



• HBO ANNOUNCES 'Final' Plan



• MARKET PROFILE/ 'Our Customers'



• SCRAMBLING/ IRD Details

THE TWICE PER MONTH BUSINESS JOURNAL OF TVRO

COOP'S SATELLITE DIGEST



MAY 15, 1985

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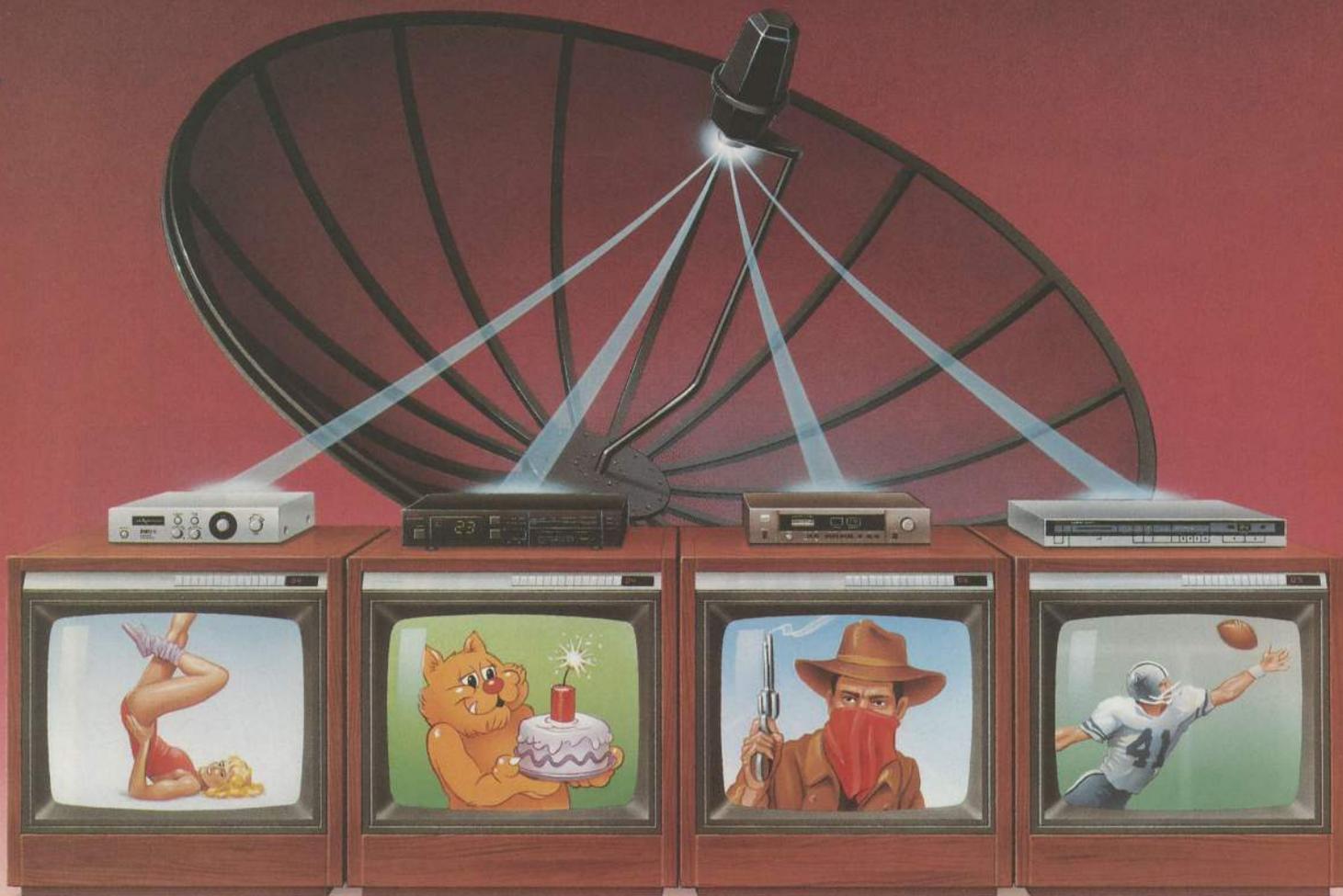
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MAY 15, 1985

REMEMBER The Trees

It didn't take long for the row over scrambling to lose all perspective; people quickly became swept up by the 'emotion' of the issue and well meaning reporters wrote stories which either missed key elements of 'the story' or deliberately slanted what it was all about. Let's review.

Scrambling is inevitable. The legislation of 1984 assures us of that. We anticipated that even back in 1980. What is not inevitable is that more than a handful of semi-important channels will scramble; **ever.** So one must ask the question **'Are those channels which will scramble so terribly important that their special requirements must dictate how we design all satellite receivers?'** In other words, is having HBO and Cinemax and Showtime and The Movie Channel so important to our well being that we must accept certain 'minimum design standards' for our equipment if we are to continue to offer TVRO users these channels?

HBO believes that its service is terribly important to home system viewers. They believe this so strongly that they have gambled on an unproven and untested scrambling system by Linkabit and now we learn that if we are going to use the Linkabit descramblers with our systems, we must build a new breed of super sophisticated receiver. And this will cost us more money than today's receivers.

Tests reported in **CSD** for April 01 and **CSD/2** for April 15th revealed that the act of descrambling **does NOT require** a special receiver. M/A-Com's Linkabit responded by admitting **'this is true,'** but then hastened to point out that the peripheral function of 'addressing' each descrambler **does require** special receivers; something to do with 'bit errors' and 'data flow'. An example.

A pig farmer teaches his herd of pigs to come for Hog Chow when he stands by the feed pen and shouts 'SUEEY — SUEEY'. All it takes is **one pig** in the herd, smart enough to identify 'SUEEY' with feeding time, to start a stampede for the feed pens. Now suppose the farmer had to teach **each pig** in the herd

to respond to **his specific name.** Picture the farmer standing by the feed pen rattling off a long list of individual names. 'Albert, Bertha, Clyde, Donny, Edward . . .' and so on through the whole herd. **Now each pig** has to know and recognize **his own individual name** and he has to be able to pick his name out of a long, babbling list of names. Some of the pigs go hungry because they never learn their names.

The Linkabit data stream is like that; your individual receiver has to be 'good enough', technically, to pick out the **unique** electronic digital address code sent to **just that receiver.** If the receiver 'misses' the tiny high speed address buried in a 'stream' of millions of addresses, the TV set connected to the receiver 'goes hungry'; it misses the descrambled HBO programming. At least that is what M/A-Com is **now telling us after CSD revealed** that even old-fashioned receivers work just fine with the **'basic'** descrambling circuits.

Every bit of evidence we have turned up reinforces our original belief that Linkabit compatible systems built to Linkabit specifications are going to cost every segment of the marketplace more money; from OEM to user. And every bit of testing **CSD** has done convinces us that the increased complexity and cost is justified **only because** of the addressing scheme or system Linkabit engineers have created.

Addressing may be an ultimate fact of life with any scrambled service brought 'to market' but it continues to bother us that HBO would commission a system which forces addressing and added expense on us, and our customers, because that is the way **THEY** have decided to approach this marketplace. I don't remember **them discussing** this with us before hand; I don't remember **us asking** to 'be addressed'. We offered them numerous alternatives: **SPACE**, for example, offered repeatedly to establish an industry wide collection system or an industry wide 'surcharge' on new systems, to compensate the programmers. HBO ignored those offers.

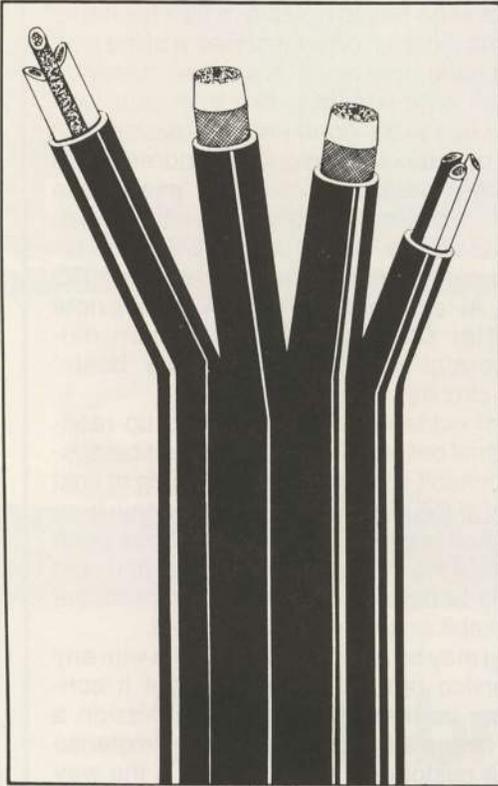
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**COOP'S
SATELLITE
DIGEST
/2**



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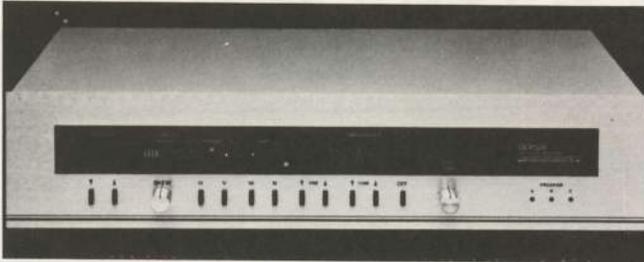
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AUTOMATION TECHNIQUES, INC. (1550 N. 105th E Avenue, Tulsa, Ok. 74116; 918/836-2584) has a pair of new block downconversion receivers in production. Model GLR-500BD has tunable audio with narrow and wide switching, automatic powering for BDC and LNA, skew control, a built-in horizontal and vertical relay for twin-LNA systems, plus baseband and unfiltered video outputs.

Model GLR-530 adds automatic polarity switching, digital step-tuning of transponders, two forms of audio muting, automatic return to local (terrestrial TV) service when the receiver is switched off, a signal level bar graph plus optional infrared remote control which can be factory or field installed (*).



GLR-530 TOTALLY NEW FROM A-T

R.L. DRAKE CO. (540 Richard St., Miamisburg, Oh. 45342; 513/866-2421) has begun shipping new receiver and accessory models first shown at the Las Vegas show. Model ESR424 is a single conversion OR block downconversion receiver with infrared remote control, automatic audio subcarrier seeking, direct polarization control and interfacing with their new Model APS424 antenna positioner. The APS424 is also controlled by the handheld infrared remote. Drake is now shipping their ESR 324B, a new block version of the popular 324 single conversion receiver. Drake's BDC units utilize the now well

*Automation Techniques has filed for Chapter 11 re-organization and court protection; **editor**.

HBO FINALLY Decides!

Home Box Office has finally released their marketing 'plan' to distribute the HBO and Cinemax services to home TVRO users. HBO Prexy **Joe Collins** says the plan will go into effect immediately but that full-time scrambling of the HBO and Cinemax feeds **will not begin** 'until home TVRO owners have an opportunity to obtain consumer descramblers'.

Here is how it will work:

- 1) M/A-Com, the supplier of the consumer descramblers, is to establish their own 'computer addressing facility' where individual subscribers will be approved for service and through which all individual subscriber addressing will take place.

(M/A-Com has been active attempting to sell 'other' satellite delivered, cable programmers on the concept of M/A-Com being the program service operator since mid-April. This apparently happened after HBO decided to cancel their own marketing plans.)

- 2) HBO will sell to home TVRO owners within 'cable franchise areas' through HBO (and Cinemax) affiliates. Each cable firm will establish their own 'schedule of rates' and these charges will vary from area to area, at the 'whim' of the cable firms.

(There was no clear definition of 'cable franchise area' in the announcement but HBO has in the past suggested to affiliates that for the purposes of selling home TVRO users, a 'franchise area' might be larger than the actual municipal area for which the cable company holds a 'franchise'.)

- 3) Outside of the cable areas, or outside of the 'franchise areas' (however ultimately defined), HBO will sell the home TVRO user through a direct sales program utilizing an 800 number (toll free) order service. The monthly rates for HBO and Cinemax, sold in this manner, will be \$12.95 each or \$19.95 for the pair of services.

NEW
PRODUCTS/
SERVICES/
EVENTS



SYSTEM 1000



SIGMA 'Ribs You'

used 950-1450 MHz 'IF' and complimenting the receivers are a pair of LNAs (models 2500 and 2501, 85 or 100 degree, with 60 dB of BDC gain), and, the BDC24, a stand-alone block downconverter for use with separate LNAs.

Drake is also releasing a new commercial receiver for the SMATV and cable markets; model ESR2240 is a block unit with an optional second audio subcarrier demodulator for 'cue' and network advisory functions. A companion cable-grade modulator, the VM2410, has thumbwheel selected channels to 400 MHz.

GENERAL INSTRUMENTS CORP. (RF Systems Division, 4229 S. Fremont Avenue, Tucson, Arizona 85714; 602/294-1600) has a pair of new home service receivers for TVRO. The System 1000 receiver uses an infrared handheld remote and features include synthesized audio and video tuning with a pair of preset audio subcarriers 'in memory' for each transponder. Model 950 has the primary features of the System 1000 less the remote control ability. Both receivers function with a BDC or LNB front end.

GENSAT COMMUNICATIONS CORP. (951 Alness St., Downsview, Ontario M3J 2J1, Canada; 416/736-4555) has greatly expanded their line-up of accessory hardware for the BSR-1200 block conversion receivers. The BDC 1.2 is a direct-to-LNA mounting BDC which claims a noise figure of less than 6 dB. The unit has a gain-slope equalization circuit so that output levels at 950 MHz reference the high

(HBO says that these rates are 'consistent with marketplace value already established for the two services' although nationwide the services are generally sold at about 75% of this rate through cable affiliates.)

