HOW TO CHANGE THE TRS CHALLENGER,

MODELS 850 AND 1400, TO AMATEUR RADIO BAND (10M)

On expanding channels from 28.505 MHz to 28.945 MHz or from 28.960 MHz to 29.400 MHz.

1. Replace crystals of 16.27 MHz and 16.273 MHz with 17.81 MHz and 17.813 MHz.

2. Tune up the coils.

DETAILS

Replace crystals of 16.27 MHz and 16.273 MHz with 17.81 MHz and 17.813 MHz.

Replace crystals presently installed on the PLL Unit, 16.27 MHz (X1) and 16.273 MHz (X2) with 17.81 MHz and 17.813 MHz. If you use USB only, replacement is only the crystal 16.273 MHz with 17.81 MHz. (See figure 1 and 2).

Tue up

After changing above crystals, the coils should then be tuned.

PLL UNIT

1. Prepare the tester and connect it between test point 2 (TP2) and any minus (-) ground (earth). Next, set to channel 1 position - the tester range should be 2 - 10 Volts (DC).
   "L2" should be tuned up as the tester indicates 2 Volts. As you are tuning up the coil, the channels should be checked individually 1 thru 40 so that as the coil is being tuned, the tester will show a balanced change from 2 Volts to about 4.5 Volts (DC) on each of the channels. (see figure 3).

2. Put your Model 850 or 1400 in AM and TX mode. Then while watching the power meter tune up the coils T1 and L3. This is to be done carefully so as to increase the Out Put Level on your power meter.

TRANSMITTER

Put your Model 850 or 1400 in AM mode and RX mode. Then follow the same procedures as discribed in above, matching the power meter and tuning up the following coils so as to increase the power; T1, L1, L14, T2, T3, L2, L5, L10. (See figure 5).

RECEIVER

Put your Model 850 or 1400 in AM mode and RX mode. Then by listening to the set noise, tune up the following coils so as to increase the set noise; T4, T5, T6. (figure 6)

FREQUENCY TABLE

CHANNEL		
1	28.505	28.960
2	28.515	28.970
3	28.525	28.980
4	28.545	29.005
5	28.555	29.010
6	28.565	29.020
7	28.575	29.030
8	28.595	29.050
9	28.605	29.060
10	28.615	29.070
11	28.625	29.080
12	28.645	29.100
13	28.655	29.110
14	28.665	29.120
15	28.675	29.130
16	28.695	29.150
17	28.705	29.160
18	28.715	29.170
19	28.725	29.180
20	28.745	29.200
21	28.755	29.210
22	28.765	29.220
23	28.795	29.250
24	28.775	29.230
25	28.785	29.240
26	28.805	29.260
27	28.815	29.270
28	28.825	29.280
29	28.835	29.290
30	28.845	29.300
31	28.855	29.310
32	28.865	29.320
33	28.875	29.330
34	28.885	29.340
35	28.895	29.350
36	28.905	29.360
37	28.915	29.370
38	28.925	29.380
39	28.935	29.390
40	28.945	29.400

