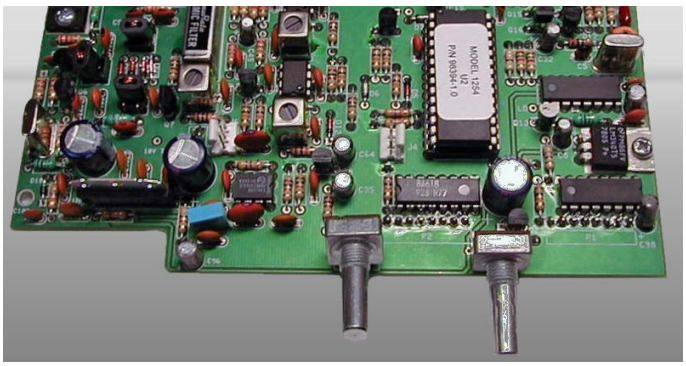
TT1254 LCD Display Board Potentiometer Replacement Option

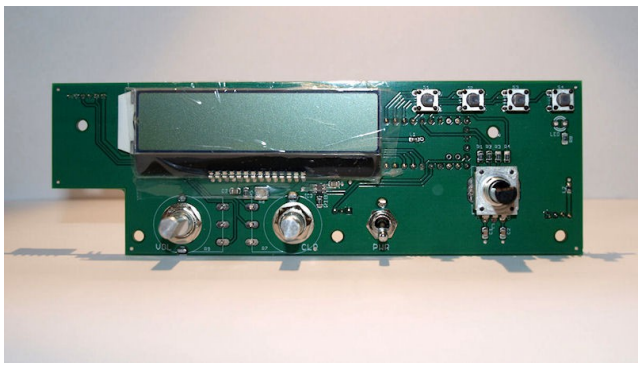
This replacement/repair option for the LCD display board solves a common problem with the TT1254 radios, failed potentiometers. Some symptoms of defective pots are no control of volume or clarifier tuning range over portions of the adjustment range. Another is hearing popping noises on the radio's speaker while turning the pots.

Ten-Tec's design mounted the radio's Volume and Clarifier pots directly to the main radio board by having their thin leads soldered to the board. These leads are quite weak and can easily break with any flexing during assembly. The potentiometers, formerly manufactured by ALPS, use a thin circuit board internally in its structure. This circuit board easily cracks with external stress. The original radio's display board was made to fit over and then be attached with the pot's retaining nuts. The front black plastic case was then awkwardly mounted to the display board while both assemblies were only held together by the same fragile leads. The whole assembly only became fixed when the front black plastic case was mounted to the internal radio's case rails. If the pots survived assembly they were still prone to failure over time under normal use of the radio by slight but constant flexing between the two circuit boards.

This kit changes the brand pots used (the ALPS model used are no longer available) and the entire display board mounting procedure. Two new pots are supplied that are both mechanically attached *and* electrically soldered to the new LCD display board. The display board is then attached to the black plastic front case before assembly into the radio. The display board/case becomes a single independent unit that can easily be mounted or removed from the main radio case. In the LCD display upgrade kit the P1, P2 connectors are no longer used. Instead cable assemblies are used. The potentiometer kit option changes the single wire JP4 cable supplied with the LCD display kit with a four wire split resistor feed through cable. The new cable now ties the display board's pots to the main radio board. To make the connection the original ALPS pots must be desoldered from the radio and two new connectors for the spit cable be inserted in their place.



Ten-Tec Main Radio Board with ALPS Poteniometers



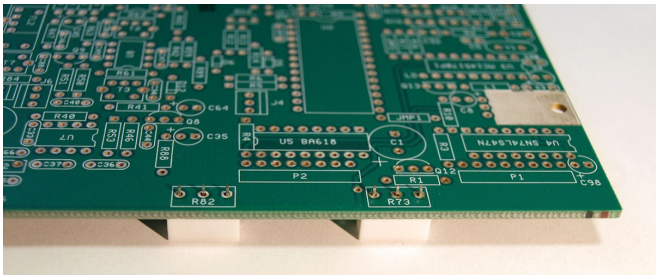
LCD Upgrade board with Integral Potentiometers

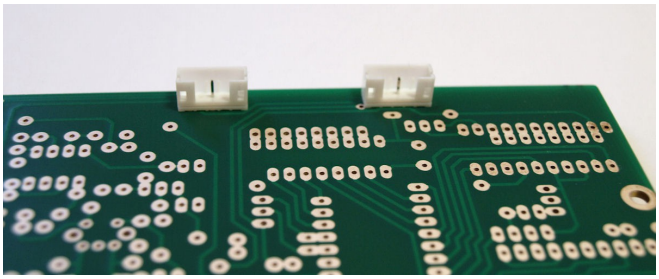
Installation Instructions

This repair kit can be added onto a LCD upgraded radio at anytime. If you are adding this kit to a radio that has already been put together the display board must be first removed. See the separate LCD Installation PDF for details on assembly and disassembly that merge with these instructions.

