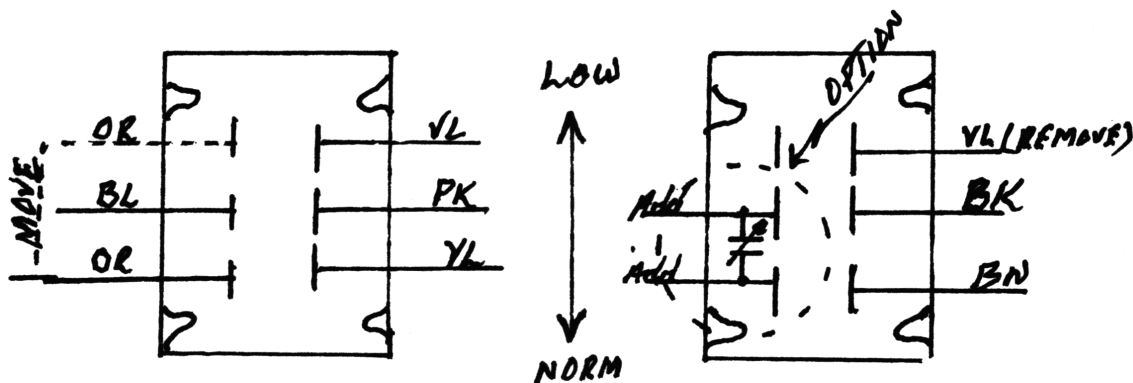


"LTD KIT" LOW CHANNEL INSTALLATION INSTRUCTIONS FOR
COBRA 21LTD/GTL, ANDREW J, AR/AX-44, PC-66,
AND ANY SISTER UNITS

The following switch lay-out is for the color code on the Cobra 21LTD. For other sister units or earlier models, note in pencil the color code that exist on those switches and adapt the reading material accordingly.



USING THE TWO EXISTING SWITCHES:

1. Clip the yellow, also the orange wire coming from the transmitter section, just forward of the first zip tie forward of the power plug.
2. In this same area, unsolder the pink and the violet wires.
3. Use the short piece of yellow wire and solder it where you unsoldered the pink wire.
4. Just forward of the audio transformer and directly center from the audio chip, unsolder the blue wire. Solder in it's place the piece of orange wire that runs from the transmitter section.
5. To clear the channel 9 swtich, remove the violet wire from the switch.
6. Unsolder the brown and black wires from their respective PC boards.
7. Solder the violet wire on to the PC board where the black wire was removed.

INSTALLING THE EPOXY PACK:

1. Pull the chassis grounding tab, located just above the PLL chip, straight out.
2. Stand the wire, tape up against the selector.
3. Using silicone sealant adhere the epoxy pack to the chassis wall just forward of the pulled out tab, with the VC upward.

INSTALL THE FOLLOWING MISSING COMPONENTS:

R-101 - 10K	C-136 - .01uf
R-102 - 3.3K	TR-20 - use a 2SC1675 or a 2SC1923
R-103 - 1K	L-19 - install (supplied)

LOW CHANNELS FOR COBRA 21LTD AND SISTER UNITS CONTINUED:

1. Solder a 220 ohm resistor from the leg of R-105 to C-137 leg nearest L-19.
2. Solder in a jumper wire from W-26 to W-27.
3. Solder a jumper from ground to the rear leg of the secondary of L-19.
4. On the PC side of the board, solder a 470 ohm resistor to the remaining secondary leg of L-19 with its other leg run through and solder where the body of R-104 should be. Now pull the violet wire of the CB/ANL/PA switch out of two ties and solder it to this end of the resistor on the component side of the board, or through another hole in that same PC pad.

CONNECT UP THE REST OF THE CB/ANL/PA SWITCH:

1. Pull the yellow wire out of the zip ties. Measure the distance needed to reach the blue terminal on the epoxy pack. Cut the insulation and pull a bare spot. Now solder it to the hook terminal, blue dot, of the epoxy pack.
2. Continue the yellow wire underneath the board (printed side) to the output secondary leg of L-16. Cut this same run just before the empty hole on the run.
3. Pull the pink wire out of the zip ties and run it on the component side of the board to this open hole just mentioned.
4. Change the orange wire to the opposite throw of the same pole.
5. Connect the blue wire to pin 1 of the PLL chip and the orange wire to the red dot terminal on the epoxy pack.

CONNECT UP THE CHANNEL 9 SWITCH:

1. Unsolder R-58, turn it around and leave the leg unsoldered and lifted.
2. Connect the brown and black wires across these two points.

(OPTIONAL)*

3. Solder the VC (supplied) across the two terminals of the other pole of the switch across from the black and brown wires. Also attach wires to these same terminals.
4. Cut the PC trace between the 10.24 Xtal and C-111. Solder these two wires across the cut.

* If full channels are desired, steps 3 & 4 must be accomplished. If half channels are desired (which allows for splitting the transmitter and receiver) omit steps 3 & 4.

Now your CB/ANL/PA switch is your receiver switch and your channel 9 switch is your transmitter switch.

LOW CHANNELS FOR COBRA 21LTD AND SISTER UNITS CONTINUED:

5. Run a wire from the yellow dot terminal on the epoxy pack to the leg of C-12 nearest R-101.
6. Run a ground wire from the shield case of L-5 to the shield case of the upper tuning tank of the epoxy pack.

ALIGNMENT TX:

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 27.265 Mhz. If not, adjust VC-1 to obtain this reading.
4. Now switch the transmitter switch down, key the transmitter again. Now the reading should be 26.8100, or, if you have the option installed, 26.815 Mhz. If you have installed the option and you have not obtained the proper reading adjust the installed VC to obtain it.

ALIGNMENT RX:

1. Connect a scope or freq. meter to the leg of R-6 (a scope is preferred).
2. On receive mode and receiver switch down, this reading should be 37.505 Mhz, or if you have the option 37.5117 Mhz. (The epoxy pack comes preset for the latter.)
3. To obtain the proper frequency adjust the VC on the epoxy pack. Use L-19 to maximize the amplitude of this signal.

The tanks on the epoxy pack should require very little or no adjustment. If the 37 Mhz signal can not be obtained in the approximate same amplitude as the 16 Mhz. Check your work to see that all connections were made properly.

NOTE: When making alignments with a small signal applied, you will detect a zero beat. The zero beat you hear comes from the fact that two external frequencies, the VCO and 10.24Mhz, combine within the unit making up the total frequencies you are trying to receive.

4. Make your normal receiver alignment and peaking on normal channels. Make sure that VR-2 is adjusted to zero needle with no signal applied.
5. Now switch to low channels and check receiver sensitivity. If you have a needle on the meter even when no signal is applied or on adjacent channels, reduce the amplitude of the 37Mhz signal by inserting a resistor at the output leg of L-19, (generally less than 500 ohms.)

THIS COMPLETES INSTRUCTIONS FOR LOW CHANNELS FOR COBRA 21LTD AND SISTER UNITS.