EXPERIMENTAL BROADCASTER'S NEWSLETTER

June 1, 1986 Vol. 3, No. 6

Jim K. sent an interesting bit of information gleaned from the ANARC (Association of North American Radio Clubs) Newsletter. On July 25, 1986 in Vancouver, British Columbia, CANADA, the meeting of the Second World Conference of Community Radio Broadcasters will be held. The actual time span may be between July 24th and 29th.

About 600 people from 36 countries were at last year's meeting in Montreal. It was so successful that it's being held again this year. Some of the planned discussion topics are: How to manage financial affairs; What kinds of programs to to produce; How to develop community involvement; Development of International, Regional, and National cooperation; How to build an audience; Exchanges of programming and technical expertise; and much more.

Apparently anyone in broadcasting is welcome at the Conference. This includes licensed broadcasters, Third World countries, Free Radio, Low - Power broadcasting, Pirate broadcasters, and perhaps even members of the Canadian equivalent of the FCC and some FCC people as well. It's assumed the conference is being held for the betterment of broadcasting - not a place to get busted for possible unlicensed activities.

For more information write to: Second World Conference of Community Oriented Radio Broadcasters, 337 Carrall St. ,Vancouver, BC, CANADA V6B- 2J4.

Vancouver, you probably already know, is the site of the EXPO86. Some 80 countries will be exhibiting their culture and technology. One of the themes of the EXPO86 is "Communications". Your editor will not be able to attend the Conference in July. Instead my wife and I will be at EXPO86 the second week September. "The International Communications and Computer Exhibition" will be held in the B.C. Place Stadium, next to the EXPO86 grounds, from September 9 - 11.

We have a variety of things to discuss this month. We'll talk about a circuit to detect if your transmitter is off frequency; we'll look at European "Pirate" schematics (so you thought YOU were the only only one broadcasting?); Computer programs and data via satellite; the LPBN's satellite plans; a shutdown of renown in California; a circuit to boost ac line voltage; and just not an "Editors note" but a full fledged "Editorial"...wow!

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EDITORIAL: (Soap box time)
The following has been submitted by several EBN subscribers:

WBAI in New York City, an Educational station (50 kW) aired a talk show somewhere about midnight. The theme of the discussion was "Pirate Radio". It seems they had several "call-ins", each telling about their particular operation and history. Apparently there were quite a few from Brooklyn. A couple of EBN subscribers got the impression that "Brooklyn Broadcasters" were trying to outdo each other - some kind of ego trips.

Another subscriber said that "Panaxis" was mentioned several times. Panaxis doesn't mind a little free publicity, however some of the comments could be taken the wrong way. Apparently Panaxis was referred to as "a supplier of "Pirate radio gear" ". This puts Panaxis in a rather poor light, perhaps in the same category with "gun runners". This I DO NOT APPRECIATE ! You can get plans, parts and kits for radio experimentation from Panaxis. This is the same sort of information you can find in amateur radio handbooks, the public library, and broadcast related publications.

What is perhaps worse is that these individuals are feeling a little too secure. Just because the FCC hasn't knocked on their door yet doesn't mean they are in the clear. The FIRST rule of "Pirating" is to keep a low profile. Telling a million people of one's illicit exploits seems contrary to station preservation. If the FCC heard the broadcast, or heard OF it, they can hardly let it go unnoticed. They are duty bound to at least do some "token" investigations. I predict several "busts" in the Brooklyn area in the next few months. If they're trying to sink their collective "Pirate" ships so be it, but they don't have to shove me up the creek without a paddle when they do it! 'nough said about that.

While we're on the subject I'd like subscriber's opinion and input to help clarify some terminology. Is there a difference between "Pirate", "Free Radio", "Alternative Radio", "Community Broadcasting", "Low-power broadcasting", etc. For what it's worth here are my thoughts.

I believe that unlicensed broadcasting can be broken down into several categories. Technically, at least according to the FCC Rules, and with Cable FM and Carrier-Current stations put aside, unlicensed stations are illegal. The categories would reflect the intents and purposes of the unlicensed broadcaster. Here is the way I, and some others I have spoken with, break it down:

Pirate: Probably a little political in operation. May have an axe to grind with the "establishment", government, or authority in general. Not necessarily interested in "community welfare or service". Programming not always in "normal" good taste. May operate in disregard of interference to other stations and/or receiving equipment. Often found on Short Wave frequencies. May be on an ego trip.