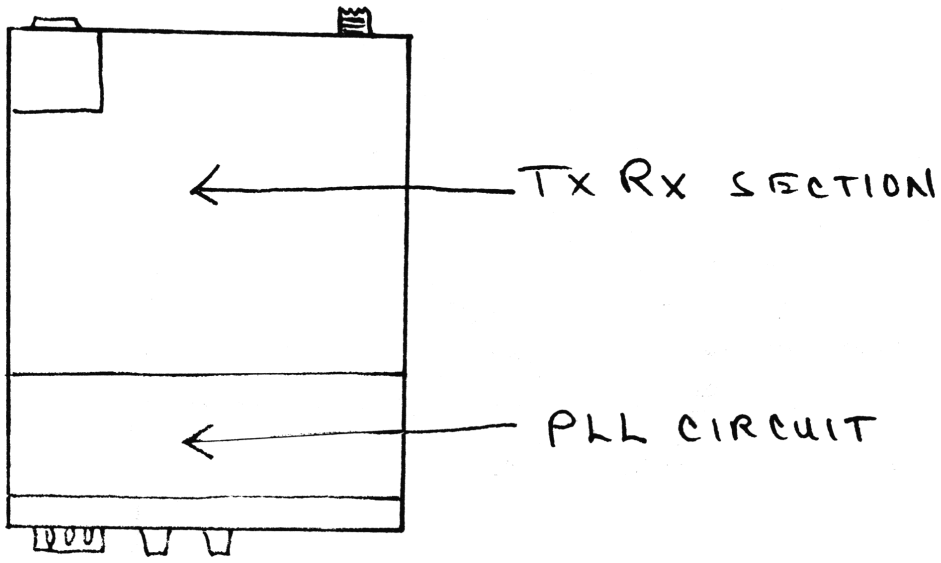


FIG 1 (INNER VIEW)

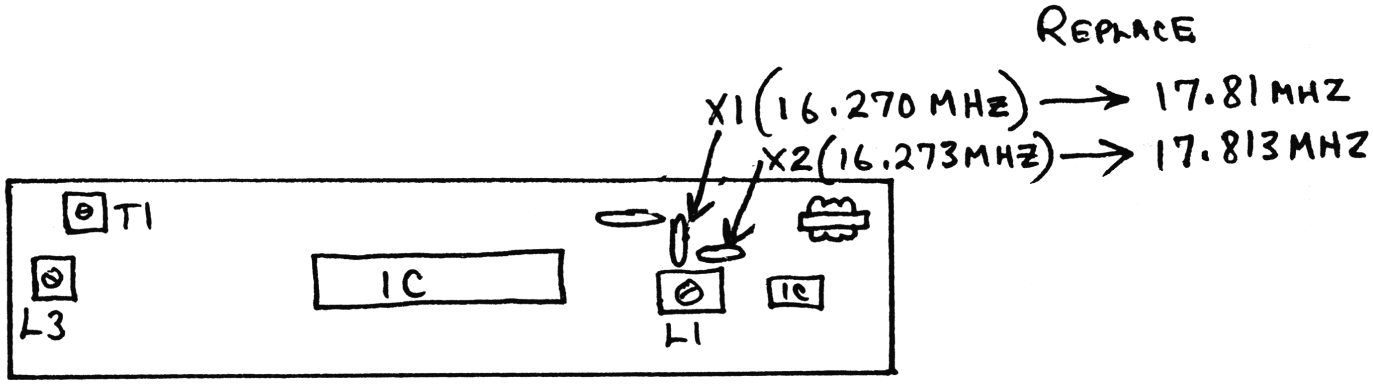


FIG 2 (PLL UNIT)

