

# PACK RATS'



**PACK RATS**

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

# CHEESE BITS



ARNS

MT. AIRY VHF RADIO CLUB, INC., PHILADELPHIA, PENNSYLVANIA  
50.125, 144.150, 220.125, 432.110, 1296.110 Mhz - W3CCX - Repeater 222.98/224.58 Mhz

Affiliated Club: AMERICAN RADIO RELAY LEAGUE

Meetings: Third Thursday of each Month at 8:00 P.M.

Southampton Free Library, 947 E. Street Road  
Southampton, Pennsylvania 19866

VOLUME XXX

MAY 1988

NUMBER 5

## THE PREZ SEZ

The 144 Mhz and 220 Mhz sprints are over and the Pack Rats were well represented on both nights. 432, 903, 1296, 50 and this year 2304 Mhz are coming up. Those contests are short and sweet and even a short time on can yield a lot of fun and maybe a new grid or two.

April's general meeting was a sample of the kind of technical presentations we would like to have on a continuing basis. Paul, WB3JYO, gave a talk on low pass filter design and Dave, W3ZD, gave a demonstration of how to build hardline connectors from UG-21 type N connectors and 1/2" copper pipe fittings. Both Paul and Dave gave excellent and informative presentations. I'm sure everyone present at the meeting went home to build filters and connectors.

May's general meeting is A.R.R.L. night. This is a good opportunity to meet our League representatives and to ask any questions we may have. It is also a good time to present any opinions we may have on pending decisions before the League. (For example, N6CA's beacon band plan proposal)

This year, the June VHF Contest is coming home to Pennsylvania! Right into our own backyards - Hilltown. The first preliminary meeting will be Saturday, April 30th at Phil, WA3NUF's home. We need people to act as band captains, operate stations, help erect and tear down and in general get involved. Everyone should be able to participate in this club activity - It's close to home and there are plenty of things to do to prepare for an activity of this scale.

I'll see you all at the meeting.

73,

Bob, N2SB

\* \* \*

### VISITORS - APRIL 21, 1988 MEETING

WB3DAD - Joe Colussi - Ambler, Pa.  
W3AJS - Charles E. Keener "Ed" - Oreland, Pa.  
KT2B - Pete Putman - Doylestown, Pa.

### CHANGE OF ADDRESS

KA3KSD - David A. Mueller  
2555 Old Trevoise Rd.  
Apt. L-8  
Trevoise, Pa. 19047

Pack Rats CHEESE BITS is a publication of THE MT. AIRY VHF RADIO CLUB, INC. Philadelphia, Pa. and is published monthly.

SUBSCRIPTION RATE - \$5.00 PER YEAR

We operate on an exchange basis with other publications. Anything that is printed in CHEESE BITS may be reprinted, unless otherwise stated, provided that proper credit is given.

SWAP SHOP ITEMS - NO CHARGE

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING: THE THIRD THURSDAY OF THE MONTH.

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Elkins Park, Pa. 19117  
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609-783-9478

CLUB HISTORIAN:

W3CL, HARRY B. STEIN

MONDAY NIGHT NETS

7:30 PM - 50.125 MHz  
8:00 PM - 144.150 MHz  
8:30 PM - 222.98/224.58  
8:30 PM - 220.125 MHz  
9:00 PM - 432.110 MHz  
9:30 PM - 1296.1 MHz

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CALENDAR OF COMING EVENTS  
By Harry Brown, W3IIT

