disc and all gas injected polyethylene dielectrics.



**Circle Reader Service #85**

Here it is, polyethylene lovers.  
'Lumifoam III... Times' third generation of  
low-loss polyethylene cables.

Times' engineering has combined  
the best CATV electricals available with  
a new polyethylene dielectric that's more  
advanced than anything you've seen or  
handled before. Compare a sample of  
'Lumifoam III with anybody else's lowest  
loss polyethylene cable. Squeeze the  
dielectric. You'll see how much more  
body 'Lumifoam III has for the loss  
characteristics it meets. That makes

it easier to handle...and easier to put  
in the air.

'Lumifoam III's adhesion and  
compression are so controlled that  
moisture migration just can't happen.  
And when you prepare it for connec-  
tors, it strips as easily as Times' original  
foamed polyethylene cables.

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for a sample of 'Lumifoam III today. Just  
contact Bud Desmond, Times Wire &  
Cable, Wallingford, CT (203) 265-2361.  
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# **LUMIFOAM III**™

**THE LOWER LOSS POLYETHYLENE  
WITH THE  
DIFFERENCE  
YOU CAN  
FEEL.**



**TIMES**  
**Wire & Cable**  
Insiko

# CONSTRUCTION EQUIPMENT - CONTINUED

## Buckeye/The Laderak

The Laderak offers fast, easy loading and unloading of ladders through the use of horizontal and vertical rubber rollers. The cushioning effect of the rollers reduces the rattling from road vibration, saving wear on the rails of the ladders, particularly fiberglass ladders. Easily attached to either Ford, Chevy, Dodge or GMC vans, the Laderak can be installed within 45 minutes and can be quickly transferred to another vehicle. Durable steel construction offers Laderak maximum weather-proof protection, yet weighs only 100 pounds. Its universal design accommodates any kind of extension ladder up to 22" wide. A convenient locking lever allows the Laderak to be securely padlocked, preventing theft or damage. Laderak is available with or without heavy-duty mounting bows.

**Circle Reader Service #86**

## EQ & M/Skyjacker

The Skyjacker is a fiberglass aerial basket designed to be mounted in the flatbed of a pickup truck. It is hydraulically controlled and extremely rugged. In case you've never heard of EQ & M, they are old timers in the business of building this sort of equipment for the telephone and power industries. The unit combines many years of experience into one simple, easy to operate and effective maintenance and construction tool.



**Circle Reader Service #87**

## Lindhult & Jones/ Manhole Lid Tool

A new tool which enable manhole covers—even tight fitting or sealed lids—to be removed and replaced effortlessly has been developed by General Machine Products Co., Inc.

The new Manhole Lid Lifter is a one-piece unit which is easily stowable. The lifter comprises a steel handle, keeper, shank and foot and a heat-treated alloy steel hook. The tool features a cadmium-plated finish, and rubber grips on both the handle and foot to prevent slippage.

To ready the lifter for use, the hook is released by rotating the keeper one quarter turn. In operation, the tip of the hook is placed into the notch of the lid far enough to clear the rib on the underside of the lid. The hook is then turned and raised to engage the rib. With the foot of the tool on the ground a firm, steady pull on the handle then unseats the lid. The lid can be pulled clear of the manhole by repositioning the foot of the lifter away from the lid.



**Circle Reader Service #88**

## Vermeer/"Dinky Digger"

A funny looking (and totally unique) track-mounted backhoe, designed for use in a variety of difficult, hard-to-reach digging conditions, has been introduced by Vermeer Manufacturing Co., Pella, IA. The new Vermeer "Dinky Digger" has easy access to tight, confined areas where conventional backhoe units have failed to maneuver . . . and yet, it features a full 300 degree swing capacity. As a result, an operator can dig on one side and discharge spoil on the other side of the machine while tracks remain stationary.

The versatile 3,000 lb. machine has a 131" reach from pivot center line and digs down to 72" deep with an 18" bucket.



**Circle Reader Service #89**

## Van Ladder/ Modular Bodies

With the gas crunch and the move toward smaller vehicles, it takes a little more effort to get all the pieces on the truck in the morning. That is until Van Ladder invented their new modular body to fit on the new smaller truck bodies.

The modular body was designed for maximum use of cargo space available in a small truck. It allows the modules to be removed and taken into an area where a shipping clerk can replenish each day, the items that have been removed. This makes possible a drastic reduction in necessary inventory needed in the truck, and keeps the truck organized at all times.

The tail gate is unique, in that it can be used in three configurations. (1) as a work bench, (2) as an open door to gain access to tools, wire spools, etc., (3) can be completely removed so full access is available into the rear part of the compartment for insertion of large items.

**Circle Reader Service #90**

## Vermeer/Trencher

A compact service trencher, utilizing rigid frame construction, has just recently been added to the Vermeer line of underground construction equipment.

The new Vermeer M-434 Trencher is a heavy-duty, electrically-welded four-wheel drive unit. It's powered by a 98 CID four-cylinder, water-cooled Ford engine that generates 34 hp at 3,000 RPM. Power is routed through its three-speed manual transmission to a mechanical transport and trencher drive. Hydraulic creep drive is used when the machine is in the digging mode.

The 3,800 lb. machine (when equipped with trencher and backfill blade) measures only 65" wide, but digs a 12" trench down to a maximum depth of 48". Its four-way backfill blade can be raised, lowered and angled all hydraulically. A replaceable cutting edge considerably extends the life of the blade.

According to Vermeer officials, the M-434 will also be equipped very shortly with backhoe and vibratory plow attachments.

**Circle Reader Service #91**



# SECURITY/TRAPS - CONVERTERS

## Eagle Comtronics/ Traps and Locks

We could try to sell you this trap but there seem to be a bunch of people out there in cablevisionland who are passing the word and it seems to selling itself. Eagles' is a combination trap and security lock that fit together on a tap. A special tool is required to remove the trap. Andy Tresness, who designed these things, managed to get the right amount of security for the right amount of money. The trap itself features low-low adjacent channel loss and a deep, stable trap notch. Run right out and get one—tell 'em we sent you.



