

CHEESE BITS



W3CCX

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CLUB MEMORIAL CALL



ARRL
Affiliated
Club

VOLUME XXXIX

April 1997

Number 4

THE PREZ SEZ

Thanks to everyone that participated in last months Homebrew Night. The diverse array of projects proved once again that the art of homebrewing is alive and well in the land of Packrats. Special thanks go to our excellent panel of judges WC2K, K3GNC, and KB3PD who had the tough task of reviewing each project and interpreting the award categories to make their final selections. Congratulations to all of the award winners.

It looks like spring has finally arrived. I can tell because every time I walk by the tower I notice things I want to fix or change and can't use the weather as an excuse any longer. Spring is also a season of improving band conditions. The sunspot cycle is mercifully on the rise again so hopefully aurora and e-skip and major band openings will soon liven up all those quiet receivers. A good start is the upcoming Spring Sprints. The Sprints are a fun way to overcome the January burnout effect. The 2M sprint is usually bedlam as everyone jumps into the contest mode by force of habit. But the real fun occurs on the 220 and higher Sprints where the true weak signal operators show their stuff and everyone goes-a-hunting for DX grids aided by a little springtime enhancement. The start of Sprint season is rapidly approaching so mark your calendars and plan to spend a few hours having a great time on the air.

If the January contest is over can June be far ahead? The rumblings have begun and June contest fever is slowly starting to take hold once again. Last year the club effort included a record turnout of members and a score which nearly doubled our previous best. This was no accident. We have proven time and time again that when we ALL get behind a project there is no limit to what the members of this club can accomplish. We will shortly ask K3GNC our resident contest sage, seer, and soothsayer to set the June contest goal but in the meantime I hope you will join the effort and help plan and secure another record score for W3CCX.

This month's program is our annual ARRL Night. We are pleased to have Paul Danzer N111 from the League Technical Department visit along with Kay Craigie the Atlantic Division Director and other invited guests. With the almost daily news flashes of new assaults on our frequencies by the little LEO satellite companies and WLAN spread spectrum folks this meeting is a great opportunity to learn first hand what the League is doing to protect our bands and what help they need from all of us. I hope you'll join us for a very informative evening. See you at the meeting.

73 and CQ Sprint.
Phil WA3NUF

MEETINGS

Third Thursday each month at 8:00 PM
Southampton Free Library
947 E. Street Road
Southampton, PA 18966

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- Mt. AIRY VHF RADIO CLUB, INC. -

Southampton, PA

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WB3KRW Steve Dallas (1 YR) sdallas@erols.com

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQ.</u>	<u>NET CONTROL</u>
7:30 PM	50.150 MHz	K3EOD
8:00 PM	144.150 MHz	N3ITT/AA2UK
8:30 PM	222.125 MHz	WB2YEH/N3EXA
8:30 PM	224.58R MHz	W3GXB
9:00 PM	432.110 MHz	WA3AXV
9:30 PM	1296.100 MHz	WA3NUF
10:00 PM	903.100 MHz	N3AOG

COMMITTEE CHAIRMEN

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1296.262 MHz 2304.034 MHz



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Calendar of Coming Events - April 1997

- 5-6. Timonium Md. **ARRL Maryland State Convention and Greater Baltimore Hamboree and Computerfest** at the Maryland State Fairgrounds. VE exams given. Call 1-800-HAM-FEST. TI on 146.67- and 224.24.
- 8 **Packrat Board of Directors Meeting** at the QTH of Brian, N3EXA at 8 P.M. All interested parties invited. Call 215-257-6303 for directions.
- 12 Physicist John Thompson demonstrated his discovery of a body smaller than the atom, a negative charged he called a corpuscle now known as an electron in 1897.
- 14 **ARRL 144 MHz Spring Sprint** (Monday evening) starting at 7-11 PM local time. See April QST, page 98 for rules. Results will be published in the NCJ.
- 17 **Packrat Meeting** at the Southampton Free Library at 8:00 PM. **ARRL Night**. Bring and/or invite your on the air VHF buddies. All VHFers invited. The speaker will be Paul Danzer, N111, from the ARRL Technical Department.
- 20 The **Pen-Del Hamfest** will be held at the NUR Temple, 198 DuPont highway (Rte 13 near US40 split), Newcastle DE. Talk-in on 224.220 and 147.225+.
- 22 **Lyrids meteor shower** peaks at 0345 UTC.
- 22 **ARRL Spring 222 MHz Sprint** (Tuesday evening) 7-11 local time. See March QST, page 98 for rules.
- 22 **Passover**
- 24 **LEAP INTO THE MICROWAVES with the Packrats!** 903 and above. Starting on the 4th Thursday of the month and continuing every 4th Thursday of the month operate from 8 to 10 PM local time on any band 903 MHz and above. For coordination on those difficult long haul contacts 144.260 MHz is the suggested liaison frequency. So here's your chance to fix what broke in the contest and work all those stations you missed.
- 25 Italian engineer and inventor **Guglielmo Marconi**, inventor of the wireless telegraph and Nobel Prize winner was born in 1874.
- 26 **Cherryville Repeater Assn. Hamfest** at the Warren County Farmers Fairgrounds in Belvidere, NJ. TI on 147.375.
- 26-27 **22 ND Annual Trenton Computer Festival** at Mercer County Community College, just north of Trenton NJ. This is the longest running computerfest in the world. Several sessions on amateur radio including no-code license cram sessions and exams as well as a separate packet radio conference. VE exams all day Saturday.
- 30 **ARRL Spring 432 MHz Sprint** (Wednesday evening) 7-11 local time. See April QST, page 98 for rules.
- May 10 **Packrat Ladies Night** will be held at the Mill Race Inn, Holland in Warrington, Pa. starting at 6:30 PM.

