MT. AIRY V.H.F. RADIO CLUB, INC.

CHEESE BITS

PACK RATS

W3CCX

CLUB MEMORIAL CALL

SCANNED TO PDF BY BERT, K3IUV, 2013

ARRL Affiliated Club

VOLUME XXXIX February 1997 Number 2

THE PREZ SEZ

The January VHF SS was a fairly typical event this year filled with all of the traditional effects of the season. The predictable pre-contest band openings occurred right on schedule a week before the contest weekend. The perennial pre-contest ice storm hit just days before the big weekend and had melted before anyone had a chance to climb the tower and blow-torch it off the rotator. And for those that thought Mother Nature was going to let them off easy this year, the contest started with a virtual RF brick wall between the Mid Atlantic region and the New England states and the coldest weekend on record for the season. Just another typical January contest.

In spite of the customary conditions, the reported contest scores of many of our members seem to be up on average, especially for those that spent the time preparing for the big event. Participation appeared to be up again this year and our contest chairman N3ITT seems pretty confident that we will make the 51 logs necessary for the Unlimited Club Competition. Thanks to Al for another fine job of organizing the club effort and to all of our members for helping to place the Packrats at the top of the standings once again.

Congratulations to the newest members of the 100K+ contest score club! Breaking a hundred for the first time is a momentous occasion for every contester and no matter how many contests you enter the thrill of passing 100K stays with you. My theory is that the popularity of computer logging isn't due to the convenience but the ability to see if your score at 10 AM Sunday morning is ahead of last years pace. For those that missed their contest goal, don't give up! Make a list of things that need improvement and start now on next years contest effort.

The contest gods were kind to most of us but alas there are still a few sad stories waiting to be told. From the few samples I have heard so far I can't wait to attend the February Crying Towel session. This meeting is easily the most entertaining event on the club calendar. Tell your tale of woe and you could possibly win the coveted Crying Towel. As always, the judges have been known to be swayed by actual examples of smoked equipment so bring in your contest props for extra credit. If you can't make it to the meeting send in your Crying Towel Testimonial and it will be entered into the competition. See you at the meeting and be sure to bring a friend.

73
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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PACKRAT 222 MHz REPEATER - W3CCX/R
222.98/224.58 MHz, Churchville, PA FN20LE

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MONDAY NIGHT NETS

TIME	FREQ.	NET CONTROL
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

LADIES' NIGHT: N3AOG	215-443-9965
JUNE CONTEST: WA3AXV	215-355-5730
HAMARAMA: WB3JYO	609-538-1687
VHF CONFERENCE: KB3XG	610-584-2489

PACK RAT BEACONS - W3CCX/B FM29JW

432.298 MHz	903.071 MHz
1296.262 MHz	2304.034 MHz

Calendar of Coming Events - February 1997

1 **January Contest wrapup session** at the QTH of Bob, WB2YEH starting at 10 AM. Get your logs and checksheets to your contest coordinator so they can be checked and submitted.

9 Birth of Brendan Behan, Dublin 1923

12 **Lincoln's Birthday, 1809.**

13 Packrat board of directors meeting at the QTH of Ron, WA3AXV at 8:00 P.M. Call 215-355-5730 for directions.

14 **St. Valentine's Day**. Remember your sweetie.

15 **Harrisburg Pa ARC Winter Hamfest** at the Oberlin Fire Hall, Oberlin, PA.717-232-6087. VE exams.

15-16 **ARRL International DX Contest-CW**. See Dec. QST page 104 for rules.

17 **Presidents Day**

20 **Packrat meeting** at the Southampton Free Library on Street Road in Southampton, Pa. at 8:00 PM. The theme of the evening will be our annual "Crying Towel" session. The best story of what went wrong during or in preparation for the January contest wins the coveted "Crying Towel". All friends and interested parties are welcomed to come enjoy the evening with us.

22 **Washington's Birthday , 1732.**

27 **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.

1997 January Contest - Final Wrap-up

The contest wrap-up session was held at the QTH of Bob, WB2YEH. The following attendees poured over the logs and had a good time: WA3AQA, WA3AXV, K3DMA, WA3EHD, K3EOD, K3GNC, WA3IAC, W3IIT,N3ITT, WB3KRW, WB3JYO and Max, W3KM and Ryan, WA3NUF, AK3O, N2SB, W2SK, AA2UK, WF3W, and WB3YEH. The final score summary will appear in the March issue of Cheesebits. The number of entries will allow the Packrats to be in the Unlimited category of club competition where they belong. In general scores were as better or equal to last year with several members achieving personal records.

Membership News

New member of the club, Russ, K2TXB, had a heart attack but is apparantly ok! Both Russ and his wife,Yvonne were in the same hospitial as she just had a operation on the previous Friday. By the time you read this, they both should be at home recuperating. Memorial Hospital of Burlington County

Condolences to Tony Souza , W3HMU,and family on the death of Tony's father.

