

# RTTY

February 1978

*JOURNAL*

EXCLUSIVELY AMATEUR RADIO TELETYPE

VOLUME 26 No.2

35 Cents



CROSS PATTERN TUNING INDICATOR  
AUTOMATIC CW ID'ER  
"J"POLE ANTENNA

SARTG CONTEST RESULTS  
USERS REPORT ON THE  
INFO-TECH MODEL 75

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## BACK ISSUES

A duplicate of any back issue may be obtained from R. Wilson, 4011 Clearview Dr., Cedar Falls, IA. 50613. \$1.00 pp. Reprints of all UART articles, \$2.00 pp.

**RTTY JOURNAL**

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Bibliography of RTTY Journal from 1-1959 to 12-75 may be obtained from Gary Buda, WAØ NDN, 8212 Douglas Drive North, Brooklyn Park, MN 55443 for \$1.00 postpaid.



# VHF RTTY NEWS



Arny Gamson, K6PXA, 8034 Gentry

N. Hollywood, CA 91605

Nice hearing from all kinds of Club's reporting growing RTTY activity; please keep them coming! Notice there is mushrooming activity in RTTY of two trends; computers and 220 Mhz. All the repeaters fall into three categories; exclusive RTTY, direct (non-regenerative) RTTY and shared with voice channel. Unfortunately, most of the repeaters used for RTTY are not solely RTTY.

About the largest group around is the British Amateur Radio teleprinters Group (B.A.R.T.G.) affiliated with the Royal Society of Great Britain (B.S.G.B) They now number 600 no less. There are no RTTY repeaters in England (though there is one in Germany) but "there is some thought being given to it" reports Ted Double, G8CDW who will be keeping us posted on the British RTTY scene.

One of the most progressive Club's we've heard lots about is the Dallas, Texas A.R.C D.A.R.C. sponsors an exclusive RTTY repeater (146.10/70) with a good 60 users and has a cross link to Oklahoma and even a computer system. They are presently in process of upgrading it to Solid State and possible site relocation. Their Newsletter is already as large as the Sunday Times and they are talking of enlarging it. Their voice repeater has autopatch and they have a very successful crime prevention and disaster warning program (tornado country) utilizing radio.

Another RTTY Club is starting, in the Denver, Colorado area; The Metro Amateur FM-RTTY Club, we are informed by Jim, WDØBZA.

Dave Miller, K9POX reports a 220 Mhz. repeater devoted to computer/Ham types in the Chicago area. This is in addition to a KIM (computer) Users net on 147.57 Mhz. Would like to hear about the activities about Chi-RTTY a pioneer Club.

In the New England area the So. Counties Amateur Radio Association operates a machine in New Haven, Connecticut on 147.855/255. There is also a machine in Burlington, Connecticut on 147.75/15; Though there is just a handful of RTTY operators they have handled around 150 traffic messages in one month and that's quite a bit of traffic. Thanks to Chris Schenck, W1EH for the information.

Chuck, W6MNO in San Diego, as if he wasn't busy enough being editor of the RTTY JOURNAL, was also elected Charter President of a newly formed Club-The San Diego Teleprinters Society. The group is off to a great start with 27 members. Their door prizes are real attractive such as an auto. CW Ider. They already have a 220 Mhz. repeater and a Ham clinic to really promote RTTY activity.

The winner of a mint condition model 28 KSR was Clarence Carson, K6PUI, at the S. Counties Amateur Teleprinters society raffle. Congratulations! The S. C.A.T.S. Club repeater in Southern California as had much interest stirred up on it with Joe Young, W6RLL's computer "Status Directory". Some of the categories that any registered user can have access to are "FILE"-prints all submitted information on any requested user, such as name, address etc., "WRU-SEL CAL"-prints all those on WRU-SEL-CAL., "SCATS"-prints all club news. "FLEAMARKET"-lists ham equipment for sale or trade. In addition there are several test functions such as "ECHOA"-which repeats your transmissions, "RY" and message test generator. Even the instructions on use of the system can be accessed. All this and more is in addition to the DATE/TIME from the computer which neatly dresses up the repeater print by dating, timing, sending 4N's to turn off SEL CALs and advance spaces one line. More on this unique computer system as it grows. As far as we know there is only one other like it anywhere, on the Dallas repeater.

That's it now- keep them coming.  
C U ENJOY--ARNY.

## COMING ARTICLES

LED RTTY TU  
TIPS ON TUNING THE  
NS-1A.  
AWARDS RTTY  
POWER SUPPLY FOR VHF  
TRANCIEVERS  
RF ATTENUATOR FOR  
VHF OPERATION.

CROSS PATTERN TUNING INDICATOR  
BY: Nat Stinnette, W4AYV  
890 Virginia Avenue  
Tavares, FL 32778

The most satisfactory tuning indicator for RTTY signal is the cross pattern displayed on a cathode ray tube. Here the mark signal is shown as a vertical line. As the two signals alternate the display shows up as a cross. You can tell at a glance whether the signal is tuned properly or - should be adjusted one way or the other.

The diagram shown is the one for the tuning indicator I am using and has evolved over a period of 4-5 years. A 2 AP1 2" CR tube is used. The unit was designed to use with the NS-1A TU but can be used with any TU which will be explained later. Two dual triodes are used in addition to the CR tube simply because to begin with I had a chassis with power supply already mounted along with two tube sockets. If you plan to build a similar unit from scratch it might be just as easy to use tubes instead of solid state because you must have the high voltage anyway for the CR tube.

The first dual triode 12AX7 is a limiter/amplifier. This feeds into two 88 mH toroids tuned for 170,425 and 850 Hz shift. From the toroid filters the mark and space signals go to the second 12AX7 which has two separate amplifiers for mark and space. These outputs in turn go to the deflection plates of the CR tube, mark horizontal, space vertical.

The values of capacitances across the toroids are the ones I used to get resonance for whatever shift is switching. They may not be right for some other toroids as I have found that the so-called 88 mH toroids vary greatly, but these values will give you a starting point. So tune the toroids you have by choosing the proper values. Extra time spent here will pay off in the long run. The method for doing this has been covered in the JOURNAL and other ham magazines and will not be described here. If you have access to a frequency counter it will take only a few minutes to do the job.