TID BITS

The RF Hill Radio Club has VE Testing on the third Monday of the month at 6:30 PM at the Valley Public Library in Telford, Pa.

The April issue of the NTMS newsletter Feedpoint has an article by Don, N0UGY on "A Transmit/Receive Sequencer". John, K3PGP, has an article on "Building a Laser MCW, NBFM, SSB System". An article is included on a "New Renewable Power Source for Hams".

The November issue of QEX (you thought that Cheesebits got out late?) is a VHF issue. Paul, N1BWT's article is "Noise Measurement and Generation". Next, Mark, K5AM fills in the details of his "Luxury Linear" (a 1500 watt output 2M linear) from the May 96 issue of QEX with "Design Notes for "A Luxury Linear Amplifier". Both articles are must reading for anyone planning a DC Band of VHF linear amp. The last of the issue is Zach, W1VT's column "RF" giving practice details on mounting RF connectors.

The current 144-MHz standings were compiled April 1 and are available on the ARRL Web site at:

<http://www.arrl.org/announce/standings/144.html>. These standings are scheduled for publication in the "World Above 50 MHz" column, June QST. If you spot any errors or omissions, please let me know before 1600 UTC, April 10. Thanks and 73, Steve, WB8IMY, QST Managing Editor

THANKS FOR YOUR SUPPORT

Thanks, to all the members for their support during the last 6 weeks. Our club is comprised of a group that never fails to help a member that runs into difficult "times". My Dad was taken to the hospital unexpectedly one Saturday morning after Janice and I found him in bad shape. With two businesses to run and the trips to the hospital at all hours my time was just about gone. All I had to do was ask and my responsibilities for the club were assumed by others. To those folks a special thanks. Janice and myself thank the club in general for their support, flowers, and personal visits during our time of need.

Dick, N3AOG and Janice N3CFE

HORACE, W3AJF, 75 YEARS AS A HAM

W3AJF, Horace Deacon was awarded a plaque by the Quarter Century Wireless Association to honor his 75 years as a ham. First licensed in 1922, Horace was presented the award by W3HK, George Van Dyke, president of the Delaware Valley Chapter. (Present at the award were Horace's family as well as a group of QCWA members. This event took place at the Ft. Washington Estates Retirement Home where Horace can be visited. Many photos were taken and greetings exchanged and memories revisited. We salute Horace as our most senior Packrat. Send a card and wish him well. Mail to: Horace Deacon, W3AJF, % Mrs. Ann Bray, 1136 Keats Court, Lansdale, PA 19446 .(Mrs. Bray is Horace's daughter)

HOME BREW NIGHT

Another fine group of homebrew projects were shown at the Annual Homebrew Night at the March meeting. See pictures of the projects elsewhere in this issue of Cheesebits. The following presenters and projects were shown:

Steve, WB3KRW	903 MHz Transverter and the W3CCX Beacon Keyer
Phil, WA3NUF	Complete 2304 MHz Transverter
Ron, WA3AXV	3456 MHz Omni Antenna for the W3CCX Beacon Farm
Len, N3NGE	Cavity Front End 1296 MHz LNA
Dave, W3KM	Multi-Port Transverter Control Switch Box (see first part of his article in the April issue of Cheesebits and the remainder in this issue.
Henry, N3NID	Digital Degree Logger
Mark, NK8Q	Direct conversion Transmitter and Receiver

The judges selected the following winners:

Most Ambitious:	Complete 2304 MHz Transverter by Phil, WA3NUF
Best Design:	1296 MHz Preamp/Cavity Filter LNA by Len, N3NGE
Best Construction:	Multi-Port Transverter Control Switch Box by Dave, W3KM
Most Unique:	Digital Degree Logger by Henry, N3NID

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The Mt. Airy VHF Radio Club, Inc.

Southampton, Pa



Welcome to the Mt. Airy VHF Radio Club better known as the "Packrats". The Mt. Airy VHF Radio Club is dedicated to serving the VHF / UHF / Microwave Amateur radio community as well as enhancing the state of the art for 50 MHz and above operation. This year we celebrated our club's 40th anniversary.