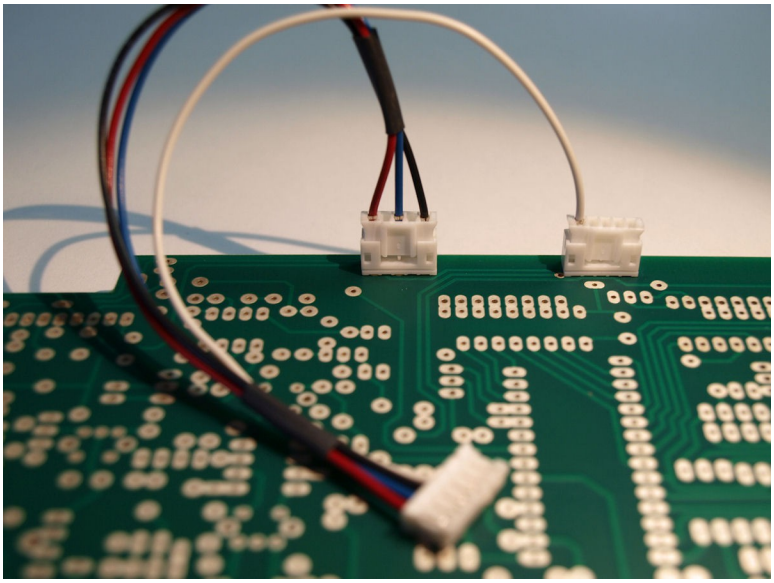
If the pot replacement option is ordered with the LCD display kit the pots are shipped loosely attached to their mounting holes on the LCD board. They are not yet soldered in place.

- With the front case, and display board removed desolder the two pots for the volume and clarifier from the main radio board. Use a desoldering tool and/or solder wick for this procedure. Try not to over heat or damage the lands on the circuit board.[1]
- See the pictures below (an unassembled board shown for reference). Take the two three pin connectors supplied with the repair kit and insert them into the holes for R82 and R73 just cleared by the desoldering of the two potentiometers. The connectors mount on the solder side of the board with the open notch on them facing inward toward the board. Solder the connectors in place.



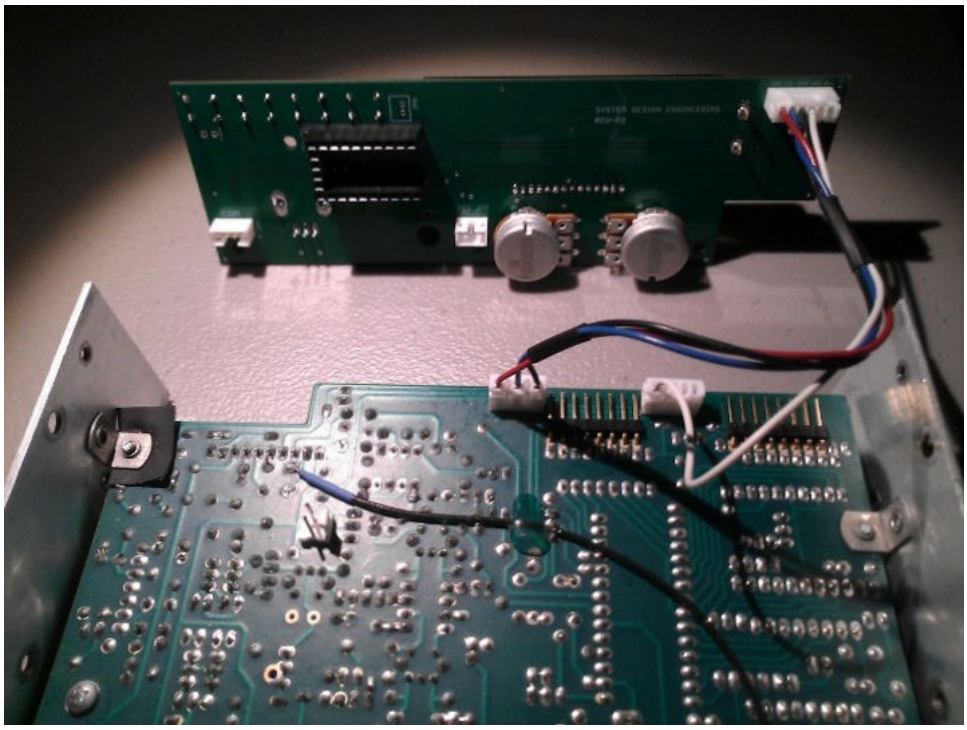


The split cable in the kit will plug into JP4 on the display board and run to the two just installed connectors on the main radio board. Note the position order of the connectors. They must be inserted as shown. Also note that the colors shown here may be different than those shipped with the kit, but the wire connections are the same.



1 If the lands on the circuit board do become damaged solder what you can onto the two connectors. Repair the damaged lands with wire from the connector to a clean portion on the board where they run. Note only 4 wires need be connected.

- Insert then tighten the retaining nuts for the two pots on the LCD display board. Solder them in place.
- Take the display board and mount it onto the front black plastic case with its five machine screws. You can now do this freely without the assembly being connected to the radio.
- Insert the three cables COM, AGC, and JP4 onto the display board. The other end of the COM cable goes to the three pin connector formal used for the encoder. The AGC wire goes to its solder point, and the JP4 potentiometer feed through cable goes to the two newly inserted connectors on the main radio board. (Note wire colors may be different that shown.)
- Mount the display board assembly onto the radio case with its four flat head screws.
- Following the LCD display installation instructions finish the radio assembly.



Internal Wiring

Note: A PICKit 3 programmer which is not part of the kit can be used on the 5 unused pins on the USB processor daughter board. (An audio coax is shown on this picture but is not part of the current upgrade kit.)