Only one major adjustment is necessary before using the unit. Turn R2 and R3 to the off position. Tune in a steady mark signal and adjust the 50K pot, R1, for maximum and equal AC voltage at both ends of this pot. Now turn up R2 or R3 whichever one is connected to the horizontal plates and a line should appear on the CR tube. Use the centering adjustment pots to put the line in the center of the face of the tube. Repeat this procedure for the space signal. If the filter switch is set for 170 Hz shift this line will probably will be an ellipse or look like a banana. This is because the

# HITS & MISSES

From The Editor  
and  
his Mail

**CHUCK EDWARDS W6MNO**

4726 Barbarossa Drive -  
San Diego, CA 92115



I hope everybody will go along with our format and page size. I remember when 'QST' first printed Ige size, followed by '73'. I objected, strenuously, for awhile until I got used to it. Now I like that size. The reason for the change is that our old printer was getting later and later in his deliveries of the JOURNAL and three weeks is a LONG time to be at 'the printers', besides that the old printer was 40 miles away from the office. Our new printer is about one mile away and guarantees 3-4 days in the shop. He could only print in the new size, so we made the choice and went to a new size, new printer, AND gained additional column space at the same time.

As a matter of interest, we have been getting a lot of questions via the mail and over the air. These questions concern whether or not the RTTY JOURNAL is "up for grabs", being dropped from existence, and etc.. PLEASE let me assure you right here and now, that the JOURNAL will continue in full regalia. It is the intention of the publisher and staff that we will definitely keep the JOURNAL going. Admittely, there have been several offers received, which have been considered, as all money matters are, but I doubt, at this time that they will be any more than considered. If there are any changes made, WE will be the first to let you know and at this time there are none.

The new edition of the enlarged version of the BEGINNERS HANDBOOK RTTY is coming along on schedule. Release date will be around the middle to end of February. Due to the increased content the price will have to increased also, but still remain a bargain. Some of the new content will involve mechanical and electronic projects and discussions of automating your teletype machine. Others will be projects pertinent to all RTTYers. If any one desires the older edition, it is still available at the old price \$2.50. So get your order in now if you want one.

Just got word from Skip, WB6CYA our DX editor that he finally got his navy orders. Guess where? Right here in San Diego of all places. I don't know how he did it, but am sure glad he was able to. That means that we will have Ole Skip here for at least another three or four years., as our capable DX Editor and informant of DX matters from all over the world.

Real sorry about the odd print being mixed somewhat in the last issue of the JOURNAL. Our machine that takes tape from our special typewriter and converts it to columnized print went awry. Repairs have been a problem for that issue to get it out in time. Gracious people from our local high school came to the rescue and the JOURNAL did get out in time.

We can use articles of interest which can be prepared for inclusion in the JOURNAL. Our readers enjoy finding out how the 'other' fellow accomplished a project(s) concerning RTTY and peripheral equipment.

Important new breakthrough: 'A new era in voice communications' is an article of great import to all amateurs appearing in the December issue of QST, page 24. It is a new method of modulation that may more than double the number of available voice channels and is applicable to all modes of voice communication.

This is an amateur radio development directly attributable to amateurs but will apply to commercial and all other services too. As pointed out in QST, 'it gives a fresh boost toward a strong amateur position at WARC.'

This method promises to 'do for the amateur radio service what single sideband did 30 years ago.' READ IT!  
73 CHUCK

## AUTOMATIC CW ID'er

While looking thru an older issue of 73 magazine, it came to mind that basically I was a very lazy fellow. I have always hated to hand identify with More code at the beginning and end of each QSO.-- and if you are long-winded, as I am, to stop every ten minutes or less and identify again.-- Well you ARE supposed to you know. Especially, if you want to keep the FCC as happy with your teletyping as you are. It has been said that laziness is the mother of invention, so, my mind started to wander more than usual as I read on with this December 1976 issue of 73 Magazine. I had discovered an article called "super cheapo CW id'er". Not only was the title of great interest but the id'er as described had a 800 HRZ. output capable of being heard in a speaker! the only hang-up was that this output was in the form of a square wave and would.. most likely, sound quite clipped. I decided to built it anyway and as the author said--- it worked beautifully!

The square wave was clipped so to correct this I built a filter.(The schematic is included at the end of this article) . The filter easily converted the square wave to an acceptable sine wave sounding very satisfactory and easy to copy.

This was it! Elated, I attached a wire from the output of the 100K pot of the filter and attached this to a microphone jack at the VHF transmitter. (AFSK input). NOTE: This wire can be soldered to the ring of a three way stereo jack or to the audio input pin of the three or four pin socket if you have a rice box transceiver. In any event this wire will go directly to the audio input to your transmitter.

Adjust the CW ID'er tone gain so that it will be just slightly less than the AFSK tones. You can do this with a local monitor or ask one of your buddies to listen in while you adjust it.

You are now ready to go! The results os the CW ID'er tone should be very satisfying and repeats every four seconds. You can, of course, be really fancy and install a momentary on/latch on switch that will permit you to have just one single CW cycle or continuous at your option. Your local print or the other fellows print will not be affected at all. The CW tone is only 800 HRZ and will, at least, should be totally rejected by almost any terminal unit. The fellow copying you may never know that you are being legal unless he has his speaker monitor on while you are transmitting. However, the FCC monitor will be able to hear it loud and clear and that is what is important.

So there you are! A CW ID'er that meets FCC requirements, and you will never have to think about it, much re ch over and brass pound it out!

A nice feature of this is that it uses low voltage, 60 HRZ power input AC as the means of control for the 18 WPM speed. It will be a solid 18 WPM day in and day out, regardless of weather conditions. This idea, I am sure, has been thought of before by other fellows with other type CW ID'ers. The ID'er suggested here just happened to spark the idea for me, and was really handy, and did have that 800 Herz and did have that 800 Hertz output I needed.

73 W6MNO

Schematic next issue

# RTTY-DX

SKIP PRINSEN WB6CYA

3611 Merrimac, San Diego, Calif. 92117



## GREETINGS TO ALL.....

Our apologies to ON4BX and ON4CK for their listing not getting to me in time for inclusion in the DX honor roll listing.

ON4BX 165/167

ON4CK 161/162

By far the leaders in DX chasing again. Please accept our apologies.

From Dick, W8CAT comes the news that Jerry, WB4MIZ/HK3 is a regular from Bogota, Columbia, South America.

Paul HB9AVK HB0AVK is looking for someone to go to C31 land with him on a DX-pedition this coming August any takers? It sure promises to be a fun time.

RTTY on 160 meters? Contact any of the following: W5TZB, W5SOT, W5WBN or W5VJP all in the New Mexico area and Colorado area.

I had the pleasure of working KM6 BI one night this last week the 2nd of January on 20 meters. Pat Shaughnessy WD0ARA was at the keyboard using a Collins transmitter with an old old Hamerlund SP600 with CV 591/URR SSB adapter. He is using a military URA 17 TU and a MARS printer on the 107 WPM which will print on a 100 WPM machine quite nicely. Paul, K0 J HAS DONATED a subscription to the RTTY JOURNAL in pes of getting the station more active on the Ham bands. Pat has a new Heathkit computer in the mill and hopes to have it on the air soon.