- Latest News
- Meetings - Where And When We Meet
- The Agenda - Monthly Speakers, Sales, Events
- Club Sponsored Nets, Activity Hours And Beacons
- Technical Info - Grids, Beacons, Articles
- Club Contacts and Packrat's History
- Cheese Bits - Our Monthly Newsletter
- Links To Other Interesting Sites

Club Webmaster: Ron - WA3AXV

Web Author: Deskware Web Designs

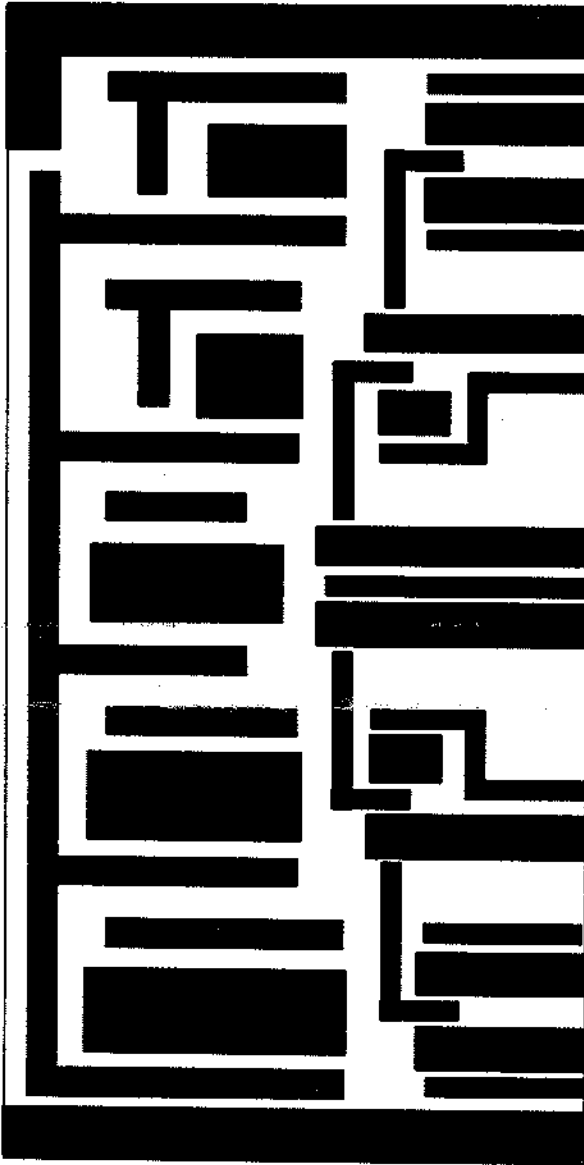
The Mt. Airy VHF Radio Club Web Page URL is: <http://www.IJ.NET/packrats/>

