

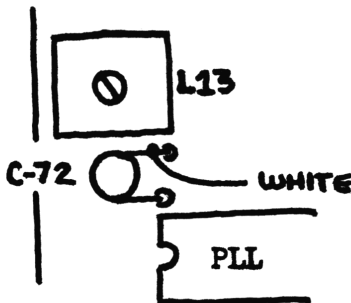
This unit, according to my sources is the last type of SSB to be sold by Radio Shack; unless the trend of sales improves drastically! It is similar to the President AR144 and Cobra 146GTL, but people are still having problems with Kit #106. Have obtained such a unit for checkout of this and found that as usual - ignorance or laziness on part of individual who installed kit.

The kit does work, however have found that in this unit the VCO would not operate over the entire frequency range. Simple changing of D-25 in the VCO circuit eliminated all problems! 'Super Diode' to the rescue again.....following procedure is for installation of Kit #106 in the Realistic TRC-451 ONLY...

Kit #106 for TRC-451, uPD 2824C chip-ONLY

Installation instructions and 'Slide' modification

1. Kit will mount directly over the PLL chip with crystals facing rear of chassis (no need to drill chassis - only enlarge present hole in the cover)!
2. Kit wiring: Black - to nearest D.C. ground (used case of L8).
DON'T USE the case of any PLL circuit can or the filter....
White - to junction of C-72/L13 (see drawing):



Red - 13VDC (B+), take from the ON/OFF switch, OFF side!
Check with VOM - was inside contact on this unit,
and wire colors are the same.

Brown - to CENTER contact on the clarifier pot.

Cut all wires to length after routing, then solder in place carefully!

3. Switch position-mounting with component side of PCB up so you can work on unit: Down-Low Fo; Middle-Normal CB Fo; Up-High Fo..
Using the Frequency Chart and both selector/kit switches for a reference: Adjust L-13 and L-14 only at this time to get the Fo's in.

(NOTE: IN THIS TEST UNIT; S/N: 130004XX, Run #3A1; had trouble getting the entire frequency range. If you have trouble, the solution is: Replace D-25 with a 'Super Diode'...had no further problem with entire modification.)

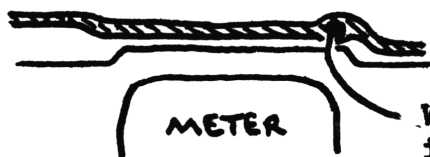
Once you get the frequency range in; tune L15, L40, L39, L38, L37, and L27; for overall LINEAR power output in SSB MODE!

This unit comes with the 'El Cheapo' Driver and Final, also '90-day wonder's'...suggest leaving them all until they go out, then change to 2SC1306/1307 and mica insulators. Unless you want to change now! All VR's adjustments are printed on the PCB...

A 'Slide' is required due to no trimmers being on the kit, and a SSB should have the capability anyway....

4. This 'slide' modification is for the TRC-451 ONLY!

- A. Remove R-422 (3.9K) on the Ch. Sel. PCB - replace with solid buss wire.
- B. Trace White wire from Clarifier pot to PCB - remove wire from that location. Pull wire out of the bundle and re-route to the etch side of board - solder to etch at spot indicated in drawing below:



White wire from clarifier pot, it will stretch this far if you removed and didn't cut it...

- C. Remove D-32 - no replacement...
 - D. Remove R-122 (15K) - no replacement..
 - E. (*) Remove D-31; replace with solid buss wire. Check out the slide in AM mode - regular CB Fo's, should be approximately: -2.5, +1.7KHz of the center..
 - F. (*-1) Replace D-30 with "Super Diode". Slide should now be approximately: -4.7, +4.9KHz of the center.
- PERFORM FOLLOWING IN NORMAL C.B. Fo's.....
- (*) Do following only if original varactor (D-30) is left in:
Put clarifier knob 'ident' to center position, adjust L-16 for center Fo in AM mode (Regular CB Fo's). Do the same in SSB modes but adjust USB (L-17) for 1KHz above center, and (L18) LSB for 1KHz below center. This way you have a starting point for SSB and a true center calibration for AM - but only in normal CB channels. Will have to slide for other switch positions.
 - (*-1) Do following only if you change D-30 to a 'Super Diode'.
Remove knob on the clarifier pot. Turn shaft fully CCW, adjust L-16 for -5KHz of the center frequency in AM mode, turn shaft fully CW, check to see if reading is +5KHz of center. (Balance out CCW and CW positions - using L-16). Turn shaft to center frequency and replace knob so that the 'IDENT' is at 12 o'clock position - recheck, might have to do a few times. Leave at center and adjust USB (L-17) for +1KHz above center Fo, adjust LSB (L-18) for -1KHz below center Fo. This will give you a true center for Normal CB operation, with 'slide' capabilities in SSB/AM.

The frequency chart is for use with switch installed in unit as write-up:
See diagrams below.....



TRC-451..Kit #106..(Cont.)

KIT #106 (TRC-451) FREQUENCY CHART

<u>Selector</u>	<u>LOW</u>	<u>NORMAL</u>	<u>HIGH</u>
1	26.515	26.965	27.415
2	26.525	26.975	27.425
3	26.535	26.985	27.435
4	26.555	27.005	27.455
5	26.565	27.015	27.465
6	26.575	27.025	27.475
7	26.585	27.035	27.485
8	26.605	27.055	27.505
9	26.615	27.065	27.515
10	26.625	27.075	27.525
11	26.635	27.085	27.535
12	26.655	27.105	27.555
13	26.665	27.115	27.565
14	26.675	27.125	27.575
15	26.685	27.135	27.585
16	26.705	27.155	27.605
17	26.715	27.165	27.615
18	26.725	27.175	27.625
19	26.735	27.185	27.635
20	26.755	27.205	27.655
21	26.765	27.215	27.665
22	26.775	27.225	27.675
24	26.785	27.235	27.685
25	26.795	27.245	27.695
23	26.805	27.255	27.705
26	26.815	27.265	27.715
27	26.825	27.275	27.725
28	26.835	27.285	27.735
29	26.845	27.295	27.745
30	26.855	27.305	27.755
31	26.865	27.315	27.765
32	26.875	27.325	27.775
33	26.885	27.335	27.785
34	26.895	27.345	27.795
35	26.905	27.355	27.805
36	26.915	27.365	27.815
37	26.925	27.375	27.825
38	26.935	27.385	27.835
39	26.945	27.395	27.845
40	26.955	27.405	27.855

Overall performance of the TRC-451 is good, with a solid 4W-AM, and 13.1W-SSB over the entire bandwidth is possible on a finely tuned unit...

Note: A 'Super Diode' was needed in this particular unit to make the VCO operate over the entire frequency range, but do not know if all will need this part..