QSL via Pat Shaughnessy, USNS Box 19, FPO, San Francisco, CA 96614

From Carl K6WZ, Nil new in the Volta Contest, the activity did not compare favorably with past Volta contests, largely, I suppose, due to the change in operating hours. The 48 hour contests allow more time to try out bands other than 20 meters.

I concur with Carl, when I was able to get on the band it seemed like any other weekend some different from the CARTG or SARTG. Take note the results of the SARTG 77 are listed elsewhere in this issue,

John, W3KV sends the following, EL2 AG Monrovia Liberia became QRV in early December. This is Carlo ex5U7

BA and will be active for sometime

TG0FRACAP - this unusual call sign is from Guatamala City for Hamfest there in December. QSL to Box 115, Guatamala City,.

From ULI, DK3CU -ULI had QSO with 5N2ALE op was from Giancarlo and QSL via Box 1 Pordenone, Italy, Also Keith C5ABK should be active from Gambia very soon.

3A2FB is active with new video gear in Monaco. KA6SS, active now counts same as Japan. FM7WB, Andre again QRV for a few days. TU2GL, reported QRV by Gin, JA1ACB. FR7ZS, Michael a rare catch. QSL via F5DV, YB0ACB Warren, Box 2282, Jakarta, Indonesia. KH6OD is ex KH6IKR.

ZS6AKO and ZS6BLV active from South Africa

In general CT1EM, LU3ABI, LX1JW LA8XS, OK3ZAS, EA3RB, EA3NE, OH3 UK and DZ9FI.

N3AI Neal Haslam earns WAC #51 all on 20 meters. Good show Neal.

Several last minute additions from John N3KV, 5N2TWO, PAolo on 170 Hz reverse shift.

QTH' CTO, IMPRESIT, Bakolor, Talata Mafara, Nigeria.

EA6BG Mateo Amengual, M. CANALS 40, Palma, Mallorca, Balearic Islands. GW3EHN, OSCAR Thomas, Cymie House Waun Road, Upper Loughor, Swansea, Wales.

We would like to thank those people that volunteered to take over as the DX editor for me. I feel very fortunate in that my transfer to shore duty will keep me here in San Diego until at least April of 1981. I will be an instructor at the Naval Air Station Miramar teaching electronic counter measures system maintenance, a very challenging job.  
73's de SKIP

VK2MJ writes wanting info on the TT 298 by Mite corporation. Can someone answer his questions for him.?

1. Do they use a synchronous or governor motor.

2. Would it be possible to dig one up

and approximate cost 230V 50 Hz.

3. If they have synch motor do they have 50 Hz ones available.

4. Would anyone be able to help me get one. His address Dr. K.M.kelly 9 Hill Street, Merimbula, NSW 2548, Australia.

At this time we would like to again bring to your attention details of an award for proficiency in RTTY-DX that many of the newcomers to the mode may not be aware of.

The Quarter Century Award is issued by the British Amateur Radio Teleprinters Group (BARTG) upon submission of satisfactory proof of two way communication with 25 countries.

Measuring 10" by 13" and printed in red and green, the certificate makes an attractive addition to any amateur station. Endorsement stickers are available for each additional countries.

Application for the award may be made by any of the following methods:

1. Submission of QSL cards for the countries being claimed. Cards are returned after checking. Alternatively, submission of photo copy of any QSL card is acceptable. This type of claim must be witnessed and signed by two other licensed amateurs.

2. Claims will be accepted based on a check list of call signs with details of date of contact and band used. This type of claim must be witnessed and signed as accurate by two officers of a recognized Radio Club or National Amateur Radio Society.

3. Claims may be accepted based on a contest log submitted for any RTTY contest sponsored by the BARTG. The claim should be made at the same time as the contest log is submitted.

Cost of Certificate is--U.K.-50P  
Overseas, 3 dollars U.S. or 15 IRC's  
Cost of additional stickers - U.K. -20P.

The first telephone message was a call for help when Alexander Graham Bell spilled some acid.

7th S.A.R.T.G. WORLD WIDE CONTEST RESULTS

CLASS A SINGLE OPERATOR

CALL	QSO's	Pts.	3.5	7.0	14	21	28
1. IK5GZS	210	194,020	13	19	41	14	2
2. I3FUE	198	155,625	14	11	33	16	0
3. W3FV	153	140,600	9	13	38	13	1
4. K8JUG	152	110,680	8	14	35	14	1
5. I5MYL	184	127,970	12	9	38	7	1
6. SM6ASD	169	121,785	11	12	30	15	1
7. I1CDB	167	111,360	9	11	27	13	1
8. I2OLW	167	106,445	8	8	35	10	0
9. WD8KBL	136	103,515	8	15	35	8	1
10. W4CQI	132	102,080	0	11	36	11	0
11. K3KD	130	99,900	6	4	37	12	1
12. DJ6JC	141	96,390	7	16	27	13	0
13. HBOAVK	140	91,930	11	12	30	5	1
14. K5ARH	124	90,210	4	15	32	10	0
15. I2WEG	151	81,200	10	13	29	4	0
16. I5HZZ	134	75,325	11	8	33	2	1
17. DF2KU	131	75,110	14	12	25	6	1
18. KH6AG	104	68,624	2	13	22	9	1
19. VE5RG	125	66,240	1	13	34	0	0
20. ON5WG	119	65,780	13	11	24	4	0
21. DM2EDL	115	65,610	7	10	28	9	0
22. SM6AEN	115	60,945	8	8	25	10	0
23. DM3YA/DM2CFA	115	60,690	14	12	25	0	0
24. VE2QO	103	60,630	5	6	36	0	0
25. DJ9IR	121	59,000	10	12	22	6	0
26. OF3TTY	143	51,625	10	0	18	7	0
27. IC8FHC	103	46,420	7	6	28	3	0
28. I5ORUH	105	45,800	1	4	31	4	0
29. F8XT	100	43,320	0	0	34	4	0
30. CE3MA	67	39,775	1	6	30	5	1
31. ZS6BLV	70	36,180	0	0	18	17	1
32. K6WZ	75	34,400	4	10	22	6	0
33. VK2SG	76	32,550	0	0	26	4	0
34. I2XRK	82	31,540	1	6	24	77	0
35. JA1DI	66	31,515	0	0	33	0	0
36. DK1MP	61	28,560	0	9	23	9	1
37. WA9AKT	64	27,550	6	8	24	0	0
38. DL6BI	76	27,360	5	8	15	8	0
39. IOLVA	74	26,455	6	1	22	7	1
40. G3RDG	75	25,670	0	7	18	7	1
41. HB9BJJ	75	25,440	0	9	20	3	0
42. I7FKO	96	25,230	5	3	21	0	0
43. ZS6AAM	57	22,140	0	0	17	10	0
44. CE3EX	52	21,600	0	0	20	10	0
45. LA2IJ	66	21,545	1	7	16	7	0
46. JA7ML	54	21,060	0	0	27	0	0
47. SM6BUV	64	20,740	7	7	14	6	0
48. OF6YI	63	15,750	0	7	13	5	0
49. SM6EBM	61	15,525	2	11	8	6	0
50. JA4ONZ	45	15,250	0	0	25	0	0
51. F5BV	54	13,320	0	3	16	5	0
52. LA3YU	54	11,880	8	3	7	4	0
53. W6JOX	35	9,750	0	7	15	4	0