PC Board Layouts

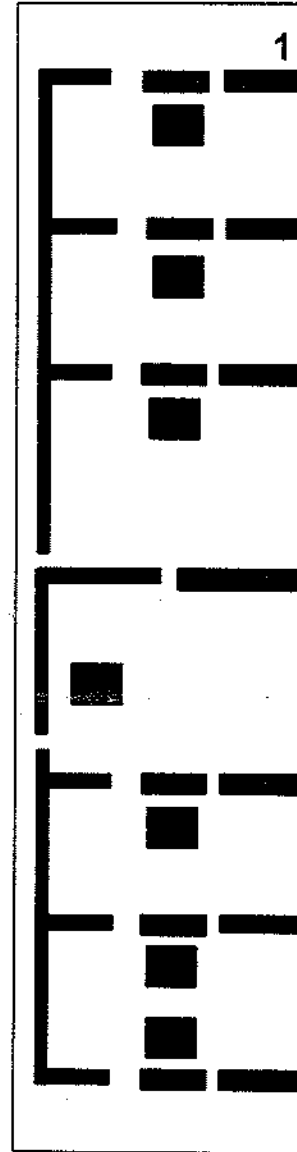
1:1 Scale

Trace Side

1/16" G-10 type material








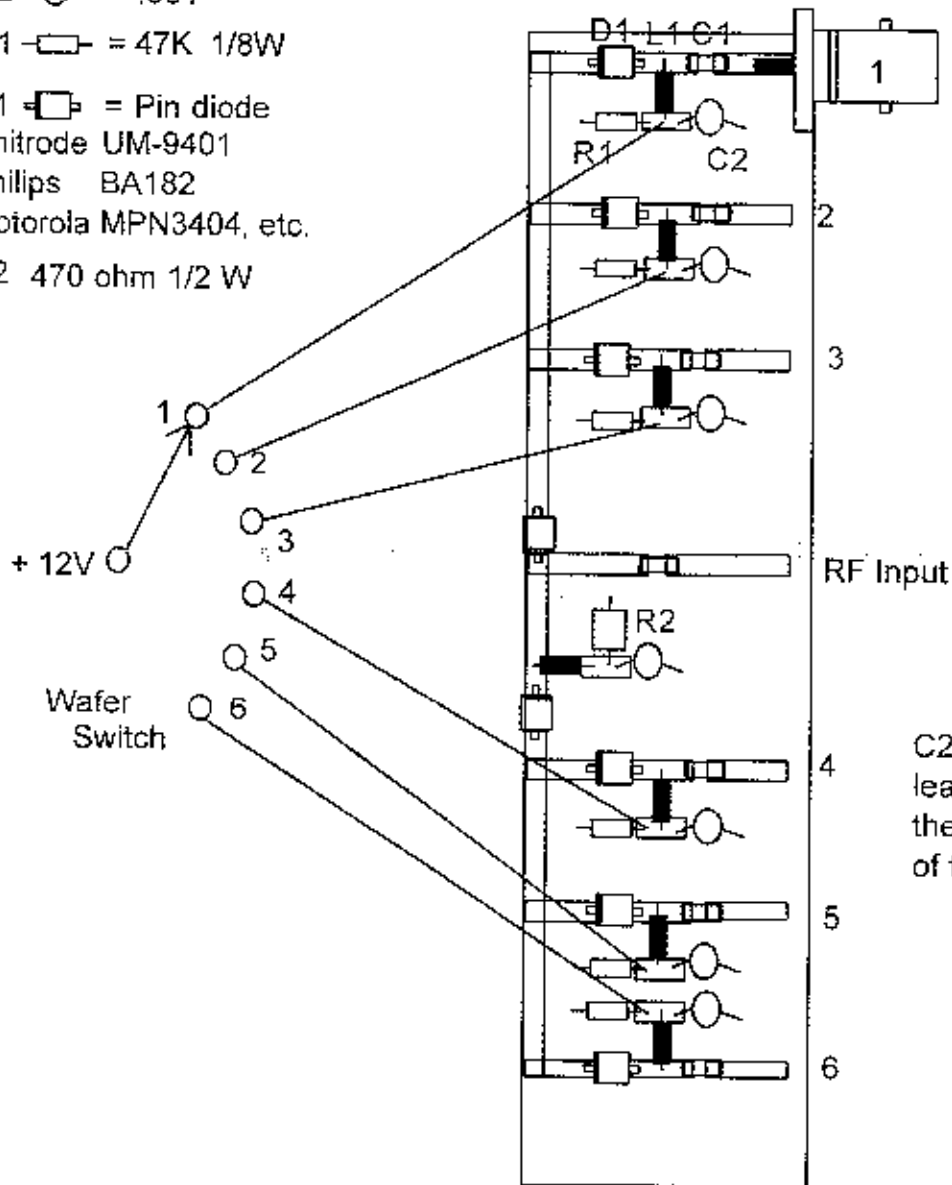
Relay type



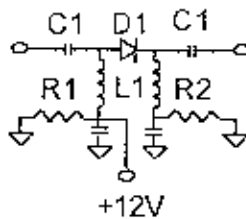
Pin diode type

6-Position Pin Diode RF Switch

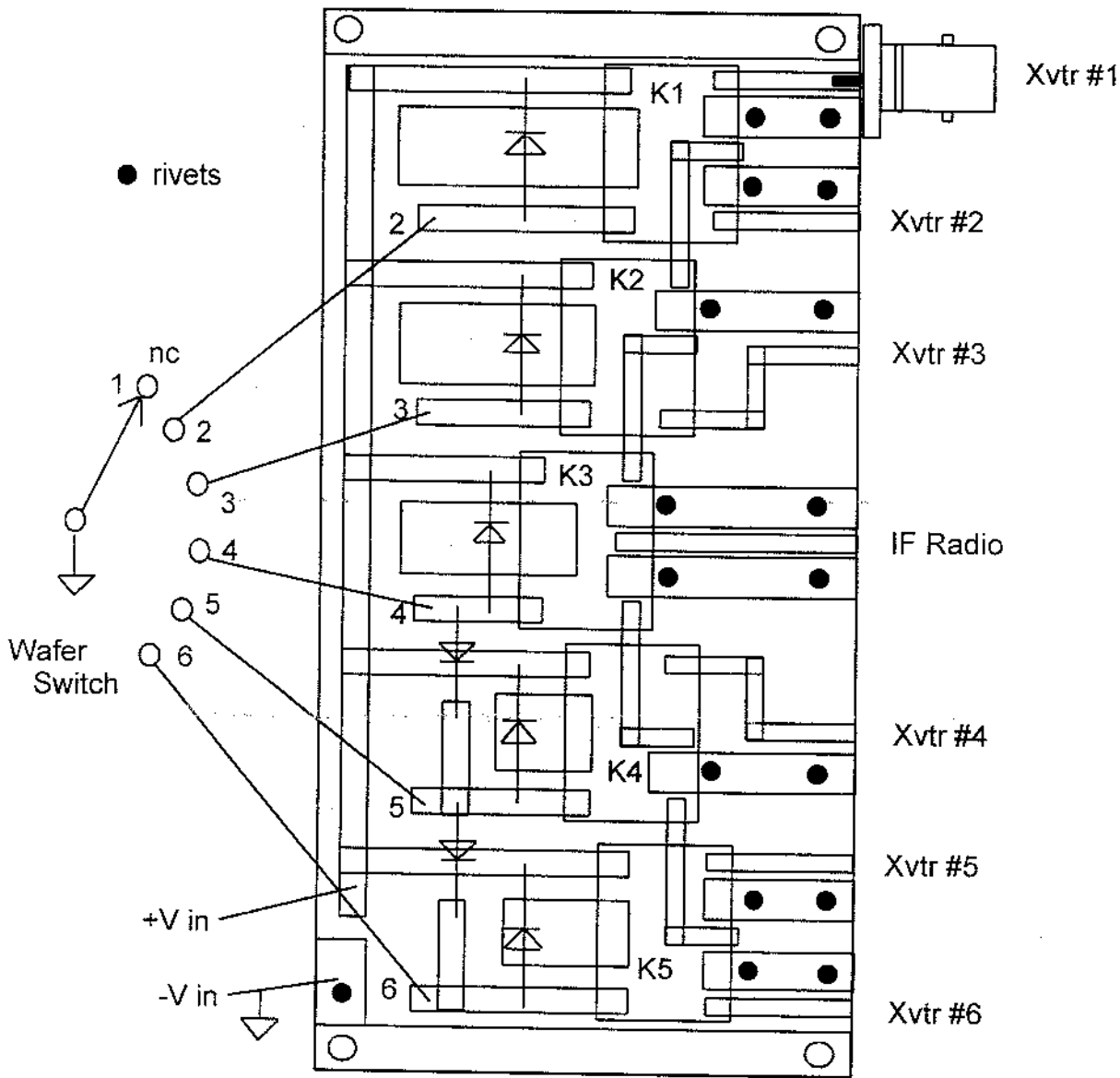
- C1  = .01 ufd chip
- L1  = 10 uh, leaded or SMD
- C2  = .001
- R1  = 47K 1/8W
- D1  = Pin diode
Unitrode UM-9401
Philips BA182
Motorola MPN3404, etc.
- R2 470 ohm 1/2 W



