

SECTION 4: AUDIO AMPLIFIER

Install Audio amplifier components C35, C37, C38, C39, C40, C41, C42, C43, C44, C46, C47, C94, C95, C96, C97, D5, D6, D7, D8, D11, Q5, Q17, R24, R25, R26, R27, R28, R55, R56, R64, R65, R67, R69, R70, R71, R72, U5, U8

Carefully take a pair of needlenose pliers and bend leads on U5 TDA2002 to fit PCB holes. Do this gently and check for a fit. When installing 1N914 diodes, the "band" end goes in the PCB square pad. C47 and C98 are non-polarized capacitors. They look like electrolytics, but they are "non-polarized", it does not make any difference which lead goes where.

When all audio-section parts have been installed, set R64, the AGC threshold trimpot to mid-range.

Check J2 input current is less than 70mA. Rotate the volume pot R27 to fully clock-wise position. Confirm a "hum" is present in the speaker when touching R27 wiper pin with your finger. The "hum" should drop out when the PTT button on the Mike is pressed. (Be sure to plug in the speaker Mike for this test!!) U5 runs warm to the touch, you may want to add a heat radiator (not supplied with kit).

SECTION 5: IF AND PRODUCT DETECTOR

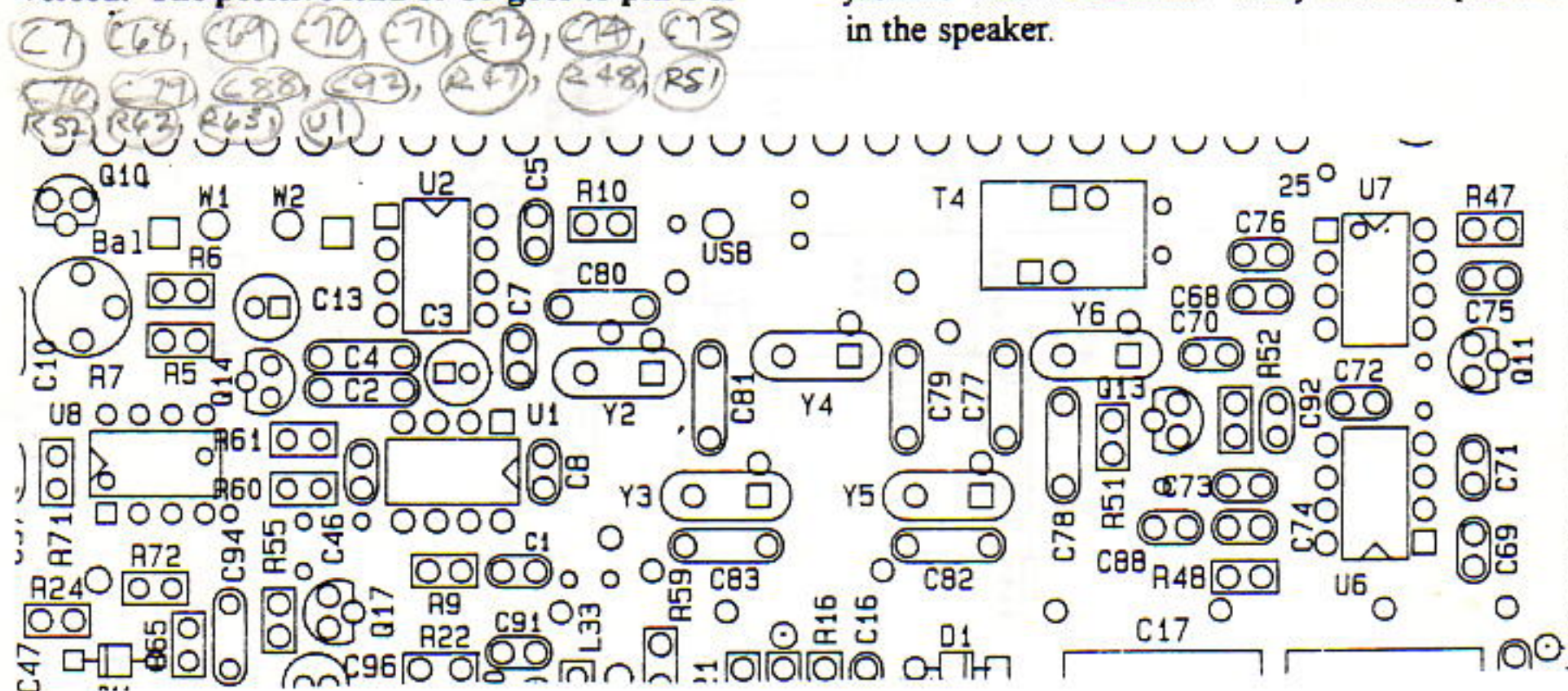
Install C1, C2, C3 [NOTE: the drawing and the parts screen shows the leads for C3 reversed. The positive lead of C3 goes to pin 2 of