Circle Reader Service #92

## Gamco/Notch Filter

Gamco has a bandstop-notch filter incorporating a new patented theft-deterrent locking mechanism. They call it NOTCH-LOC. The filters are very small, less than 3/4 inch in diameter. They're burn-out protected and trap attenuation is 50 dB nominally. Insertion loss is .25 dB and they're available for standard channels 2,5, A and H.

Circle Reader Service #93

## Jerrod/Converters

The Model DST-C series are Jerrod's newest entries in 30 to 35 channel set-top converters. The -4C includes a descrambler for super secure pay-TV. The new set-top converter is packaged in a high-impact plastic housing with push button selector, low noise, high gain stable performance.

Circle Reader Service #94

## GTE/Sylvania/ Pay-TV Traps

The CATV operation of GTE has developed a line of notch-type bandstop filters for selected low and mid-band carrier frequencies for pay-TV. Designated Series 3900, the filters remove specific video frequencies from subscriber drop lines. Stopband attenuation is 46 dB min. over an operating temperature range of -40 to +140°F. Units attach directly to the ports of a typical multi-tap. Construction is watertight and will withstand a 20-foot drop to concrete.



Circle Reader Service #95



Jerrod Super Descramblers:  
"The Money Makers"

# Cash in on the explosive growth of PAY TV...

**without risk of product obsolescence!**

Jerrod's super descramblers provide the most effective way of marketing and *maintaining* penetration of pay-TV.

- on-channel scrambling
- super secure
- super reliability
- orderly growth . . . without obsolescence— from single level to multi-channel, multi-level services



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From off-air signals to TV-set transformers,  
Jerrod is the only total-systems CATV manufacturer.

## SECURITY - CONTINUED

### Magnavox/ Low Cost Descrambler

At a price which can be easily absorbed in the subscriber installation charge, the MX-MU-1 represents a profitable and simple means of providing pay-TV channel descrambling. The unit does not require a converter, but if one is present or is added because of system expansion, the MX-MU-1 is compatible with any standard converter without modification.

The new unit, which has received wide industry interest since its introduction at the recent NCTA convention, descrambles any channel with a common sync-source at a pilot carrier frequency between 108-118 MHz. Specifications include input frequency range of all 36 CATV channels (54-300 MHz), output frequency ranges of any low or high band channels (54-88 MHz and 120 to 300 MHz), and a return loss of 16 dB.

With relatively simple modifications, the MX-MU-1 becomes the MX-MU-2, the same basic broadband descrambler capable of two-channel output.

**Circle Reader Service #96**

### Microwave Filter Co./ A Trap for All Seasons

... and for all channels. We could've filled 20 pages reviewing the line (everyone of Glyn Bostick's traps), so all we'll do is summarize it for you here. Basically, Microwave Filter Co. builds traps for every channel from 54 to 300 MHz. Traps are available for either trunk applications or line drives. All traps are in a 3" x 1" can, sealed in epoxy with one male and one female F fitting. Optional trap locks are also available, along with basic security traps and multi-channel traps, double traps, sound traps, pay-only traps and pilot carrier traps. What, no mouse traps?

**Circle Reader Service #97**

### Magnavox/ Converter-Descrambler

The Magnavox MX-SCCD Single Channel Converter-Descrambler makes possible convenient and relatively low cost addition of a single channel—which can be scrambled for pay-TV—to existing 12-channel CATV systems, without an expensive multi-channel converter.

It offers the same performance and dependability as the MX-MS Multi-channel Descrambler. The unit is available with an optional subscriber-operated key switch affording total audio and video control of pay-TV programming.

Available in 44 variations of input and output channels, MX-SCCD is crystal-controlled for extreme stability. Exact sync-to-picture ratio restoration prevents rolling and fluttering. It accepts a 6 MHz mid-band channel input and utilizes channels 2, 3 or 4 for output.



**Circle Reader Service #98**



## new **DIGITAL** signal level meter

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- programmed attenuator
- 0.1dB resolution
- built-in speaker
- ni-cad battery/AC
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5-54MHz with optional adaptor

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That developed the tools

That help build it right . . .



This is the  That makes expansion bends

That follow the  That guides the cable

That's positioned by the 

That's drawn by the 

That rests on the  That's pulled by the 

Around the  That fits on the 

That's stopped by the 

That's wrapped on the 

That fit on the  That followed the 

That carried the crew

That did the work in the system

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# SECURITY-CONTINUED

## Oak/Decoder

The Oak Econo-Code is for one-channel subscription cablevision. It was designed as an economical method of increasing revenue for an operating cable system without rebuilding or substantial equipment costs and without sacrificing an existing channel.

The unit decodes a scrambled channel for premium viewing. The two-position rotary switch allows selection of the standard "2-13" channels or of the "Premium" channel and there is the option of a keylock for parental control.

Headend video scrambling prevents unauthorized subscriber viewing while those subscribers having an Econo-Code unit will receive an unscrambled signal. Oak also provides the headend scrambler and modulator.



**Circle Reader Service #99**

## Oak/Converter Decoder

The Oak Multi-Code is a multiple channel converter decoder for subscription cablevision. It has been designed as a modular addition to Oak's Trimline or Jewel Case varactor converters incorporating AFC. The cable system operator is able to provide subscribers with a single unit for "normal" viewing and "premium" viewing, thus minimizing the initial investment for premium viewing while maximizing the revenue base.

The Multi-Code permits the option of predetermining any number of scrambled channels up to a total of 36 channels. A single detented rotary selector controls both "normal" channel selection and automatically unscrambles the "premium" channels. A keylock option is also available for parental control of "premium" channels.

**Circle Reader Service #100**

## Oak/Single Channel Converter

Design ingenuity keeps costs down—the SCC utilizes Channel G or H in the midband and converts to Channel 3 or 4. There is no need for inverted carriers—a single conversion, low-side injection mixer with filtered input and output is used. And since most cable systems already have the necessary headend equipment installed as part of normal cable operation, the only need is to add a Channel G or H modulator to existing equipment.

Installation is easy—simply connect the CATV cable to the input terminal of the SCC and the SCC output to the input terminal of the subscriber television set.

Operation is simple—a two-position rotary switch selects either the standard "2-13" channels or the "Premium" channel. Standard channels are fine tuned at the subscriber television set. A fine tuning knob on the front of the SCC unit provides convenient fine tuning of the "Premium" channel.