Lynn Roland, W3NSI, reports that his father , WB2HHJ (formerly W3QAS) died recently. Lynns father was a member of the packrats from 1959 to around 1968. Like a lot of the origional Packrats, he was a member of the York Road RC and Phila. High Freq. RC before joining the Packrats.

9913 No Drip, Just One more way to do it!

By: Chuck Steer, WA3IAC

Belden, 9913, and its clones have been known to turn from transmission line to water pipe when it rains. This is due to the cable having an air gap and a bad fit between the cable and connector. For the past two years I have used 3/4 inch shrink tubing over the cable/connector end on my N connectors. Then I wrap it with Teflon tape. This also works for other cable types, i.e.: RG8, RG213 ect. Not having a heat gun has not stopped me. I use the xyl's stove. Adjust the distance from the burner as needed and rotate the cable. That's it!

TID BITS

The Central States VHF Society web page has relocated. Its new address is now:-http://www.csvhfs.org/

Joe Lynch's VHF PLUS column in the Feb. issue of CQ has a summary of discussions that have been taken place on the VHF Reflector concerning the 6 Meter DX Window. Lots of comments from all over the world are included.

The G3PHO Microwave Pages at: http://members.aol.com/g3pho/ghz.htm. You might care to take a look at the "World Above 1000MHz" web site...have just uploaded a lot of new stuff, news, photos, & improved diagrams.

The UK Six Meter Group Web Site can be found at: www.uksmg.org/index.htm

The Oct. 96 issue of QEX has an articleby Zack Lau, W1VT (note the new call), titled "A Simple T/R Switcher". It includes the board artwork (double-sided), parts layout and schematic. It's all analg, really simple circuitry with relay driver outputs.

T-MATCHING MMIC's

By Chuck Steer, WA3IAC

Last winter I was building a new 2 meter transverter. The driver stage that was to drive the power amplifier, was to be two MMICs in parallel. The layout was done on a piece of p.c. board which was then mounted on the lid of a die cast box. Both the input and outputs were matched using an L-match configiuration. The leads were cut to about 0.125 of an inche from the body of the MMIC. This worked so will that I built two others for 432 MHz. and 903 MHz. After building the 432MHz verson, I set out to test the amplifier. This time the match didn't work as good. The problem was in the way the layout was done. In order to make the connection from the center pin of the SMA connector to the shunt capacitor, a small piece of wire, (about 0.5 in.long) was used. This was the same layout I had used for the 2 meter amplifier, but as it turned out, at 144 MHz, the wire length is small and adds just a little inductance to the match. Using a Smith Chart, I was able to confirm this and correct for it in the 432 and 903 MHz. layouts. What I did was to make the lead longer instead of trying to keep the lead short. That made the first wire more of an inductor and part of the match, turning the L-match into a T-match.

For the capacitor, C1, I found that ATC chip capacitors worked the best. Although for 1296 MHz., a small variable capacitor was used to improve the match. Inductor L1 was a piece of #22 bus wire, about 0.5 inch long, and L2 was 2 or 3 turns (depending on frequency) of #24 wire on a 0.07 inch drill bit.

Below is a table of the values that gave the best match for the UHF bands.

Frequency	C1	L1	L2
432 MHz.	10 pf.	10 nH	12.0 nH
903 MHz.	4.7 pf.	10 nH	8.0 nH
1296 MHz.	2.8 pf.	10 nH	7.6 nH

SWAP SHOP

(send all ads to the editor)

FOR SALE: YAESU FT-902DM 160-10 ALL MODE TRANSCEIVER $550.00 KENWOOD TS-830S 160-10 TRANSCEIVER - $550.00. ALL IN EXCELLENT CONDITION WITH MANUALS. CALL HERB, K2LNS (717) 472-2230.

FOR SALE: For Sale: 2 meter liner amplifier, 2CX350's from 1966 VHF manual, with documentation. $150.00 also power supply, 1250 VDC @ 500mA. and all other voltages, $100.00., pick up only. Chuck Steer WA3IAC - 215-335-0637 after 6 PM