MAY

- 1 Suffolk County Radio Club Indoor-Outdoor Fleamarket will be held at Republic Lodge No. 1987, Long Island, N.Y. Talk-in on 144.61.21 and 146.52.
- 1 Delaware County ARA Hamfest in Drexel Hill.
- 6 ARRL 902 Mhz Spring Sprint Contest. 7 - 11 PM (Fri. evening)
- 10 EME Perigee
- 12 ARRL 1296 Mhz Spring Sprint, 7-11 PM (Thurs. evening)
- 12 Pack Rat Board of Directors meeting at the QTH of WA3AQA, Walt Zumbach at 8 P.M. All interested parties welcome.
- 14 LADIES NITE - Warrington Motor Lodge, Warrington, Pa - send in reservations pse
- 15 Tamaqua Transmitting Society Hamfest in Tamaqua, Pa. at the New England Valley Fire Company. Talk-in on 146.67 and 147.105.
- 15 New Moon
- 15 Warminster Amateur Radio Association Hamfest at the Grange in Wrightstown, Pa. Talk-in on 146.69/.09 and 146.52.
- 19 Pack Rat general meeting (membership) at the Southampton Free Library on Street Road in Southampton, Pa. at 8 P.M. All club members and VHFers invited. Nominations for the election of officers in June will be accepted. ARRL NITE: Speaker: Robert Bennett, W3WCQ of the VUAC. Guests: Hugh Turnbull, W3ABC, Atlantic Division Director; Kay Craigie, KC3LM - E. Pa. Section Manager. Dinner at 6 PM The Buck Hotel.
- 20 Atlantic Division Convention at the Monroe County Fairgrounds near Rochester, N.Y.
- 21-22 ARRL 50 Mhz Spring Sprint Contest 7-11 P.M. (Sat. evening)
- 20-22 14th Annual Eastern VHF/UHF Conference sponsored by the Northeast VHF Society will be held at River College, Nashua N.H. For further info call Lewis Collins at 617-358-2854.
- 22 Bergen County Amateur Radio Association Spring Hamfest at Bergen County Community College in Paramus, N.J. Talk-in on 146.19/79 and .52.
- 26 ARRL 2304 Mhz Spring Sprint Contest, 7-11 P.M. (Thurs. evening)

LAST CHANCE TO PAY YOUR DUES!!!!

\* \* \*

Dear Harry:

Thank you for the warm greeting you gave me as a visitor to the Pack Rats meeting last Thursday. I enjoyed the homebrew night very much, and felt the drive up from Baltimore to be well worth the effort. I also appreciated the chance to be a judge in the contest as it gave me a good excuse to play with all the electronics goodies.

Hope to get a chance to visit again, and certainly to attend the technical conference this Fall.

Sincerely,

Jerry Hinshaw, N6JH

SABA ISLAND DX-PEDITION (PJ6)

By Jim Holt, N3AHI

An expedition to Saba Island manned by 6 meter DX society members Mario Karcich, WB2CZB, Jim Holt, N3AHI along with Jack Laing, W1EXC has been finalized for July 7 through July 14, 1988. Operation will be on all bands, 160 through 6 meters - SSB & CW. Equipment will include a Yaesu FT757 and 2 Kenwood TS-680's with wire antennas on HF and 3 & 5 element beams on 6 meters. Solid State "Brick Type" amplifiers will be used on 6 meters. Particular attention will be paid to exploring multi-hop propagation paths and 6 meters to the U.S.A., United Kingdom, Europe and the Americas. In addition, WB2CZB - a member of QRP A.R.C. International will actively solicit QRP Contacts. The special event callsign PJØM has been granted by the PJ authorities for this activity. QSL'ing is via Mario, K2MUB...SASE's please. The Saba Island grid square is PK87.

\* \* \*

PROPAGATION REPORT

By Paul Drexler, WB3JYO

Several band openings to be reported this month - normal activity is on the rise and the Spring Sprints have brought added activity to the bands.

An aurora on the 26th of March is reported by Rick Connors, WC2K. Rick reports aurora thru 432 Mhz. The opening started around 2000 GMT and lasted for over 5 hours with 8's and 9's to be worked. Mike, N3BBI reports 59 signals but rather poor activity. How many more grids could have been worked if stations were on?

A short 144 Mhz opening to 8 land has been reported but unconfirmed by this author. On April 1st 2 meters again showed signs of life with enhanced conditions to FM16 and several other grids.

The second aurora was observed on Easter, April 3rd, at 1930 hrs. GMT. Although the opening was rather short lived - only about 1/2 hr. long - the author worked grids FN41, FN42, FN03, FM18 and EN84 on 2 meter CW. Signals were all strong, including the EN84 contact with SBØWAQ/8, who was only running 160 watts.

On April 18th the 220 net experienced some enhancement with N4HB (FM17) checking in with an S5 signal. Radar was heard on 432 the same night but no real enhancement was observed.