**Circle Reader Service #101**

## Pro-Com/Channel Converters

The Pro-Com single and multi-channel set top converters represent a slightly different approach in converters for pay cable and "add a channel" applications. Tom Stockton of Pro-Com says that their studies of the average household proved that it didn't matter what the set top converter looked like, the wife didn't like it. Keeping this in mind, Pro-Com eliminated the frills for looks and just set out to build the most rugged box in existence. The housings are die cast aluminum, and the single channel units have one button (only one moving part). There is no fine tune control since the stability is held within  $\pm 25$  kHz.

The converters are available as single channel units for midband to low-band conversions, (one inverted channel unit is also available) or a three channel block converter is offered to convert, G, H and I to 2, 3 and 4. The units are fitted with a customers label and are smartly finished with a brown enamel finish. The converters meet present FCC radiation specifications and the rejection of spurious signals at the input is -20 dBmV. Prices for all units are under 20 dollars.

**Circle Reader Service #102**

## Sylvania/Converters

While not actually a current product, GTE is trying out the concept of building a mid-band to UHF converter, tentatively called a Model 4010. This would provide economical multi-channel subscription TV. The converter would shift up to six mid-band channels to UHF with crystal controlled local oscillators. This scheme offers a number of advantages. For instance, the customer wears out his TV tuner instead of a switch on your converter (none existent). The converter can be located in a basement or attic and the simple design will reduce maintenance costs. If this scheme interests you, let Sylvania know since they're not certain at this time whether they're going to continue the project.

**Circle Reader Service #103**

## T.E.S.T./Decoder/Encoder

"Don't call it a trap!" says Paul Rebeles, the new Vice-President of T.E.S.T. The encoder-decoder system represents one of the most ingenious systems ever devised to protect a pay channel. Instead of using a trap to remove the pay channel, the T.E.S.T. people have come up with a passive gadget **you have to insert** to get the channel.

The system works with a modulated carrier inserted at the headend at about 2.58 MHz above the picture carrier. This carrier makes a mess of the pictures until the companion "trap" is inserted at the customers home. Once the modulated carrier has been eliminated, the pictures are restored to perfect condition. The little gadget that is used at the subscribers home is passive, so in theory it should pose few problems, should not age, will not blow fuses, etc.

The construction of the little \$7.50 home decoder is rather unique too, utilizing thick film technology and silver fired to ceramic inductors, all of which should contribute to a long and trouble-free life for the units.

**Circle Reader Service #104**

# SECURITY-CONTINUED

## Toner/Anti-Theft System

A new, inexpensive anti-theft system has been announced by Toner Cable Equip., a CATV distribution company specializing in system security. Called the SQUEELER™ the system provides an 80 dB horn alarm actuated whenever a protected apartment TV distribution cabinet is opened illegally, whether by force or with a master key.

In operation, the SQUEELER™ can't be shut off until the Master Control unit is reset. The Master Control is located in a secure area, such as the apartment managers' office.

The Toner SQUEELER comprises a magnetic door switch and two actuator units which are interconnected by drop-cable, plus, the master control and a plug-in, adjustable B-plus supply.

**Circle Reader Service #105**

## Toner/CENTAP System

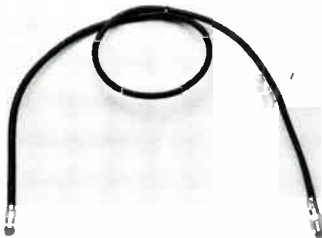
Bob Toner is selling Blonder-Tongue's CENTAP system and has installed the first complete system in an apartment complex in Atlantic City, NJ. All apartment drops are brought into one control panel which contains a PIN diode switching matrix. The customers

can be turned on or off at will or the system can be scanned to detect illegal taps. Toner Cable Equipment offers complete turnkey services featuring many leading manufacturer's equipment including this item from Blonder-Tongue.

**Circle Reader Service #106**

## Vitek Electronics/ Two-Channel Trap

Vitek, designers of the ingenious traps in a cable have announced two traps in one piece of cable. Actually, they could probably build up any number of single channel traps in a single piece of cable using the same techniques. These traps offer in excess of 70 dB rejection per channel. Of course, the real reason the traps are so neat is that the customer can't tell the difference between the trap and a piece of drop cord. If you're interested in these traps, circle the number down below on your Reader Service Card.



**Circle Reader Service #107**



## Commander III processes and produces perfect pictures...

*cable operators*

the way **broadcasters** intended.

**Recommended Output:** +60 dBmV; **Spurious Output:** -70 dB, 5-350 MHz

**Processor** ■ Noise Figure: low band 5 dB, high 6 dB, UHF 9 dB  
 ■ Adjacent Channel Rejection: 60 dB ■ Group Delay: ±25 ns video thru color; +75, -25 ns, -0.75 to +4.0 MHz

**Modulator** ■ Group Delay: conforms to FCC requirements for color broadcast ■ Differential Gain: 0.5 dB max. ■ Differential Phase: 1° max. at 87.5% depth of modulation, 10-90% APL