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Pennsauken, NJ 08110

Pack Rat 432 Monday Night Net

Year End Statistics

432.110 MHz - Monday Night -2100 Local Time - WA3AXV - FN20LE

1996 Check-in Sort **No. of nets in 1996 = 51**

W3HFY	**47**	**WA3RLT**	**44**	WZ1V	43	**WA1YHO**	**41**	K1PXE	39
K3EOD	**33**	**WA3NUF**	**32**	**WB3KRW**	**29**	**AA2UK**	**29**	**N3EXA**	**26**
K3GNC	**24**	WA2ZFH	20	NB2T	19	**N3DQZ**	**17**	WA2VNV	15
N3WUM	1	KH2CY	1	WA4TNV	1	**K3IUV**	**1**	N3FUJ	1
W3HK	**14**	**N3ITT**	**14**	**NK8Q**	**14**	**W3KKN**	**10**	**W3KM**	**10**
N2MSS	8	N1DPM	7	**N3NGE**	**6**	**WA3EHD**	**6**	KO0U	6
N2MH	5	K1FO	5	N3XEM	5	WA2LTM	5	K3LIC	5
KB3JB	**4**	W1GRW	4	**WA3AQA**	**4**	K3YWY	4	**W3OR**	**4**
N3RSE	4	**K3EBZ**	**4**	AA2LY	4	N2FRB	3	N2TNN	3
WB3JYO	**3**	W3IP	3	KE2SO	3	**AK3O**	**3**	**W3GXB**	**3**
N3AOG	**3**	**AA3GN**	**3**	NC1I	2	WA3PEB	2	**W0RSJ**	**2**
N2SCJ	2	N2CEI	2	**WC2K**	**2**	**WB2YEH**	**2**	KD4UPF	2
N3VBG	2	**N2SB**	**2**	N3EMY	2	KN3X	2	KD1DU	2
N2TZV	2	**K2TXB**	**1**	N1BWT	1	KE3WA	1	K1ZKR	1
W2FU	1	W3ZZ	1	N3EMA	1	N1DVL	1	N2UAH	1
KD2Q	1	N1MUW	1	KB1RP	1	**W2SK**	**1**	K2XX	1
KE1CO	1	N2DKP	1	KG2EH	1	K2MLB	1	N3KRE	1
K3SFS	1	**K3ESJ**	1	**W2UR**	**1**	K8ZES	1		

And the winner is:

W3HFY with 47 check-ins **!**

Total Different Stations in 1996 = 89
New Stations in 1996 = 27
Total Stations Since 1988 = 242
Pack Rats (at least once) = 30

Congratulations to Hal, W3HFY, on checking-in to 47 of the 51 432 MHz Pack Rat nets in the calendar year 1996. Hal is a long time Pack Rat who has been on VHF and above for longer then I can remember. There will be a certificate awarded to commemorate this effort.

Thanks are also in order to Dave, W3KM for working with me on shaping a fine piece of software to track the net activities. The program started out very simple and soon grew into really useful tool for a net control station.

Thanks to all the loyal net members who check-in week after week and help maintain at least a minimal level of activity on the band. It always nice to know that your station is still working and any changes result in the desired improvement. The nets are stabile sources of reference signals to gauge your progress.

73
Your Net Control
Ron WA3AXV

VHFTIP- N Type Connectors

By: Ken ,KP4XS/W4, EM84xp

Here is my first contribution to VHFTIPS! After spending 2 weeks installing N-Type connectors on RG-214 while in the AIR FORCE during a tour of duty in Iceland I became an "Expert" in doing these things. One thing I have noticed when troubleshooting cable problems is the poor assembly of the N-connectors. Here are things to look for in a properly made N Type connector:

1- The connector should NOT spin around the cable. If it spins even a quarter turn then something is wrong with it. Either a gasket has been left out or the wrong washer or gasket was put in the wrong place.

2- A properly installed N connector has NO shield visible anywhere. If you can see the braid then the cable wasn't cut to the right dimensions for assembly. Odds are that the connector spins around the cable too.

3- The center pin of the N connector should be flush or just a teeny tiny bit below the outer retaining leaf of the connector. If the pin sticks out above the leaf ring there is a good chance that you will damage the female connector that mates with the improperly assembled Male N connector. I have busted open the female leaf pin on the back of a Yaesu FT726 because I borrowed a cable and didn't check to ensure proper assembly of the N male connector on the RG-213 cable. When you screw on a connector with the pin extending too far it will open the female leaf like a banana peel once the edges meet and start forcing against each other. The female connector always loses!

4- Once the connector is properly assembled, ensure that the center pin is centered by using the leaf separations as a cross hair guide. It will be easy to center the pin using a small Needle nose pliers and applying a small amount of pressure on the pin to get it centered. A center pin that is off center can also damage the female connector. Disclaimer- this doesn't work well with 9913 type cable with solid center conductor. The solid center conductor doesn't bend very easily and chances are that the center pin housing will tear open as it has done to me a few times. The moral of the story? Don't use 9913 solid center conductor. HI

5- When you trim the braid back during assembly make certain there are no strands that fall over the lock washer assembly. These will twist and break when you tighten the N connector and wind up causing you lots of grief at some point. I use a pair of linemen's scissors to cut away excess braid. They work great and cut through the first time out. Comb the braid out first using a scribe or some other small pointy tool. This will make sure that the braid has extended as far as it can and won't extend further once you start tightening up the connector. I have never had an N connector cable assembly fail at my station. None of the connectors spin on the cable and I can place a straight edge flatly over each and every one of them. I have seen more problems in VHF/UHF stations due to Poorly assembled N type connectors than any other types of problems. Hope this helps someone avoid damaging a female n connector on a rig or from damaging an amp due to a shorted connector/cable assembly.