Activity during the 144 Mhz Spring Sprint was very good and conditions were at least average. This author worked 31 grids in 3 hrs. of operation. The 220 Sprint wasn't as exciting however, several good grids were available to be worked. CU in the rest of the Sprints!

\* \* \*

SCORE MEMBERS TO REACTIVATE FM27 FOR JUNE CONTEST

Doylestown, Pa. - Members of the Society of Contest Operators and Radio Experimenters (SCORE) will reactivate Chincoteague Island, Virginia in grid square FM27 for the 1988 ARRL June VHF QSO Party during June 11-12, 1988.

Station KC2PX/4 will be active on all bands from 50 Mhz through 2304 Mhz with large antenna arrays and high power amplifiers. Modes used will include SSB, CW and FM. In addition, secondary stations will act as "rovers" to activate FM28, FM27 and FM26 on 2304 and 10 Ghz.

Members will be looking actively for microwave contacts during the standard activity hours on 903,1296 and 2304. Every effort will be give out this grid on these bands so quick-turnaround schedules will be appreciated.

QSLs will be handled by Ivars Lauzums KC2PX, 52 Stonewyck Drive, Belle Mead, N.J. 08502.

\* \* \*

SWAP SHOP

FOR SALE: IBM PC/XT Clone, 1 yr. old \$450.  
640K RAM, 2-36 OK floppies, multi I/O board,  
Panasonic KX-P1091i NLQ dot printer, Amber  
TTL monochrome monitor and display card or  
RGB Color monitor with CGA display card.  
CONTACT: John, KB3XG

Phone: 215-340-0847 (evenings)

FOR SALE: Kenwood 3600A - 440 Mhz walkie-  
talkie w/batt. pack. \$225.

CONTACT: Charley Zeager, WA3OQR  
Brith Sholom House, Apt. 735  
3939 Conshohocken Avenue  
Phila., Pa. 19131

FOR SALE: From the estate of W3JZ, Yaesu  
FT101ZD transceiver \$425; Yaesu FV 101Z  
(External VFO) \$75; Heathkit SB200 amp.  
\$275; Matchbox ant. tuner, Kenwood TR-7400  
\$125; Heathkit HO-1250 dip meter - \$25;  
Lafayette HA460 \$75; BC221J freq. mtr.

CONTACT: Harry Stein, W3CL  
Phone: 215-887-5052

FOR SALE: Kenwood TS-520 \$350; Heath SB-  
220 - 80 thru 10 linear \$260; Brigly freq.  
counter \$110; Drake TR-22 \$80; Lafayette  
HA460 (\$80); Tri-bander \$95; Rohn 60 ft.  
tilt-over tower \$475.

CONTACT: Mort - WA3EPS  
Phone: 215-657-2221

FOR SALE: Alan 50V10 step attenuators,  
0-10db, 1.0db steps, 1 watt, 50 ohms,  
max swr 1.4:1 @ 2 Ghz, insertion loss  
.4dB @ 2 Ghz. One SMA connector, One  
"N" connector, spec sheets. Pack-Rat  
price \$25 ea.

CONTACT: W3GXB, Robert G. Fox  
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FOR SALE: Model 15 teletype converted  
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good working condx \$65; Tubes, tape  
recorders, cassette, reel to reel, 8 trk.  
tapes. Resistors, caps (fixed & variable)  
switches, parts, etc. H.O. train stuff.

CONTACT: Doc, K3GAS  
Phone: 215-635-1078

COMMERCIAL ADS

LOOP YAGIS: 902 Mhz 33 element \$80 kit, \$97 assembled and tested. 1296, 45 element \$80  
kit, \$97 assembled tested. 1296 - 55 element (New "Super Looper") \$95 kit, \$119 assembled  
and tested. 2304 - 45 element \$70 kit, \$89 assembled and tested. Also, available:  
Element & hardware kits for above, 2 and 4 way power dividers, stacking frames, and power  
dividers. Discount on complete arrays. Solid State Linear Amplifiers, 13.8 V.D.C.: 1296  
Mhz 8W in 35W out \$305 (\$210 in kit form) 1 watt in 18 w out \$255. 902 Mhz 10w in 40w out  
\$305, 1 watt in 20w out \$255. Coming soon: 65 watts solid state linear for 1296. GAAS FET  
PREAMPS: Under 1dB N.F. 902 \$80, 1296 \$80, 2304 \$139. LMW Microwave Transverter Kits: 1296  
1 watt \$170, 2304 0.4 watt \$219, 2304 preamp \$63. Universal 1 Ghz L.O. kit \$44 less xtal  
700-800 Mhz L.O. kit \$47. Xtals available. Write for complete catalog: DOWN EAST MICROWAVE,  
Bill Olson, W3HQT, Box 2310 R.R.I. Troy, ME 04987 (207) 948-3741.