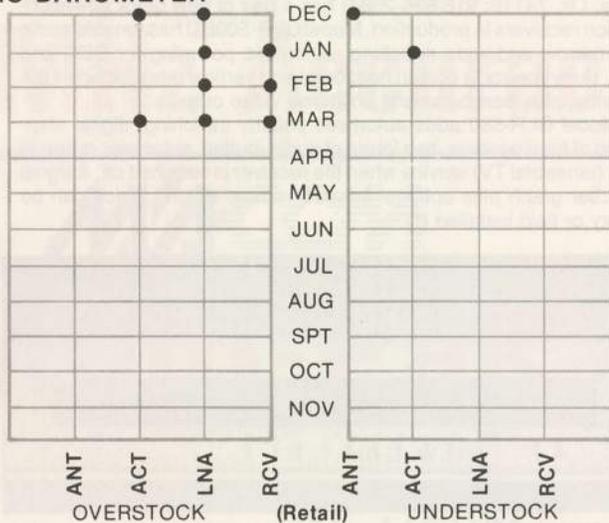
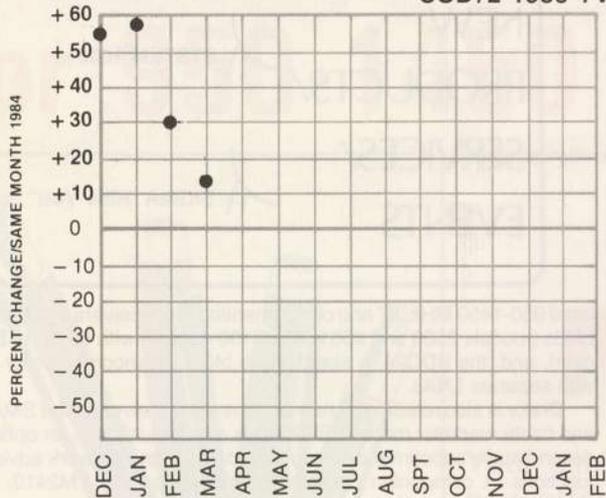
HBO's Collins, in a prepared release dated May 2nd, reportedly said "We are very pleased that we will be able to provide HBO and Cinemax to home TVRO owners while protecting the satellite signals. We believe that this equipment distribution and service subscription approach provides us with the most cost-effective and efficient method to serve 'backyard dish' owners."

HBO did not address the on-going question of allowing any part of the TVRO industry (OEMs, distributors or dealers) to participate in the sale or marketing of the in-home service and from the text of the prepared release it appeared that HBO does not intend to allow any such participation by the TVRO industry. SPACE reaction was as expected.

Taylor Howard responded that the HBO announcement clears the air of the **cable created myth that 'the skies will go dark'** and provides TVRO retailers with **proof** that there will be the continued availability of premium programming to home systems. However, **Bud Ross** was not so pleased noting that the rates established by HBO for direct sale are indeed 25% higher than normal HBO and Cinemax rates. Ross was also incensed that the cable operator is being 'needlessly inserted into the marketing scheme and the plan allows the cable operator to establish his own rates and reap 'windfall profits' from the non-cable connected subscribers.

SPACE attorney **Rick Brown** used the announcement to note that the HBO plan is proof of the need for support for the **Congressman Judd Gregg proposal (HR 1769)** to ban any scrambling for a two-year period while the marketplace mechanisms 'sort out' and descrambling equipment becomes generally available.

CSD/2 1985 TVRO BAROMETER



THIS REPORT: CSD/2 routinely surveys approximately 300 TVRO dealers each month to determine (1) how business for the last complete (calendar) month compares with the same month in 1984; (2) whether four primary equipment items were in dealer 'overstock' (i.e. too many in-house) or 'understock' (i.e. supplies dangerously low at retail level). This serves as TVRO's "industry barometer" of equipment trends at the retail/dealer level.

end outputs at 1450 MHz are -6 dB. Nominal gain is 14 dB at 'mid-band' (1200 MHz). Their Dual BDC 1200 II has twin outputs for processing both horizontal and vertical polarized signals from a dual mode feed, slope equalization between 950 and 1450 and 15 dB of gain. This unit uses a single, common 'DRO' puck to maintain oscillator stability. The Gensat BSR 1200 receiver is also now available as a rack mounted receiver for SMATV applications.

Gensat also announced the CDR 4/12 receiver, an (optionally) infrared controlled consumer receiver with synthesized tuning and digital micro-processor control that includes a non-volatile memory. The memory system retains specific information for audio subcarrier tuning, audio mode, audio bandwidth, video fine tuning and polarizer skew for each of 24 transponders on up to 18 satellites.

Finally, Gensat has opened offices in the United States with Bobby Taylor in charge. The temporary address is Suite 300, 6584 Poplar Street, Memphis, Tn. 38138 (901/682-1670).



CDR 4/12 is full MTVRO Compatible

LOCOM Division of Radio Semiconductor, Inc. (P.O. Box 529, State College, Pa. 16804; 814/355-3494) has filed a petition requesting court approval for voluntary bankruptcy under Chapter 11 provisions. LOCOM seeks to have the protection of the court while it attempts financial reorganization of its monetary affairs. LOCOM cites

intense price competition (from Far Eastern LNA suppliers), a general downturn in TVRO business during the first quarter of 1985, and problems associated with transferring from proto-type to full production their newly created 'Royal Commander' line of micro-processor based TVRO receivers as contributing factors to the firm's financial problems. LOCOM is still seeking financial partners to bring the new receiver to market and reports an upturn in business for their LNA and other products since the spring selling season began. Firm President Kingsley Hastings reports the firm would 'seriously consider the sale of the Royal Commander product and its technology' at this time.

LUXOR NORTH AMERICA CORP. (600 108th Avenue N.E., Suite 539, Bellevue, Wa. 98004; 206/451-4414) has introduced a number of new block downconversion outdoor units including their model 9734 'dual downconverter'. Luxor has also formally introduced the 9726 Low Noise Block Downconverter and reports the 'retail price' for the unit is \$450 for a 100 degree (LNB) unit and \$550 for the 80 degree unit. Another new Luxor outdoor product is the 9755 stand-alone block downconverter unit (see CSD/2 for March 15th) which carries a suggested retail price of \$205.

SAT-TEC SALES, INC. (2575 Baird Road, Penfield, New York 14526; 716/586-3950) is offering dealers 'cash rebates' on all Sat-Tec XL receivers, standard receivers, downconverters, stereo demodulators and antenna positioner products. The cash rebate period runs through June 30th and details are available from Mike O'Connell.

SATELLITE GROUND COMPONENTS (480 East Street, Suite 3, Simi Valley, California 93065; 805/583-4818) has released a new power supply designed to operate single or dual polarization LNA plus (block) downconverter systems. The power supply creates 15 volts DC (at 850 mils) and has two sets of F connectors for in and output connections. The unit carries a one year warranty and is available for immediate shipment.

STAR TECH CORPORATION (5225 Old Orchard Rd., Suite 27-C, Skokie, Il. 60088; 312/967-0170) has introduced a trio of separate TVRO receiver products. Model ST-1000 has matrix stereo, detent tuning, skew control (automatic Polarotor 1 interfacing), AFC, video-invert, and a matching (15 dB noise figure claimed) downconverter. Model ST-9000 is continuous tune with a scanning feature and is matched with a 13 dB noise figure (claimed) downconverter. Model ST-3000 is economy priced with built-in modulator, skew con-



...two for the show.

ESR 424

EARTH STATION RECEIVER



ESR 424 Earth Station Receiver



APS 424 Positioning System

APS 424

ANTENNA POSITIONING SYSTEM



An entertainment team that is second to none: the Drake ESR424 Home Satellite TV Receiver and APS424 Programmable Antenna Positioning System.

The ESR424 receiver offers you the choice of either economical single conversion or convenient block down conversion. Both models feature the solid dependability of microprocessor design. With the easy-to-use infrared remote control, the Drake ESR424 is a natural for any home satellite TV system. Extra features like audio channel seeking and an innovative fluorescent display combine for unbeatable viewing pleasure!

The APS424 programmable antenna positioning system charts a new course in control technology. Simple programming allows easy entry and selection of satellites. A one-button command will move your antenna to the desired position through the dependable power of the APS424 motor drive. The APS424 is also controlled by the same infrared remote used with the Drake ESR424 Receiver!

DRAKE

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? 100,000 CPM
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 150,000 ?

The Numbers Game



Another new satellite TV publication is trying to convince you that buying advertising space is a simple matter of comparing numbers. "Buy us," they say, "because we have the largest distribution . . . buy us because we have the lowest CPM."

We say: "Know what you're buying, and take a careful look behind those numbers."

First of all, we must remember that there is a very important difference between COPIES DISTRIBUTED and COPIES SOLD. Unfortunately, not every magazine sent to the newsstands is bought and read. Depending upon the quality of the publication, the power of its distributor and the type of newsstands to which it is circulated, a magazine can sell in very high or very low percentages. It's pretty obvious that advertising which appears in unsold magazines is of no value.

The newest satellite TV magazine says that it has the lowest CPM, "cost per thousand readers." That's interesting because it is making this boast weeks before its first issue even goes on sale. That means they are making the claim on the basis of copies printed, not copies sold. That is not a valid figure for CPM comparisons.

We at HOME SATELLITE TV can't give you a valid CPM

figure either. Our first issue goes on sale May 23rd and we won't have meaningful sales reports for weeks. We can tell you this:

Over 90,000 copies of our first issue have been distributed. The next issue will go over 100,000.

We are circulated on newsstands throughout North America by Warner Publisher Services, the largest distributor in the business. Warner's team of marketing experts made the decision as to how many copies should be placed in circulation. Their figure is based upon quality distribution in the best income areas with a high percentage of sales potential.

We have produced an exciting magazine aimed directly at the consumer who has a new interest in TVRO. Our professional staff has captured the wonders of satellite TV with articles by experts you know and respect. They have put them into a colorful package using modern graphic techniques to make the subject alive and understandable.

What we are saying is that HOME SATELLITE TV is the quality consumer magazine...Quality in distribution, quality in product. And, as you already know, quality is always the best buy.

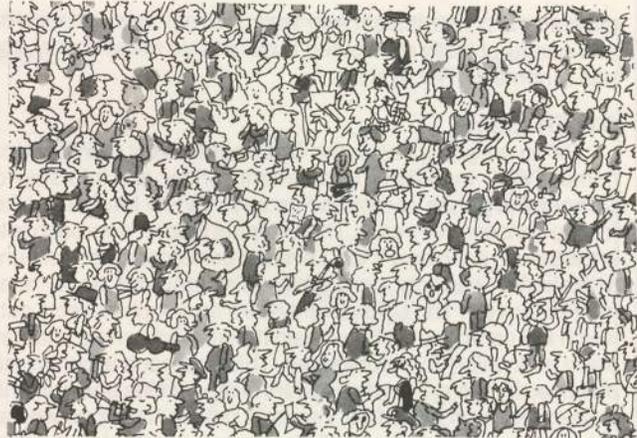
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PROFILE OF A MARKET: Part one



FROM The Top

In the beginning, we knew who the first users of TVRO were. They were ham radio operators, people who lived in the middle of 350,000 acre ranches in New Mexico, and people who had huge bank accounts and some particular lust for sports programming. The hams built their systems, usually for under \$2,000. The rest paid big bucks for their systems; upwards to \$36,500 if they selected **Scientific-Atanta** as their supplier. And there was no middle ground, no middle-America buyer.

And then the market began to change. The hams figured out they could build two as easily as one, and they became our first 'dealers' (1). And firms without SA's overhead figured out that if you could sell one system for \$36,500, you could probably sell 10 for \$3,650 and we had the early entrance of firms such as **Channel Master**. And thus a middle-America marketplace developed. And it grew and grew so that by 1984 we were selling more than 400,000 new terminals per year. But **who** were we selling these terminals to, and **why** were they buying from us???

CSD decided to find out. And not simply because that seemed like something that needed to be done. We had several concerns to resolve and we'll share some of them with you:

- A) Market size.** If you determined that the only REAL marketplace for home TVROs was the rural market where television reception by more traditional (and less expensive) means was poor or non-existent, then our total potential marketplace was going to be limited. Perhaps to no more than 2,000,000 home units. With the industry racing rapidly towards the 1,000,000 terminal mark, a conclusion favoring our just being a rural market phenomenon was important to recognize.
- B) Market Type.** If the **programming** available via satellite was an important part of the consumer buying decision, then where the consumer lives is less important. People watch movies in Atlanta just as they do in Dubois, Wyoming. If movies were more important than a lack of local reception, not only is the size of the market considerably greater, but the importance of

coming to grips with the 'scrambling situation' becomes more pressing.

- C) Buying Habits.** If the typical buyer is middle and upper income only, and he is paying cash for his system (or arranging his own financing to buy a system), the marketplace will ultimately self-limit because not everyone can afford the cash-up-front dollars. We need to know more about the buying habits of the consumer who has been attracted to TVRO to date and to better understand how to motivate the buyer who has not yet purchased from us.

To learn about size, the depth and the profile of our present marketplace, **CSD** got together with a major telecommunication corporation and we packaged these two elements with a group of hardware equipment suppliers willing to share between 500 and 1,000 customer names and addresses taken at random from each of the OEM's warranty card return files.

We were careful to select OEMs who sold a considerable variety of products, on a national basis. We were equally careful to select out a time-diverse cross section of warranty card names covering the full four year span of the TVRO industry. Then we put together a 4 page, 45 question survey which we mailed to nearly 5,000 existing owners and users of TVRO. To make the recipients of the survey more willing to complete the survey (requiring from 15 to 20 minutes of their time since most of the questions were multiple-choice answers) a promise of 'two crisp, new, \$1 bills' was included for each person returning a survey form.

The result of this project, conducted during the first quarter of this year, was more than 2,000 returned surveys; **43.6%** of all TVRO owners receiving the survey returned it essentially or totally complete. And from that tabulation of more than 2,000 returned surveys, CSD has published a 150 page '**1985 (CSD) TVRO MARKET PROFILE**'. This profile is available under special contract to businesses and individuals who seek detailed demographic profiles and behavioral answers to the 40+ questions we posed to TVRO owners (2). Over the course of the next two issues of CSD and CSD/2, we will share just a tiny fraction of this analysis with you so that you will better understand the marketplace which you are now involved with. The 'Market Profile' is a copywritten report produced at considerable expense and several dozen 'clients' will be using the reams of demographically profiled data found here to create their own interpretations and analysis of the TVRO marketplace for the balance of 1985. Of particular interest will be the measurement and analysis of 'behavioral

1/ The first dealer to operate solely as a dealer was **Fred Hopengarten** (amateur K1VR) who opened his '**Channel One**' TVRO business in Waltham, Ma. in the spring of 1979. Hopengarten offered Microdyne commercial equipment in home system configurations and continues in the same business today.

motivations'; clear insight into why different age and income and geographically distributed buyers have opted to buy and use a home TVRO system.