**Optional Phase Lock:** single-channel, incremental or harmonic.



Used by NBC and CBS for inter-studio facilities

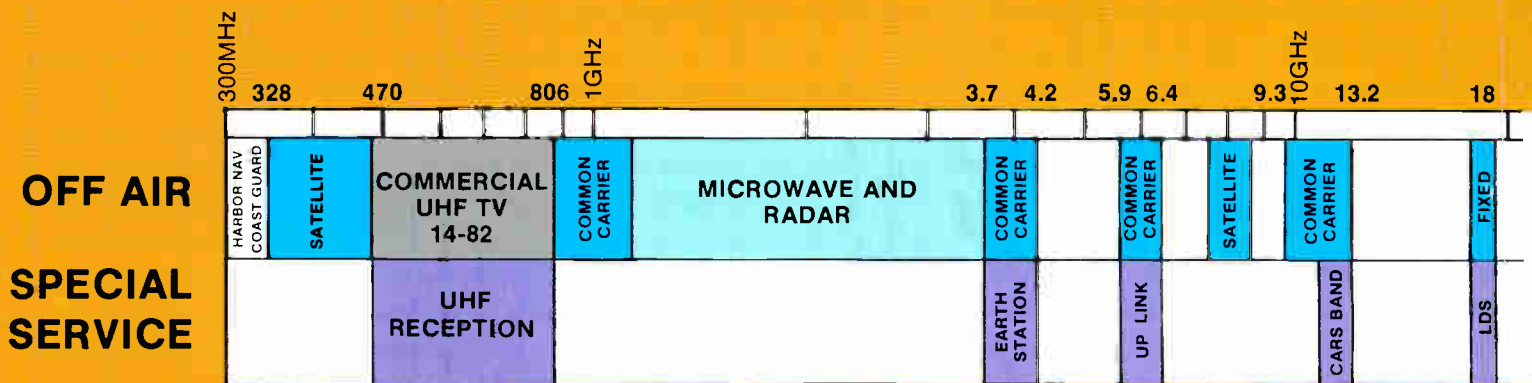
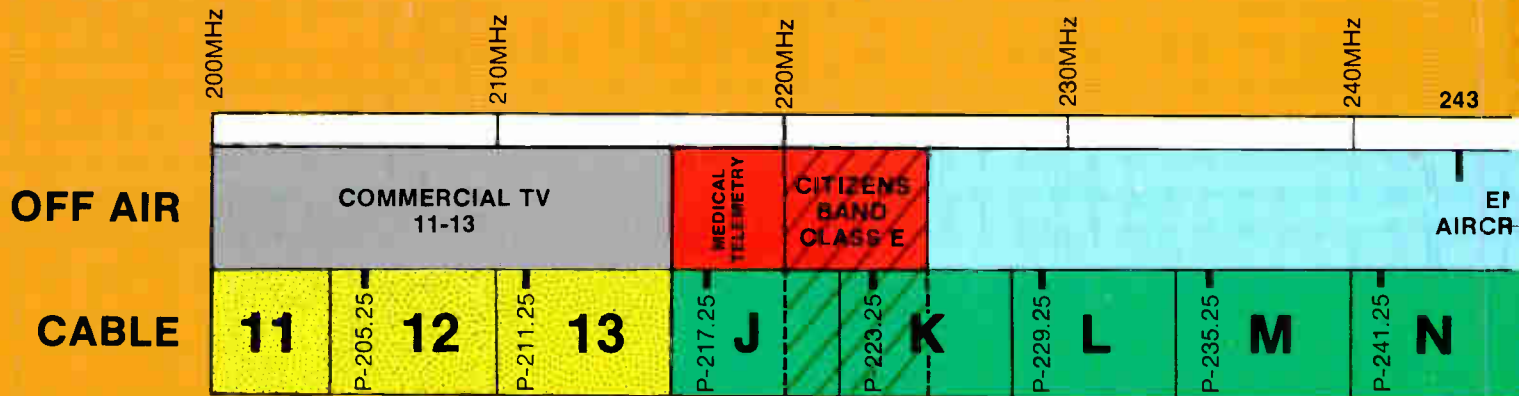
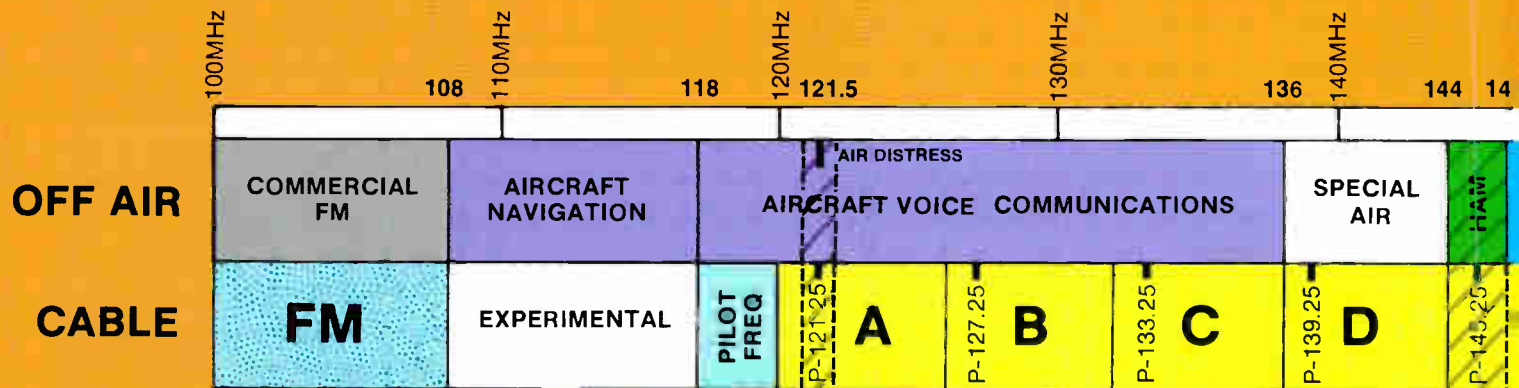
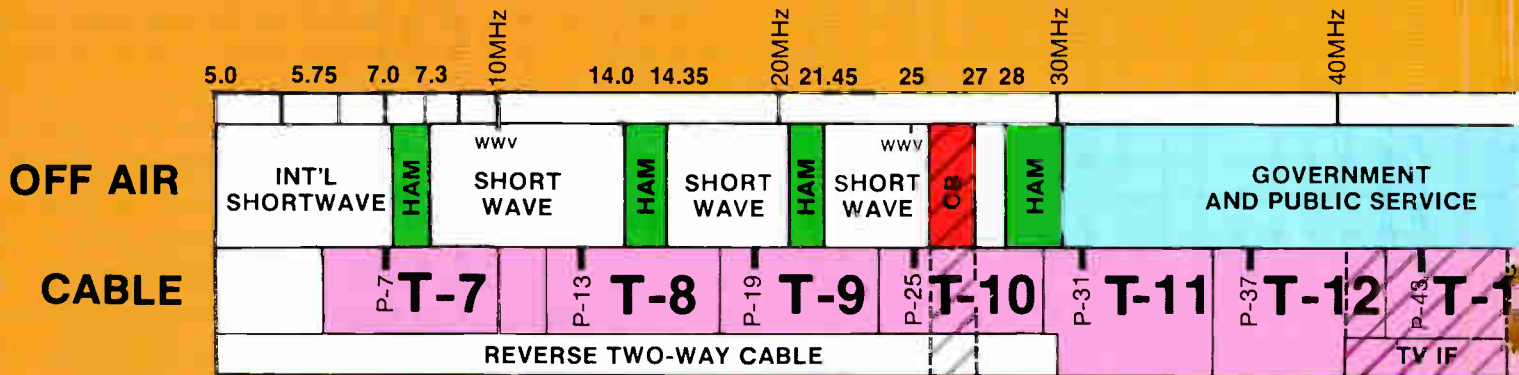