**FOR SALE:** Mits SG-1900 Audio Sweep Generator ket. PCB partially assembled. Cost \$180. Sell for \$75. MXD triple-headed TD. Sync motor, 60 wpm gears, all 7.42 code \$25. FOB Bryan, Texas. Tim Swarthout, WA5QEG, P.O. Box 3692, Bryan, Texas 77801

**MITE PARTS-** Largest inventory in the World. Phone orders accepted, shipped COD. Also buy Klienschmidt & Teletype Corp. parts and Assy's. Philmar Electronics, P.O. BOX 70 Morrisonville, NY\* 12962 518-561-3479

**RTTY. UT4 P.C.B.'s** available. providing for UART\* FIFO's and XB 6 clocks. double sided 8 x 6 main board with power supply board. Drilled with printed legend. circuitry and description. \$87.50. Postage extra. Den Michaelson G3RDG. 40, the vale, London, N.W11 8SG. England. Telephone 01-455-8831

**Teletype model TT-7/FG model 19** with reperforator less TD. Tabletops 60 WPM page printer checked out & working \$75 (also have model 28's RO & KaRs) W. F. Harmon 5628 10th Avenue So Birmingham AL 35222 (205) 592-0835

**AUDIO FILTERS.** Precisely tuned 88 mH. toroids plus 5 Hz. \$3.50 each postpaid. Specify freq. Set of three 22 mH. toroids tuned to make a bandpass filter centered on 2195 Hz. \$13.00 per set postpaid. Nat Stinnette Electronics, Tavares, FL 32778.

**DOVETRON TBA-1000 BAUDOT-ASCII** code translator permits an ASCII teleprinter (model 33,35,etc.) and the Heath H-9 video terminal to be used directly with any terminal unit on Baudot RTTY circuits. The TBA-1000 may also be used to interface a 5-level Baudot teleprinter directly to ASCII circuits, such as a microprocessor. When using an ASCII video terminal, hard-copy may be had simultaneously on a Baudot printer. In addition to signal regeneration, speed conversion and 192 characters of FIFO memory, direct keyboard control of the companion terminal unit and transmitter-receiver is also provided. Price: \$245.00 FOB. Delivery: November 1977. Complete specifications are available on request. DOVETRON, P.O. Box 267, 627 Fremont Avenue, South Pasadena, CA 91030. 213-682-3705.

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The no-nonsense state-of-the-art technical magazine. Dozens of exciting projects and an emphasis on quality un-matched by any other radio magazine. Subscribe now and see for yourself. 1 year ... \$12.00...2 years.....\$22.00 and 3 years ....\$30.00.

**HAM RADIO Magazine,**  
Greenville, NH 03043  
**P2102 MICROPROCESSOR IKX1** memory chips tested good. \$1.00 each. Joe Young W6RLL, 16808 Goodvale Road, Canyon Country, CA 91351. (805) 251-2135.

Thank you for check log from I50FFS  
 Tnx to all participants of this years contest. Next year's contest will run as usual the 3rd week-end in August. Please reserve this week-end for the SARTG W/W RTTY Contest. From a couple of comments I can see that they haven't received awards for the 1976 Contest. This year all marked entries will receive diplomas for the contest 1977 which will be sent from here before December 15th.  
 Please help to inform as many RTTY Hams as possible of next years SARTG W/W CONTEST. Tnx in advance.  
 Vy 73's  
 Carl, OZ2CJ

"J" POLE ANTENNA

FROM 220 Club Bulletin Vol.1 #5, 8-77  
 220 "J" ANTENNA

With the cost of everything going up, money saving ideas are always welcome. If you can save money and increase radio performance at the same time, it a double bonus.

The J-POLE antenna offers numerous advantages. It is omni-directional, requires no ground plane, achieves a 6db gain over 1/4 wave, and is easy and inexpensive to build. I have tested this antenna on 2 meters against a - Hustler Colinear type and found the J-POLE far superior as well as smaller. I also tested it on 220 MHz against a LARSEN 5/8 wave mobile antenna in a bad area of Spring Valley California and on one repeater it showed an increase of over 3 units on the "S" meter.

The center conductor of the coax - feeds the short element, shield to the long element. Matching is accomplished by varying dimension "X".

The elements themselves can be made of stainless steel, copper rod or simply telescoping radio antennas if you desire a collapsable model., adjusting the antenna is most easily accomplished by using a VSWR of 1.5:1 before any adjustments are made.

ed by using set screws thru the aluminum block.

Use of the following dimentions should get you to within a VSWR of 1.5:1 before any adjustments are made..

Long element - 38 3/4 inches  
 Short element - 12 3/4 inches  
 Feed point - 2 inches above block  
 Element spacing - 2 inches

Bill, WB6HTU, in Stanton, California manufactures these antennas. Anyone desiring more information can contact Bill or me.