OTHER Efforts

On an on-going basis, the **Channel Master Corporation** home TVRO marketing department, under the tutorship of **Donald Berg**, has completed its own 'TVRO Market Profile' for two consecutive years. The Channel Master approach is to enclose with each new TVRO system or major component unit a customer warranty card which also doubles as a 'mini-market-survey'. The CM warranty card approach extracts data which the company feels will help it better determine 'market-place motivation' for future sales. This approach is commonly practiced by many industry leaders in other fields and from this market research important trends in buying habits as well as the demographic makeup of the buyers are detected. From this 'early detection system' better marketing strategies develop and new marketing plans are born.

Channel Master found that in the year 1984, the majority of their home TVRO customers cited '**Poor TV reception**' and '**More TV choices**' as the two primary reasons for investing in a TVRO. Channel Master also found that **19%** of all people returning their warranty cards and completing the questions on the card reported they had 'No TV reception' or 'Poor TV reception'. This number compares with between 4 and 5% of all American homes which would find themselves in the same reception situation. Channel Master also found that **62%** of all those surveyed reported they had reception from five or fewer channels prior to investing in a satellite dish; nationally, there would be between 20 and 21% in the same predicament.

Both of these survey results, from the Channel Master study, would support the thesis that the majority of our TVRO customers **to date** are people who live in areas where direct (terrestrial) television reception is poor or below acceptable levels. The logical extension of such a profile would lead one to the conclusion that ultimately, **this marketplace** would be saturated since barely 1/5th of all American homes are so located that they have five or fewer television channels to select from. Still, in the 18,000,000 or so realm (the number of homes or living units that equals the percentages tossed about here), the marketplace would seem to be barely 'dented' at the 1,000,000 home (TVRO) terminal level.

The Channel Master 1984 survey, however, revealed something else; 'a trend' since 1984's survey was the second such compilation done by Channel Master. CM found that whereas in their **1983 survey** 11% of all TVRO customers had access to cable TV, that in their 1984 survey, this number had risen sharply to **21 percent**. Channel Master's Berg took this as an indication that home TVRO selling was moving out of the countryside and into either the suburbs or the smaller com-

munities where cable service existed. He also took this as a 'signal' that the nature or 'mix' of home TVRO selling was rapidly changing and he forecast a greater number of 'small dish' systems, located in suburban backyards, in 1985 as a result.

The 1984 Channel Master survey, which Channel Master willingly has shared with the balance of the marketplace, is important to us here because it provides us with a 'scale' against which to compare the tabulated results of the spring of '**1985 (CSD)TVRO Market Profile**'. A similar study, conducted by Uniden Corporation through a similar warranty card approach, was also instructive.

But, a study conducted by one manufacturer represents a profile at best of the customers of just that manufacturer. The distribution pattern of any single manufacturer, even a Channel Master or a Uniden, is at best 'uneven'. No single supplier, including Channel Master and Uniden, yet has a totally 'integrated distribution system' which properly balances rural sales and suburban sales and urban sales patterns. Channel Master's strength, for several decades, has been in rural areas. Uniden's strength is not yet clear other than their volume distribution.

So when we are able to take a Channel Master 'question' and find a 'reasonable fit' to a specific question in our 45 question survey, we consider that more 'luck' than skill since our nearly 5,000 questionnaire forms eventually filtered out to what we intended to be a totally integrated marketplace made up of rural, suburban and urban users spread over all types of equipment packages from exceedingly expensive to exceedingly inexpensive. There is value in **any** study conducted; there is more value in some than others. The pioneering work done in this field by Channel Master and Uniden is recognized and important. And where we found important 'fits' between data sets in the surveys cited, we shall call them out for you. More important, where we did not find fits between data, we shall also call that out for you.

WHERE Are TVRO Customers?

We foresaw the 'conflicts' between cable and TVRO 'coming'. And we carefully selected our questions relating to the living situation of each TVRO owner so that we might better understand **why people who have access to cable television service(s)** would, in fact, opt for a home TVRO system. Our data clearly shows how the behavioral pattern of TVRO buyers has changed or 'matured' since the 1980-81 era buyers. In our CSD study-approach, respondents were asked to identify where they live and how long they have had a TVRO. The 'where-they-live' profile was then broken out for analysis in several ways including the **region** of the United States where they live (i.e. Pacific, West-Central, Southwest, Southeast, East-Central, Mid-Atlantic and New England; **see map**). Then we wanted to see where they lived, relative to towns and metropolitan areas of various sizes. We also identified how long each category had owned their systems and further broke that down by their income levels and by the type of work done by the 'family head'.

Here is a summary of that data:

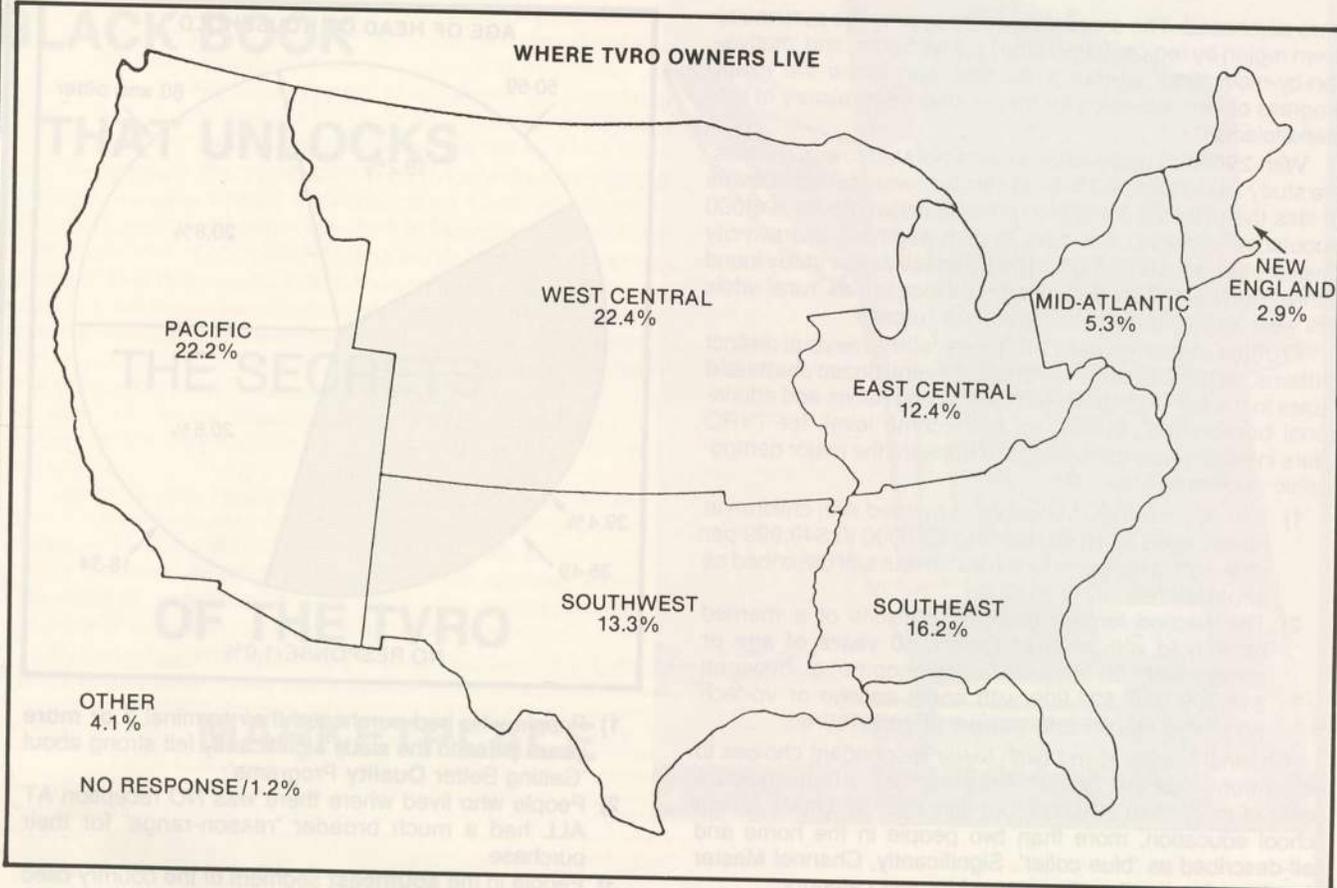
A) TVRO Owners Live In:

1) Incorporated towns or cities	YES/
25.8%	NO/ 71.9%

B) Distance to nearest City of 100,000 or More:

1) Less than 50 miles	YES/ 30.4%
2) More Than 50 Miles	YES/ 62.6%
3) Within City 100,000 +	YES/ 5.3%

2/ 'The 1985 (CSD) TVRO Market Profile' is immediately available, on an individual copy basis, from CSD Magazine. The 150 page report includes 52 pages of 'cross-tabulation' tables, 22 pages of 'summary tables', a 16 page 'executive summary' suitably illustrated with graphs to highlight the size, caliber and scope of the market. Manager for the survey proper was **Ruddick Research International, Inc.**, a leading marketing and communications marketing strategy research firm with headquarters in Tulsa, Oklahoma and including amongst its clients firms such as Bechtel Corporation, General Motors Corporation, Goodyear Tire and Rubber Company, U.S. Steel Corporation and Xerox Corporation. Instructions for ordering this copy-written report appear here on page 13 or call CSD Magazine at 305/771-0505.



Note that **Channel Master** found 73% are 'rural' (without defining the term rural), 18% are 'on farms' and 7% are suburban.

Our study also found that the geographic distribution of satellite users was:

- A) **Pacific** (Alaska, Hawaii, California, Idaho, Oregon, Utah, Washington, and Arizona): **22.2%** of all terminals now installed
- B) **Southwest** (Arkansas, Oklahoma, Louisiana, Texas, and New Mexico): **13.3%** of all terminals now installed
- C) **West-Central** (Colorado, Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wisconsin and Wyoming): **22.4%** of all terminals now installed
- D) **Southeast** (Florida, Alabama, Georgia, Mississippi, North Carolina, South Carolina, Tennessee and Virginia): **16.2%** of all terminals now installed
- E) **East-Central** (Illinois, Indiana, Kentucky, Michigan, Ohio and West Virginia): **12.4%** of all terminals now installed
- F) **Mid-Atlantic** (Delaware, Maryland, New Jersey, New York, Pennsylvania and District of Columbia): **5.3%** of all terminals now installed
- G) **New England** (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island and Vermont): **2.9%** of all terminals now installed
- H) **Foreign** (Outside of USA but within U.S. or Canadian DOMSAT coverage regions): **4.1%** of all terminals now installed.

The growth of the TVRO marketplace, during the past 18 to

24 months, has been virtually 'logarithmic'. In measuring the term of ownership, we found:

- 1) **59.4%** of owners had purchased their TVRO **within 12 months** of the survey response dates (through late February)
- 2) **29.8%** had purchased their terminals from **12 to 24 months** prior to the survey date
- 3) **7.8%** had purchased their terminals from **24 to 36 months** prior to the survey date
- 4) **1.3%** had owned their terminals from **36 to 48 months**, and,
- 5) An additional **1.3%** had owned their terminals 'longer than 48 months' (in theory, out to the 67 month point or June of 1979 when the first commercial-home terminals were installed).

Significantly, the marketplace 'activity' has changed through the years with certain regions of the country 'catching on faster' to TVRO than others, and then slowing down as they reached a certain stage of maturity (or market saturation). For example:

Of all terminals sold to date:

- 1) **The Pacific** district achieved 24.5% of its present saturation at a point **24 months** 'back';
- 2) **The Northeast**, by comparison, did not reach the same point of saturation until some **14 months** back.

Or, the 'hottest market' for home TVROs between 12 and 24 months 'back' was the Pacific region (buying **44.8%** of all terminals owned, in THAT 12 month period) while the slowest geographic area within that SAME 12 month period was the Southeast when but **21.4%** of all presently owned terminals

were purchased. The cross tabulations breaks the purchases down region by region, time frame by time frame, and 'motivation-by-motivation' so that a 'student' can follow the exact progress of terminal sales for the full (five year) history of the marketplace.

With **25.8%** of users living in incorporated towns or cities, the study found that **10.1%** of all system owners lived in towns of less than 10,000 population while cities with over 100,000 population attracted the next largest segment of town/city dwellers in the market; **5.3%**. The Channel Master study found similar numbers; 73% described their location as 'rural' while 7% were self described as 'suburban (urban)'.

Profiles of the typical TVRO user fell into several distinct patterns, as did the use of terminals. Several dozen charts and tables in the full study point out the viewing habits and educational background, as well as the income level, for TVRO users in each geographic district. It appears the major demographic segments are:

- 1) The largest single 'category' is married with children at home, aged **35 to 49**, earning \$30,000 to \$49,999 per year, with a high school education but self described as 'professional'.
- 2) The second largest category consists of a married household with children grown, **60 years of age or older**, with an annual family income of between \$18,000 and \$29,999 with some college or vo-tech schooling credits and 'retired' or semi-retired.

Channel Master found (with fewer respondent choices to select from) that the 'typical' customer had a household income of more than \$30,000 (but less than \$50,000), a high school education, more than two people in the home and self-described as 'blue collar'. Significantly, Channel Master **also found** 'retired' as the second largest category.