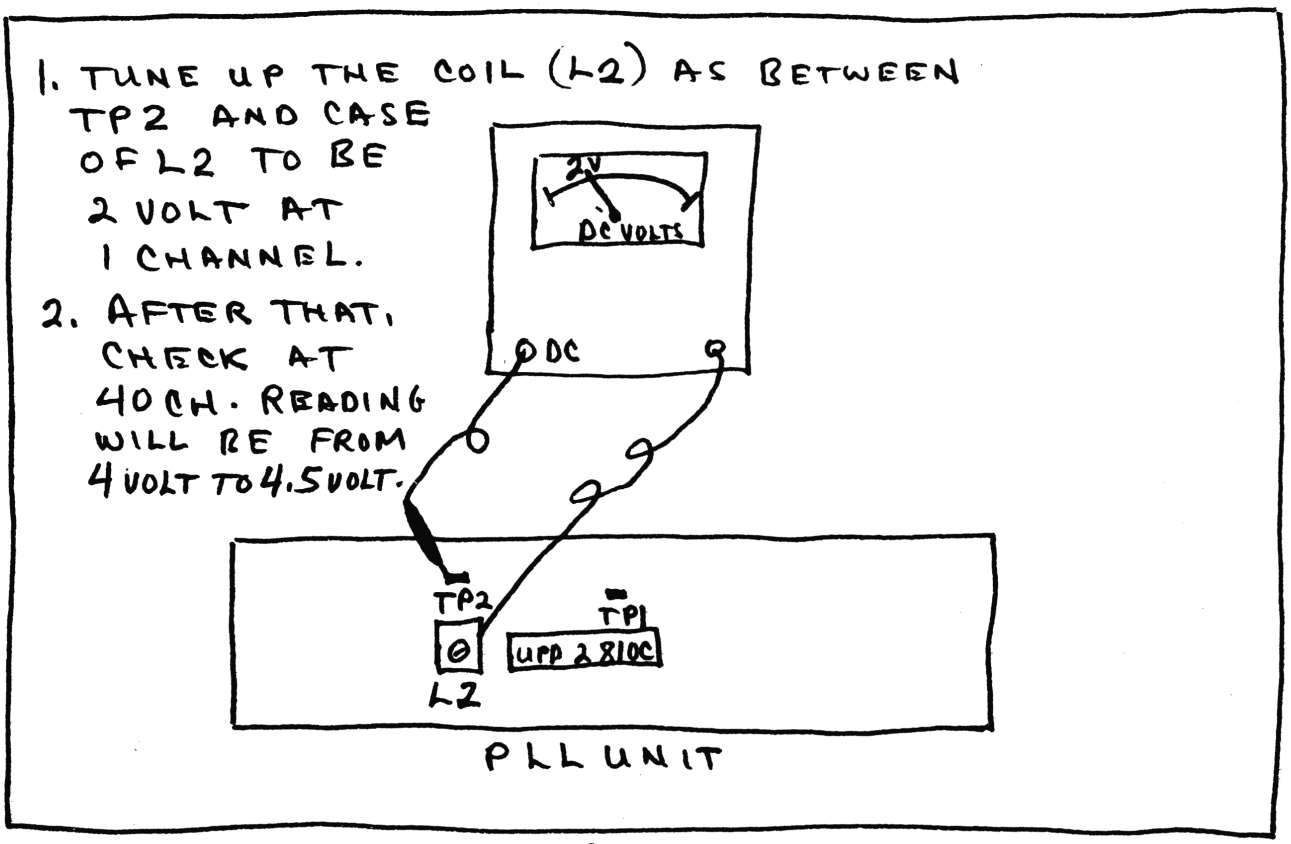


FIG 3 (TUNE UP PLL UNIT) No1.