Individual Pin diode switch schematic



Relay type 6-Position Transverter IF Switch



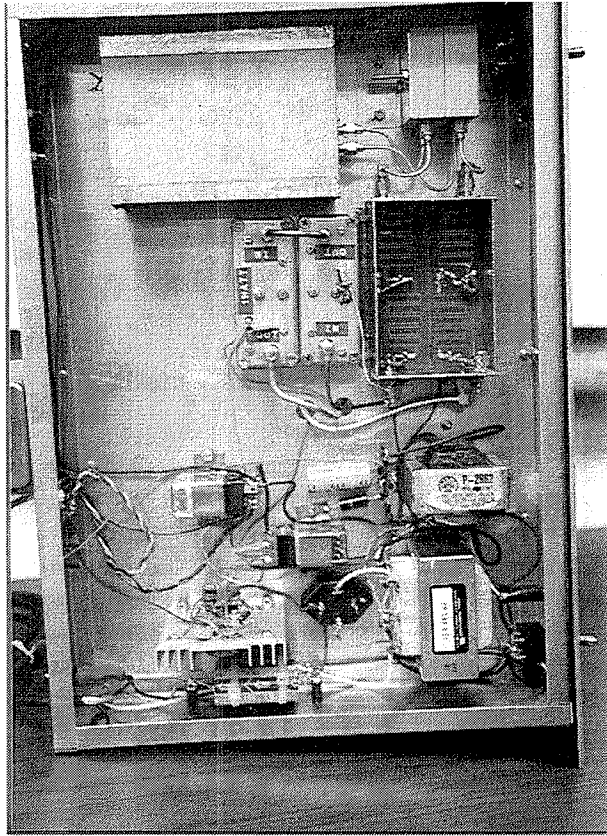
Top side (X-Ray view of etched side)

K1 thru 5 = Omron G4Y-152P (24V) or G5Y-1-DC12

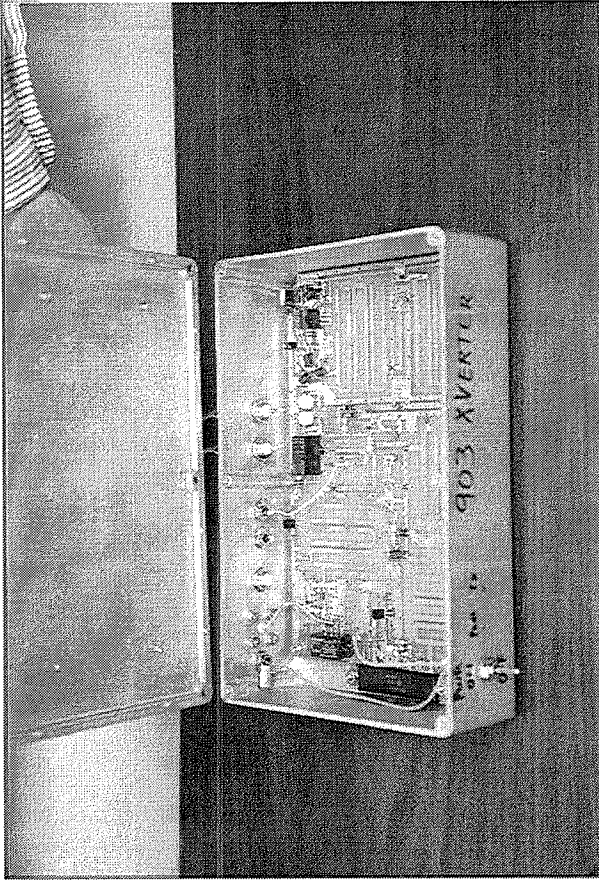
6-Port IF switch		Input Match			
Measured response:		I.L.	Isolation	Return Loss	SWR
Relay type	28 MHz	.05 dB	77 dB	23 dB	1.15:1
Pin Diode type	28 MHz	.35	40	17	1.3:1
Relay type	144 MHz	.05	35	14	1.5:1
Pin Diode type	144 MHz	.43	36	23	1.15:1

Note: The use of the IF post amp dc switch can increase the band-to-band receive IF isolation to >70 dB.