Added note by Jim Aguirre WB7DHC:
Good discussion on Type N connectors. One additional tip for combing out the braid: instead of a "scribe" or similar tool, use a small wire brush; it does a super job of straightening the braid. I use a small stainless steel brush (just a bit larger than a toothbrush) that I bought at a welding supply outlet for about $3. It works great!-----

ATTENTION ALL SMIRK MEMBERS!!!

George and Lisa, N0EOQ, KA0NNO---EM24

HELP!! We are in the mist of making a membership list which will contain over 6000 members with call sign, address and smirk numbers. This new list will be a program that you can search for smirk members by either call sign or smirk number. before we can finish this list we need your help.

If you have changed your call sign in the past 20 years or more and if your old call sign is listed in either Buckmasters or QRZ callbook on line and it comes up with "no data found" we would like you to send us an email with the correct call and your Skirk number, so we can update the Smirk membership list.We have experienced that over 150 call signs so far have come up with "no data found". We have experienced that 20-30 of these 150 have new calls that we were unaware of. we do not want to make any mistakes with your call sign that other members might think you don't exist. Please email any changes.ka0nno@mail.cswnet.com http://www.cswnet.com/~ka0nno

VHF+ NEWS & ACTIVITY

By Jerome Byrd, K3GNC

"THE CONTEST RAVEN" PART II

AH DISTINCTLY I REMEMBER IT WAS PASSED A BLEAK DECEMBER,AND EACH SEPARATE DYING EQUIPMENT WROUGHT ITS GHOST UPON THE FLOOR. EAGERLY I WISHED THE MORROW, - VAINLY I TRIED TO BORROW FROM MY 1296 IF WITH SORROW, SORROW FOR MY LOST FREQUENCY 222 POINT 14 - FOR THAT RARE AND RADIANT FREQUENCY THAT VHF+ PEOPLE CALL 222 POINT 14- BROKEN THIS CONTEST FOR EVERMORE.

To Be Continued...

ON THE BANDS:

Six meters, which has opened sporadically all through December, gave the January Contestors, who were alert, a real treat! The Band opened briefly Sunday to the north, and then to the west. Contest conditions were dead on Saturday, but were at least average on Sunday afternoon.

E Skip in January!!! Ron - WZ1V (FN31) and myself - K3GNC (FM29) worked several Florida Stations on E skip Saturday afternoon on January the 11th. I worked WA4CHA (EL88) and WA4LOX (EL87). I alerted PACKRATS via the 222 repeater, but the opening was very spotty here. It appeared to be better in New England.

STATION WATCH:

Terry - WA3LTB (EN92)A is quite active on 2 meters. There is a net on 144.210 every Friday at 0000 UTC with the net control in EN92. NO3I - Bob is quite active on 432 from en90. His loud cw is heard in our area on a regular basis.

WHERE OH WHERE IS CARMEN SANDIEGO:

Dennis - VE3ASO is back. I did not work him, but others did during the January Contest. He was only on 144 and 222, but, hopefully will be back strong by next year. Has anyone heard from WA8TJL (EN91) lately? Alex - W4FSO (FM14, FM05) has been sporadically active due to health problems. He appears to be improving - GREAT! Tom - N2DKP (FN13) has been quite active recently. He is engaged in a major dispute regarding 'RFI' and runs low power. He still puts in a decent signal into our area.

LET LOOSE THE DOGS OF WAR:

Well kiddies - Kiddies, the big one is over The PACKRATS were out in force! I heard that the Northern Lights boys might have had good 6 meters conditions. Several N.E.W.S. members will turn in big scores. Who will win? Who will place? Stay tuned for our traditional 'March' issue of 'CHEESEBITS' for a complete run-down on how our club did!

DSP HARDWARE & SOFTWARE COMPARISON

Stu Olson ,N7QJP, DM33

Well, I got a number of suggestions to put these comments out on the reflector. No problem, here it is. Before I get started, let me state that I have no loyalties (or family connections) to Brian, K6STI (DSP Blaster software developer) or TimeWave Tech. I own a copy of the DSP Blaster software and a TimeWave DSP-9 (recent firmware upgrade to 3.0). I also recently had the opportunity to borrow a TimeWave DSP-59+ and see how it worked compared to my two DSPs.

Here are my thoughts, in no particular order.