U1], C4, C5, C6, C8, C9, C11, C12 [Note: the drawing and the parts screen shows the leads for C12 reversed. The positive lead of C12 goes to pin 7 of U3], C13, C14, C84, C85, C86, C87, Q11, Q13, Q14, Q15, Q16, R1, R2, R3, R4, R5, R6, R7, R9, R10, R11, R12, R60, R61, U6, U7. Refer to IF and Product Detector Schematics

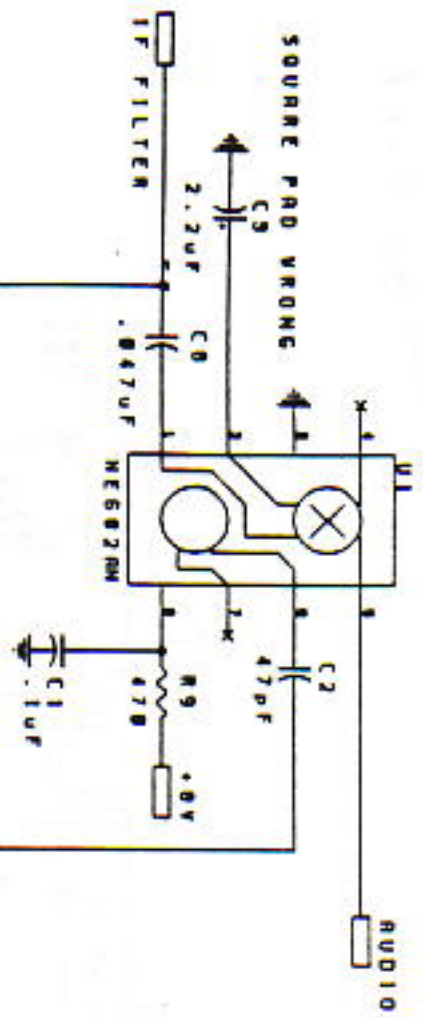
Install Q10, a 2N4124, and R50 near J4. Install 5 crystals and 6 silver mica capacitors C78, C77, C82, C83, C81, C80. The crystals are matched to within 100 Hz. and are in a small envelope. Make sure that you install all five of these crystals in the filter. The loose crystal in the bag of parts is the BFO crystal. Leave a small space (0.025") between the PCB and the case of each crystal. It isn't necessary to ground the case of each crystal to the ground plane. Also populate T4, T5. (Winding instructions on page 11). Wait until step 7 to populate the TX Mixer 1, U2 and Mike Amp U3.

Check J2 input current is less than 70ma. Verify DC levels at all NE602's pin 8, should be 6.5 to 7.5 volts. Confirm Q13 source voltage is 1 to 2 volts. Verify +8TX is 7.5 to 8V volts when PTT is closed. Install a temporary wire jumper between W1 and W2. This bypasses the RF Gain POT, and will be removed later.

Use the station transceiver to transmit a low level signal into the station antenna on 3.800MHz. With a clip lead for an antenna on U7 pin 1, adjust the VFO to 5.2mhz. Verify a tone is present in the speaker.