HOW They Buy

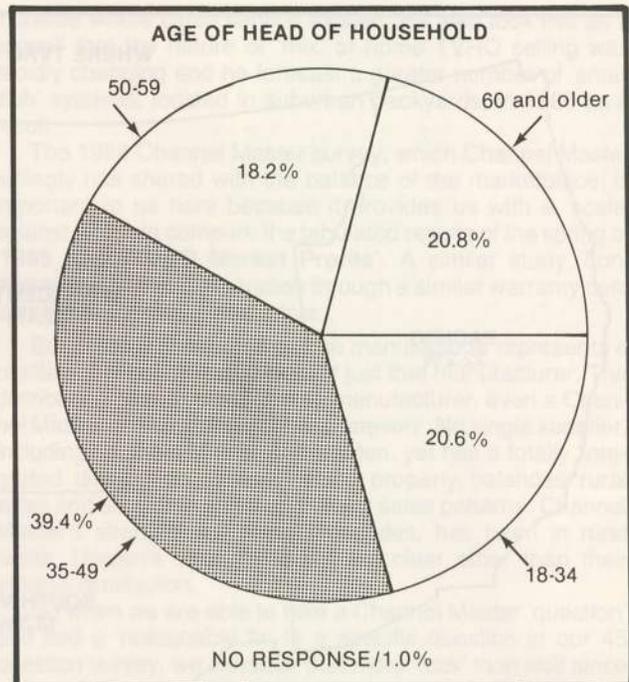
Eight of the questionnaire topics developed a behavioral profile of the TVRO consumer; or **how they described themselves** as purchasers in the marketplace. The questions were 'general' to seek out patterns and did not specify the buying process as it related only to TVRO. Among what we learned:

- A) A high percentage do compare prices when shopping BUT a significant percentage does NOT tend to buy at the 'lowest prices' found. Another significant percentage said they 'usually buy more than they planned while shopping' although a surprising **majority** said they will NOT buy sooner if credit is available.

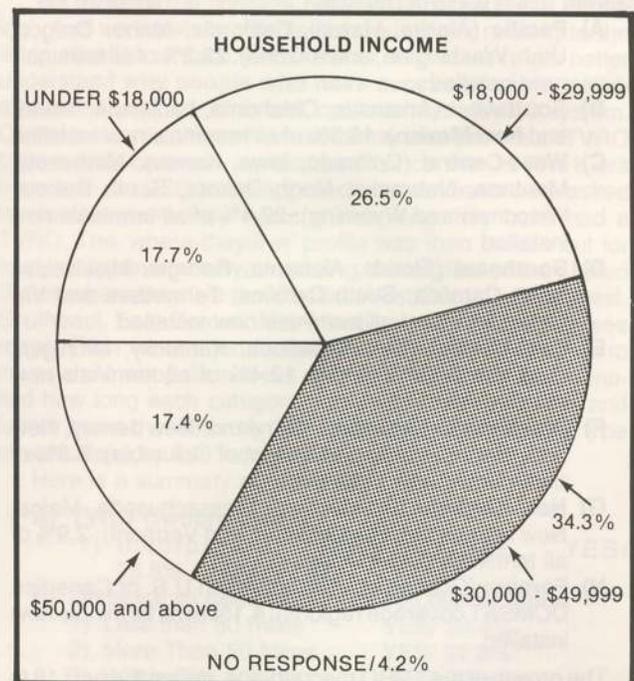
There has always been much discussion within the marketing arm of the industry as to what motivates a person to actually learn about and then to buy a TVRO system. That first 'exposure' to TVRO is critical because it starts the purchase process. Our study found:

- A) The majority of buyers either saw a system at a neighbor's or relative's, or saw a system in operation at a dealer (59.4%). A sizeable percentage cited a 'lack of cable' or 'cable is too expensive' as a **reason** to purchase a TVRO. That number will come back again as we shall see in CSD for June 1st.

After the first exposure and interest, what 'motivates' the consumer to buy a TVRO? Again, respondents were given 8 possible answers and once again there was a clear cut leader; **60.5%** reported that '**More Channels with a Greater Programming Variety**' was the primary motivation for buying a terminal. However, running contrary to this answer were several sub-groups within the whole of the study.



- 1) People who had purchased their terminal **3 or more years prior** to the study significantly felt strong about 'Getting Better **Quality** Programs';
- 2) People who lived where there was **NO** reception **AT ALL** had a much broader 'reason-range' for their purchase.
- 3) People in the **southeast** segment of the country cited '**more movies**' as a predominant reason for the TVRO while people in the **Pacific** segment of the country were far less interested in movies.
- 4) People earning \$50,000 or more per year were more



COOP'S SATELLITE DIGEST

THE BIG

BLACK BOOK

THAT UNLOCKS

THE SECRETS

OF THE TVRO

MARKETPLACE



WHO — really makes up the 1985 TVRO marketplace? Is the marketplace shifting from rural to suburban?

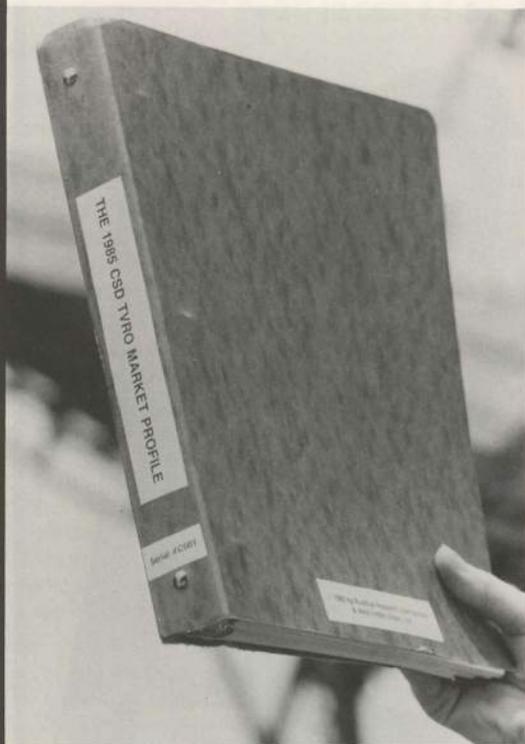
WHAT — motivates people to buy TVRO? Movies, sports, news??? How important to TVRO owners are the **unscrambled** network TV signals?

NOW for the first time there is a 'definitive profile' of the TVRO marketplace; a detailed, perceptive look at the demographics of the TVRO consumer, complete with behavioral segmentation profiles! More than 2,000 present-day owners of TVRO completed a 43 question, four-page survey designed by skilled marketing strategists to elicit data which would allow a full computer tabulation of the 'demographics of TVRO.'

THE 1985 (CSD) TVRO Market Profile contains 150 pages of charts, analysis, tables and summaries. 'The Profile' provides insight into the motivations of TVRO purchase and reveals important 'user satisfaction' and TVRO system 'use profiles' for the first time. 'The Profile' is skillfully edited and arranged into sections to allow cursory, intermediate and in-depth analysis of all of the important factors influencing TVRO purchase and use.

Within the 150 pages there are 32 'basic tables', 49 'cross-tabulation tables' and 38 'behavioral tendency tables'. A 16 page 'Executive Summary' backed up by 22 pages of 'summary tables' is tailored for the busy management person who needs to understand the basic motivations of TVRO but who does not have the time to prepare his own analysis.

'The 1985 (CSD) TVRO Market Profile' is available to you on a confidential basis for use limited to within your organization, and it may not be reproduced nor printed in any form without the written consent of the copyright holders.



METHODOLOGY/ Nearly 5,000 home TVRO system users were identified through an arrangement with a cross-section of TVRO hardware original equipment suppliers. A random sample of warranty registration card files provided a master 'survey universe' covering the period 1980 through 1985, spread over all regions of the United States and outside the USA where DOMSAT (domestic US satellites) can be received. Survey results are based upon 2,086 responses (43.6%) received by the specified cut-off date. The study was conducted under contract by Ruddick Research International.

Partial listing of questions included in original survey form: How long had satellite earth station? **Region of country?** Primary use of system? **Factor that convinced you to buy system?** Number of broadcast television stations you receive? **Currently have access to cable TV system?** A subscriber to the system? **Pleased with cable service receive(d)?** Total number of hours per week satellite system used by all members of household? **Satisfaction with satellite receiving equipment?** Satellites tuned-in three or more times per week? **Category of programming viewed most frequently by household on satellite?** Categories of programming viewed next-most frequently? **Important source of satellite programming information?** Main benefit expected from satellite equipment? **How much spent on satellite receiving equipment?** Other electronic equipment currently have or own in home? **Live in incorporated city or town?** Population of city or town? **How far from residence to nearest city of 100,000 population or more?** Anticipate replacing or adding satellite receiving equipment within next 12 months? **Equipment plan on buying?** Age of head of household? **Family status of household?** Income of household? **Education of head of household?** Occupation of head of household? **Publications subscribed to or read regularly?** Programming sources viewed through satellite: **ABC, CBS, NBC, WTBS, WGN, USA Network, CBN, ESPN, HBO, Cinemax, Showtime.** Type of products usually purchased? **Buy sooner if on credit?** Generally a 'risk taker' in purchasing? **When shopping, generally buy more than anticipated?** Use 800-toll-free numbers when shopping? **Tend to buy merchandise based upon lowest pricing?** Consult literature and publications for education before buying? **Generally compare prices before buying?**

Partial contents of '1985 (CSD) TVRO Market Profile': **Market Characteristics/** Location of residence in cities-towns; Age of head of household; Family income levels; Family status of household; Location of residence by region; Educational level of head of household; Occupation of head of household; Magazines subscribed to or read regularly. **Behavioral Segmentation Profiles/** Urban novelty seeker, Impulsive credit buyer, High-tech innovators, costly system owner, upscale low-end user. **Purchase Dynamics/** Length of ownership; Factors in purchasing decision; Number of broadcast stations able to receive prior to TVRO; Major benefit expectations; Cable TV access-subscription-satisfaction; Electronic equipment cross-ownership; TVRO system upgrade potential (age of system, cable access-subscription-satisfaction, equipment cross-ownership). **Usage Patterns/** Viewership; Satisfaction; Satellites viewed; Types of programming viewed; Services viewed (Viewership, Programming viewed).

HOW TO ORDER:

'The 1985 (CSD) TVRO Market Profile'

PLEASE enter our order for a single copy of the 150 page '1985 (CSD) TVRO Market Profile'. Our check for \$1,000, to West Indies Video, Ltd., is attached. We understand that this 'Profile' is being sold to us with our agreement that no portions may be duplicated for distribution nor published without the written consent of the copyright holders. We also understand that our copy will be sent via Federal Express within two working days of receipt of our order and payment.

Ship to:

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COMPANY _____

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CITY _____ STATE _____ ZIP _____

Telephone Number: (_____)

We agree to the confidentiality terms of this 'Profile':

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Title

Order from:

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P.O. Box 100858 (Telephone 305/771-0505)

apt to cite **'more sports'** as their reason for a terminal while people in the 18 to 34 age group were **least apt to cite more sports** as a reason for buying a terminal.

Because of the demographic break down, by program type, years of ownership of a terminal, location within the country, the number of stations received without a TVRO, the age groups, and, the income levels, the full study revealed a number of enlightening patterns which allow the skilled marketing person to focus on potentially useful advertising messages and promotions for the sale of TVRO.

WHAT They Buy

For more than a year, the industry has been price driven at both the wholesale and retail levels. Yet, as CSD/2 for January 15th reported, the average retail price for a home system has **not dropped** from one year ago in spite of the pre-occupation by members of the industry 'with price'. The 1985 TVRO Market Profile substantiates this at the retail or consumer level as well.

Those surveyed were given 5 price range choices for the amount they had paid for their systems. And **91.3%** paid between \$1,500 and \$5,000 for their systems with **44.2%** paying **between \$3,001 and \$5,000** for their systems. When price-paid is viewed as a function of 'age of system' and 'location of user' several interesting patterns emerge.

- A) Systems costing **less than \$1,500** are most frequently found in the mid-west and southwest and least frequently found in the northeast.
- B) Systems costing **more than \$5,000** are most frequently found in the southwest, Pacific and northeast.
- C) People between 18 and 34, earning between \$12,000 and \$18,000 per year are most apt to purchase a system costing under \$1,500.
- D) People over 50 and earning more than \$50,000 per year are most apt to purchase systems over \$5,000 (especially in the northeast).

Is the TVRO system merely an extension of a buyer's fascination with 'electronic toys'? Certainly a TVRO is about the most sophisticated and easy-to-use 'home electronics toy' available to the consumer at the present time. If, however, the primary market to date has been to people who are excited about 'the machine' and less in love with the product (i.e. the programming it creates), there are danger signs here for the long term growth of the industry.

Channel Master in their 1984 survey found that **75%** of their customers surveyed owned two or more television receivers. We found that **80%** of all TVRO users owned two or more TV sets. Channel Master also found that **35%** of all (CM) TVRO owners also owned a VCR while we found that **39.5%** of all TVRO owners had a VCR. Both numbers are significantly higher (by a factor greater than 2) than the population base as a whole.

We also found high ownership of personal computers and even 'amateur radio equipment'. That one bothered us until we cross checked and learned that those who owned amateur radio equipment were heavy 'early users' of TVRO, being a significant percentage of the early TVRO universe (i.e. owning terminals for over three years).

TVRO 'use patterns', a measurement of not only how the terminals are used but how often the consumers watch television, turned up some interesting data previously only guessed about. According to the November (1984) **National Audience Demographics Report**, a frequently used reference in the (over the air) broadcasting industry, the typical (average) American home had the television set operational **37 hours**

and **24 minutes per week** in the fall of 1984. If you made the assumption that each day in a week was evenly split for TV viewing, that works out to about 5 hours and 20 minutes per day.

Satellite TV viewers are heavy users of television.

- 1) **19.5%** used their (satellite) television **fewer than 30 hours** per week;
- 2) **25.9%** used their equipment between **30 and 39 hours** per week;
- 3) **23.2%** used their equipment between **40 and 49 hour** per week;
- 4) **12.4%** used their equipment between **50 and 59 hours** per week;
- 5) **18.4%** used their equipment **more than 50 hour** per week.

There is a 'breaking-in period' however; people who had their terminals longer tended to use their terminals less per week. People in the southeast and Pacific were less apt to use their terminals heavily than people in the northeast, as well.

SATISFACTION Guaranteed?

Seemingly, satisfied users would be interested in recommending home systems to neighbors and relatives, and also interested in upgrading or expanding their systems as well. The study asked those surveyed for their 'level of satisfaction' with their home system. We found an exceptionally high percentage (**62.6%**) was **'extremely satisfied'** (the highest level of satisfaction possible) with their systems and satisfaction seemed to increase with 'age' like a fine wine; **72.2%** of those who had owned systems **3 years or more** were 'extremely satisfied'. Likewise, geographic locale had a bearing on satisfaction with the least satisfied in the southwest and mid-west.

Approximately 1 user in 5 anticipates buying some additional TVRO equipment during 1985 and this group expands to 1 user in 3 when you look only at those terminals 3 years old or older. Not too surprising, we learn that motorized actuators and receiver remote controls (or new receivers with remote control) are the two most often cited 'new equipment' categories for existing TVRO owners.