To run the DSP software, you must have a 486 or better machine, VGA, math coprocessor, mouse, and a 16-bit Creative Labs sound card (Sound Blaster 16, Vibra 16, or AWE32). I can not verify proper operation on clone 16 bit sound cards, although I do not think they will work. I am using a Pentium 75 and Win95. The DSP Blaster software is the latest release, version 1.12. There are no special digital modes that I am aware of. It is my understanding that K6STI has other software for this (or is currently working on it).

My first impression of the software was that I did not like it. Why...it was different. I had my DSP-9 for about 18 months and was comfortable using it. The software DSP was new, different, etc. After I had it for a few days, I started to get over that "new" feeling and got into using it. I hooked up my FT-736R so I could do side-by-side comparisons...A/B switching, etc. I wanted to be able to switch back and forth between both DSPs and hear the difference, if any. I ran none of these processed signals through an analyzer, o'scope, or even a cheap DVM (grin). This was all done with my two ears (which were working OK the last time I had them checked...would someone please answer the phone that keeps on ringing!).

One thing I immediately noticed is that the software does not decrease the "clear channel" noise nearly as much as does the DSP-9. By clear channel, I mean that no one is talking...just good old background noise. With my DSP-9, I routinely dial up the calling frequency and then turn on noise reduction. The noise goes away (almost like having squelch without the drawbacks). I spoke with K6STI about this and he gave me a long and quite complete explanation for this....having to do with the way noise cancellation works, that the DSP-9 is also killing part of the weak signal when it does this (sometimes called soft-squelch), etc. I can not prove or disprove his explanation. I am not a DSP engineer. All I can tell you is that if you want don't wish to hear noise when no one is talking, don't get the software DSP.

Heterodyne reduction....they both do a very nice job. I could not really tell any difference between either unit. I went down on 40 meters in the evening to check this out, since I couldn't find that many heterodynes up around 144.200. I did, however, kill a couple of birdies that I found lurking down on 6 meters. As I said before, they both did a good job in this area, without screwing up the desired signal.

Noise reduction on a really weak SSB signal.....I tried this on 2 meters and also on 432 during the contest last weekend. After spending significant time evaluating both, I think the software DSP wins this one by a little bit. There were a several times when I could pick out more words, and when this was the case, the overall sound of the audio signal was more pleasing to listen to. (Of course, I was not running the signals through the same audio amps and speakers either, and this could account for the difference in the sound as well.) I believe the software DSP digs a bit further into the mud and brings up a better sounding signal.

I do not do a lot of CW work, although I spent some time trying out both in this mode. The software version also takes the honors in CW weak signal as well. It has a very nice CW peaking filter, which has an automatic fine tuning option to really tweak the signal. I was able to track a operator with a rather drifty VFO without having to fool with the controls, nice touch!

Low and High pass filters.....they can be controlled separately in the software. On the DSP-9, you must use them as a single function. I liked being able to switch in a 250 Hz HPF while leaving the audio up at 1500 Hz untouched. I found that a lot of nasty noise is taken out when turning on the high pass filter. I used this more than I did the low pass filter. Having two independent controls, with multiple settings each, is much better than the DSP-9 with only a couple of bandwidth selections.

Automatic Gain Control....the software has it, the DSP-9 does not (the DSP-59+ did though). It seemed to work quite well in the software, although I really don't care to use it. Perhaps it would be more useful in a faster paced contest were you have lots of signals with widely varying signal strengths. I prefer to use the volume control myself.

Support....K6STI normally answered my e-mail requests the same day...often times within an hour or two (this was over the holiday season). The DSP-9 folks always answered my e-mail within 1 business day (and even once on a Sunday). So, I guess they both get a high rating here. Nice to see that customer support still means something to some people! FYI...I have already received one update from K6STI, no charge. He distributes them via e-mail attachments (hard to do with the EPROM in my DSP-9).

So...at this time, it appears that the software version is quite a bit ahead, eah? Well, yes and no. One thing that I found that I REALLY HATE is the fact that I can't run the K6STI software in a window in Win95. The computer does not give it enough time, and the software bogs down...distorts, stops processing, complains about interrupts, etc. If I run it full screen, it is fine. It also does not do well at all running as a background process. In defense of the software, let me state that it is written in assembly language and directly accesses the cards hardware. As such, running it in any kind of Windows environment would not be the preferred method to use. It is a DOS based program, and from what the manual says, does best running that way. It can also be loaded as a TSR and is suppose to run well in the background in this manner. (It is only about 35K bytes in size...ah yes, those good old days of compact assembly language code!) Anyway, if you plan on running your Windows based logging program and this at the same time...good luck. Every time you switch over to log a contact, your DSP goes south!