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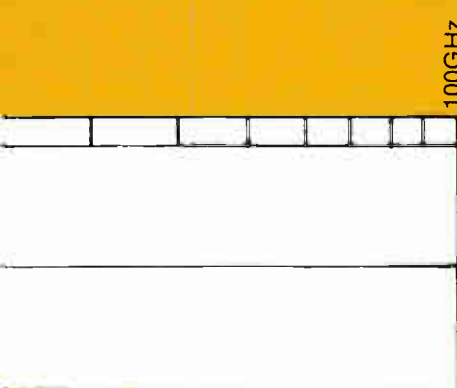
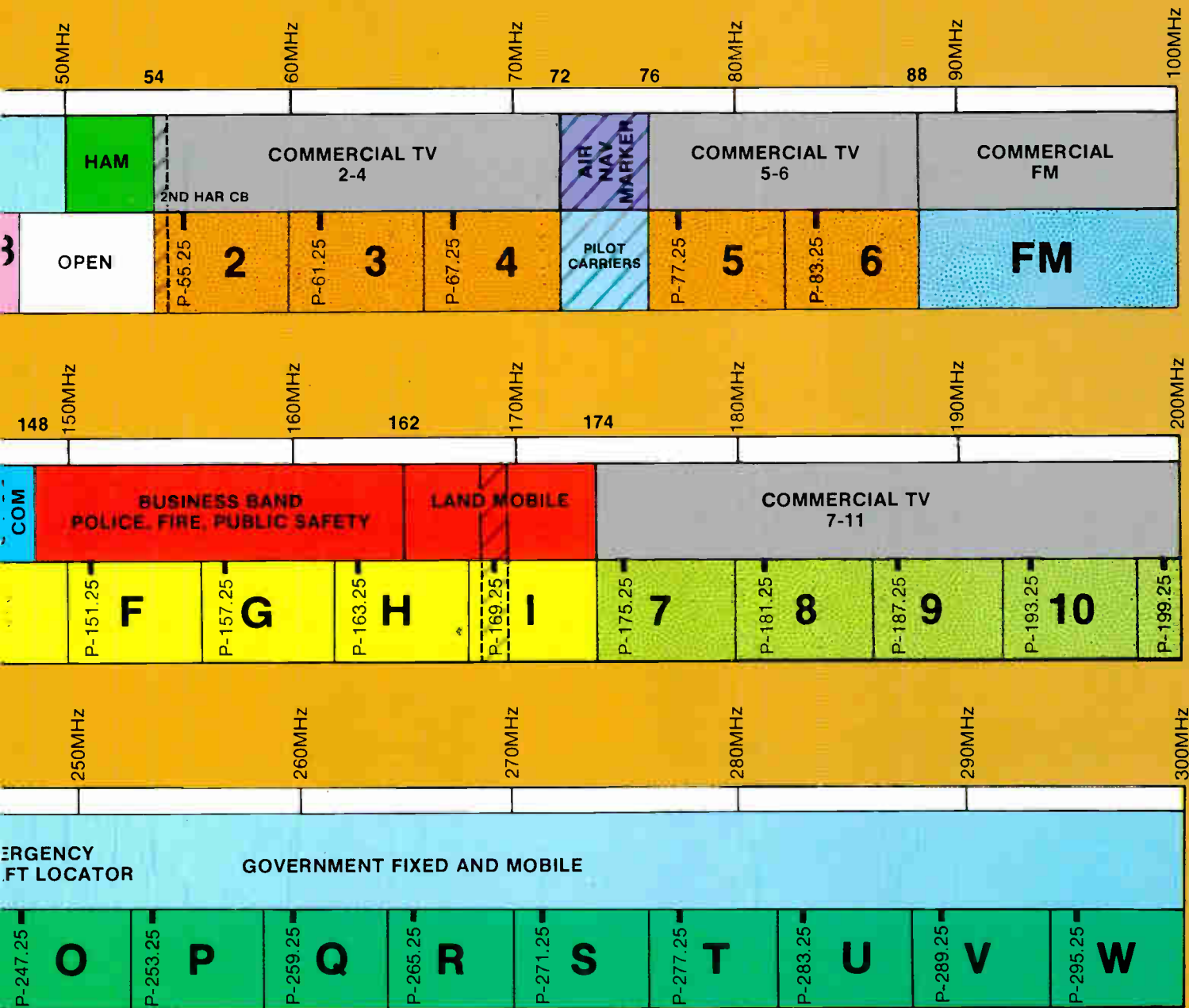
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 Jerrold is the only total-systems CATV manufacturer.*