Free Radio: Operates with the philosophy that the airwaves belong to everyone. As such the airwaves should not be regulated. There may be a protest against "authority" and government regulation, but with less vigor than a "Pirate". Programming is aimed more at an audience than for personal pleasure.

Alternative Radio: The operator is aware of government restrictions but feels that licensing may take too long or may be next to impossible. Operation without a license is the most expedient way to provide a service to the community. Usually the station provides programming not otherwise available. This might include talk shows, public interest and local news, music otherwise not aired in the area, minority needs, etc.The operator would probably join a group interested in passing legislation permitting small low-power stations to exist.

Each of these may have additional attributes. On the other hand there may be sub-categories, or additional categories. I don't know how important it is to anyone to "pigeon hole" types of stations and operators. The above is pretty much my observation and opinion. Of course every situation is unique and there are probably exceptions to the general categories. I am reasonably sure that J.T. will take some exception to the "Pirate" description for example. These are GENERAL descriptions as I see them. YOU, for example, may feel comfortable in one of the above categories, then again you may see your operation entirely differently.

I am open for comment on the above. Please submit your ideas and observations of your own operation, or of others. Perhaps we can come up with some worthwhile descriptions. I think the term "Pirate" is used a little too loosely and may also carry a bad connotation. None of us need that.
The LPBN reports that K-LARR broadcasting, owned by Dr Lawrence Herbst of LARR Computers, is requesting programming for aired on SATCOM F4, transponder 15, 5.8 MHz. This is the last word but if it becomes necessary the broadcasts may be transferred to another frequency. Check around. For more information contact LPBN, 514 Vincil, Moberly, MO 65270.

In addition, the satellites will also be involved with computer activities such as relay of public domain programs. Several companies are considering computer communications via satellite at this time. We'll keep you posted as the information comes in.

Mark P. passed along some information about experimenting with broadcasting of computer programs via Medium Wave transmission. Distances of 2000 kM or more are possible. A common ground for program exchange must be developed however. If you're interested in possible trans-Atlantic computer program exchange via radio contact Hobbyscoop, PO Box 1200, Hilversum, The Netherlands. Include a couple of "International Reply Coupons", to offset postage costs, available at your post office.

WHAT'S NEW AT THE FCC

The Commission is making it tougher to get radio station construction permits (CP's). A fee schedule is scheduled for implementation in 1987. Fees will range from $1800 for an FM application, $2000 for an AM application, to $6000 if the application has to go to hearing. Minor facility changes will cost $500, $325 for AM licenses. Stations using a satellite will have to cough up $3000 for transmit/receive, $1350 for transmit only, and $200 for receive-only.

Kahn Communications had the FCC looking into allegations that Motorola's C-QUAM AM stereo system doesn't comply with Rule 73.44. This is Rule dealing with adjacent channel interference. Apparently the FCC was inclined not to do much about the allegation, but...more about this is bound to come up in the future.

STATION SHUT DOWN IN CALIFORNIA

"They may apply for a license" said the FCC, as they shut down KSOS, 107.9 in April. KSOS drew praise from the community for its outstanding rally to community needs. Programming consisted of black-oriented music, needs, and the philosophical wit of "Bishop" Walter Dunn. Music consisted of soul, jazz, and rhythm and blues. Thomas Nash, editor and part owner of a newspaper in town,the Seaside Post, commented that the station was "sorely needed".

The station was apparently operating by automation when the FCC arrived. It was housed in a portion of a record shop, however the record shop owner was not one of the operators. Its been reported that the FCC will seek a $2000 fine against the shop owner. The shop owner however will have a chance to negotiate for a lower fine. The actual operators and owners of the station have not been fined.

KSOS operated for 2 1/2 years in Fresno, California, before moving to Seaside. The FCC tried on several occasions to shut it down, and to present the owners with a "Notice of Violation". They were unsuccessful in both closing the station, and, in getting the owners to admit they were in violation. The owners simply didn't respond to letters or visits from FCC inspectors!