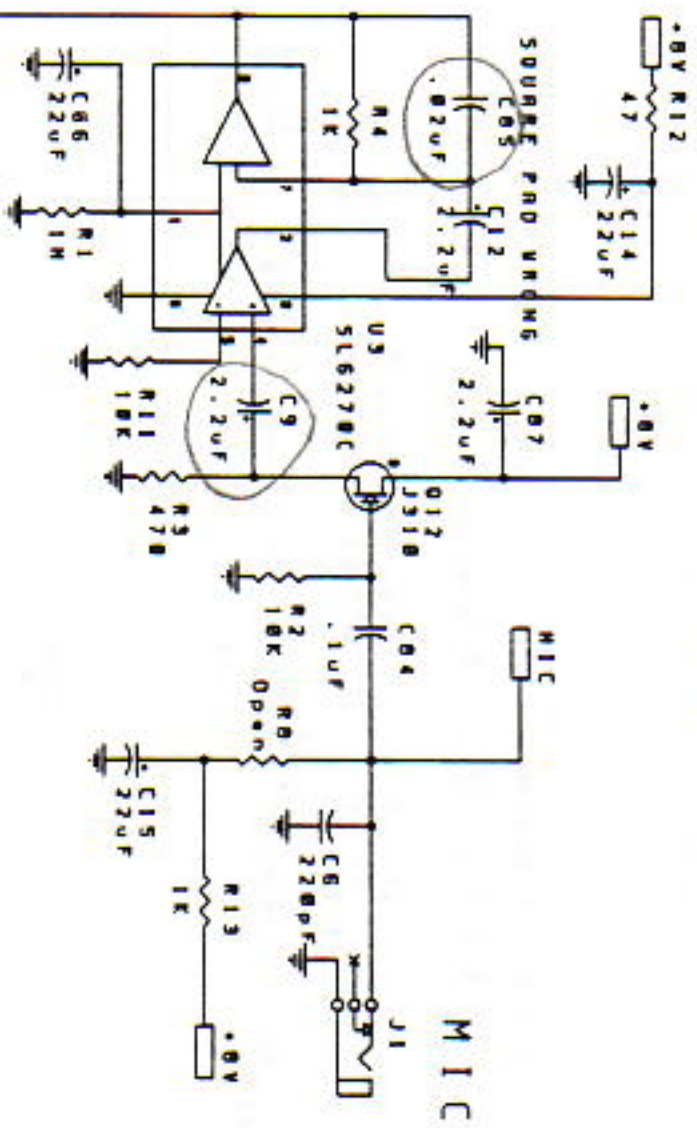


RX MIXER 2

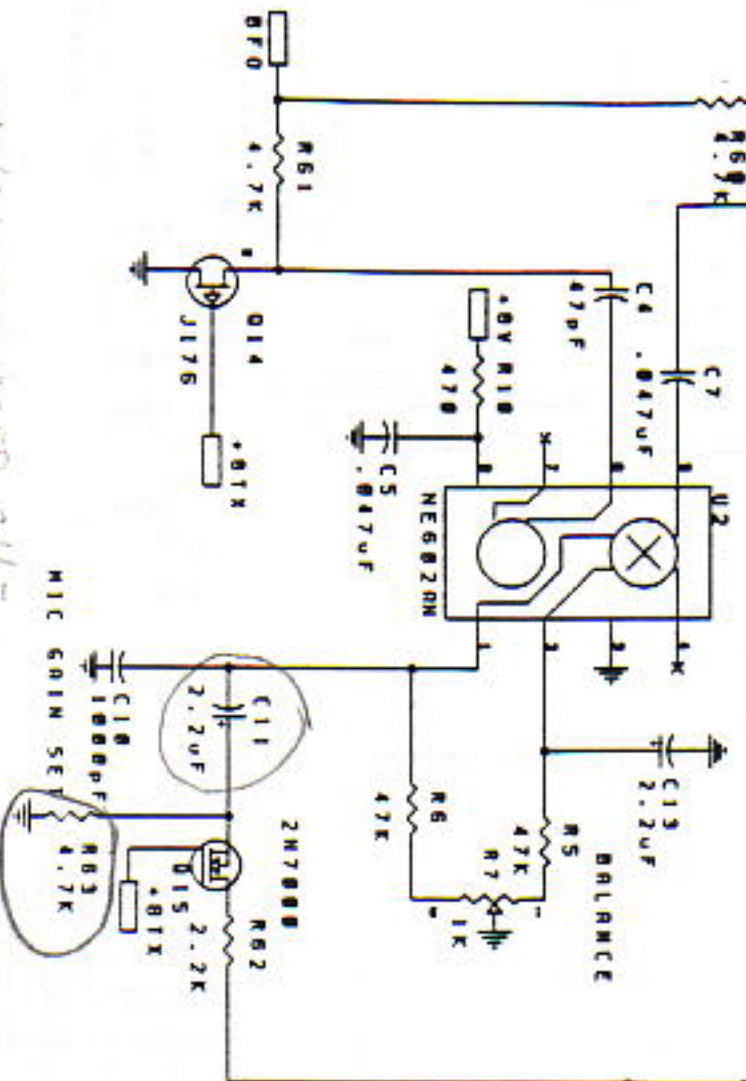


PRODUCT DETECTOR