# CATV Off Air Int





# Interference Chart



## LEGEND

SUB-BAND  
 LOW BAND  
 MID-BAND  
 HIGH BAND  
 SUPER BAND

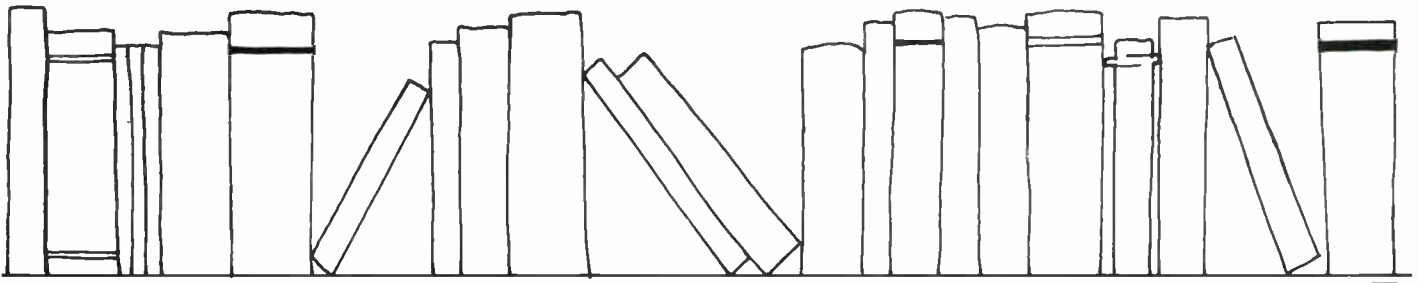
T 7-13  
 2-6  
 A-I  
 7-13  
 J-W

SAME AS OFF-AIR  
 TROUBLE AREAS



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## BOOKS & LITERATURE

### IEEE CABLE TRANSACTIONS

The Institute of Electrical and Electronics Engineers has announced publication of *Transactions on Cable Television*, an archival record of CATV technology. The first issue will be available in October and future issues will be published quarterly. A free copy of the premiere volume can be reserved by writing to Editor, IEEE *Transactions on Cable Television*, P.O. Box 2665, Arlington, VA 22202. Members and non-members of IEEE are invited to take advantage of this offer.

### RENTING TEST EQUIPMENT?

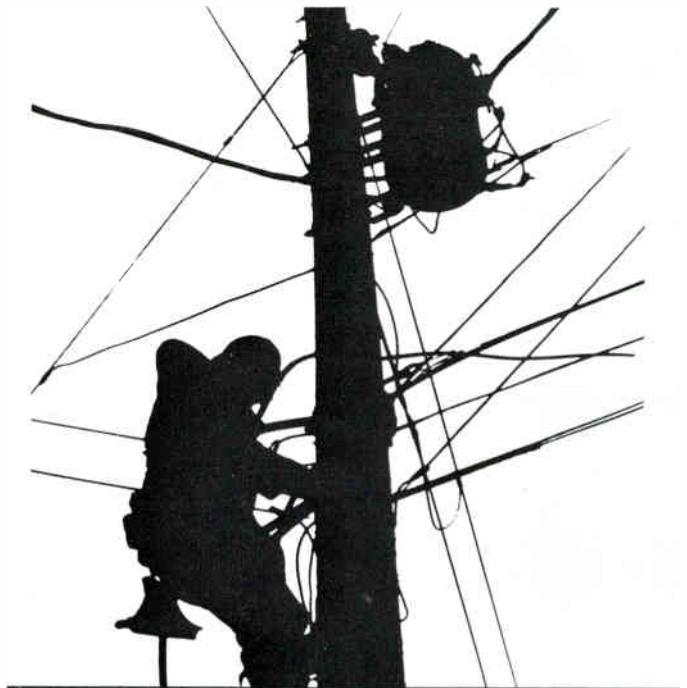
If you're interested in short-term rental of electronic test and measuring gear, Electro Rent Corp. has a newly published rental catalog listing over 100 manufacturers and including monthly, quarterly and semi-annual rental rates. The company rents a



complete line of electronic test equipment and the catalog lists all technical specifications for the products listed. Write to Electro Rent Corp., 2230 Charleston Road, Mountain View, CA 94043.

### PAPERS ON CATV RELIABILITY

Transcripts from the 1st Annual SCTE/IEEE Reliability Conference include 15 papers covering components and product design and systems design and operations. More than 170 CATV engineers and technicians attended this successful meeting held in Philadelphia in February 1976. The transcripts are bound, heavily illustrated and the publication is more than 100



#### FIRST ANNUAL CONFERENCE ON CATV RELIABILITY

February 5-6, 1976

Holiday Inn-City Line  
Philadelphia, Pennsylvania



pages in length. Copies may be purchased from SCTE, 607 Main Street, Ridgefield, CT 06877. Cost is \$15 to SCTE/IEEE members, \$18 to others.

### INCLUDING THEFT OF SERVICE

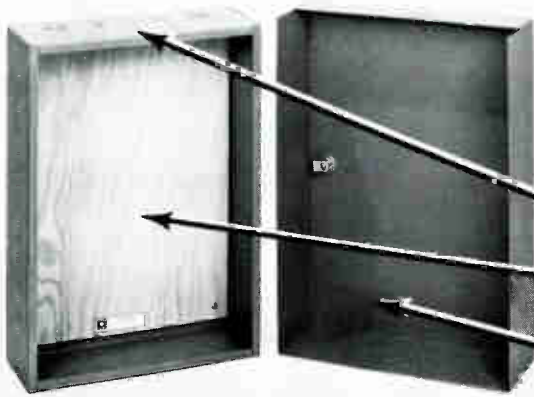
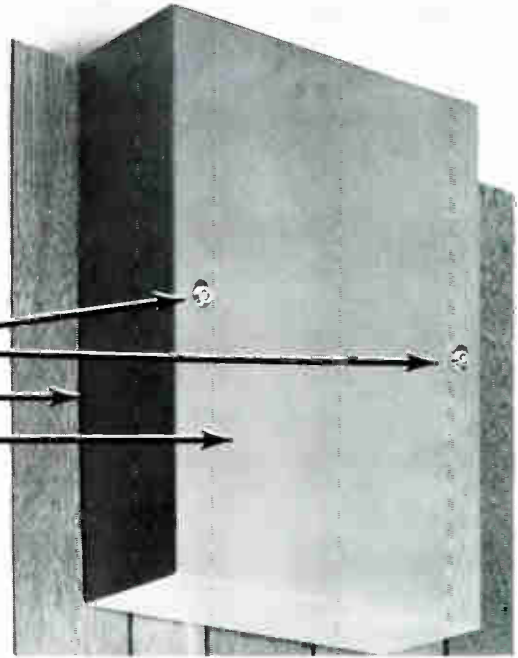
*Federal Regulatory Developments in Cable TV and Cable TV State Regulation* summarizes major rulemaking actions by the  
(Continued on Page 46.)

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(Continued from Page 44.)

FCC since 1972, current rules and regulations and guidelines in FCC processes. This volume is 112 pages, bound for bookshelves and includes a survey of franchising and other State Law and Regulation in CATV through June 30, 1976. Theft of service laws as passed are listed, ownership restrictions and other important state-by-state information is detailed. The book is available from Communications/Engineering Services, P.O. Box 2665, Arlington VA 22202. Cost is \$8.95 per copy.