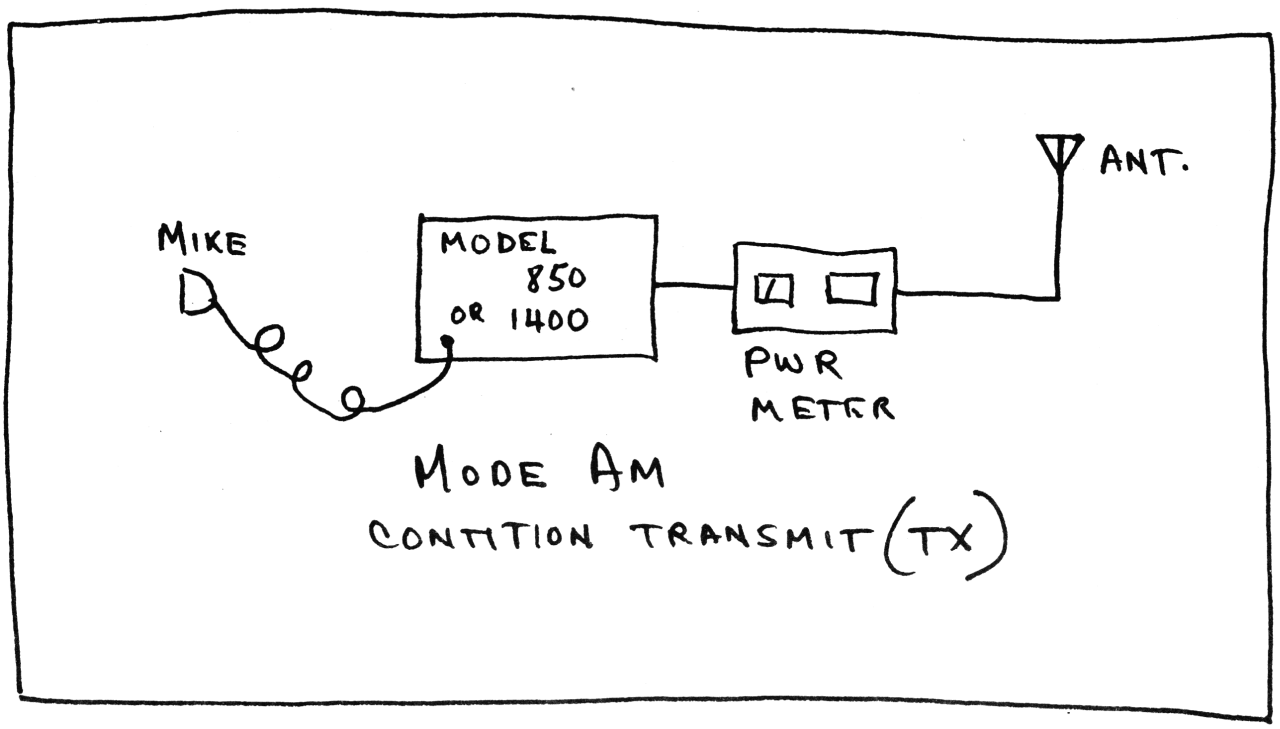
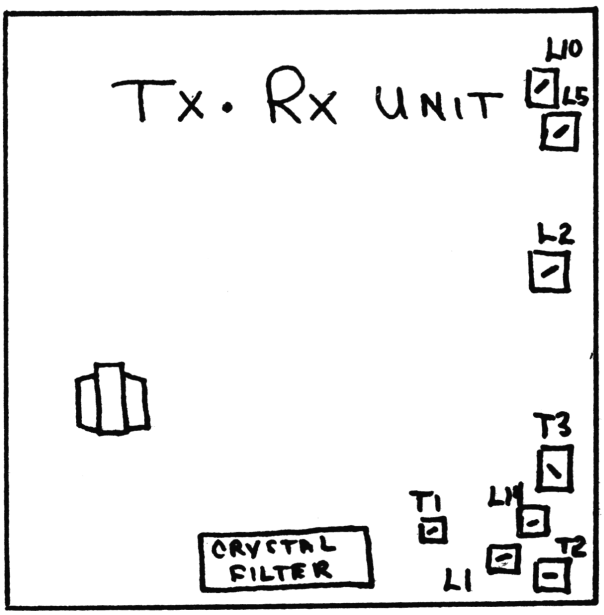


FIG 4



TUNE UP T1, L1, T2, L14, T3, L2, L5, L10.

FIG 5

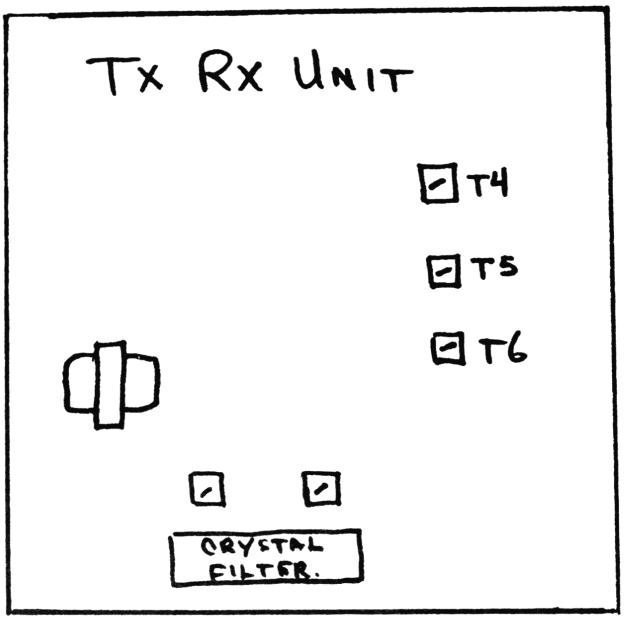


FIG 6

TUNE UP. T4, T5, T6

CAUTION

*Each of the coils are locked tightly in place by a special glue. So before you tune up these coils, you should try to remove this glue. Take care in turning the core of the coil as it is very sesitive.

*Selecting for the Band desired, either from 28.505 to 28.945 MHz or from 28.960 MHz to 29.400 MHz is your choice and that choice is determined by connecting one lead of the IC to earth or not as shown in figure 7.