GAIN CONTROLLED MIC AMP

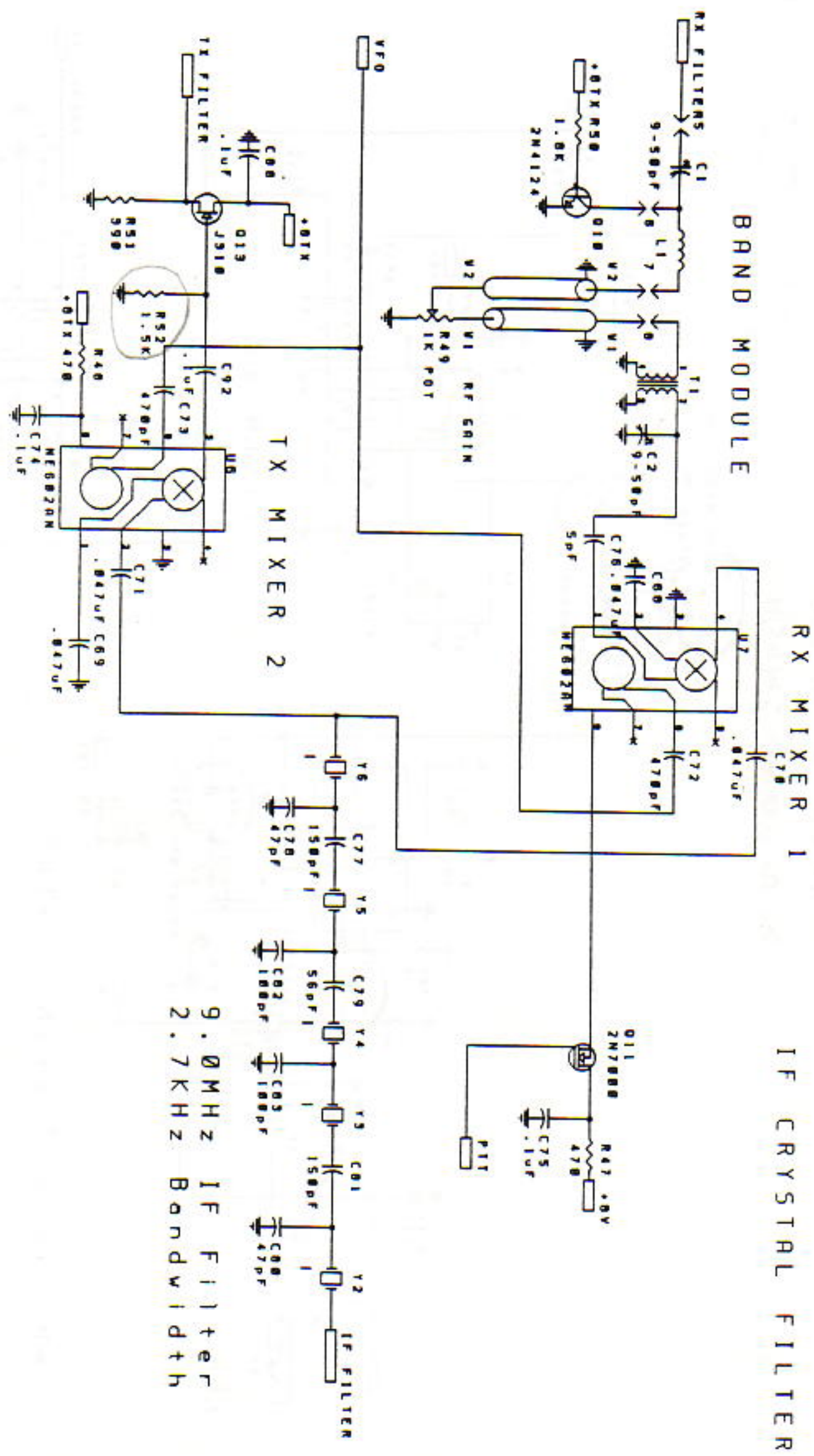


TX MIXER 1

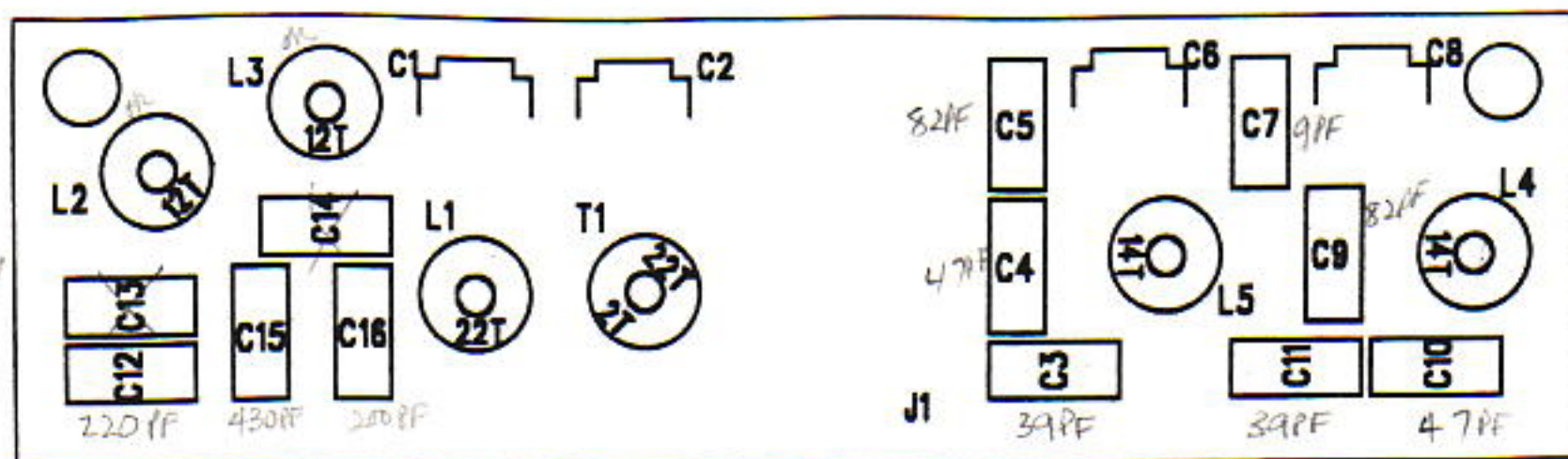