What will they buy?

Motorized actuators (**41.8%**) and receiver remote controllers (**23.5%**) lead the list but people in the northeast are only 50% as likely to buy a new actuator this year as people in the Pacific region. If you want to sell new **receivers** to existing owners, go to the southeast and concentrate on users who earn \$50,000 or more per year. If you want to sell new **dishes**, find customers with dishes more than 3 years old in the mid-west or southwest earning \$50,000 or more per year. New LNA sales are planned by only 1 existing system owner in 50 and then you will have your best chance with customers who have systems from 12 to 36 months old, living in the northeast, receiving no off-air TV stations, aged 18 to 34 and earning over \$50,000 per year!

This multiple-part series, profiling the **'1985 (CSD) TVRO Market Profile'**, will continue in our June 01 issue where we will concentrate on the unusual viewing habits of satellite users. Please note that these extracts have been taken from the recently released **'1985 (CSD) TVRO Market Profile'** where more than 150 pages of summarized data explains the type of marketplace we now deal in as an industry. Full copies of this 'Profile' are available; see page 13 here.

3/ There are 89,400,000 U.S. homes equipped with television sets representing 98% of all American households.

SCRAMBLING PART 2: THE IRD UNIT

The 'IRD' or VC2000M device was created ostensibly because M/A-Com claimed testing at Linkabit revealed to them that a very small percentage of the existing TVRO receivers provided adequately 'pure' baseband video to properly interface with an externally connected **outboard** baseband descrambler.

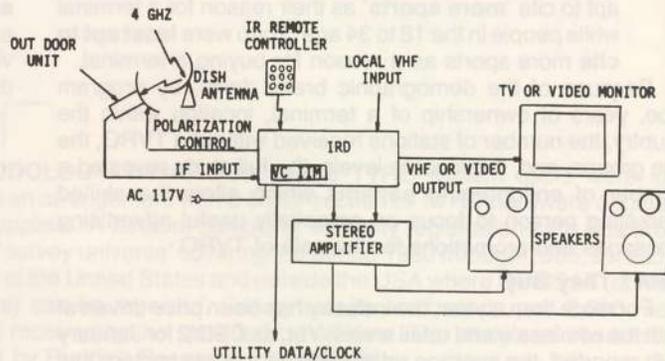
M/A-Com tested 22 consumer receivers, according to their reports, and found that 4 of these receivers worked with 'no modification' while 14 more worked 'with modification,' and 4 did not work **even with** modification. The four that worked without modification were never identified as a group but the M/A-Com T1, H1 and Viewstar 1450 models were believed to be 3 of the 4.

M/A-Com said that because such a low percentage of receivers tested did function with an external baseband input descrambler, they created the inboard or 'IRD' descrambler unit package. The theory behind the inboard unit is that by 'catching' the satellite signal internally within the receiver, the plug-in IRD unit could then 'more properly process' the signal and assure a high percentage of compatibility between the 'delicate' descrambler circuits and the receivers. The IRD unit, or Integrated Receiver Descrambler, may not have been a product of M/A-Com creation at all, at least conceptually. During the Las Vegas show early in April, representatives of **Showtime/The Movie Channel** were openly 'taking credit' for having directed Linkabit towards the IRD unit claiming they were 'concerned that M/A-Com testing revealed such a low percentage of scrambling compatibility between receivers.'

Regardless of who inspired the IRD unit, later to be dubbed the VC2000M, where 'M' stands for module, the unit's unveiling first in La Jolla at the Linkabit plant March 28th and later in Las Vegas on March 31st created a considerable reaction from receiver OEMs.

The IRD is a 2 pound electronic 'brick' measuring 11.50 inches wide by 9.02 inches long by 1.77 inches tall (**see drawing**). This electronic brick is a refined, 'miniaturized' version of the full descrambler and addressing electronics found in the earlier announced cable version VC2C descrambler (see **CSD** for April 01 and **CSD/2** for April 15th). The IRD unit is designed to slide into an opening or cavity provided for it by the receiver OEM. The IRD unit connects its circuits to the TVRO receiver circuits through a 44 pin (!) Amphenol type 225D

by
Alli Lake
The Satellite Link
Ft. Lauderdale, Fl.



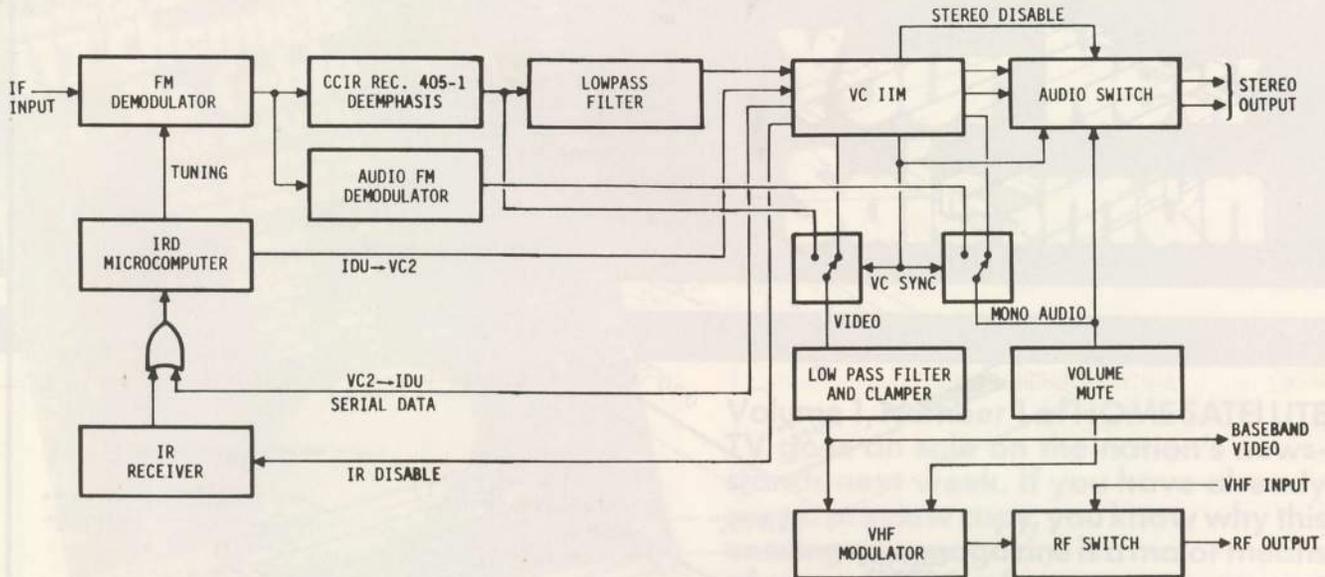
TYPICAL TVRO configuration using Integrated Receiver-Descrambler (IRD); drawing courtesy of M/A-Com.

connector.

The IRD unit and the original receiver must 'talk' with one another, using electronic codes. There are 17 'communication/control/powering' lines required between the IRD unit and the receiver. This means that any receiver designed to accommodate the IRD unit must provide for not only the 44 pin connector for the IRD unit, but for a minimum of 17 'data/communication/powering' circuits to interface the IRD to the receiver proper. The interfacing required is shown here in **diagram form**.

In addition to the communication and powering lines, there are control functions which the VC2000M/IRD unit will initiate or dictate. For example, let us suppose that the TVRO receiver package has been designed to allow the user to use an **infrared remote control** with the receiver. One of the requirements of the VC2000M/IRD is that this infrared control circuitry be capable of being 'broken' by an uplink initiated command coming from the programming center. The purpose for this is to allow the uplinker, such as HBO, to shut-down the user's infrared remote control by remote control. **Why would they want to do that?** The theory is that a programmer, such as HBO, might wish to charge 'extra money' for the customer using his infrared remote control on the scrambled, premium channels. The receiver manufacturer, in turn, is 'obliged' under the terms of the IRD-use-agreement to 'break' the infrared remote control lines, within the receiver, so that if the satellite programmer wishes, the normal handheld can be rendered useless unless the (HBO et al) customer agrees to a special 'surcharge' to get use of the infrared control back again.

In another example, there are stereo outputs for the IRD and stand alone VC2000E unit. These are to accommodate the plans-for-stereo which the premium programmers (such as HBO) are scheduling at some future date. The stereo is actually a feature of the Linkabit system and both home style and cable style descramblers (i.e. the VC2C) are equipped with left and right stereo outputs. The theory is that the premium programmer may wish to charge an 'extra fee' for use of the stereo feature and once again the stereo lines are to be 'broken' within the receiver/IRD system so that the uplinker can request a customer to pay a special (added) fee for the benefits of stereo. If not, the IRD/receiver package, **configured as Linkabit requires** from the OEM, will deliver the audio as 'living monaural' only. You can spot these two unusual 'functions' as lines 7 and 8 in the 'VCIIM Interface' drawing shown here.



70 MHz IF input (top left) and IRD functions through to stereo output, baseband video output and RF output (right hand side); drawing courtesy of M/A-Com.

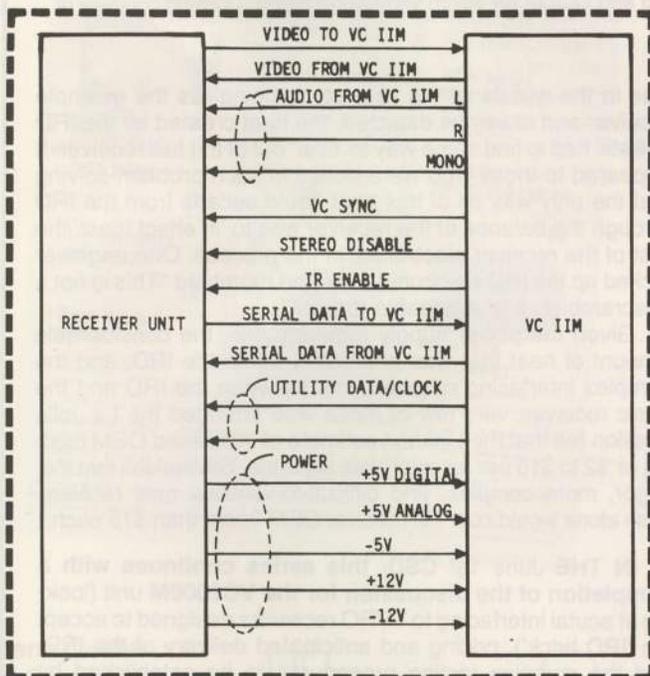
HEAVY Power User

As mentioned briefly in CSD for May 1st, one of the concerns voiced by receiver OEMs on hand at the La Jolla unveiling dealt with the powering requirements of the IRD unit. All TVRO receivers require power and power supplies in the 12 to 25 volt range, DC, are pretty standard. Some receiver sup-

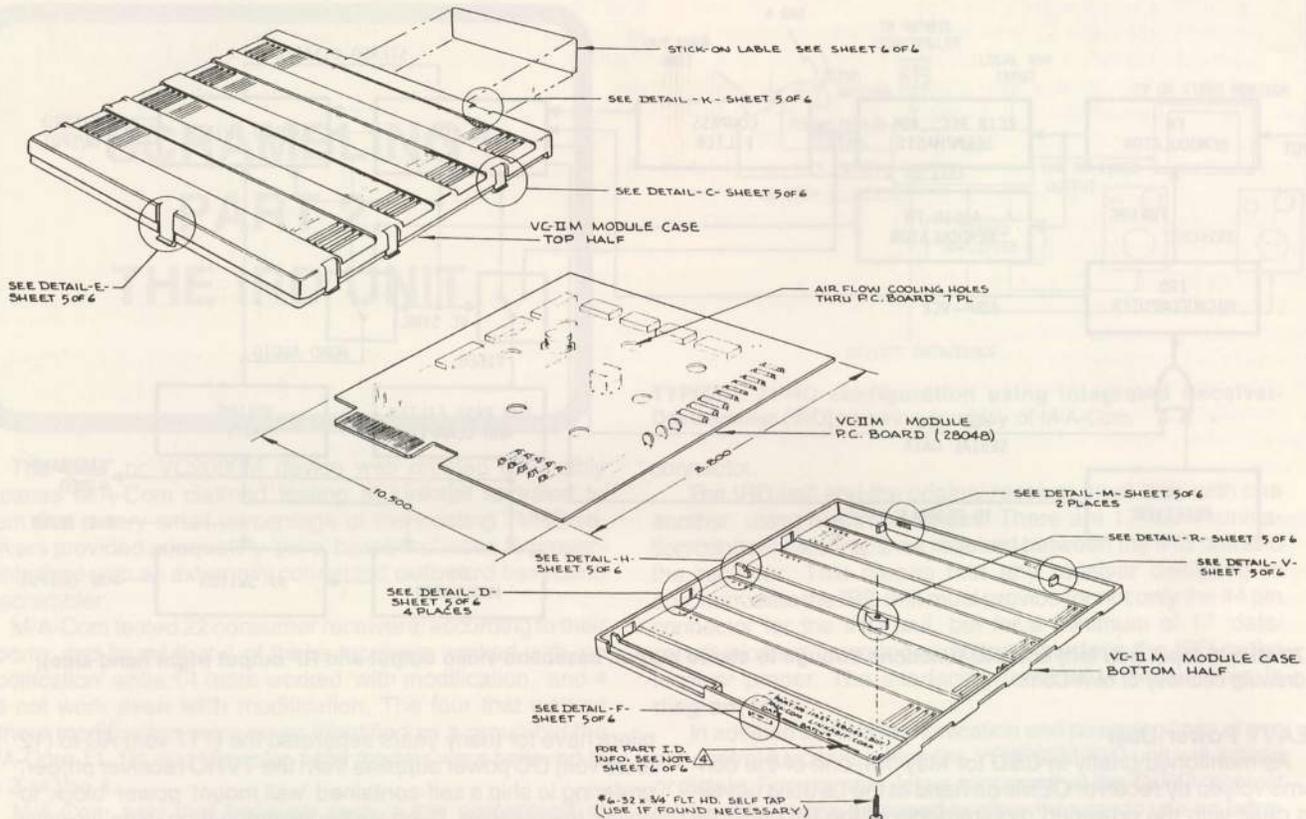
pliers have for many years separated the (117 volt) AC to (12 to 25 volt) DC power supplies from the TVRO receiver proper, preferring to ship a self-contained 'wall mount' power 'block' to power the receiver. Such wall-socketmounting units typically provide 1 AMP or less, at 15 to 18 volts DC. This power is fed into the TVRO receiver with a small twin-wire cable through some form of miniature plug on the back of the (TVRO) receiver.