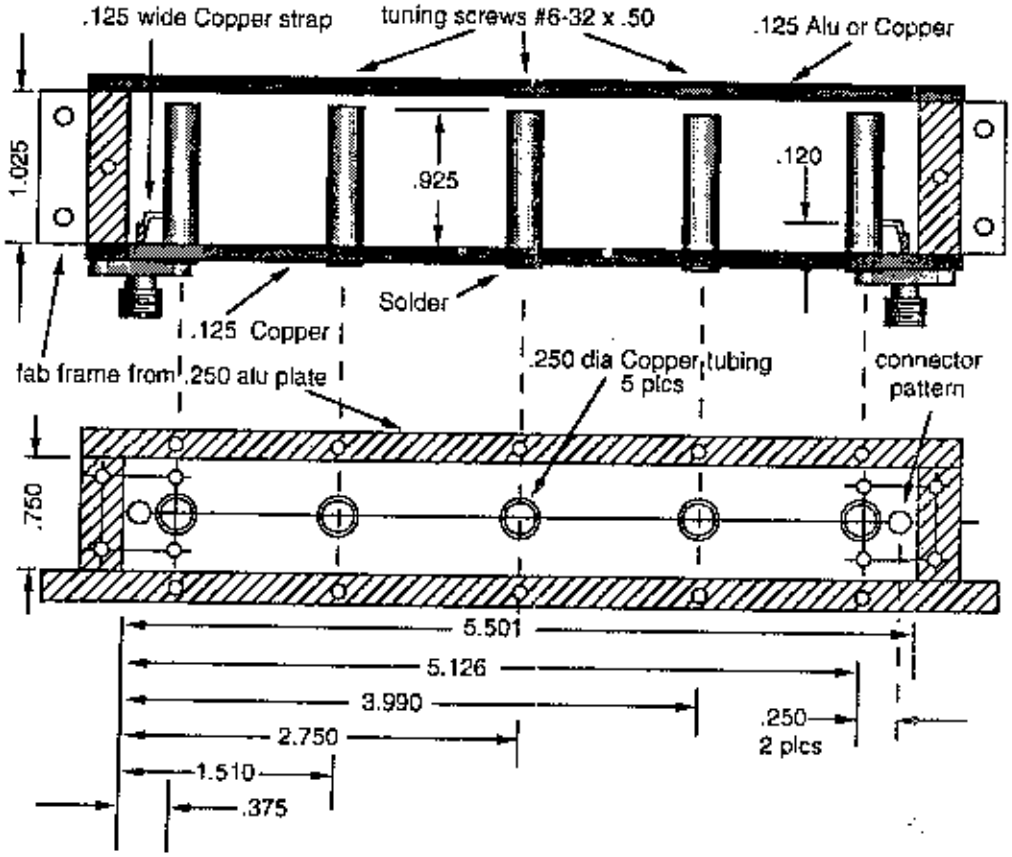
I usually don't take my PC workstation roving with me...so using the software in the Jeep is a no go for sure. However, it is really easy to toss the little old DSP-9 in the front seat and use it. Score a point for the DSP-9!

Bottom line....PRICE always means something here! For the price, you can not beat the software DSP. It sells for $100, and when compared to a hardware DSP, that is quite a bit cheaper. It sure is not portable, unless you have a notebook with compatible sound card to support it. I have had a couple of people come over and use my station, and I fire up the software DSP for them to try. They were very impressed with it...having never used a DSP before. If you are a Windows person, and you MUST use other software at the same time, you may not be very happy. If you are a good old DOS person, this should not cause a problem.

Last comment for the road. This evaluation sure as hell was not scientifically conducted. It was never meant to be. If you have more questions, drop me a note. If you DSP is better than either of mine, good. I won't dispute your claims. If you want to flame about these contents...vent your frustrations on the calling frequency thread and spare me. I wrote this up because several people wanted my comments on this. I hope you have may have gained something from these paragraphs. I wish I had known some of these things before I spent my money (on either one for that matter). Good luck and happy DSPing!

2302 to 2340 MHz BPF

loss = 2.0 dB avg
designed for 28 MHz IF



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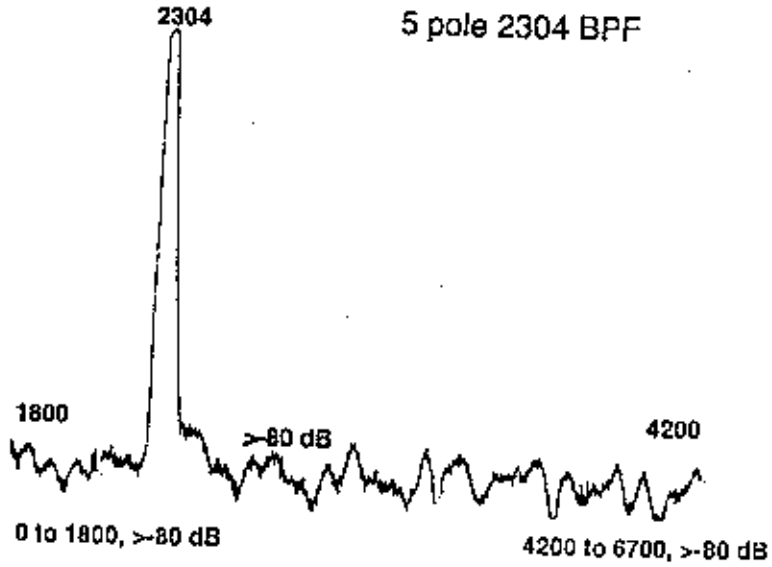
2302 to 2340 MHz BPF