\* \* \*

TID BITS

Sunspot No. for March 1988 = 75.8 Smoothed No. for September 1988 = 39.1.

Randy Bynum, WB2SZK reports taking the family on a 3 week vacation to New Zealand  
and Australia. Keeping very busy working on his own business. Sends 73 to the gang.

Received a letter from Jim, N3AHI - reports a dxpedition - the notice elsewhere  
in this issue. 73 Jim.

Bill, W3HQT, keeping very busy - now has a 100 ft. tower up. Might be in our  
area this Summer - if he can get away from all the work on his new house plus a greenhouse  
for Sandy. Keeps up his teaching skills and guitar playing in a local country dance band --  
WOW!! Good luck folks.

Congrats to Mark and XYL (WB2JHG) on the birth of Brooke Emily Adams on April  
17, 1988. Mother and baby doing fine.

(CONTINUED ON PAGE 6 )

TID BITS CONTINUED

Dave Martin, WB8ZAR underwent lower spine surgery. A speedy recovery, OM. K3EOD and K3DLS back home from the hospital.

Was nice to have some members show that we haven't had at the meetings for some time - W2EIF, W3HK and W3RZU. W3RZU, Elio brought his son Joe along. WB3DAD.

Rochester Hamfest, American Radio Relay League, Atlantic Division Convention combined with New York State Convention, May 20-21-22, 1988. Headquarters hotel is the Rochester Marriott Thruway Inn. Special rates are \$75 single or double. Call the hotel direct, 716-359-1800. You MUST tell the reservation clerk you are with the Rochester Hamfest. Tickets are: \$6.00 advance, \$7.00 at the gate. Combined registration and Saturday banquet, only \$20. Flea market tickets: \$16 per table indoors, \$5 per parking space outdoors. Indoor space by advance order only. All flea market sellers must hold a registration ticket.

\* \* \*

FROM THE UN-OFFICIAL JUNE CONTEST CHAIRMAN

After five years of taking our show on the road, the Pack-Rats are returning to Hilltown for the June 1988 VHF Contest. For our returned members, Hilltown is sure to bring back many fond memories, and for our newer members and those who could not make the trip during the past expeditions - this year's local event is your chance to participate in one of the best VHF/UHF Hill-topping operations on the East Coast.

Mark your calendars now. The June Contest will be held on June 11 and 12. There's plenty of work to be done and everyone's help is needed to make this one of our best ever contest efforts. By the time this is printed, the first planning meeting will have been held and band captains established - that's just the beginning, we need your help for set-up, take-down, operating, roving, etc., etc.....

Don't kick yourself later for not being part of the fun experience - join in NOW!!!

Phil, WA3NUF

\* \* \*

From ARRL Letter --- VHF/UHF BEACON FREQUENCIES-DATED APRIL 8, 1988

The ARRL Membership Services Committee (MSC) met on March 26 in Torrance, Calif. Present were representatives of the VHF/UHF community, including the immediate past chairmen of the VUAC, VRAC and representatives of the Digital Committee.

At the meeting the MSC accepted and endorsed the earlier recommendation of the VJAC regarding beacon frequencies. Under this plan the new beacon segments (in MHz) would be: 144.275-144.300, 220.275-220.300, 432.300-432.400, 902.300-902.400, 1296.300-1296.400, 2304.300-2304.400, 3456.300-3456.400, 5760.300-5760.400, and 10368.300-10368.400.

The FCC would be petitioned to amend Part 97 to allow beacon operation on the above frequencies in the 144, 220, and 432 MHz bands. Rule changes would not be required for frequencies above 450 MHz.