Such power supplies typically are 'UL' or otherwise approved as stand-alone power supplies; you can find many variations of this family of supplies at Radio Shack, for example, intended to power everything from calculators to video games. There are two reasons why a receiver OEM would elect this 'out-of-receiver' approach to (DC) powering for his receiver circuitry.

- 1) Inboard power supplies, to meet UL and other codes, require special protective circuits designed to reduce the opportunity for short circuits and potential electrical fires. Such separate supplies commonly get around this requirement, or have their own certification, by having circuits built-in to their own housing.
- 2) Inboard power supplies generate considerable amounts of heat; electrical circuits which change voltages (from AC to DC) or reduce voltages (from 18 volts to 12 volts, for example) create heat; it is a part of the process. Heat, in turn, causes parts in the same housing to increase in operating temperature. When electronic parts heat up, and cool off, the value of the parts (resistors, capacitors, transistors, ICs) actually change. A circuit that requires a 100 ohm resistor may work quite differently if that resistor heats up (because of heat inside the receiver) and changes 'value' to 108 ohms. Thus heat inside of a receiver is not desirable and must be 'shunted off' to prevent internal parts from radically 'changing value' in the heating (and cooling) process. When parts 'change value,' the receiver circuits 're-tune' and create problems such as receiver



VC IIM INTERFACE/ note 'stereo disable' and 'IR disable' lines just above mid-way point on receiver to VC IIM interfacing; drawing courtesy of M/A-Com.



LAYERING and sub-assembly of IRD module; note center of drawing and callout for seven ventilation holes. Drawing courtesy of M/A-Com.

(tuning) drift.

The 1.5 amps required by the IRD unit is from 50 to 100% more current than many of the most popular receivers now used to power **both** the receiver **and** the outdoor electronics (i.e. downconverter plus LNA). Therefore, the IRD unit itself could easily double the capacity required from the power supply. Such an increase in capacity is unlikely to be met by an external, wall-socket mounted 'power block.' This simply means that any receiver, capable of handling the IRD plug-in unit, would be required to move the full power supply back inside of the receiver housing and to perhaps double the capacity of the power supply in the process.

There is, of course, a '\$\$' value assigned to this.

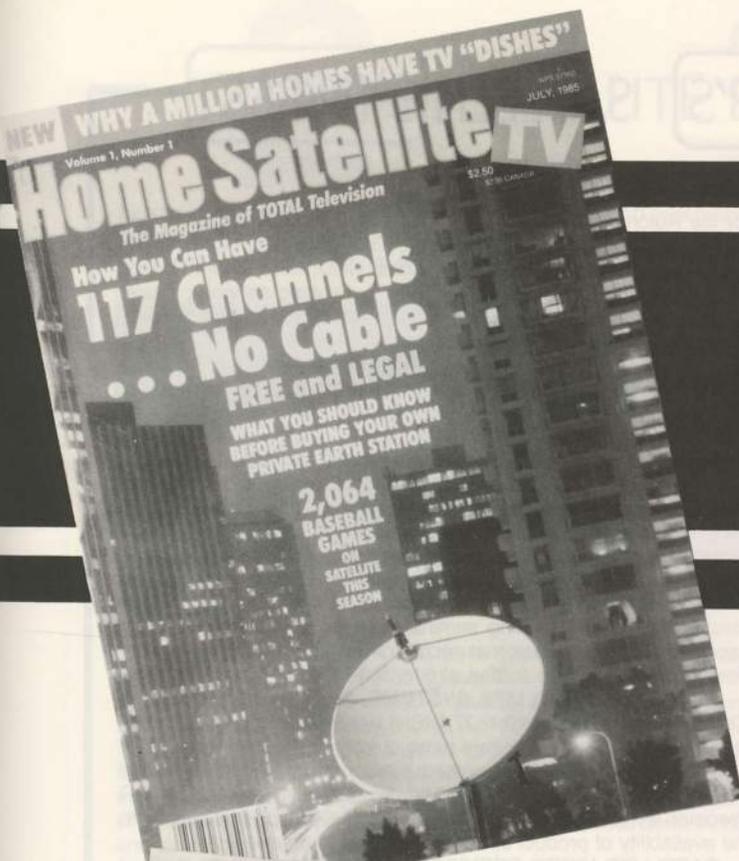
Linkabit had maintained that existing receivers could be 'adapted to the IRD unit for between \$2 and \$15 OEM cost.' Many of the receiver design engineers on hand at La Jolla did not share that estimate. The increased power supply requirements was certainly a significant hurdle but 'heat' was another.

The IRD unit itself, being exceedingly 'compact,' was going to 'dissipate' 1.5 amps in that 11.5 by 9.02 by 1.77 inch 'electronic brick.' It had to be noted that the black, plastic-ribbed covering on the IRD unit had been carefully designed to allow for the circulation of air around and perhaps through the sandwich type board construction (see diagram here, provided by M/A-Com). However, if the 'cavity' for the IRD unit

was in the middle of the receiver housing, as the example receiver and drawings depicted, the heat created by the IRD unit still had to find some way to 'filter' out of the full receiver. It appeared to those who were skilled in such problem-solving that the only way all of this heat could escape from the IRD through the balance of the receiver was to 'in effect toast' the rest of the receiver electronics in the process. One engineer picked up the IRD electronic brick and mumbled "This is not a descrambler, it is a portable toaster!"

Given the power supply requirements, the considerable amount of heat that was generated within the IRD, and the complex interfacing requirements between the IRD and the basic receiver, very few of those who attended the La Jolla session felt that the Linkabit estimate of increased OEM costing of '\$2 to \$15 per receiver' was accurate. Several felt that the larger, more complex, and difficult-to-ventilate new receiver case alone would cost the receiver OEM 'more than \$15 each.'

IN THE June 1st CSD/ this series continues with a completion of the discussion for the VC2000M unit (looking at actual interfacing to TVRO receivers designed to accept the 'IRD brick'), pricing and anticipated delivery of the IRD, and the complex testing procedures to be established by OEMs who will make their receivers 'IRD compatible.' Also in the June 1st issue, a look at the 'stand-alone' VC2000E unit which accepts baseband or 70 MHz IF inputs.



Your New Salesman

Volume 1, Number 1 of HOME SATELLITE TV goes on sale on the nation's newsstands next week. If you have already seen a preview copy, you know why this exciting new magazine is a major means of communication from you to your next customers. Aimed directly at the consumer who has a new interest in TVRO, HOME SATELLITE TV is produced by magazine professionals. They have captured the wonders of satellite television with articles by experts you know and respect. They have put them into a colorful package using modern graphic techniques to make the subject alive and understandable.

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Home Satellite TV

The Magazine For New TVRO Buyers

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601 226-6807

NEW PRODUCTS/ continued from page 6

trol, continuous tune, video invert and signal level metering. The matching downconverter has a (claimed) noise figure of 15 dB.

UNIDEN CORPORATION of America has moved their corporate headquarters from Huntington Beach (California) to Indianapolis; 6345 Castleway Court, Indianapolis, Indiana 46250 (317/842-0280). Personnel at the firm's New York City headquarters were also relocated to Indianapolis in the consolidation of management and product distribution; Uniden TVRO systems have been distributed through the Indianapolis facility since Uniden entered the TVRO field.

Dealers for Uniden are also vying for a new sales incentive award which includes in the prize string an all-expense paid 8 day and 7 night cruise trip throughout the Caribbean. The sales contest involves selling various Uniden TVRO products and earning points for products sold. An accumulation of 950 points, through July 31st, results in the dealer winning the cruise trip. Points earned vary from 5 points for each UST 1000 or UST 3000 receiver sold to 20 points for each UST 7000 receiver system (LNA and BDC).

VIEWSTAR, INC. (55 Millner Avenue, Scarborough, Ontario, Canada; 416/298-9919) has introduced their CSS 1450 consumer TVRO receiver using PLL quartz synthesized tuning and 'fiddle free' performance according to the firm. All functions are infrared remote controlled, including parental view control, stereo sound, antenna actuator and transponder memory. Viewstar also reports the new receiver is certified to be compatible with Oak Orion and M/A-Com Videocipher descramblers.



FIDDLE-FREE from Viewstar

DISTRIBUTOR Doings

HOOSIER ELECTRONICS has opened two new office and warehouse facilities. A new mid-western location is located at 8920 Bond Avenue, Overland Park, Kansas 66214 (800/457-3330) in the greater **Kansas City** region. A new west-coast location is found at 1630 Cerbrian, West **Sacramento**, California 95691; 800/457-3330. Hoosier claims to be the largest distributor of home TVRO equipment nationally and was formed and headquartered in Terre Haute, Indiana more than 14 years ago.

MASTER DISTRIBUTOR ORGANIZATION (MDA) formed during the Las Vegas trade show in an effort to provide lower equipment buying prices and improved dealer training and service to retailers located in the states of Indiana, Tennessee, West Virginia, Minnesota, Michigan, Ohio, Texas, Louisiana, Florida and Pennsylvania. The new distributor association has an ambitious program planned to concentrate distribution and marketing abilities to the benefit of the dealers; a second meeting of the group was scheduled for mid-May. Information from Mike Talbert (812/426-2188) of Flame Satellite Products (Evansville, Indiana).

MISAT SATELLITE CORPORATION (2000 Barnes Street, Penticon, B.C., Canada; 604/493-7168) has become a 'master distributor'

for the Automation Technique line-up of GLR series receivers and accessories. Misat has also become Canadian distributor for the Fanon-Courier line of equipment. Additionally, Misat's Orin Beebe announces the firm is offering SMATV consulting services, dealer technical seminars, warranty repair and exchange, and other dealer-oriented services to **Canadian** dealers.

NATIONAL SATELLITE COMMUNICATIONS (Clifton Park, N.J. and Orlando, Fl.) has opened a new 60,000 square foot facility at 9220 Cody, **Overland Park**, Kansas (66214). The new facility is managed by H. Bruce Bachelder and Janet Gildig.

NSC has also introduced an 'Authorized Dealer Program' aimed at upgrading existing retailers who buy from NSC by providing the retailers with extensive additional training and sales and marketing support. NSC reports that approximately 200 of their 1100 (+) dealer accounts have now qualified as '**Authorized NSC Dealers**' which is granted on an 'exclusive basis'. To qualify, dealers must have a fulltime dedication to TVRO, a storefront location, undergo credit scrutiny and attend training seminars, possess equipment testing capability and have customer recommendations. Information from Ronald Bruce or Gerry Jordan at 518/383-2211.

PRECISION SATELLITE SYSTEMS, INC. (715 Grove Street, Clearwater, Fl. 33515; 800-HOT-DISH) has announced a new 'shipping program' to serve retailers more quickly and dependably. They call it 'Same-Day/ Or-We-Pay' and it means that all orders placed before 12:00 PM eastern time will be shipped out the same day OR Precision will pick up (pay) the freight charges. The offer is subject to the availability of product in the warehouse, of course.

SATELLITE VIDEO SERVICES, INC. (RR#1, Box 85-S, Paul Saxe Road, Catskill, New York 12414; 518/678-9581) has opened a fourth warehouse and retailer service outlet in **Hornell**, New York. The outlet is dubbed 'Satellite Video Services/Western New York' and is located in the southwestern portion of the state 70 miles south of Rochester. Product line up includes Uniden, Luxor, M/A-Com, Inter-sat, Conifer, Winegard, Houston Tracker, Gensat, Laux, Chaparral and Kent Research; Christopher Walczak is the the GM.

ANTENNAS/Antenna Accessories

CHANNEL MASTER CORPORATION (Box 1416, Smithfield, NC 27577; 919/934-9711) will be giving away a trio of complete TVRO systems during the CES/Consumer Electronic Show in Chicago June 2-5. CM is introducing a new **6 foot perforated antenna** (plus system) at CES and is using the give away to draw attention to the CM display of the new product. Only established consumer electronic retailers will be eligible for the prize(s).

CHAPARRAL COMMUNICATIONS, Inc. (2360 Bering Drive, San Jose, Ca. 95131; 408/262-2536) has created a new installer alignment aid called '**The Arrow**'. The plastic tool is used by the installer to insure correct rotational orientation of the feed to guard against premature servo motor failure. The device also assists the dealer in installing and adjusting scalar rings for specific f/D ratios. Part number 0471 is for Polarotor 1, dual feed and twister models while part number 0470 is for the PolarAmp unit. The 'Arrow' is now routinely packed with all units shipped.



DX COMMUNICATIONS, INC. (10 Skyline Drive, Hawthorne, New York 10523; 914/347-4040) has introduced their first antenna positioner. Model DSB-400 uses microcomputer technology to coordinate the movement of the dish to any of 24 programmed positions in the Clarke Orbit belt. The controller is totally compatible with the DX DSB 700 series of block downconversion receivers and the 700's

handheld infrared remote control. The controller has a 10 year memory should power fail, programmable limits, parental supervision, a 15 inch actuator arm and a host of advanced features.



DX Completes The Circle

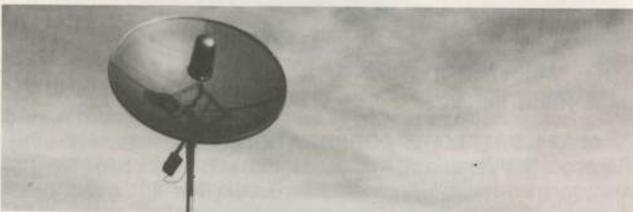
HERO COMMUNICATIONS, INC. (2470 West 8th Avenue, Hialeah, FL 33010; 305/887-3202) has introduced their 'Super-7' home TVRO antenna as the latest in their complete antenna line from 7 feet to 32 feet in diameter. The 'Super-7' is intended for the home TVRO market and features slide-in 'radar mesh' panels and UPS shippability. The antenna comes with an Az/EI mount but a polar mount is optional as is a horizon to horizon mount. Hero claims a gain of 37.9 dB for the antenna with 2 degree spaced satellites down 13 dB and side lobes reduced 20 dB.