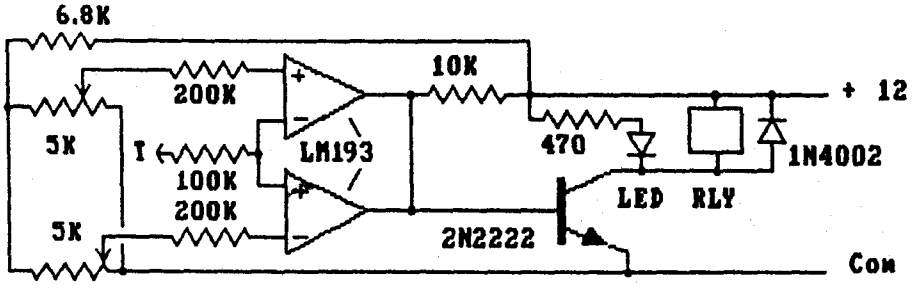
Apparently the Engineer-in-charge of the FCC's San Francisco field office received orders directly from Washington. No search and seizure warrant was brought forth however. No equipment was removed. The FCC field office said if KSOS returns to the air the FCC will seek criminal charges.

We may hear more about KSOS in the future. I suspect they will find some way to serve their faithful audience, either by direct transmission, cable FM, carrier-current, or applying for a construction permit.

ON THE TECHNICAL SIDE

Bill D. recently upgraded a CBS 411 stereo FM Volumax and would like to pass along the information to EBN subscribers. He replaced the audio path transistors with 2SA640's and readjusted bias on the input stage. Although it had poor quality before, it now meets specs, has ample gain, and very quiet. He also advises that when you rework older equipment it's good practice to change ALL electrolytic capacitors. If you'd like to know more about his 411 changes call (203) 336-5606.

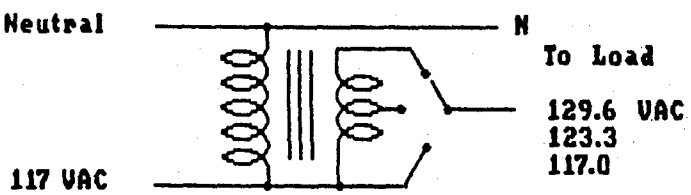
Bill also submitted a circuit which is remarkably close to one I have been working on for "off-frequency" detection. The circuit is designed for an application such as the FME PLL, where it works from the PLL error voltage. With a suitable discriminator circuit before it (tuned radio frequency circuit for FM) it could be made to work for any FM transmitter.



Adjust the upper trimpot to set upper detection limit. Lower trimpot is for lower limit. Point "T" is connected to the PLL error voltage. If it's normally 2 volts then set upper limit to 2.2 volts, lower limit to 1.8 volts. If the PLL loses lock the LED shows it and the relay is activated. The relay contacts can be used to switch-off your final RF output amplifier.

Next month we'll include Bill's logic circuitry to gate the FME's PLL reset pulse from the off-frequency detector. This way the reset pulse is sent to the PLL only when it is needed eliminating that little "pop" that is sometimes annoying.

Robert O. submitted a circuit which he uses to boost a low ac line voltage. A similar circuit is manufactured as a VARIABLE transformer under the trade name "Variac". Bob's ac line voltage drops now and then, especially when air conditioners get switched on in the neighborhood. It can also be used to indirectly boost the output of a dc power supply-it simply connects between the ac wall plug and your equipment. This one uses a fixed transformer 117 vac to 12.6 vac (center tapped). The transformer must be capable of handling whatever load you want to place on it. If you want to boost the voltage to equipment that requires 100 watts then this transformer must be able to handle 100 watts. Technically speaking it is called an "autotransformer".