Roger, WB6QMN

CALL	QSO's	Pts.	3.5	7.0	14	21	28
54.G4EEV	46	9,200	0	0	14	6	0
55.SM6CAL	45	8,900	5	0	15	0	0
56.DL10Y	39	8,510	3	9	10	1	0
57.OK2BJT	38	7,700	0	8	12	0	0
58.W3KV	28	7,370	0	0	22	0	0
59.VK5RY	36	7,140	0	0	14	0	0
60.G3NML	32	6,825	0	3	15	3	0
61.G3HJF	33	6,120	2	3	11	2	0
62.VE7DLX	37	6,080	0	0	16	0	0
63.JR6AG	30	5,760	0	0	16	0	0
64.K8UFW	29	5,400	0	0	14	0	0
65.OZ1AKD	34	5,325	3	0	10	2	0
66.DK4IS	32	4,060	0	0	14	0	0
67.WAOTAS	24	3,975	0	0	15	0	0
68.F5DE	30	3,900	0	0	6	7	0
69.G4EDR	28	3,360	0	0	12	0	0
70.SM5EIT	14	2,520	0	0	14	0	0
71.SM6CVE/6	20	2,145	10	0	1	0	0
72.W4YZ	15	1,650	0	0	10	0	0
73.SM7BUN	15	1,600	0	0	9	1	0
74.SM6GDL	14	1,200	10	0	0	0	0
75.PAOSOL	10	800	0	5	3	0	0
76.VE8CM	11	750	0	0	6	0	0
77.LA3PP	11	575	0	0	5	0	0
78.SMOEZO	11	570	6	0	0	0	0
79.DM2BCD	13	460	2	2	0	0	0
80.OK2PAD	7	390	6	0	0	0	0
81.OZ4DZ	4	120	3	0	0	0	0
CLASS B		MULTI OPERATOR					
1. I5WT	194	184,590	13	11	38	18	1
2. LZOU	163	92,560	9	2	30	11	0
DKOOW	119	68,850	14	9	24	7	0
4. G3UUP	120	60,115	7	10	22	15	2
5. OK1KSL	117	57,840	11	10	21	6	0
6. OK1OFF	109	53,760	11	13	24	0	0
7. DM3GM	104	52,875	14	8	23	2	0
8. IF3IRA	102	37,125	2	2	29	0	0
9. OH1AD	82	27,390	4	6	17	5	0
10. SKOFA	29	5,760	0	0	18	0	0
11. SL5AR	10	855	0	0	7	2	0
		SWL's					
1. OK2-5350	217	184,500	15	16	35	9	0
2. B.Niendorf	158	104,960	12	14	28	10	0
3. I3-13018	168	103,800	6	12	32	10	0
4. I1-50071	127	78,300	11	9	25	9	0
BRS-18456	109	69,940	7	9	28	8	0
6. DM-67547C/P	97	43,000	7	10	20	6	0
7. I1-56889	82	30,400	7	11	18	4	0
8. JA1-3477	38	8,700	0	0	17	3	0
9. JA1-4876	14	1,305	0	0	9	0	0
10. OK1-11857	15	1,160	1	0	7	0	0

## NEW EQUIPMENT

### INFO-TECH MODEL 75 USERS TEST REPORT

W6MNO - CHUCK

Having several requests from our readers for information on the Info-Tech RTTY to video and Morse converter we contacted Mr. G.D. Kelce, President of Info-Tech, in St. Louis, MO. Mr. Kelce graciously agreed to send one of his Model 75 converters, promising to later send one of his Model 200 Tri-Converters as soon as it became available. Seems like that particular model is selling faster than it can be made. Mr. Kelce indicated that this problem is being quickly rectified, as they are speeding up there production line. The Model 75 is a - RTTY to video converter which contains both a RTTY terminal unit (demodulator) and a video converter.

The Model 200 Tri-Converter accomplishes the same functions and in addition converts Morse code to video using Fairchild F-8 microprocessor technology.

This report will, at this time, encompass only the Model 75 and be preliminary. When the Tri-Converter becomes available for a test, and users report, this report will continue and be in much more detail. The video and Morse converters will be explained and the terminal unit will be retested to assure there are no differences in sensitivity.

The Info-Tech Model 75 converts RTTY audio tones as received from a radio receiver to a composite video output which will drive most standard video monitors or converted TV set. This conversion is quite easy to do and will be explained in our more detailed report. Whatever monitor is planned to be used must be isolated from the household mains. If your monitor has a transformer fed power supply this should be sufficient. If you plan to use a AC-DC type TV set then you must consider the use of an isolation type transformer. The obvious reason for this is that the multitudes of IC's within the circuitry of the converters will not stand the glitch involved should a ground be accidentally made across one lead of the AC input line.

Specifications and very complete "hook up" procedures were included with the Info-Tech equipment. These procedures were followed implicitly upon receipt of the Model 75, because of all the cautions outlined by Info-Tech during "hook-up" we turned on the monitor and let it warm up and then cautiously turned on the Model 75 and a Triton IV transceiver that we had put in the circuit. Lo and behold; the monitor started to print beautifully line characters from a fellow Ham in Wisconsin. Very impressive indeed!

In as much as we did not at first realize that this model had a RTTY terminal unit in it, as part of the standard circuitry, we thought that we would test this part of it at this writing and then test the video and Morse converters at the next writing. When

After what we thought was a careful examination of the schematics for the Model 75 terminal unit we came to the conclusion that it was a very simple circuit patterned somewhat after the TTL ST-5, only utilizing some CMOS technology. It didn't take long after running some tests to discover that we were completely in error.

There was a lot more to this demodulator than what first met the eye!

We took a short piece of small microphone type coax and made up a "Y" connector, putting two RCA type female connectors at the Y end and a single male RCA connector at the long end of the Y. This would allow us to compare two completely different terminal units and printers simultaneously from the identical audio signal from our receiver. The receiver used was a Triton IV which fed its audio thru the "Y" to the Model 75 terminal unit and video converter thence to the video monitor. The other side of the "Y" went to the comparing terminal unit(s) and on into a Model 28ASR printer.

First we plugged in a PLL type demodulator unit that had been a good performer, even if home brew. We were a bit shocked to discover that the Model 75 was printing perfectly even after the PLL type has completely stopped printing intelligent information. Incidentally, what we did was find a spot on twenty that showed poor propagation and lots of QRM.

Having several TU's that were thought to range from fair to excellent I started to plug each into the comparison

circuitry and all but two of the very best terminal units available just could not hold up to the Info-Tech. When tested against the very best commercial unit the Model 75 would print right along with it. One or the other might miss a character now and then, when the going was real rough, but the other would print the correct character. From all this I would have to deduce that the Info-Tech was as good as anything that I could find on the market. After a recommendation like that what else is there to say! Except that the INFO-TECH RTTY to video converter is an excellent performing piece of ham equipment. Frankly, I am going to buy one and have it right here in the shack.

Basically, the Model 75 consists of an untuned OP AMP (709) limiter. This OP AMP is certainly not one of the most recent chips, but it sure does have a wallop in amplification, fidelity and stability. This limiter is followed by four OP AMPS (741) active filters. Each tone has its own separate filter, Mark 2125 space 170 shift (2295), 425 shift (2550), and 850 shift (2975) respectively. (I think that one of the secrets of the sensitivity of this unit might be in that 709 limiter chip.)

The filters are sharp and very effectively filter out unwanted trash. The filters are followed by slicers which drive a uart to convert the serial Baudot to parallel Baudot. This Baudot is then converted to parallel ASCII by two PROMs 8577 which in turn drive the video board. The PC boards in the Model 75 are very professionally made, using glass epoxy to last a long time without undue maintenance. About the only thing we could find that could be improved was a simple transmit capability. This would cost more but Info-Tech may consider making it as an accessory item. What would be needed is an AFSK or FSK oscillator to generate tones to the transmitter and a loop supply. These items are not hard to make or find in local stores. Logic input to the AFSK is also quite simple from this terminal unit. There is furnished with their prime schematics a special loop supply circuit that can be made by the purchaser of the converter. This loop circuit is used to interface an "AUX" port in the video converter circuit to permit operation of the converter with a standard mechanical teleprinter machine. When used as an output this - "AUX" port provides digital output from the demodulator board. Since this signal is the output from the demodulator only, it is not possible to operate the mechanical teleprinter at any speed except that for which it has been geared for.

