

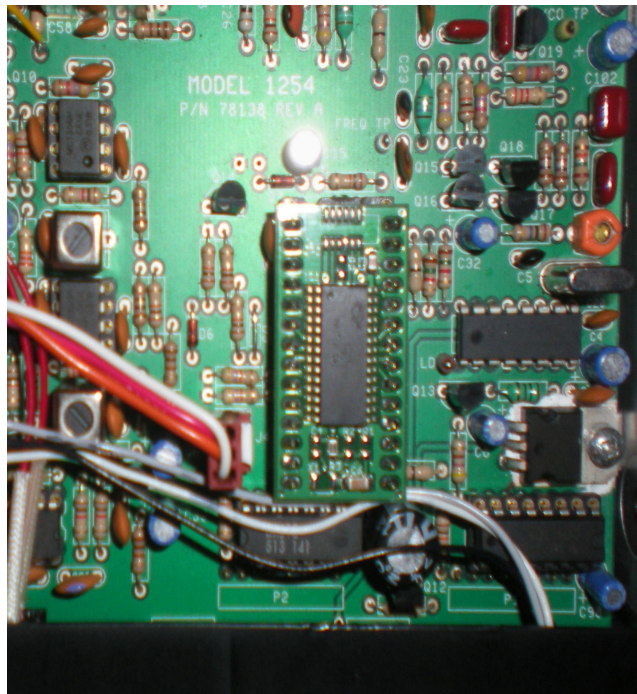
## Ten Tec 1254 Basic Upgrade Installation - Version 2 Firmware

Remove the four screws on the sides of the radio case then remove the upper and lower metal covers.

Remove the PIC processor from its socket on the radio's main board. Use a screwdriver blade to pry and lift the chip a little at a time on the top and bottom of the chip until its' free. Be careful not to bend the pins on the chip. Put the chip aside pressed into the black anti-static foam block used to protect the new daughter board shipped with the kit.

Remove the 9 Volt battery. It will not be required and must not be installed.

Take the new kit daughter board holding the replacement Cypress processor and orient it exactly as in the picture below. Carefully align it so all 28 pins are matched to the radio's main board's socket and press the new board into place.



Replace the upper and lower metal covers completing the basic kit installation.

### ***Optional Installation Instructions***

A LED is provided in the kit for optional installation on the display board. This new LED allows the processor's program to provide additional state information during the radio's operation. Note that it is not required to install this extra LED for the kit's operation. Refer to the Ten-Tec instruction manual page *1245 - Assembly - 7*. The new LED inserts in between diode D5 and D6 in the same orientation in the holes present but unlabeled on the display board.

# New Radio Features

## Frequency Step Size

The radio now tunes in steps of 10, 100, 1000, 1250, 2500, 5000, 9000, 10000, and 100000 Hertz.<sup>1</sup> Pressing the SPEED key displays the current tuning step size. Rotate the tuning knob to change the step size. Press the SPEED key again to select the new step size. The FAST LED will light as before when you are set to the 100000 frequency step. The frequency step is now independent of the mode setting.

## Memory Locations

The amount of memory locations has been expanded from 16 to 128. You now can change modes from memory to VCO retaining the current memory channel frequency and mode by pressing the MW key.

## Setup Mode Options

Upon power up and for two seconds you can enter a special radio setup mode by pressing the MODE key. Pressing any other key or tuning the radio immediately terminates the setup waiting period and returns the radio to normal operation performing the selected action. If available the optionally installed display LED will be lite on power up for the duration of the two second timeout, and thereafter while in setup mode.

Setup mode is indicated by the display showing a “u” followed by the firmware revision number and by the optional LED being lite. In the setup mode the radio keys have alternate functions.

Pressing the MODE key allows you to adjust the communication baud rate to other than the default 57600 rate using the tuning knob. Pressing the mode key again returns to normal use with the selected rate retained. (Not applicable to the basic kit.)

Pressing the MW key allows you to adjust the display brightness between 0, off, and 255, full on, using the tuning knob. Pressing the MW key again returns to normal use with the selected brightness value. Reducing display brightness lowers the current requirements of the radio and running at less than full brightness allows spread spectrum display driver modulation techniques to be used to reduce display generated system noise.

Pressing the V/M key sets the display refresh rate between fast “c1” and slow “c0”. The default setting is fast. Pressing V/M again returns to normal operation. Slow should only be used when using a good regulated power supply. Fast is used for minimal radio noise using the Ten-Tec supplied wall supply.

Pressing SPEED allows you to set a new display timeout interval. Dial the desired timeout in seconds using the tuning knob with 0 meaning no timeout, default operation. Hit SPEED again to select the new timeout. With a non-zero number is used the display will fade to off after the number of seconds selected if no key is pressed or no new frequency is tuned. Any action starts the display again. There is no timeout on memory or frequency select functions. Display blanking is used to remove the possible occurrence of display generated noise, most noticeable when using unregulated power supplies.

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<sup>1</sup> Exact frequency tuning is obtained over 98% of the full receive frequency range.