12/4/95 REVERSED C1/-
+ SIDE TO U2 NOT Q15
PER K7RD

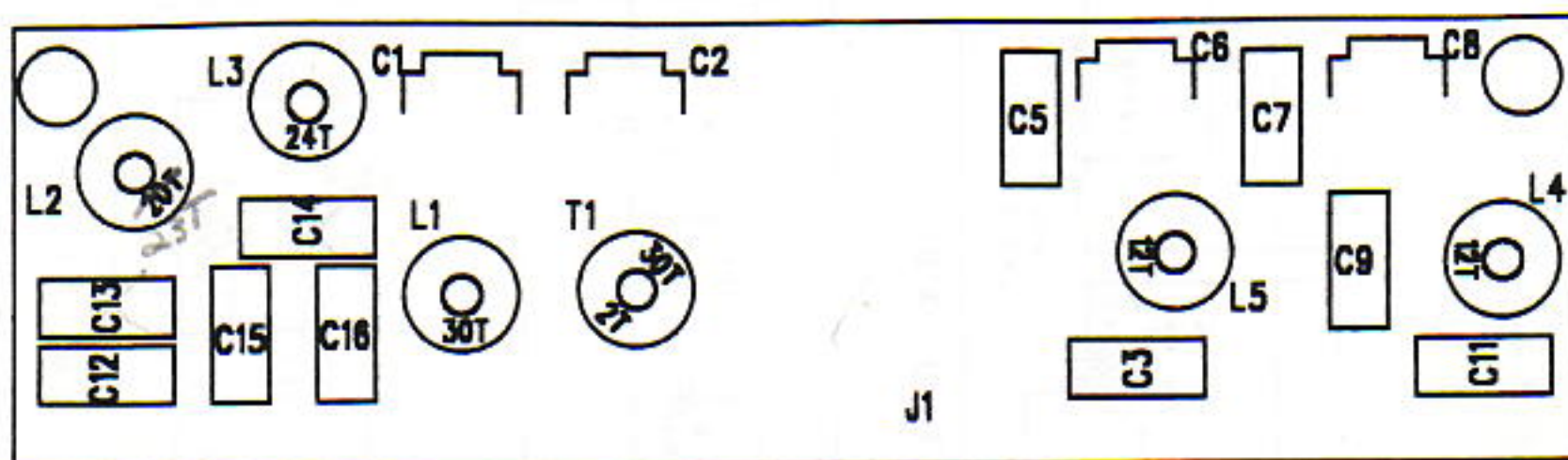
11/29/95 CHANGED TO 1K
PER K7RD (R63)