Specifications for the Model 75 RTTY to Video converter.

Audio input: Impedance ~~1000~~ OHM (will match 8-~~1000~~ OHMS)

Frequencies: Mark --2125

Space --170 shift 2295 HZ

425 shift 2550 HZ

850 Shift 2975 HZ

AUX. Input : RS-232C or TTL compatible

Input speeds : 60, 66, 75, 100 WPM

45,50,57,74 B.P.S. (BAUD)

Video Output: Composite video, -1.5 volts

PP Negative sync.

Impedance - 75 OHMS

Horizontal frequency - 15,750 HRZ.

Display 16 lines, 32 or 72 characters

# YOU ASKED FOR IT-

## BOTH MORSE AND RTTY



ST-6000

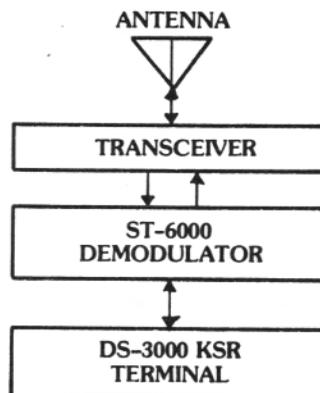


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- 170-425-850 Hz Shift
- Low or High tones
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- Active band-pass filters
- Autostart and antispace
- ATC and DTH
- KOS for keyboard break-in
- Scope or meter tuning indicator
- AM or FM limiter modes
- Table or rack mounting
- I/O interface to current loop, RS-232, MIL-188, and CMOS



### DS-3000 KSR

- MORSE, BAUDOT, and ASCII codes
- Full 72 character lines
- 16 lines of display
- Word wrap-around
- Edit with WORD, LINE, & PAGE modes
- Keyboard programmable HERE IS message
- Up to 175 WPM CW, 5 speeds BAUDOT & ASCII
- 8080A microprocessor controlled
- MORSE also output as ASCII or BAUDOT
- I/O interface to current loop or RS-232
- New streamlined 12 inch display
- On-screen indicators of WORD & PAGE modes

ST-6000M (Meter) ..... \$495.00  
 ST-6000S (Scope)..... \$595.00

DS-3000 KSR V3 ..... \$1575.00  
 DS-3000 KSR V2 (NO MORSE) . \$1195.00

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 Primetek Systems; Handen, Sweden  
 Radio Shack of London

**TEST REPORT ON INFO-TECHS  
MODEL 75 RTTY TO VIDEO CONVER-**  
**TER.....**

per line. 5 x 7 dot matrix  
AUX Output -5V to plus 8V  
Controls - power switch, filter switch  
normal/reverse switch, shift selector,  
speed selector (Baud rate), clear but-  
ton ( instantly clears video display)  
Mark and Space LEDS, LED indicators  
to properly tune mark and space tones.

Look for our more detailed test re-  
port on the Model 200 TRI converter  
very soon. This triconverter will have  
the identical RTTY terminal unit and  
video converter as the Model 75 with  
a few more goodies and controls in  
addition to the Morse to video or RTTY  
converter.

**Continued Cross Pattern Tuning**

filter is not selective enough. As the  
shift is widened to 850 Hz the ellipse  
will approach a straight line since the  
mark and space signals are further a-  
part. When coping an RTTY signal there  
will be a cross of two ellipses rather  
than two straight lines. This should  
present no problem as what we are  
really interested in is a cross indi-  
cator of the two alternating signals.

If you are using the NS-1A PLL TU  
which has no filters, it should be con-  
nected to the receiver output just as  
the scope tuning indicator. Now adjust  
the 5K VCO pot so that you get good  
copy when the scope indicator shows  
a cross pattern.

If you are using a TU which has fil-  
ters such as the ST-5/6, etc., remove  
the jumpers from the lines going to  
R2 and R3 and connect the scope out-  
puts of the TU to R2 and R3. If you  
want additional filtering for mark and  
space, remove R1, the 50K pot and  
connect the scope outputs of the TU  
to the top ends of the two filters, the  
mark filter of the TU going to the -  
mark filter of the tuning indicator. The  
jumper should be reconnected. This  
additional filtering will give a straight  
line even on narrow shift. The first  
12AX7 limiter/amplifier can be elimin-  
ated in this case.

The power transformer T-1 should be  
one which will give 250-300 VDC  
output. Higher voltage can be used and  
will amke the CR tube show better.  
However, if higher voltage is used a  
dropping resistor will have to be used  
for the plate voltages of the two 12  
AX7's. Note also that a seprate fil-  
ament transformer is needed for the  
CR tube since neither side of the fil-  
ament AC is grounded and the cathode  
of the CR tube is connected to one  
side of the filament.

A 3" scope tube can be used in the  
circuit just as well but the pin con-  
nections are different so you better  
check this out . Also, it is better  
to use a higher voltage on the 3;;  
tube.

Ham ingenuity can prevail in mounting  
the tube, transformer, etc. In my case



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Over pocket with pin ad 75¢

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P. O. Box 15093

San Diego, Calif. 92115



**INFO-TECH MODEL 98 T.U. A full  
featured, economical, RTTY Demodu-  
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Active Filter, demodulator. \* L.E.D.  
Tuning indicators. \* Limiter on/off  
selection. \* Sense selection. \* Regenera-  
tion on receive, using UART. \* Auto-  
start \* Three-shift, Function Generator  
derived, AFSK. \* Built-in C.W.I.D.  
F(Prom Programmed)**

For additional Information, Write

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2349 Weldon Parkway  
St. Louis, Mo. 63141