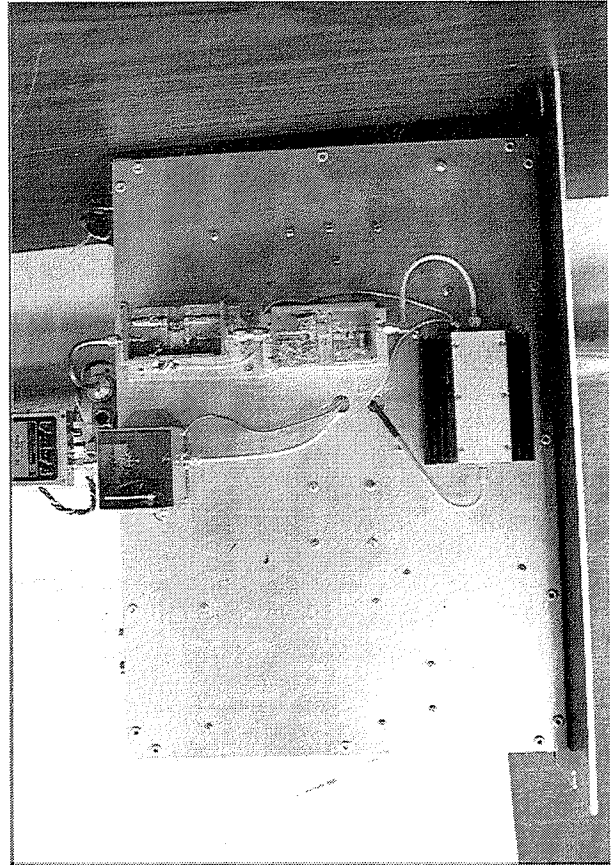
1997 Home Brew Night Entries



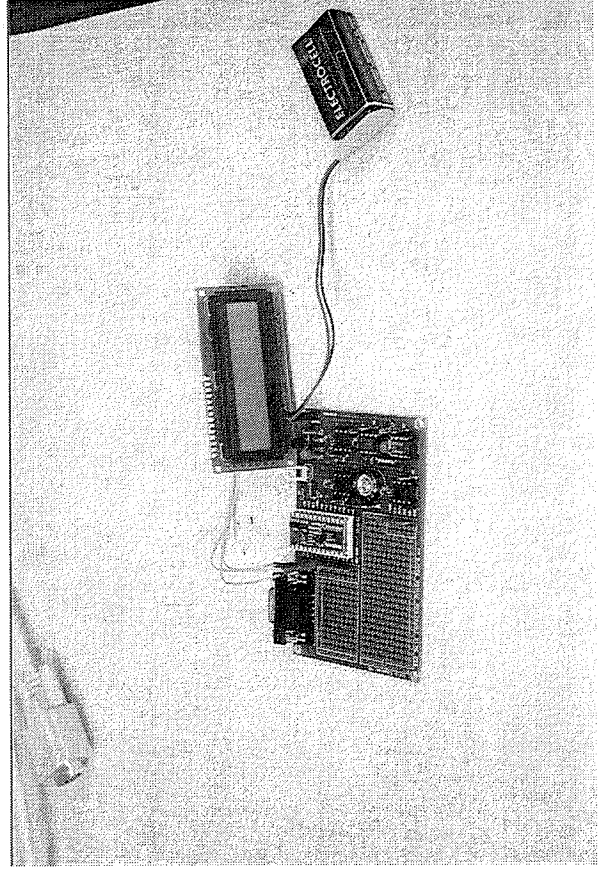
WA3NUF 2304 Mhz Transverter, Bottom View