9.0MHz IF Filter
2.7KHz Bandwidth



20 Meter Band Module



75 Meter Band Module

SECTION 6: PLUG IN BANDMODULES

20 Meter Band module:

Install vertical mount trimmer capacitors C1, C2, C6, C8 and C3, C4, C5, C9, C10, C11, C12, C15, C16. Now you will get another chance to improve your skill at winding toroids. But these are easier than L1, as they don't have a tap. Prepare the wire as in L1 and wind the following toroids using the same procedure to count the turns and then finish the toroid.

L1. Use a small yellow toroid (T37-6) and wind it with 31 turns of #28 Brown wire.

L2. Use a small red toroid (T37-2) and wind it with 12 turns of #26 Brown wire.

L3. Use a small red toroid (T37-2) and wind it with 12 turns of #26 Brown wire.

L4. Use a small red toroid (T37-2) and wind it with 14 turns of #26 Brown wire.

L5. Use a small red toroid (T37-2) and wind it with 14 turns of #26 Brown wire.

T1. Use a small Yellow toroid (T37-6). You will have 2 separate pieces of wire for this one. The first is to be the secondary and is 31 Turns of #26 Brown wire, the primary has 3 turns of Green #26 wire.

Wind the secondary first, then wind the pri-

mary over the secondary.

75M Band Module Assembly

Install vertical mount trimmer capacitors C1, C2, C6, C8 and C3, C5, C7, C9, C11, C12, C13, C14, C15, C16. Now you will get another chance to improve your skill at winding toroids. But these are easier than L1, as they don't have a tap. Prepare the wire as in L1 and wind the following toroids using the same procedure to count the turns and then finish the toroid.

L1. Use a small black toroid with no marking (FT37-61) and wind it with 30 turns of #28 Brown wire.

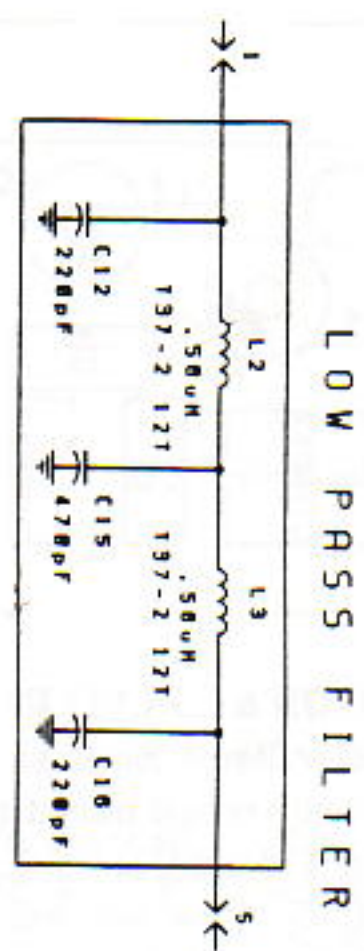
L2. Use a small red toroid (T37-2) and wind it with 23 turns of #26 Brown wire.

L3. Use a small red toroid (T37-2) and wind it with 24 turns of #26 Brown wire.

L4. Use a small black toroid with no marking (FT37-61) and wind it with 12 turns of #26 Brown wire.

L5. Use a small black toroid with no marking (FT37-61) and wind it with 12 turns of #26 Brown wire.

T1. Use a small black toroid with no marking (FT37-61). You will have 2 separate pieces of



20M BAND MODULE