## **GROUNDING SYSTEMS**

*Methods and Materials for Grounding Systems* is a 30 page booklet that describes and illustrates practical grounding principles. Included are numerous charts and graphs dealing with electrical characteristics and specifications of Copperweld's bimetallic DSA ground strand, counterpoise wire, ground rods and wire mesh. The booklet is available from Copperweld Bimetallics Division, P.O. Box 1000, Glassport, PA 15045.

## **BASEBAND AND RF TV MEASUREMENTS**

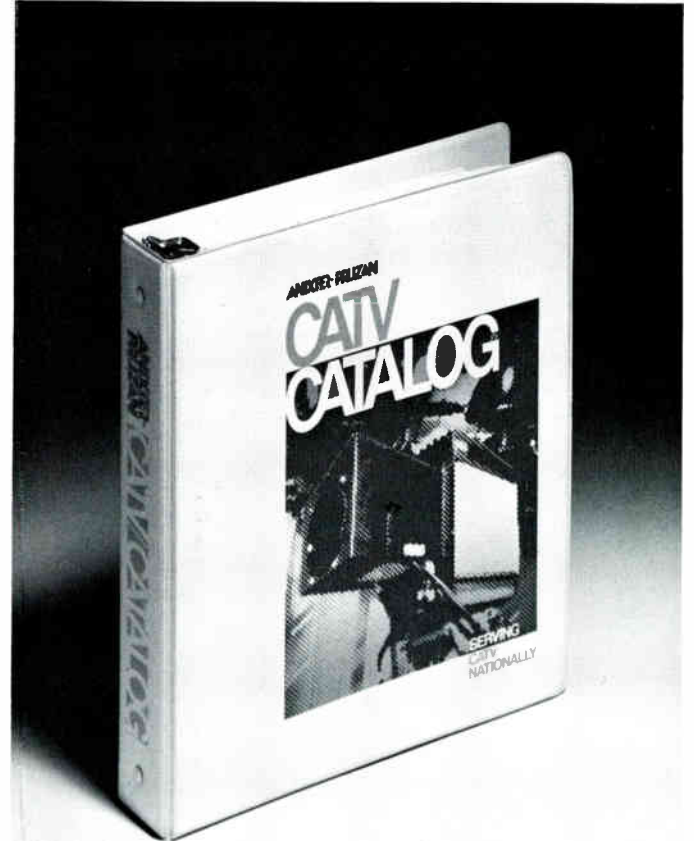
Tektronix has published zillions of application notes on TV measurements, but somehow you can never seem to keep them all collected in one place at one time. Well they must have figured that out because they have reprinted or rewritten all of them into this giant handbook on all TV measurements. The book is divided into a baseband section that reviews equipment calibration, video amplitude measurements, timing, distortion, differential phase and gain, about 40 measurements in all. The back of the



book is brand new stuff about rf measurements, primarily transmitters, but a lot is applicable to CATV. This book is so big and neat, the only thing I can't believe is that they are giving it away for free. Contact Bill Warner, at Tektronix, P.O. Box 500, Beaverton, OR 97077 and ask for Television Operational Measurements Video and RF for NTSC Systems. (AX-3323).

## **EVERYTHING YOU NEED TO KNOW?**

The Third Edition of Anixter-Pruzan's comprehensive CATV catalog of materials and equipment is divided into nine sections, and covers aerial construction materials, connectors, splicing



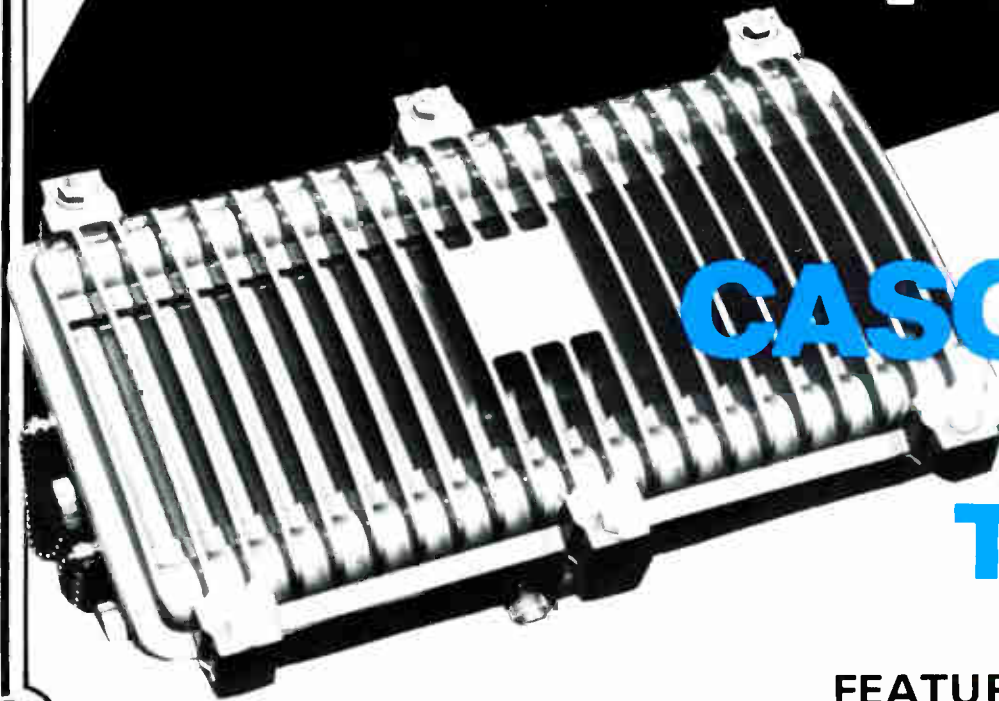
materials, underground materials, tools and safety equipment, active and passive devices plus studio and local origination equipment. For a copy write or call the company's Northwest District office, P.O. Box 3777, Seattle, WA 98124. Telephone (206) 624-6505.

## **AGC/ASC AMPLIFIER APPLICATION**

"Considerations on the Application of AGC/ASC Amplifiers in CATV Systems" by Eric Chisholm of Jerrold/Canada is available upon request from that company. The paper reviews the behavior of AGC/ASC amplifiers and examines system performance and reliability. Potential limitations to cascading AGC/ASC amplifiers are delineated and a detailed explanation of the amplification of transients and transfer modulation occur in AGC/ASC amplifier cascades. Methods of reducing adverse effects are outlined. The

(Continued on Page 48.)