WB3KRW, 903 Mhz Transverter

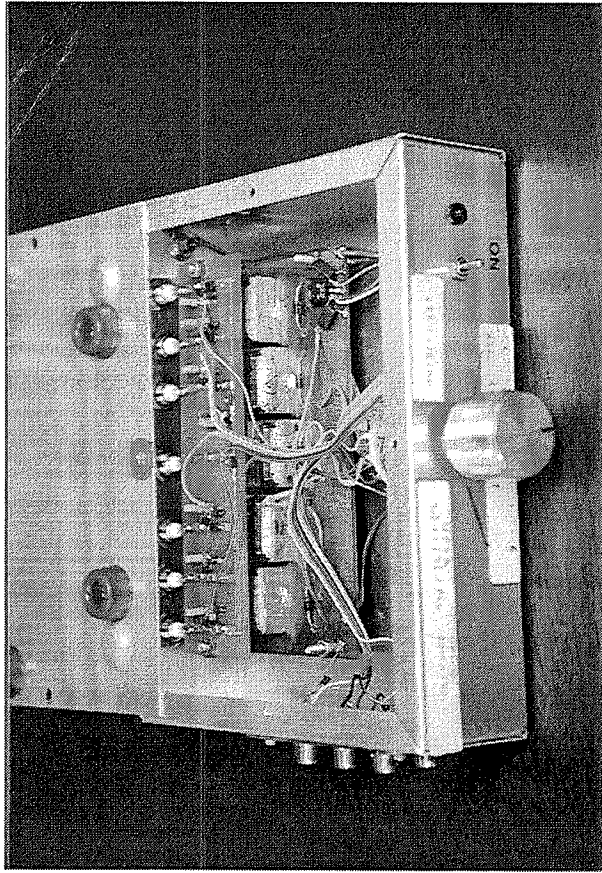


WA3NUF 2304 Mhz Transverter, Top View

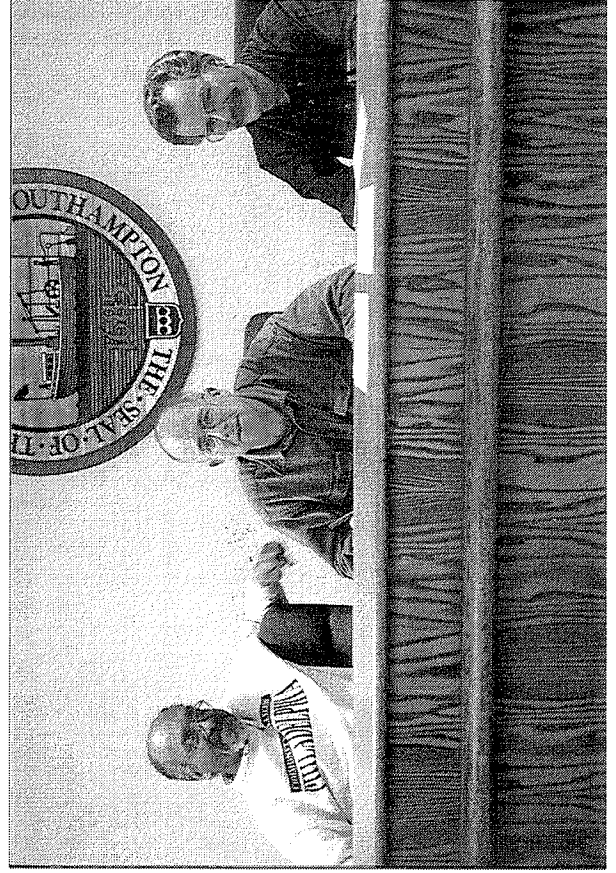


N3NID Digital Degree Logger

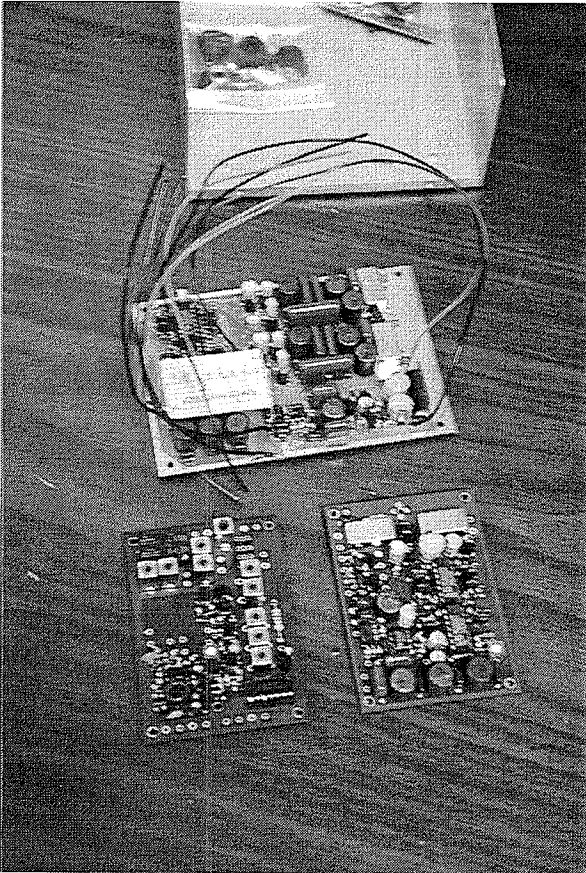
1997 Home Brew Night Entries



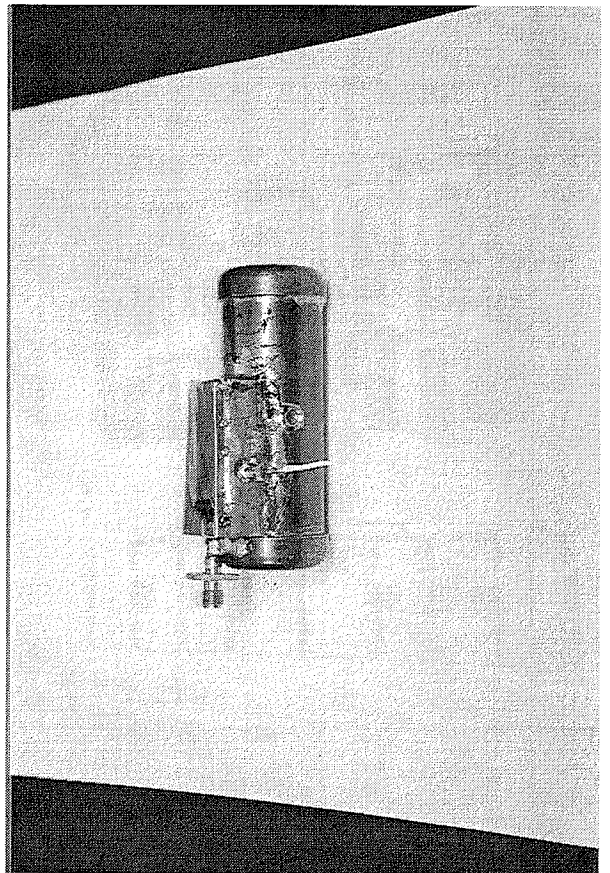
W3KM Multi-Port Xvtr Control/Switch Box