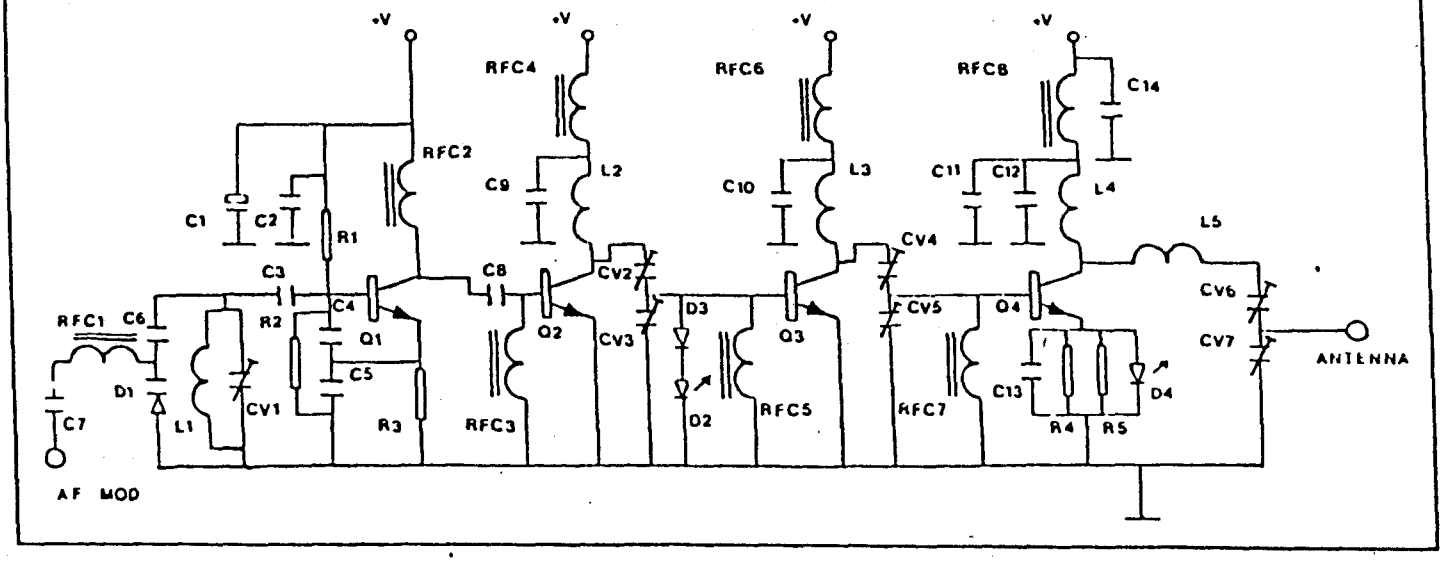
The primary of the transformer is connected to your normal 117 volts a.c. The secondary is connected to the primary in the proper phase to add to the line voltage. If your output voltage is less instead of more simply reverse the secondary leads. REMEMBER: This circuit should only be used to feed another transformer!

A DIRECT FM MODULATED (MONO) 10 WATT TRANSMITTER FROM GREECE

ΟΛΑ ΤΑ ΥΛΙΚΑ ΥΠΑΡΧΟΥΝ ΜΕ ΤΟ ΚΙΤ FT-1
ΣΤΟ ΚΑΤΑΣΤΗΜΑ ΕΡΑΣΙΤΕΧΝΙΚΩΝ ΗΛΕΚΤΡΟΝΙΚΩΝ
POP 22 WATT
στὸ Μοναστηράκι, Αγ. Φιλίπου 11, τηλ. 32.19.426.

FM 10W

FT-1



Τὸ ηλεκτρονικὸ σχέδιο τοὺ πομπού FM 10 W.

ΚΑΤΑΣΚΕΥΑΣΤΙΚΕΣ ΟΔΗΓΙΕΣ - ΜΟΝΤΑΖ

Αρχίστε τὸ μοντάζ οπὸ τὰ τρίμμερ. Στὴ συνέχεια κολλήστε τὰ RFC τοὰκ. Μετὰ περόστε τὶς αντιστάσεις, τοὺς πυκνωτές, τὶς διόδους καὶ τὰ LED'S. Μὲ τὸ πέραομα τῶν παραπάνω μένουν τὰ πηνία πού θὰ τὰ φτιάξετε οὲ τούμπο αέρος, διαμέτρου 4 mm, καὶ μὲ ούρμα 0,6 mm κοτό προτίμηση επάργυρο. Προοέξτε η φορὰ τῶν πηνίων νάναι δεξιόστροφη, αρχίζοντας οπὸ αριστερὰ τὸ τύλιγμα. Τὰ τρονζίστορς μπαίνουν τελευταία γιὰ νὰ μὴν καταπονούνται κατὰ τὸ μοντάριομα.

C6= 10pF
C7= 1μF
C8= 22pF
C9= 100pF
C10= 1nF
C11= 560pF
C12= 1nF
C13= 1nF
C14= 1nF