# A NEW ERA HAS DAWNED



## WITH CASCADE 300 TRUNK

PERFORMANCE — Carrying 35 channels  
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COMPOSITE TRIPLE BEAT	—	66 dB.
CROSS MODULATION	—	66 dB.
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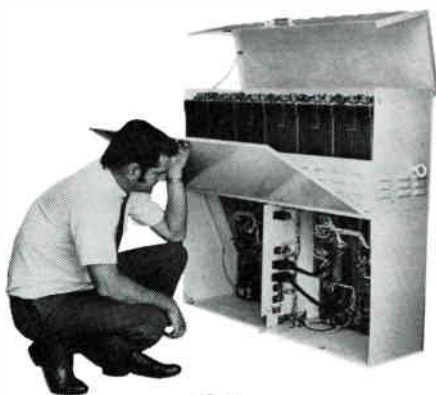
You'll like the confident feeling Sawyer supplies give you. Your customers won't complain a bit about that either!



MODEL 1044: Separate battery compartment for flexible installation: 720VA. (Can be growth unit for low initial cost.)



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MODEL 1002: Single-cabinet dual-channel; 720VA, 1440 VA total.

\*Note: Head-end UPS units also available.

## Sawyer

Sawyer Industries, Incorporated  
5649 Peck Road, Arcadia, CA 91006  
Tel.: (213) 442-5981

(Continued from Page 46.)

publication is available at no cost by writing Toni Barnett, Jerrold Electronics Corp., 200 Witmer Road, Horsham, PA 19044.

## TDR FOR CABLE TESTING AND TV OPERATIONAL MEASUREMENTS

As the Time Domain Reflectometer is used more and more around the cable system, a lot needs to be understood to get the most out of your unit. This book describes in detail, the complete applications and limitations of TDRing. It covers theory, resolution, accuracy (and inaccuracy) as well as coax and telephone cable tests. It is highly illustrated and contains numerous actual fault examples to help you interpret the fault displays. Whether or not you own a Tektronix TDR or someone else's, or are just considering buying one, this book is highly recommended. Contact John Trudel, Tektronix, P.O. Box 500, Beaverton, OR 97077 and ask for Application Note 25M1.0.

## BUCKEYE HAS TOOL CATALOG

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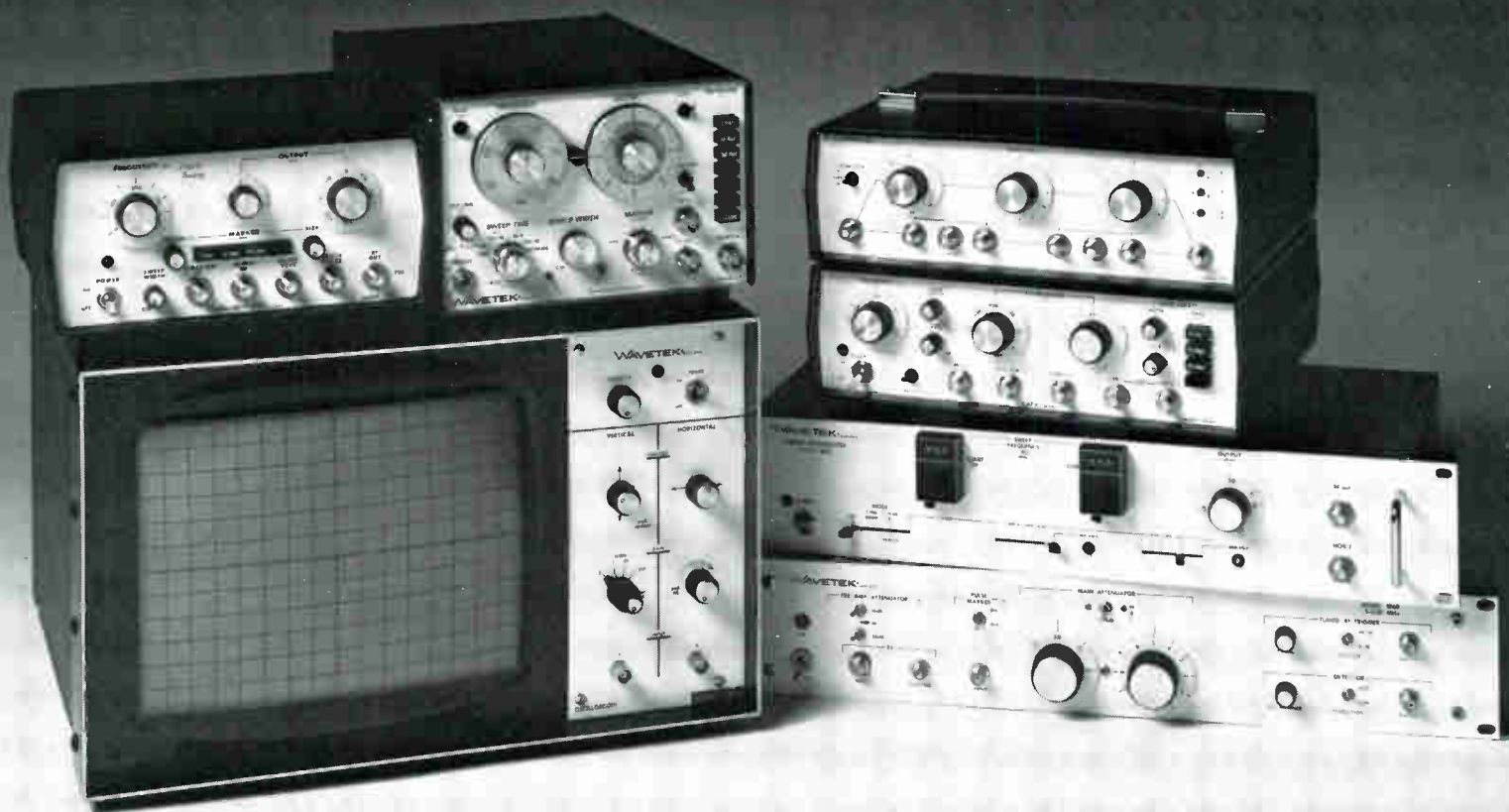
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