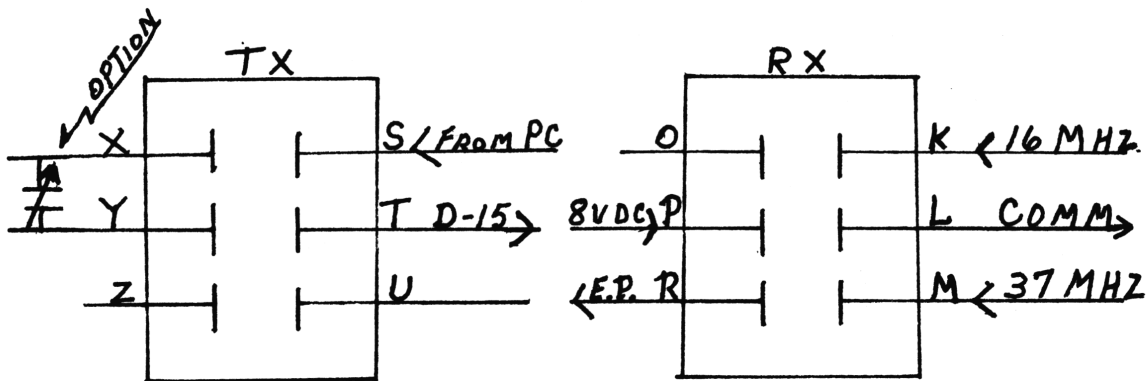


"LTD KIT" LOW CHANNEL INSTALLATION INSTRUCTIONS
FOR COBRA 21/25 PLUS UNITS AND ANY SISTER UNITS

It is not feasible to use the existing switches on these units. We suggest that for any and all single modifications, that you use two DPDT sub-miniature switches. Also, since we will be using 8VDC Regulated (maximum allowable voltage) on the Epoxy Pack, we feel that the final 37Mhz. amplifier can be eliminated. True, you will not have quite as clear of a signal but since the circuits are all on the same plane, you are less likely to pick up stray signals or have as much mutual inductance.

MOUNTING SWITCHES AND EPOXY PACK

1. Use the mike clip hole located to the rear of the cover screw on the lower cover as one of the mounting holes for the switches.
2. Mark the top cover equal distance and in line with this hole. Make new hole for the second switch.
3. Mount the Epoxy Pack approximately 1/8 inch to the rear of these switches. Use silicone sealant mount with the VC up.



CONNECTING RECEIVER SWITCH

1. Remove C-102 (100pf) and relocate it on the PC side of the board, between pin 1 of the VCO, Mixer Chip and the output leg of L-9.
2. Cut the PC trace just to the rear of where C-102 was removed, (adjacent to pin 3 of the VCO, Mixer).
3. Solder wire K in this hole.
4. Strip the wire bare at the spot where it passes the blue dot terminal of the Epoxy Pack. Solder it to the terminal.
5. Solder wire L to the resistor leg of R-16 (TP-2).
6. Solder wire M to the yellow dot terminal on the Epoxy Pack.
7. Solder wire P to the leg of R-69 (82 ohm resistor) located just to the left of TR-14.

LOW CHANNELS FOR COBRA 21/25 PLUS AND SISTER UNITS CONTINUED:

8. Connect wire R to the red dot terminal of the Epoxy Pack.

CONNECTING UP THE TRANSMIT SWITCH

1. Raise the cathode leg of D-15 off the board. It is located just forward of the PLL Chip with its cathode end forward.
2. Solder wire S on the board where D-15 was removed.
3. Solder wire T to the raised cathode leg of D-15.
*OPTION: If only half channels are desired omit steps 4, 5, and 6 below. If you wish to have full channels these steps must be accomplished.
- *4. Solder the VC (supplied) across wires and terminals X and Y.
- *5. Remove C-49, located just forward of the 10.24Mhz. Xtal, along side of L-8. (if the legs of C-49 are not long enough to stand one leg up while the other leg is soldered in the most forward hole then replace it with another that is).
- *6. Solder wires X and Y to the raised leg of C-49 and the other in the hole it was removed from.

AN ALTERNATE METHOD

For better trimming of the frequency you may desire to drill a hole in the PC board where the Printed Board circuit number is, and run the two wires through to the PC side. In this case do not lift the leg of C-49 but cut the PC run between the 10.24Mhz. Xtal and the leg of C-49. Then connect your wires across this cut.

7. Now solder a jumper wire from the case (shield) of L-6 to the top tank case (shield) on the Epoxy Pack.

ALIGNMENT

TRANSMIT

1. Connect power to the unit and load properly with a frequency counter attached.
2. Select channel 26.
3. With both switches up in normal position, key the transmitter. The reading should be 27.265Mhz. If not, adjust this frequency by changing the size of C-49.
4. Now switch the transmitter switch down, key the transmitter again; now the reading should be 26.810, or if you have the option installed 26.815 Mhz. If you have installed the option and this reading is incorrect,

LOW CHANNELS FOR COBRA 21/25 PLUS AND SISTER UNITS CONTINUED:

adjust the VC on the switch to obtain this reading.

RECEIVE

1. Connect a scope or frequency counter to the leg of R-16 (a scope is preferred).
 2. On receiver mode and with receiver switch down, you should have a reading of 37.505Mhz. If you have installed the option 37.5117Mhz. (the Epoxy Pack comes preset to the latter).
 3. To obtain the proper reading adjust the VC on the Epoxy Pack. The tanks on the Epoxy Pack should require very little or no adjustments. If the 37Mhz signal can not be obtained in the desired amplitude, you might need a 37Mhz. amplifier. They are obtainable from Card-Kit & Selman Enterprises.
- (NOTE: When making alignments with a small signal applied, you will detect a zero beat. This zero beat comes from the fact that two internal frequencies, the VCO and 10.24Mhz. combine to make up the same frequency you are trying to receive.
4. Make your normal alignment and adjustment to the receiver on regular channels.
 5. Now switch to low channels and check the receiver sensitivity. If you have a needle (or lighted scale) even when no signal is applied or an indication on all low channels, reduce the amplitude of the 37Mhz. signal by inserting a resistor in the output line of the Epoxy Pack. (generally less than 500 ohms).

This completes the Installation Instructions for Cobra 21/25 Plus and any Sister Units.