The Judges: Jerome, K3GNC, Rick, WC2K, and Rick, KB3PD



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N3NGE 1296 Mhz Cavity Input LNA

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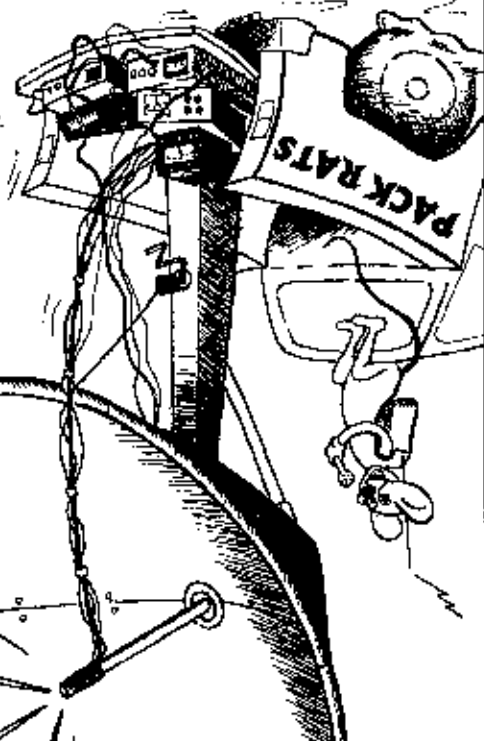
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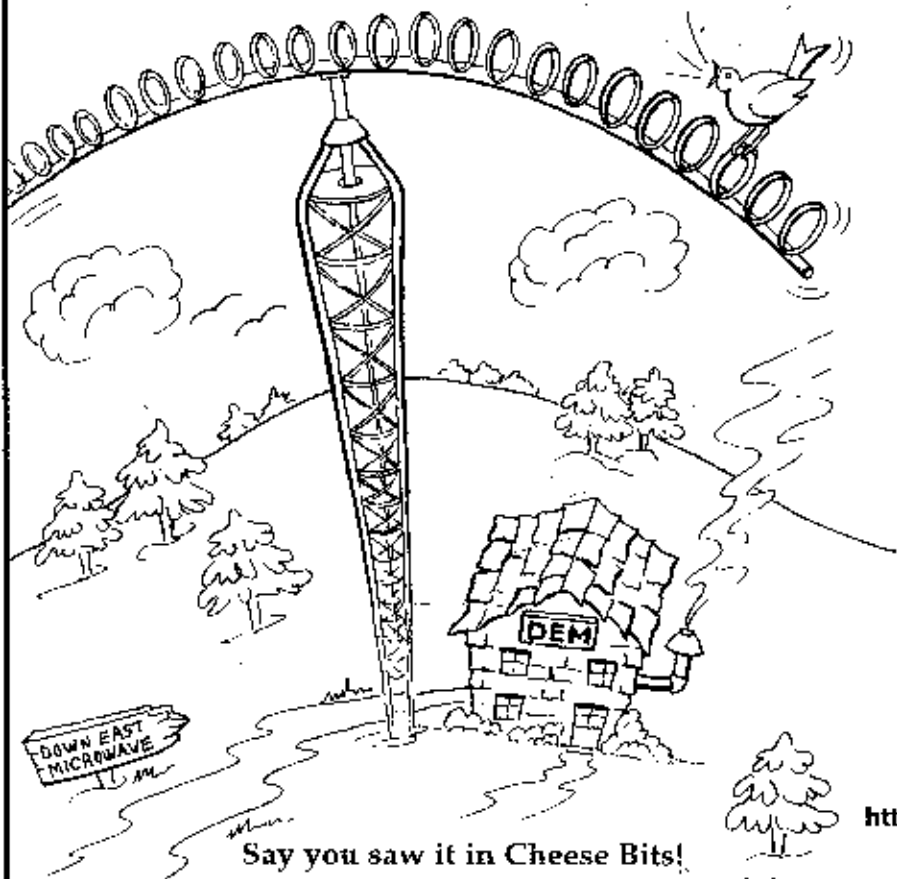
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