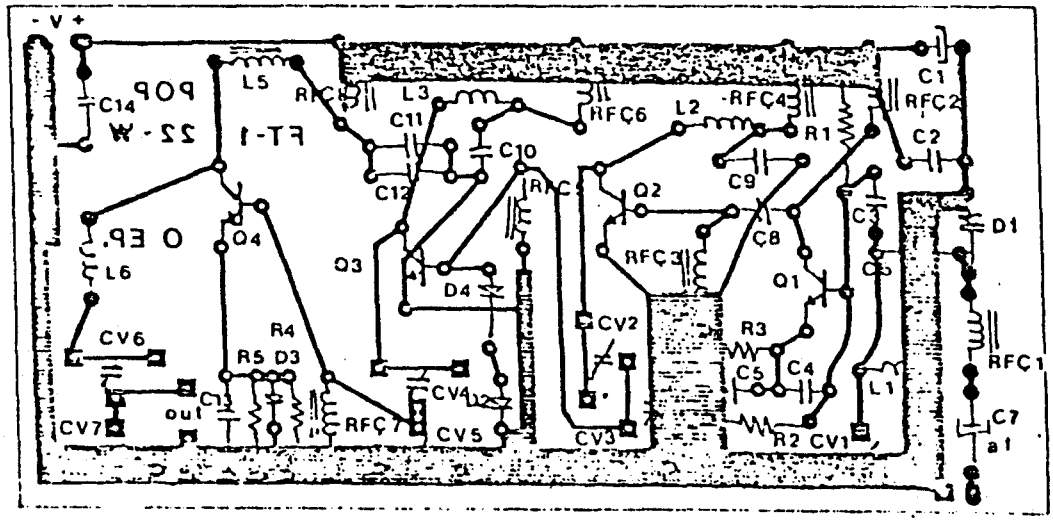
D1= BA102
D2= MLED 650 Motorola
D3= MLED 650 Motorola
D4= OA95
Q1= 2N201
Q2= 2N60
Q3= DLX909
Q4= DLX909

L6, L1=4 σπεῖρες διομ. 4 mm 0,6 χιλιοστά.
L2, L3, L4=9 σπεῖρες, 4mm 0,6 χιλιοστά.
L4=τυπωμένο.