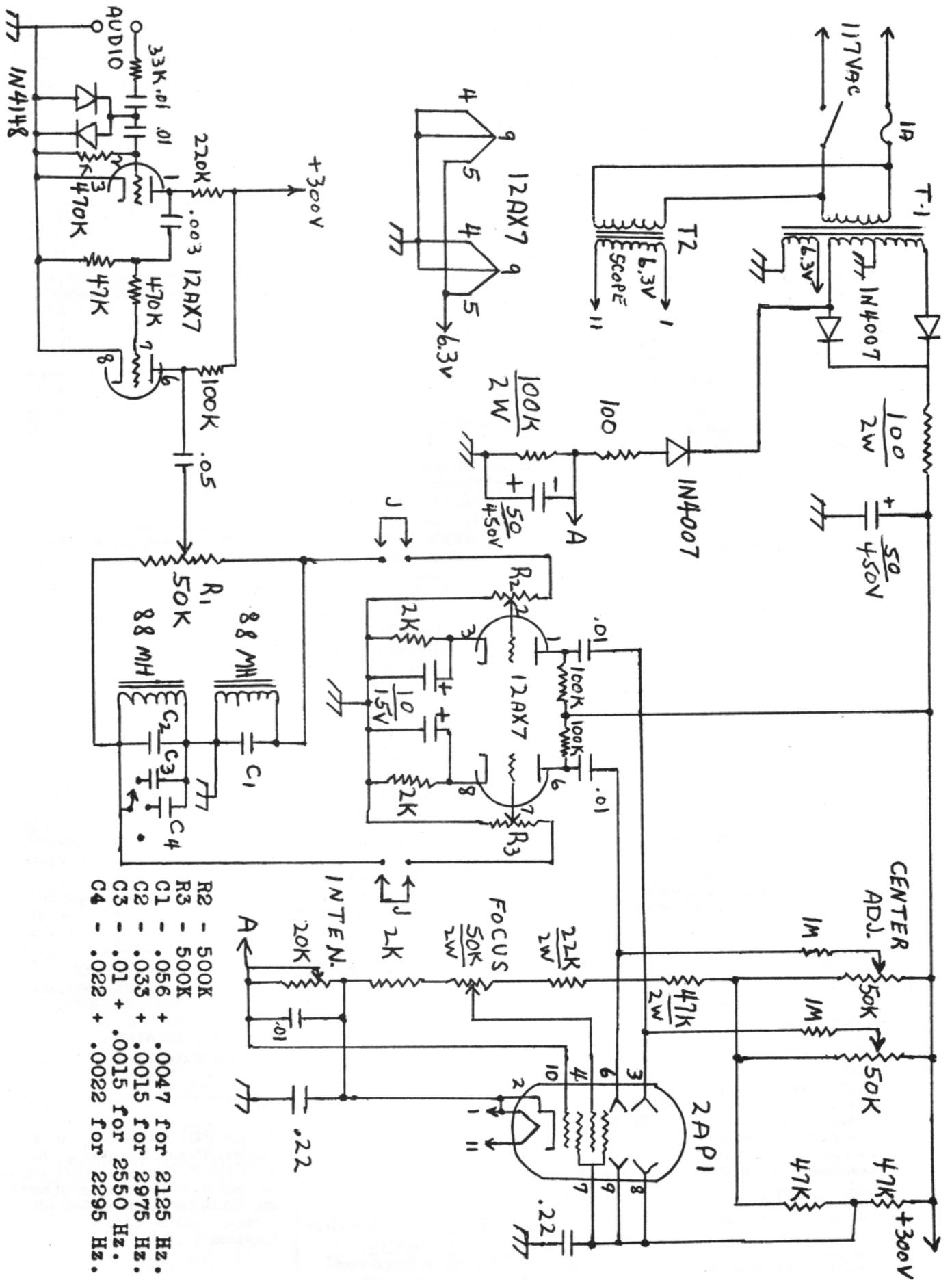
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I picked up a surplus housing for the  
2" tube at a Hamfest and mounted it  
on a long narrow chassis with the  
transformers at the rear end. The tube  
can be mounted open on top of the  
chassis with the transformers behind  
it. This will cut down the electrostatic  
field affecting the CR tube. If you run  
into trouble, get a CR tube shield. The  
centering, focus and intensity controls  
should be insulated from the chassis  
since they have the high voltage ac-  
ross them. This will reduce the chance  
of breakdown.

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for sale; 11/16", 5 level punch, perf tape, surplus, well oiled. \$3.00 per 10 roll box (13 lbs.) or \$10. per 40 roll case (50 lbs.) Prices do not include shipping so enclose sufficient money to cover same. A.E. Perkins, RR 1, Maquon, IL 61458.

**FOR SALE: Hal RVD 1005'** in excellent condition \$295 or best offer. Hal 128 EMO for DKB in mint condition \$55. Fred WB9YNA, 606 W. Church St., Champaign, IL 61820.

Set of 3-3 1/4 x 5" double-sided boards (includes dual xtal clock, no power supply) for \$12.00 Australian (about \$14.00 US) Available from: K. Roberts, 11 OXFORD St., Reynells, south Australia.

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**WANTED: INFORMATION** on how to minimize drift on the Hammarlund SP-600JX receiver. Jerry Salko, WA8DLD, 1500 Vineyard Dr. Apt. 403, Broadview Hts., Ohio 44147.