The next step in the process is final approval of the plan by the ARRL Board of Directors at its July meeting. The MSC will meet again just prior to the Board meeting. Additional comments on the plan should be sent to the MSC in c/o ARRL HQ.

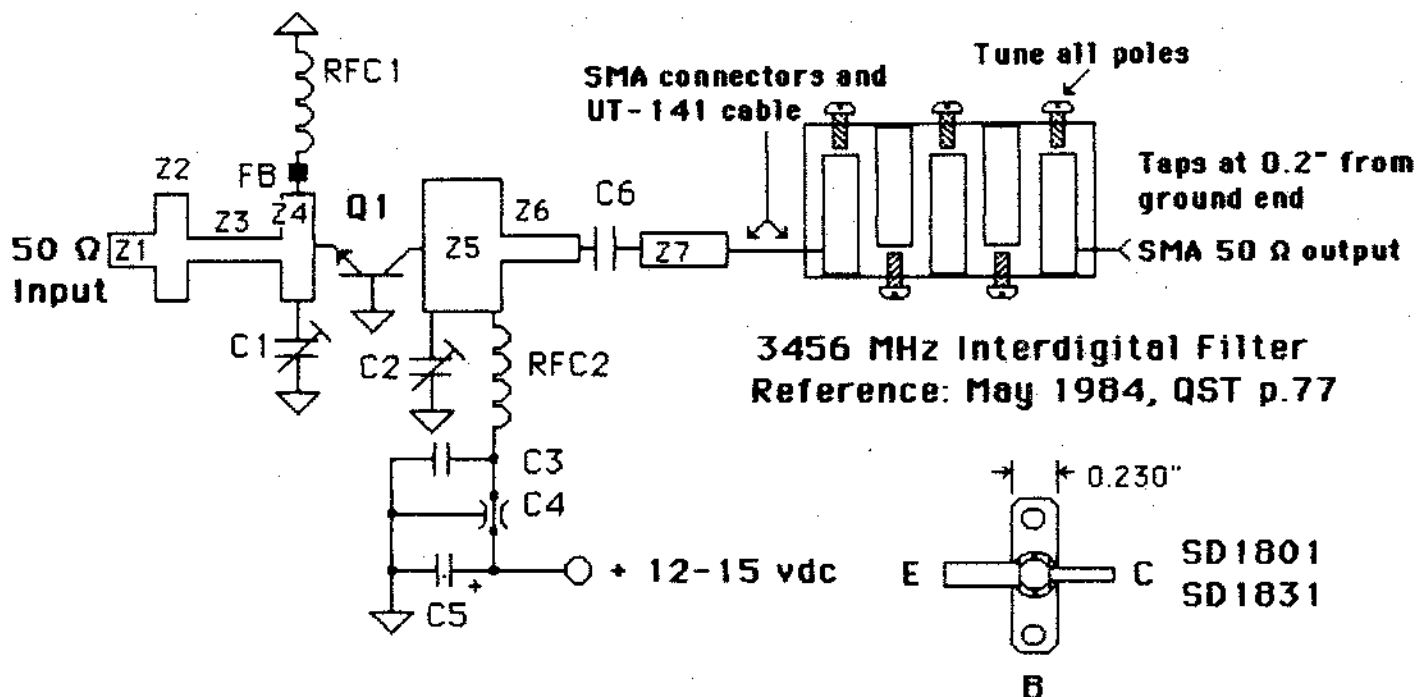
\* \* \*

CENTRAL STATES VHF CONFERENCE CALL FOR PAPERS

The 22nd Central States VHF Conference is being held July 22-24 in Lincoln, Nebraska. ARRL will again be publishing Proceedings of this Conference. Last year there were 175 pages of articles on subjects ranging from VHF propagation to antennas to equipment design.