5 pole 2304 BPF



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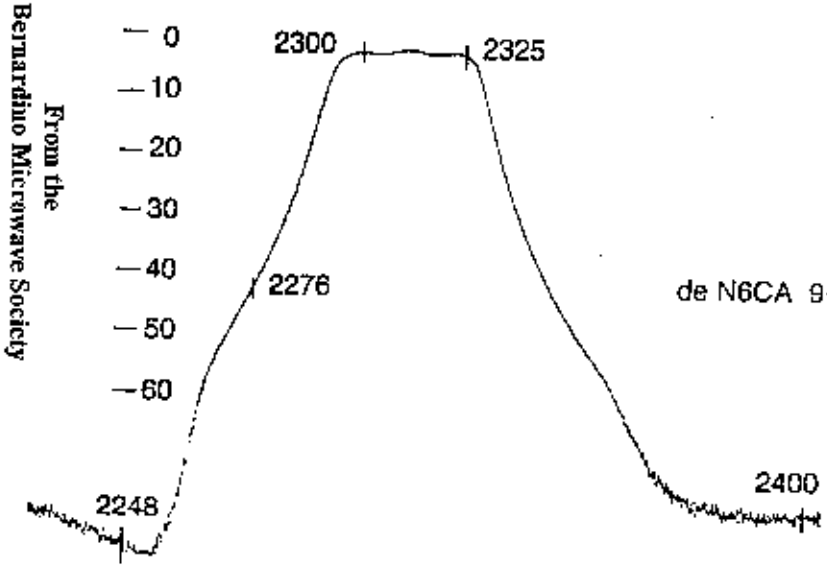

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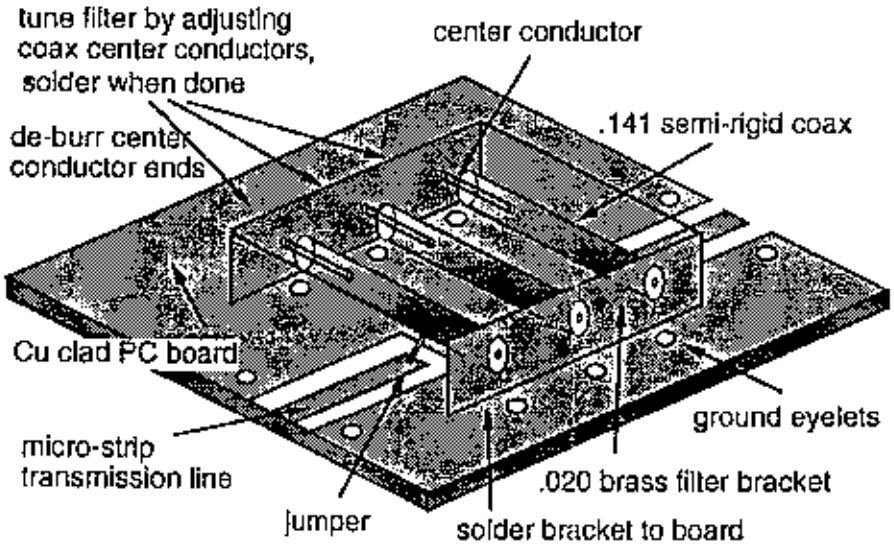
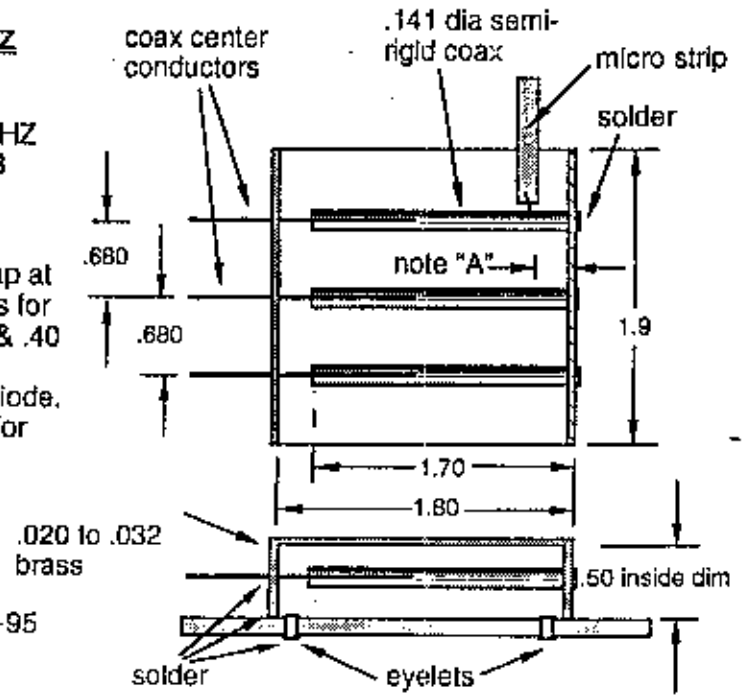
PC mount Combline BPFs