ISIS ELECTRONICS (P.O. Box 3708, Terre Haute, Indiana 47803; 812/234-4033) has introduced a new, portable, TVRO antenna; the ISIS 55. The antenna has a 'hard aluminum wall', enamel finish, is 55 inches in diameter and weighs 47 pounds. Quick installation and set-up are featured.

NORTHERN STATES METALS CORPORATION (Box 666, West Hartford, Ct. 06108; 203/236-1613) is expanding its **direct-to-OEM** dealings for providing customized aluminum extrusions and aluminum parts. The firm offers aluminum parts covering a wide range of TVRO designer applications; LNA castings, antenna part fabrication and bending, receiver front panels and housings are included.

VERSA-MOUNT INDUSTRIES (P.O. Box 529, Big Bear City, California 92314; 714/585-8974) has introduced a 'T-Bar' pole support package for the installation of TVRO antennas. Model TB60 uses 2" OD by 25" schedule 40 pipe while model TB75 uses 3" OD by 30" schedule 40 pipe. The primary target for the mounts are dishes in the 4-6 foot class requiring a low to the ground/mounting surface profile. Leg levelers for horizontal fine tuning and plumb adjustment for vertical surface fine tuning are included. The mounts are UPS shippable and carry retail pricing of \$135 and \$185.

WINEGARD COMPANY (P.O. Box 1008, Burlington, Iowa 52601; 319/753-0121) has packaged their new 6 foot 'Mini-Ceptor' dish with necessary accessories to allow TVRO retailers to perform rooftop (level) installations with a greater ease. The perforated antenna can be installed on flat or sloping roofs or on a pipe along the side of a building. The mounts have stainless hardware, offer coverage of the complete Clarke Orbit belt, and require no special orientation during installation. The six foot 'Mini-Ceptor' antenna has a claimed gain of 35.4 dB(i) and ships in four quarter-sections. Total antenna weight is 22 pounds and assembly time is said to be 20 minutes. Wind survival rating is 125 MPH.



SATELLITE RECEPTION SYSTEMS, INC. (145 Columbus Road, Athens, Ohio 45701; 614/594-2524) has become one of the first distributors to offer the computer programmed 'Nitec Robot

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PROMAR, INC.
4912 W. LaSalle St.
Tampa, FL 33607

Antenna Positioner initially shown to the industry in Nashville last September. The positioner will track an antenna towards any satellite in any direction. The installer programs in the location's latitude and longitude and sets the mount to 'true north'. From that point forward the controller locates the geostationary orbit belt (or non-belt signals such as Molniya) and automatically positions the dish at any of up to 32 separate locations. The azimuth and elevation drives will track to within 0.2 degrees in any direction.

SIGMA SATELLITE (1115 Hamilton Ct., Menlo Park, Ca. 94025; 415/327-5210, or, 925 N. Central, Medford, Or. 97501; 503/772-9227) has introduced a pair of new 11 foot aluminum mesh antennas. Sigma's original 42 rib model was designed for high wind areas where dish stability was a function of structural strength. To satisfy needs in lower wind areas, Sigma introduces the Sigma 'Supreme', a 32 rib model and the Sigma 'Deluxe', an 18 rib model. Both antennas have an all steel base, true polar mount and field adjustable declination offset. The firm has warehousing in Los Angeles, Modesto, Menlo Park and Auburn (California) as well as Medford and Portland (Oregon) and Tacoma (Washington). They are currently expanding distribution east from the west coast to selected distributors.

S.R.C. INDUSTRIES (773 S. Oregon St., Ontario, Oregon; 503/889-7261) has expanded its Pacific Northwest and West Coast distribution to the Southwest. S.R.C. spun aluminum antennas are now available from a location in Kerrville, Texas (508 Mill Run, Village West Industrial Park, Kerrville, Texas 78028; 512/895-5501).

UNIDEN CORPORATION OF AMERICA (15161 Triton Lane, Huntington Beach, Ca. 92639; 714/898-0558) has introduced the UST 110 as a new product. The 10'7" antenna has a total weight of 140 pounds and is UPS shippable. The firm reports installation time is 1.5 hours. Eighteen extruded aluminum ribs are used in the expanded aluminum mesh surfaced antenna which is protected with a five-step baked-on painting process. The antenna has an f/D of .3.

SYSTEM Package Accessories

DISHSET (P.O. Box 2105, Durango, Co. 81302; 800/237-8838) has introduced a product to help installing dealers speed up their antenna install cycle. The special high density polyurethane (plastic) foam has been created to allow a dealer to set an antenna mounting pole in record time. The product comes to the TVRO industry from the utility firms where it has been used for more than 15 years. The process has a two-part liquid which is combined and stirred and then poured into the hole dug for the mounting pipe. The foam expands to as much as 15 times its liquid volume and sets in typically 30 minutes time.



PLANT IT With DishSet

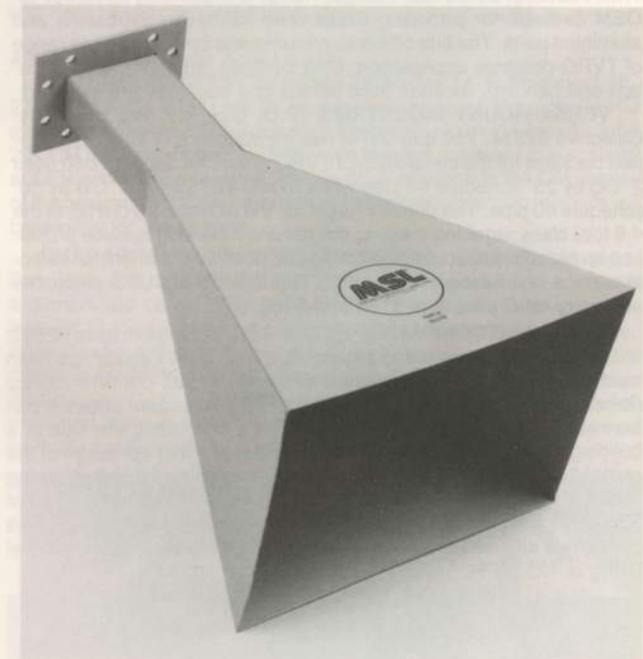
G & G ELECTRONIC SUPPLIES, LTD. (Box 329, St. Jean Baptiste, Manitoba, Canada R0G 2B0; 204/758-3944) has introduced a retro-fit package antenna controller which upgrades even the lowest end priced systems to full infrared remote control capability. The 'Northscan' package comes in several forms but here are the basics: The retrofit unit functions with virtually any dish and any

receiver. It converts the packages from manual tune and manual dish control to digitally displayed infrared controlled operation with skew control, dish control, antenna tuning (with adjustable actuator limits, visual end alarms and optional lock-out); all with a 12 button handheld infrared remote package. Pricing for the deluxe package starts at \$472 in lots of less than 1,000 and drops to \$357 (in Canadian dollars; check the exchange rate in USA; if IS favorable!).

FIELDING MOTOR CYCLE COMPANY (P.O. Box 944, Athens, Alabama 35611; 205/232-8564) has a TVRO 'antenna sight survey tool' which allows the user to perform on-site visual verification that there is antenna boresight clearance from a chosen dish location. The handy, all aluminum tool uses a sighting tube, compass, and inclinometer scale to tell the user whether the proposed location is 'doable'. Pricing is \$10.95 each or three for \$25.

HOPSON ELECTRONICS LABORATORY (P.O. Box 774, Sherman, Tx. 75090; 214/892-0116) has a computerized satellite locator program available. The program covers 4 and 12 GHz satellites now in operation or projected through 1988 and gives the user a print-out for a specific location of user name and address, polar offset for the site, name of each satellite, satellite longitude, true azimuth to the satellite, magnetic azimuth to the satellite, elevation angle to the satellite, polar offset for the site and distance in miles to the satellite. Those ordering should provide their full name and address (as it is to appear on the print-out) plus site latitude, longitude, and the magnetic declination. A companion magnetic deviation program is also available. Pricing is \$19.95 for the Satellite Locator Program and \$29.95 for the Magnetic Declination Program.

MICRO SCIENTIFIC LABS (4719 South Cobb Drive, Smyrna, Georgia 30080; 404/435-8630) has added a 25 dB gain 'site survey horn' to its line up of test related products. The TI7000 horn is designed to allow a system planner to quickly ascertain the direction and extent of terrestrial interference within the 4 GHz receive band when coupled with an appropriate LNA and receiver/spectrum analyzer. Price is under \$150 and delivery is immediate.



MSL Horns In

MISAT SATELLITE CORPORATION (2000 B Barnes Street, Penticon, BC, Canada V2A 4C3; 604/493-1122) has opened an affiliated company called Basic Satellite Repair. The firm offers factory directed repair service for Canadian dealers and their customers for both warranty and after-warranty situations. Firm head **Orin Beebe** reports they can handle virtually any TVRO products in the field and have a long list of factory authorized arrangements that includes

Autotech, Lowrance, Pentec MTI, Satron and others.

PROFESSIONAL ELECTRONICS (2612 Lexington Street, Kenner, La. 70062; 504/467-1717) is now producing mercury type limit switches useful with any DC operated motor drive. The limit switches require a pair of wires to hook up, and dealer cost is \$15 while distributor cost in the 100 lot area is \$11.

SATELLITE GROUND COMPONENTS, INC. (480 Easy Street, Suite 3, Simi Valley, California 93065; 805/583-4818) has introduced a newly created antenna feed system which they claim overcomes many of the problems associated with early TVRO feeds. The **Ferros-tat Ferrite Polarizer Feed** has no moving parts (and thus cannot freeze up), uses a straight-through design (and thus has no elbow) and is capable of being interfaced with the polarity control built into most receivers. The new feed carries a five-year warranty and availability is off-the-shelf.

SCHINDLER MACHINE WORKS (4954 W. Orem, Houston, Texas 77045; 713/433-7845) is offering a ball screw linear actuator which includes a swivel saddle clamp, swivel rod end and a pair of reducer bushings. The dealer has the option of a potentiometer position sensor (12, 18 and 24 inch arm) and hall effect sensor (12, 18 and 24 inch arms). A special bracket for Paracclipse family antennas is also available. The firm also offers a line of actuator hardware including Swivel Action Saddle Clamps (\$8 each), Reducer Bushings (\$.75 each) and Swivel Action Rod Ends (\$8 each).

STEREO VIDEO DISCOUNT (9310 Timberlake Road, Lynchburg, Va. 24502; 804/239-7585) has an extensive catalog covering a wide variety of coaxial cable distribution system accessories. Matching transformers, line splitters, switchers and combiners, line amplifiers, connectors and connector adapters, signal tap off devices, jumper and hook-up cables, power dividers and a considerable selection of consumer re-sale video and audio items are included.

SUPERWINCH, INC. (Winch Drive, Putnam, Ct. 06260; 203/928-7788) reports the firm's two TVRO antenna control systems have been submitted to both the (US) Underwriters Lab and the (Canadian) Standards Association for their 'approval' and listing. Superwinch notes that under 'Standard Number 73', a DC motor drive system must not create a 'peak voltage' greater than 60 volts. Superwinch feels that many of the present 36 VDC actuators actually generate peak voltages over 60 volts and therefore has chosen to operate their motor drives with a 24 volt DC line to insure that peak voltages do not exceed those allowed by UL and CSA.

System 2001 is an east-west package with a 3 digit readout and a key lock feature. **System 2010** is a programmable 16 satellite memory system. Both packages use a brand new actuator developed by Superwinch specifically for TVRO applications. A 1/8th horsepower motor with a one ton thrust rating drives a solid steel gear transmission. Inner and outer tubes are cad plated steel.

DEALER Aids

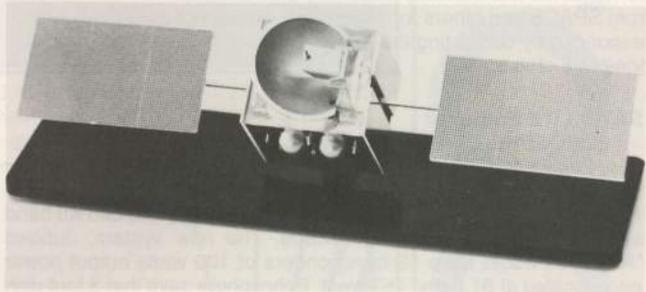
BizNet News Today has joined the Financial News Network (FNN) weekday program schedule. BizNet, an activity of the U.S. Chamber of Commerce, is now seen weekdays at 8AM (eastern) on F3R TR4.

COMMUNICATIONS PRODUCT MARKETING is a new firm formed by former D.B.S. Satellite Television head **David Sheldon**. The firm is providing marketing assistance to TVRO and other communication equipment manufacturers and they are also providing product development, technical manual creation, marketing coordination and product representation services. Contact Sheldon at 503/388-0431 (Bend, Oregon).

(The) **ELECTRONIC TECHNICIANS ASSOCIATION, INTERNATIONAL** (825 E. Franklin Street, Greencastle, Indiana 46135; 317/653-3849) has joined with the Indiana Electronic Service Association (IESA) to conduct an extensive series of training seminars for would-be TVRO retailers in the state. ETA and IESA are responding to an Indiana state law which requires that persons engaged in the retailing and installation of (TV antenna) products be licensed by the state before operating. Both groups are on record as supporting the Indiana law and consider it a 'model which other states should follow' in controlling 'fly by night' TVRO retail operations. An additional seminar series is planned for August and November.

Iowa's Electronic Technicians Association has also responded to the need for TVRO dealer training by adding a 'Journeyman Option Certificate' in their Certified Electronics Technician program. The new training course being offered in Iowa deals with dishes, waveguides, low-noise-amplifiers, downconverters, satellite receivers and electronics basic to all fields of endeavor. Full information and class scheduling available from Ron Crow (Box 1258/ISU Station, Ames, Iowa 50010; 515/294-5060).

NCP ENTERPRISES (22701 — 119 Avenue, Maple Ridge, British Columbia, Canada V2X 8S5; 604/463-7885; 464-2002) has introduced a series of handcrafted, desk-top models of the SATCOM series and Galaxy series satellites. Models are available in kit (construct it yourself) or assembled form and the SATCOM model measures 9 inches by 1.75 inches by 3 inches while the Galaxy model measures 7 inches by 2 inch diameter. Both models have an acrylic base, detailed solar paneling and are suitable for showroom display. Pricing is \$9.95 in kit form and \$35 in assembled form (US dollars).