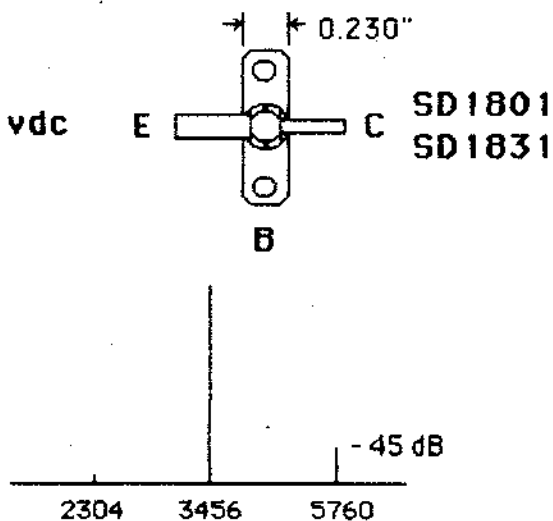
Amateurs active on VHF and above are invited to submit papers for publication in the 1988 proceedings. Papers may be on any topic of interest to amateurs operating at 50 MHz and above. Contact Mark Wilson at HQ for more info. Submissions must be received at HQ no later than JUNE 1, 1988. (from ARRL Letter dated April 22, 1988)

## x 3 Multiplier to 3456 MHz (or 3312 MHz)



**3456 MHz Interdigital Filter**  
Reference: May 1984, QST p.77

Pin	Pout after filtering	
1152 MHz	Vcb 12v	15v
50 mw	50 mw	125 mw
100 mw	100 mw	150 mw