900 MHz

BW =10 MHZ
loss = 2 dB

note "A", tap at .210 inches for 50 Ohms & .40 inches for multiplier diode. Use .6 pF for capacitive coupling.



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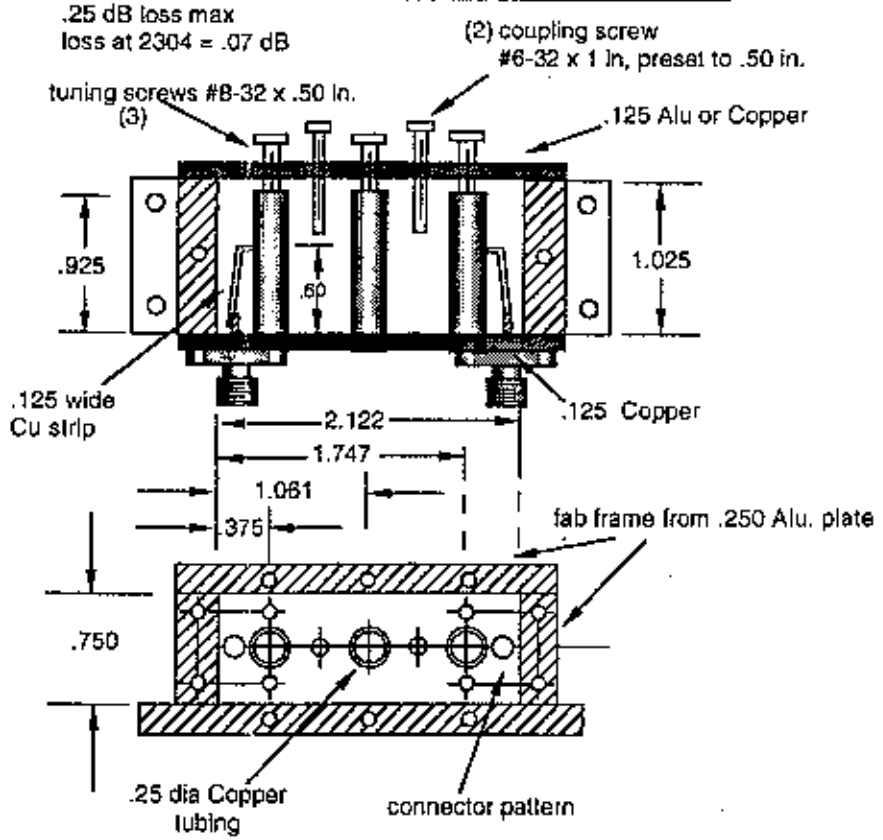
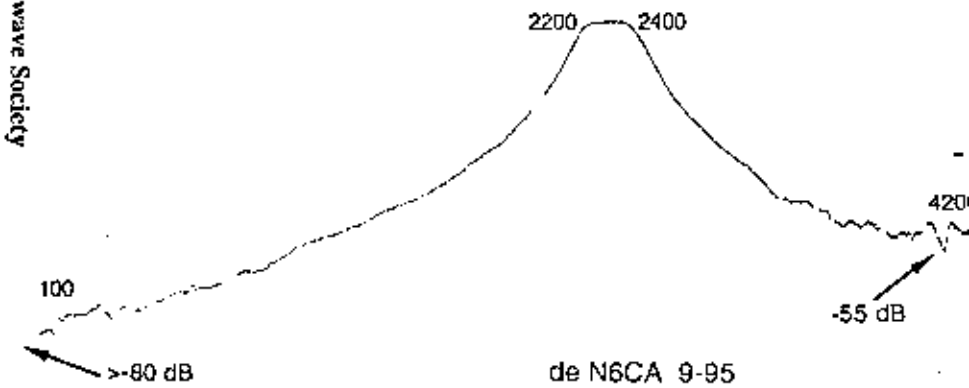
2304 MHz BPF

2200 to 2400 MHz
.25 dB loss max
loss at 2304 = .07 dB





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