SATCOM On Your Desk from NCP

(The Fifth Annual) **NORTHWEST SATELLITE CONFERENCE** will be held August 2, 3 and 4 at the MGM Grand Hotel in Reno, Nevada. Emphasis will be on new products and new technology in TVRO featuring speakers that include Taylor Howard of Chaparral, Ted Anderson of Automation Techniques, Royal Lamb of Pentec International, Stan Leaf of SRC Industries and many more. Registration fee is \$30 in advance, \$40 at the door; full information from Evelyn Kessler or Tamara Neff at 503/389-1553 (NATS, P.O. Box 7288, Bend, Oregon 97708).

'**SATELLITE PREVIEW '85'** is a special two hour television program scheduled to uplink on F4, TR22 at 8PM on Tuesday May 28th and again at 8 PM on June 4th. The program will address zoning, scrambling, new product trends and predictions of both long and short term growth of the TVRO industry.

SATELLITE ELECTRONICS SCHOOL, operational for nearly two years now from Reno, Nevada, is expanding to reach more dealers. The program is 'going on the road' to allow dealers in various parts of the country to be exposed to professional training which will make them better qualified to plan and make installations. At the same time the basic school, conducted in Reno (Nevada), will continue and the next set of school dates for the Reno course are May 22-24, June 5-7, 19-21 and July 10-12. Information from 702/329-6611.

'**SEMINAR in Satellite System Engineering**' is scheduled for June 11-13 at the Hyatt Regency City Hotel in Arlington, Virginia. The three day course is designed for professionals in the communications field and will deal with complex engineering of uplink and international data flow systems. Course cost is \$895 and each participant will receive a course notebook. Information from Kathy Pritchard at 800/932-6100.

(The Third Annual) "**Campus Satellite System Conference**" will be held May 30, 31 and June 1st at Creighton University, Omaha, Nebraska. Creighton has been a pioneering University in creating a campus cable distribution network feeding into school rooms and living quarters a wide variety of 'international television' fare including the elusive Russian Molniya orbit services. Creighton created the first Molniya tracking system monitored by a computer (see CSD for **November 1983**). Cost for the seminar is \$325 although low cost on-campus housing is also available (\$15 per night); details from

402/280-4063 (Creighton University/Telecommunications Office, California at 24th Street, Omaha, Nebraska 68178).

SATELLITE TV CENTER (208 Broadway, Asheville, N.C. 28801; 704/252-1165) has introduced an unusual approach to out of warranty repairs for virtually any piece of TVRO hardware ever produced and distributed. They promise a 24 hour turn-around and for a flat fee of \$50 will repair anything that is broken plus give you a **one year parts and labor warranty**. More than 31 brands of receivers, 9 brands of LNAs, 6 brands of antenna actuators are included in their list of 'repairable' products. And they accept credit cards for payment as well (!).

UNITED RETAIL SATELLITE SYSTEMS ASSOCIATION, INC. (P.O. Box 931, Oakdale, California 95361; 209/847-5996) has converted from a privately owned business to a 'non-profit trade association' according to the founder Steven J. Clark. The association's membership is made up solely of 'showroom TVRO dealers' and during the past year URSSA has expanded its activities to include 'mediating disputes between retailers and suppliers' over equipment performance and warranty problems. URSSA had drawn some 'heat' from SPACE and others for its privately owned status and Clark has responded by converting the operation into a trade association with non-profit status.

SATELLITE Potpourri

ECHOSPHERE CORPORATION (1925 West Dartmouth Avenue, Englewood, Co. 80110; 303/761-4782), as reported in CSD for March 01, has joined with two partners to file an application with the Federal Communications Commission to operate a two-bird Ku band satellite system late in this decade. The new system, dubbed '**Antares**', would have 12 transponders of 100 watts output power each located at 61.5 and 157 west. Echosphere says that 3 foot dish systems would allow earthbound viewers to access the network which may ultimately be used for television program distribution as well as non-video services. Echosphere will be a 30% partner in the venture, if the FCC approves the application, requiring a capital investment of up to \$150M. Firm President **Charlie Ergen** sees the smaller-dish Ku band systems as inevitable in the decade ahead and feels that any system which brings down home-viewer dish size will ultimately be successful in spite of recent failures to launch such systems in North America.

GENSAT COMMUNICATIONS CORPORATION (951 Alness Street, Downsview, Ontario M3J 2J1, Canada; 416/736-4555) has introduced the first of the firm's new 'Microstar' integrated block down-conversion accessories; their model MTS 1200 'multi-tap V/H switch'. This unit will function with virtually any 950-1450 MHz BDC IF downconverter and allow any of up to four separate receivers to access either a vertical feed or a horizontal feed from the same antenna. The switching circuit is driven by the polarization output on the TVRO receiver (demodulator) and the system is compatible with **either ferrite or pin diode polarity selection systems**. Isolation between polarizations is 25 dB or better and receiver match is 10 dB or better.



FOUR SETS/Both Poles/One Antenna by Gensat

ISS/INTERNATIONAL SATELLITE SYSTEMS (2225 Sharon Road, #224, Menlo Park, Ca. 94025; 415/854-8987) is shipping a 105 channel frequency synthesized, totally agile modulator which will function on standard, HRC, and IRC channel assignments. The mod-

ulator is the 'IF type' with video IF loop thru and it is compatible with virtually any type of cable scrambling system. The user switch programs the channel from a secured switch location.

LUXOR NORTH AMERICA CORPORATION (600 108th Avenue NE, Suite 539, Bellevue, Wa. 98004; 206/451-4414) has begun shipping four new products for the BDC family of receivers. The four DC passing accessories include the model 9757 vertical/horizontal switch driven by the receiver's polarization switching pulse, model 9758 power divider to allow multiple receiver configurations, model 9759 20 dB line amplifier and model 9760 10 dB signal attenuator for adjusting cable distribution levels to the recommended region for receivers connected to the BDC distribution system(s). Frequency range for all of the Luxor designed and manufactured products is 950-1450 MHz and all devices are designed to be compatible with Luxor and many other BDC receiver lines.



LUXOR Completes The System

SCANNER SATELLITE SYSTEMS, INC. (P.O. Box 571, Massena, New York 13662; 315/764-0775) has introduced a quartz synthesized block downconverter (model SD1000) which the firm claims increases receiver system stability to the point that no receiver fine tuning is required. The Scanner unit avoids AFC design approaches which result in the receiver AFC system locking on any strong signal, including TI, in the area. They claim the quartz approach insures that the receiver will always see the correct IF stability for any operating temperature between -40 F and +140 F.

UNIDEN CORPORATION OF AMERICA (15161 Triton Lane, Huntington Beach, Ca. 92649; 714/898-0558) has introduced their model UST 550 block downconverter, model UST 441 LNA and model UST 900 low noise block downconverter. The new products are designed to compliment the firm's recently introduced BDC type receivers. UST 550 has an output frequency range of 950-1450 MHz and will sell at a suggested retail price of \$99. Model UST 441 is a radically redesigned LNA package from 1/3rd to 1/2 the weight of most existing LNAs in the marketplace, thereby reducing weight-load at the feedpoint of the antenna system. Suggested retail price is \$149. The LNA plus the BDC will carry a combination retail price of \$239. Model UST 900 LNB will not be available until this June, but it will cover the range from 60 to 120 degrees K and carry a suggested retail price of \$249.

SATELLITE News

Brooks/The Satellite Store has named **Robert C. Schubert** as Director of Product Engineering. He will be responsible for selecting and testing new products added to the franchise operator's equipment line-up.

Thomas L. Sharpe has been named as Eastern Regional Manager for **DX Communications, Inc.**, a division of C. Itoh and Company/America. Sharpe will cover a 21 state area that stretches from New England to Florida.

uniden®



UST 5000 Block receiver offers LED channel display, automatic polarity control, slow and fast scan.



UST 6000 Block receiver features expanded audio format and fine tuning skew adjustments.



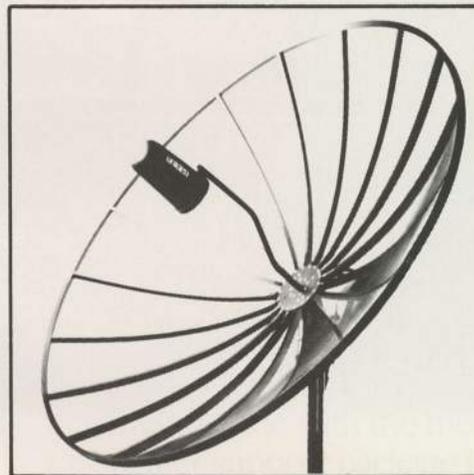
UST 7000 Block receiver features IR remote built-in programmable antenna control accommodating up to 81 satellite positions in memory.



UST 730 Antenna Positioner features built-in programmable antenna control and Opto-Interrupt circuitry.



UST 710 Antenna positioner offers compact styling, manual east west control and 3 digit LED readout.



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Like our UST-5000 for instance. It's the simplest block downconversion unit in our top-of-the-line line, yet it offers your customers all the sophistication of Uniden technology and styling along with features usually found on more expensive receivers.

Like soft-touch controls for easy channel selection, slow/fast channel scan, easy-to-read LED channel display, and skew and audio tune controls. Plus, the most sought-after feature of all: a very affordable price tag.

There's also our UST-6000. An incredibly reliable mid-priced blockdown receiver that offers all the features of the UST-5000 plus convenient handheld wireless remote control and full stereo sound.

Our UST-7000 combines the most sophisticated engineering in the industry with the most advanced convenience features. Like a built-in programmable antenna controller. Easy-to-read LED displays that provide a full range of information at a glance. And a full-function remote control for total 'armchair' operation.

All in all, an incredible array of features, functions and models. All with block downconversion and at competitive prices, making it easy to multiply your profits by selling multi-receiver systems to families with more than one TV.



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So contact your local authorized Uniden distributor for more information on our complete line of satellite television systems. Or call toll-free 1-800-582-5360. In Canada call 1-800-663-0296. And start stocking Uniden's top-of-the-line line.

It will do amazing things for your bottom line.

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Win with Uniden in '85.

POWER MEMBER OF
SPACE

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Uniden receivers have met their match.

For years, no one was quite good enough.

No one satellite dish antenna quite possessed the exceptional standards of performance that Uniden receivers do.

So we had to create one.

Introducing the Uniden UST-110. An incredibly durable, lightweight satellite dish antenna. The perfect match for the Uniden line of receivers and system components.

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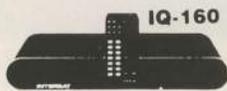
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— DEALERS WANTED —

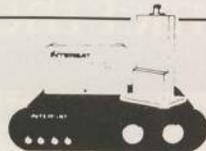
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June 6:

Boresight TVRO Magazine, F4, TR20, 9PM eastern (target marketing of TVRO in a difficult transition year)

June 11:

'Satellite Showcase', F4, TR22, 10PM eastern

June 13:

Boresight TVRO Magazine, F4, TR20, 9PM eastern (profile of August Anderson, lady TVRO executive)

June 18:

'Satellite Showcase', F4, TR22, 10PM eastern

June 20:

Boresight TVRO Magazine, F4, TR20, 9PM eastern (through the air distribution of TVRO services)

June 25:

'Satellite Showcase', F4, TR22, 10PM eastern

June 27:

Boresight TVRO Magazine, F4, TR20, 9PM eastern (shirt pocket TVRO receiver)

Shows/Meetings:

May 31/

June 2:

Satellite Dish/Energy Conservation Expo, Cincinnati Center; contact 602/581-0188.

June 1/2:

National Satellite Cable Association meeting, Las Vegas; contact Mickey Gorman 202/659-2928.

June 2/5:

National Cable Television Association annual convention, Las Vegas; contact 202/775-3500.

June 2/5:

International Summer Consumer Electronics Show, Chicago; contact CompuSystems, Inc., P.O. Box 6195, Broadview, Il. 60153.

June 17/19:

Community Antenna Television Association annual convention, Nashville; contact 703/691-8885.

June 21/24:

SPACE/STTI summer trade show, Tulsa, Oklahoma. More than 700 exhibit booth spaces allocated; contact STTI at 405/396-2574.

COOP MID-MONTH/ continued from page 3

So all of this emotion, the recent high-level departures at Linkabit by their top management people, and the 'bad press' we are receiving both outside and inside our own industry seems to be missing the original problem totally. And that is?

The scrambling system created for HBO by Linkabit is a 'proprietary scrambling system'. It was not created by our industry and it was not created with any input from our industry. To solve a problem which HBO and Linkabit perceive as critical to their success in the marketplace, their ability to address each customer individually and on a per-program (pay-per-view) basis, **we are being told** (not 'asked') to change the way we design and sell receivers. I continue to question that we need HBO (or a handful of others) 'so badly' that we should be forced to 'pay the ransom' being demanded by this private, proprietary scrambling system. HBO and Linkabit have brought to market a round peg which they insist will fit into our square holes only because **we should be willing** to change the shape of our holes. **'SUEEY-SUEEY'!**

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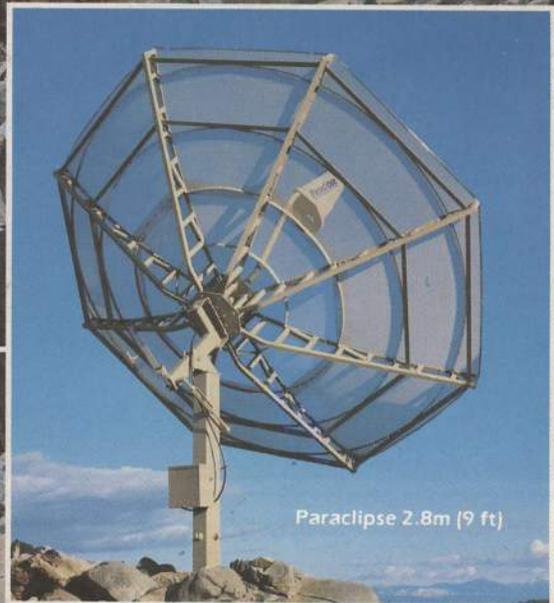
Paraclipse 2.8m (9ft)

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Paraclipse 2.8m (9 ft)

Mark Fator photographer