CV1= 10-60
CV2= 10-60
CV3= 10-40
CV4= 10-60
CV5= 10-40
CV6= 10-60
CV7= 10-40

C1= 10μF
C2= 1nF
C3= 22pF
C4= 15pF
C5= 15pF

R1= 10KΩ
R2= 10KΩ
R3= 330ΩM
R4= 4,7ΩM
R5= 4,7ΩM

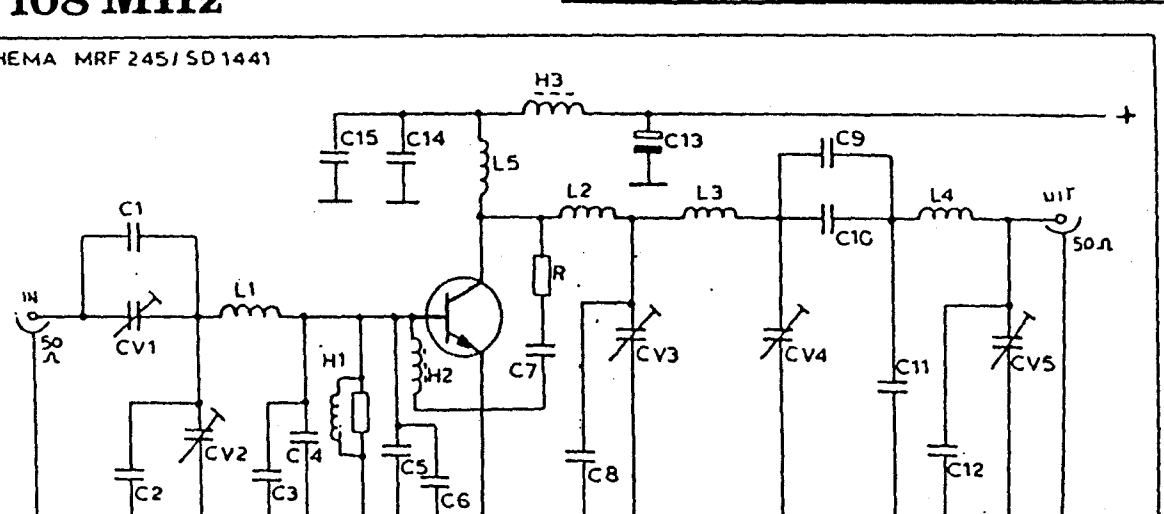


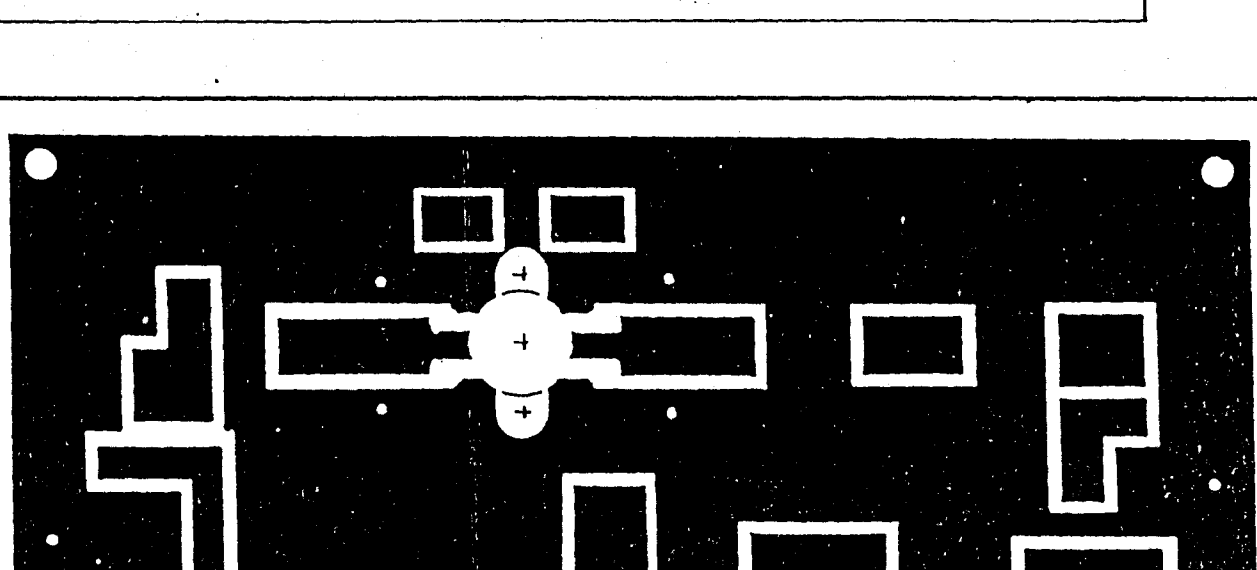
A 90/150 WATT LINEAR AMPLIFIER FOR 88-108 MHZ FROM HOLLAND

90 WATT
150 WATT
88-108 MHz

FRM JUNI KRISTALOSCILLATOR
==========
Er is een kleine wijziging in de kristalosc. uit het juni nummer:
De condensator van 220 pF tussen de emitter van T1 en de basis van de volgende transistor moet vervangen worden door een cond. van 10 pF i.v.m. eventueel afsloan van de osc. op hogere frequenties

SCHEMA MRF 245/ SD 1441





PRINT: DUBBELZIJDIG EPOXY, WAARVAN DE CHTERZIJDE GEHEEL KOPER

FOR SALE, TRADE, BARTER, EXCHANGE, & BULLETIN BOARD

FOR SALE: Two CBS 411 Stereo Volumax peak limiters, unmodified, good condition, one available now, one is on loan to a commercial FM and will be returning soon. $160.00 each. Call (203) 336-5606.

GIVE-A-WAY: The original "Z-100/Flame Thrower" image package from the New York area is yours for the asking. Just send a blank cassette, return postage, and whether you want standard, Dolby B or C, or DBX Type II noise reduction. Bill DeFelice, 621 Bishop Ave Bridgeport, CT 06610

WANTED: 6 TO 10 Channel stereo broadcast console. Also would like contact with anyone using "aggressive processing". Same address and phone number as above.

FOR SALE: GATES YARD with power supply. $300 plus freight. Contact John Hart, 4437 Jeanne, Virginia Beach, VA (804) 499-8146

FOR SALE: ICOM 45A 430 MHz amateur band 10 watt transceiver. In original box, no time to use it. Reasonable offer considered. Also have an Amplica Satellite receiver, Polarotor, 2-LNA's, and down-converter (none ever put in service) and a MTI computerized dish positioner. Just can't find the time to install them. All you need is a dish and I can tell you where to get good ones inexpensively. Make me an offer I can't refuse! Contact "Uncle Ernie" at Panaxis, (916) 534-0417

STILL WANTED: Computer programs related to electronics, radio, utilities. To be used on an IBM Compatible (Leading Edge) with PC-DOS 3.1. Open to trade for Panaxis products. Ernie, PO Box 130, Paradise, CA 95969

Note: Interested in having your own copies of European "Pirate" circuits, PC board layouts, Sales literature, and technical hints and tips? Just send $10.00 (to cover cost of shipping, photocopies, and time to run all 50 pages) to Ernie Wilson, PO Box 4028, Oroville, CA 95965