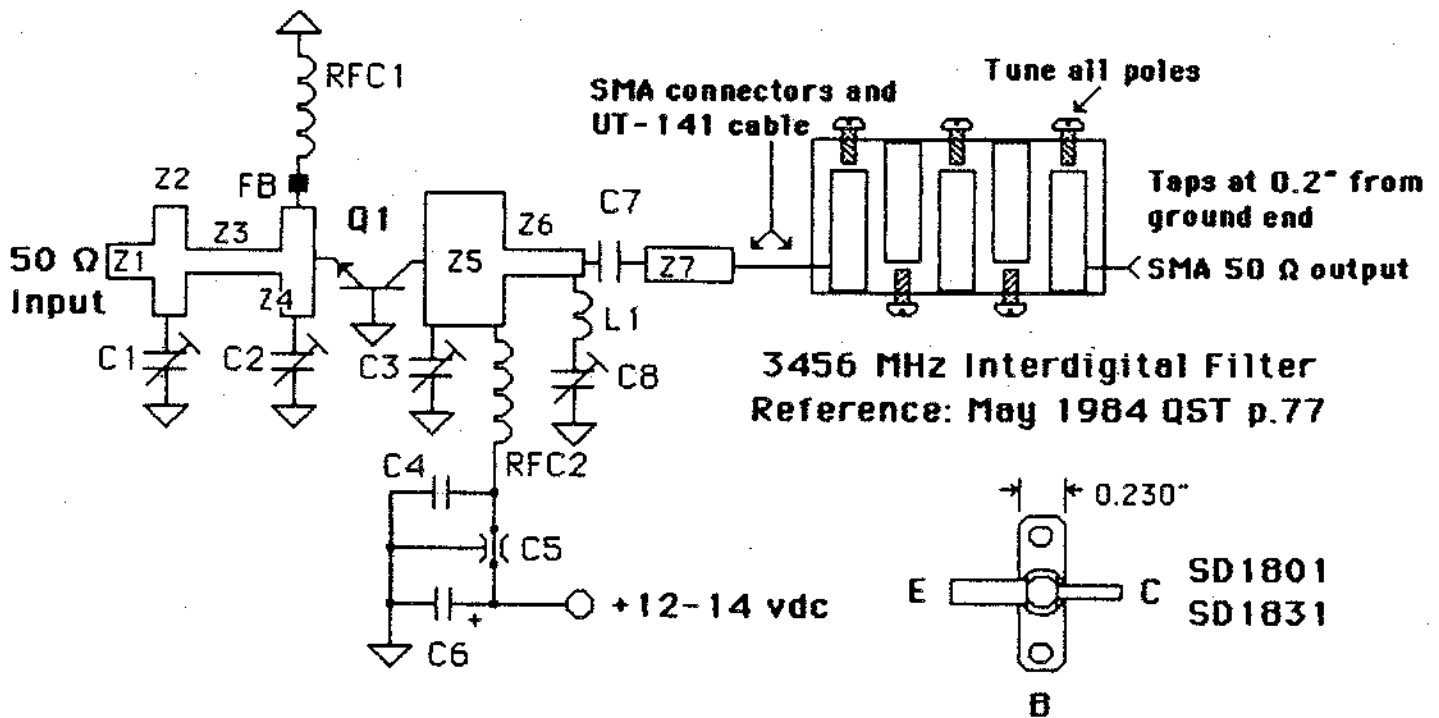
Board material is 1/32" Teflon Er=2.5

- |      |                            |      |                                 |
|------|----------------------------|------|---------------------------------|
| C1   | 0.3-3.0 pf Johanson piston | Q1   | Thomson SD1801,SD1831           |
| C2   | 3 pf Johanson Gigi-trim    | Z1,7 | 0.080" X any length 50 Ohm line |
| C3   | 20 pf chip                 | Z2   | 0.150" X 0.300"                 |
| C4   | 470 pf Feedthru            | Z3   | 0.060" X 0.350"                 |
| C5   | 1 ufd Tantalum             | Z4   | 0.150" X 0.300"                 |
| C6   | 10 pf chip                 | Z5   | 0.200" X 0.300"                 |
| RFC1 | 6t, #26, 0.1" ID           | Z6   | 0.060" X 0.200"                 |
| RFC2 | 3t, #24, 0.1" ID           |      |                                 |
| FB   | Ferrite bead               |      |                                 |

The multiplier stage and filter are tuned as one unit for a stable and clean output. Non-harmonically related signals are down more than 60 dB.

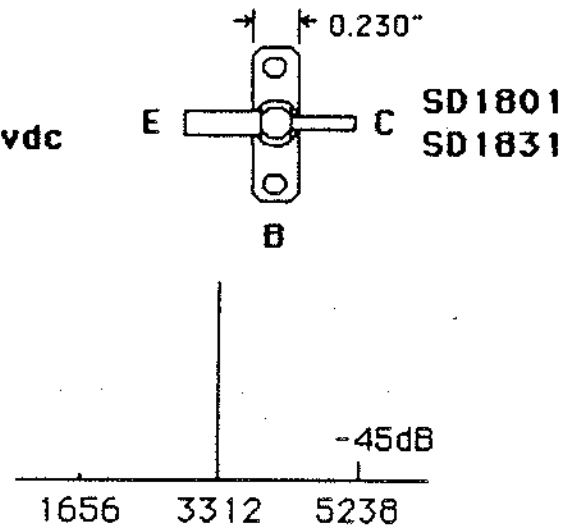
**WA3JUF**  
**D. Mascaro 1987**

## X 4 Multiplier to 3312 MHz (or 3456 MHz)



Pin @ 828 MHz	Pout @ 3312 MHz
40 mw	60 mw
60 mw	125 mw
80 mw	175 mw

**3456 MHz Interdigital Filter**  
Reference: May 1984 QST p.77



Board material is 1/32" Teflon Er=2.5

- |                               |                                      |
|-------------------------------|--------------------------------------|
| C1,2 0.3-3 pf Johanson piston | Q1 Thomson SD1801,SD1831             |
| C3 3 pf Johanson Gigi-trim    | C8 8 pf Johanson Gigi-trim #27293    |
| C4 20 pf chip                 | L1 full mounting lead of C8          |
| C5 470 pf feedthru            | Z1,7 0.080" X any length 50 Ohm line |
| C6 1 ufd Tantalum             | Z2 0.150" X 0.300"                   |
| C7 10 pf chip                 | Z3 0.060" X 0.350"                   |
| FB Ferrite bead               | Z4 0.150" X 0.300"                   |
| RFC1 6t, #26, 0.1" ID         | Z5 0.200" X 0.300"                   |
| RFC2 3t, #24, 0.1" ID         | Z6 0.060" X 0.200"                   |

L1 is the full length of the mounting tab of C8. This combination forms the X3 idler and is the key to the operation of this multiplier. Proper tuning occurs with C8 at approx. 1/4 capacitance. Tune the multiplier and filter as one unit. All non-harmonically related signals are down >60 dB.

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**D. Mascaro 1987**



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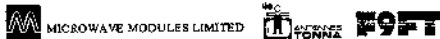
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DoD Tech Recruiter

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