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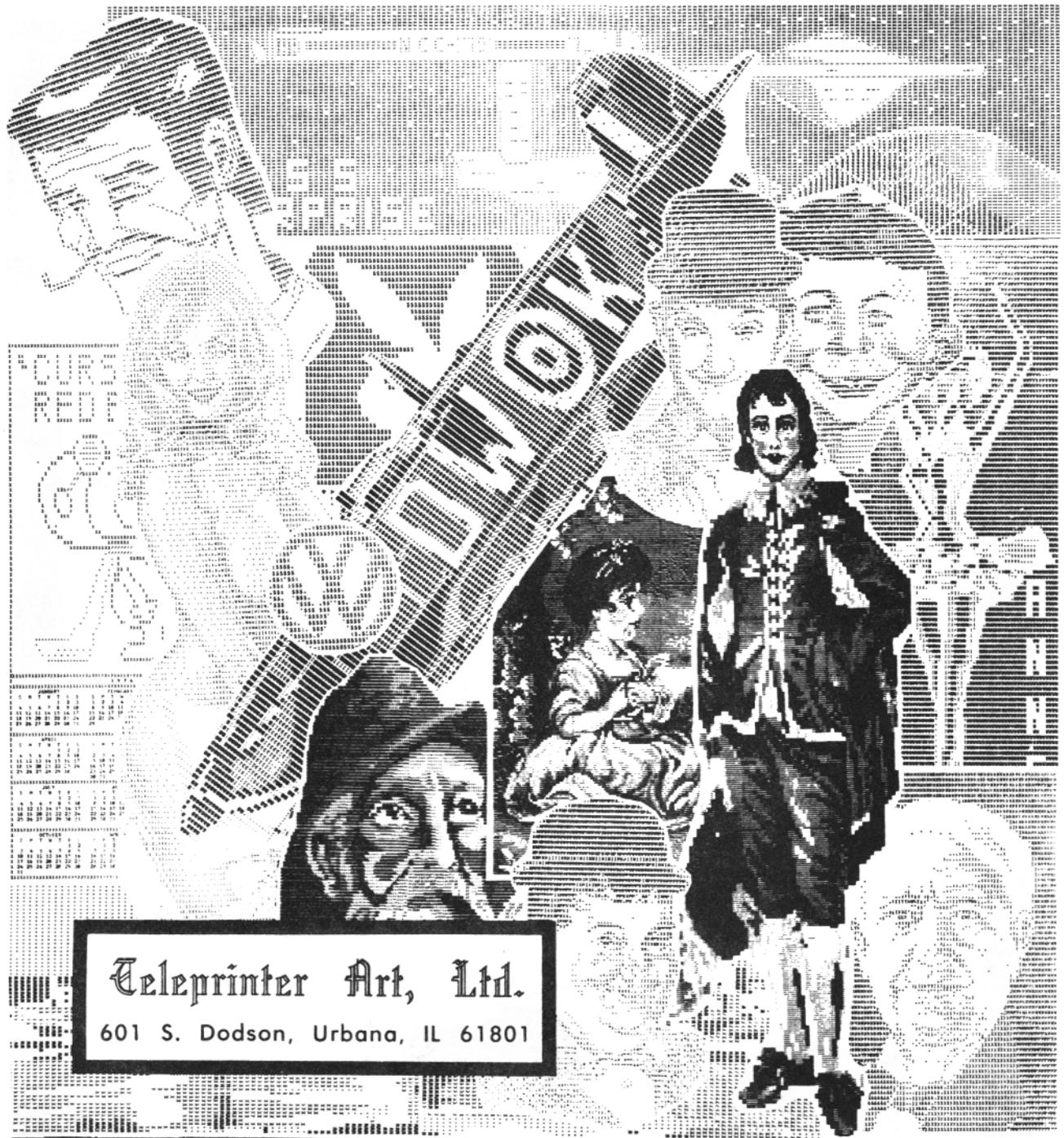
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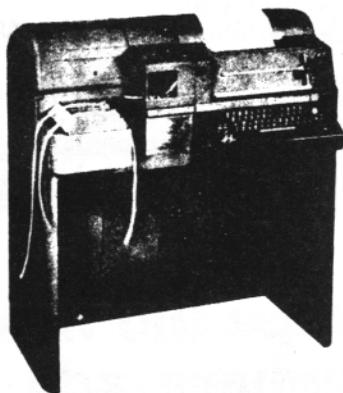
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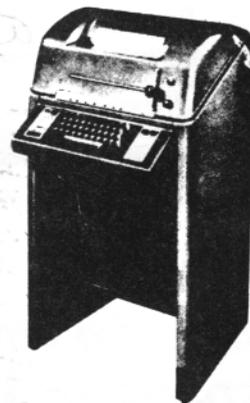
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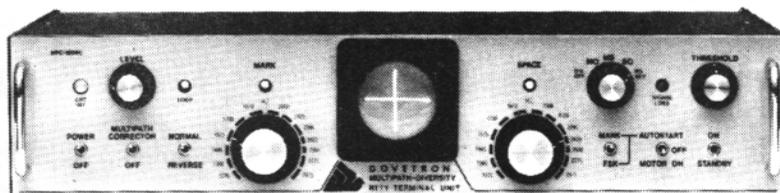


**Model 28KSR**

**WA6PMA**

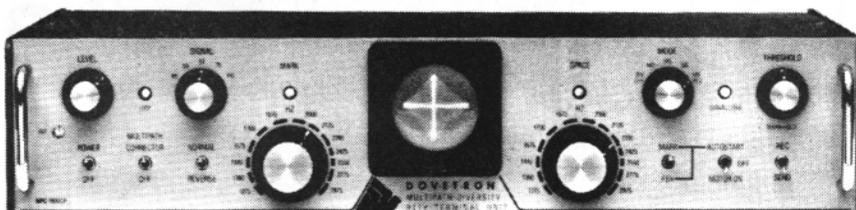
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# DOVETRON



**MPC-1000C**  
Multipath-Diversity  
Amateur Net: \$495.00

The MPC-1000C features MULTIPATH CORRECTION, IN-BAND DIVERSITY (single channel copy during deep selective fades) Operation and a PHASE-CONTINUOUS AFSK TONE KEYS. The Mark and Space channels are CONTINUOUSLY tuneable from 1200 to 3100 Hz. The internal RY GENERATOR and DUAL-MODE AUTOSTART (FSK or MARK) are standard, as are rear panel provisions for SIGNAL REGENERATION and SPEED CONVERSION peripherals.



**MPC-1000CR**  
Signal Regeneration &  
Up-Down Speed Conversion  
Amateur Net: \$595.00

The MPC-1000CR combines all the features of the MPC-1000C with the TSR-200 SPEED CONVERTER-REGENERATOR. A front panel SIGNAL SPEED switch provides electronic "gear-shifting" between 60, 66, 75 and 100 WPM speeds. All incoming and outgoing signals are regenerated by a CMOS UART and a crystal-controlled DUAL-CLOCK to less than 0.5% bias distortion, providing an extremely low error-rate on weak and badly distorted signals.



**MPC-1000R**  
Dual-Uart Regeneration,  
200 Character Fifo  
Memory & Word Correction.  
Amateur Net: \$820.00

The MPC-1000R combines the features of the MPC-1000CR with the TSR-500 SPEED CONVERTER-REGENERATOR and offers 200 characters of FIFO MEMORY, a DUAL-UART REGENERATOR that also provides local copy during all PRELOAD-RECIRCULATE functions, a WORD CORRECTION circuit that permits an incorrect word to be erased from memory by depressing the local keyboard's BLANK key, VARIABLE CHARACTER RATE and automatic BLANK/LTRS DIDDLE. Character OVER-RUN during down-speed conversion is prevented by an automatic CHARACTER RATE OVER-RIDE and TEE DEE INHIBIT circuit. Three preset AFSK TONE/SHIFT combinations are selectable from the front panel.

The MPC-1000R (80 characters of memory), MPC-1000CA (Tri-tone AFSK), MPC-1000CRA (Tri-tone Regenerator) and MPC-1000CS (Crypto-Scrambler) are also available.

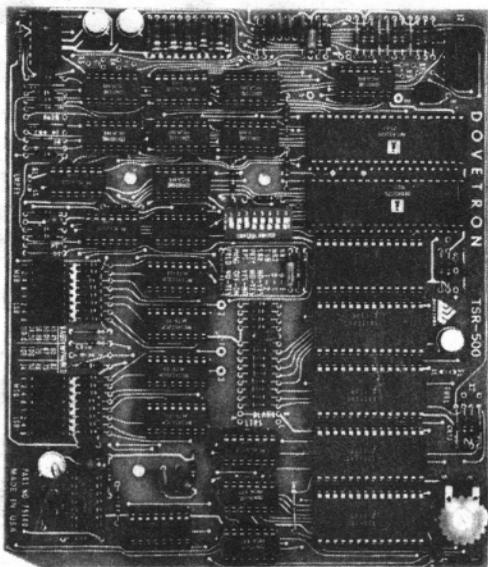
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