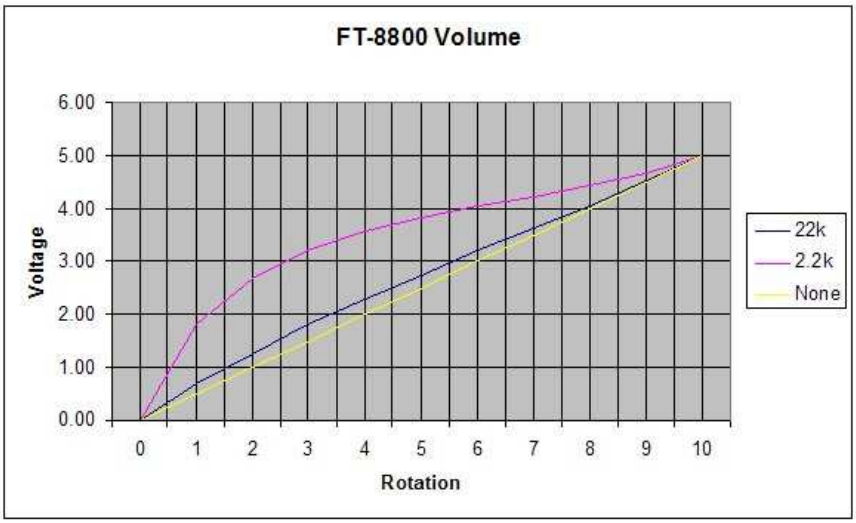
FT8800 Volume Control Modification

One of the first things I noticed about my FT8800 was how sensitive the volume controls were at low volume levels. There have been many comments by users about this problem. Harley, KI7XF, discovered that if R4006 and R5006 are removed the controls are much less sensitive on the low end.

The volume controls are linear but due to the way Yaesu implemented them they are non-linear in the WORNG direction. The resistors that Harley, KI7XF, pointed out are installed from the wiper to the top side of the control. This results in the control being more sensitive at the bottom of the rotation. Below is a plot showing this. As the knob is rotated it varies the voltage to the control circuits from 0 (minimum volume) to 5 volts (maximum volume). The plots are blue for R4006 and R5006 values of 22k (LOT 1), magenta for 2.2k (LOT 2) and yellow for no resistor (KI7XF mod).



After doing the modification to my FT8800 I am much happier with the operation of the volume controls.

Note: To remove the control unit slide the button on the left side to the rear, slide the control unit to the left and disconnect the short cable.

Below is the modification and some photos that I added.

Ron - K0QVF

---------- The modification From Harley, KI7XF ----------

Having found that the FT8800R has a very sensitive volume control knob, I decided to find a fix.

Here it is:

Take the head apart as follows: Be very careful!

1) Pull all of the knobs off.

2) Remove the 2 nuts holding the pots to the front cover.

3) Remove the 4 screws from the back.

4) Gently pop the front and rear covers apart, only 1/8", squeeze the back near the center.

5) Remove the front cover by pushing on the four shafts.

6) Bend the volume squelch pots w/boards out.

7) Remove resistors R4006 and R5006 on the small boards attached to the pots.

8) Reassemble in the reverse order.

This makes the volume pots less sensitive to movement, but allows for the full range of volume control. I calculated the volume change per a given rotary movement to be about 2/3 the change before the mod was made. This was calculated at a comfortable listening level for me.

I made a spanner wrench to remove the pot retaining nuts located under the volume and squelch knobs, which just pull off. And found that the nuts were not very tight. You might get them off with two very small screw drivers, pushing against the slots in the nuts.

The pot/board Assemblies are attached to another circuit board via a somewhat flexible ribbon cable, so there is no problem bending the pots w/boards out to where you can work on them.

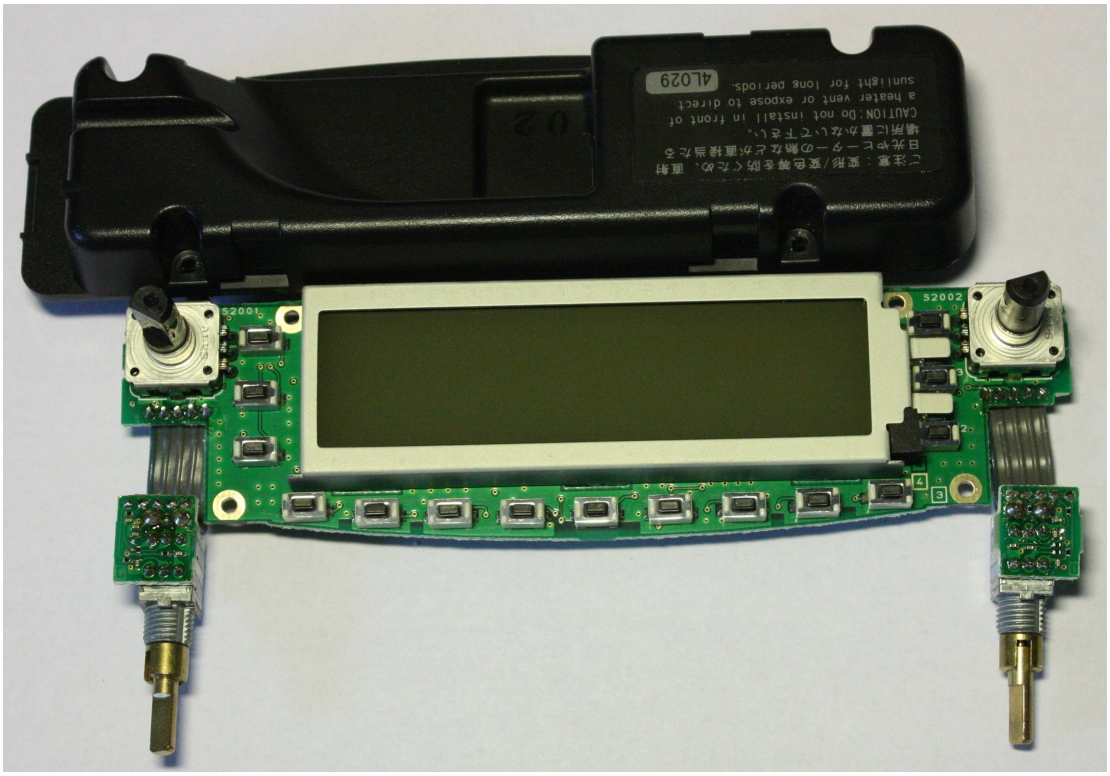
Use the circuit board "parts layout" diagrams near the end of "FT-8800R 26-55.pdf" to locate the 2 resistors to be removed. R5006 & R4006 they measured 2.2K in my unit.

While working with any semiconductor circuits, it is a good idea to do that work on a conductive surface to minimize the chances of a static discharge zapping the sensitive components.

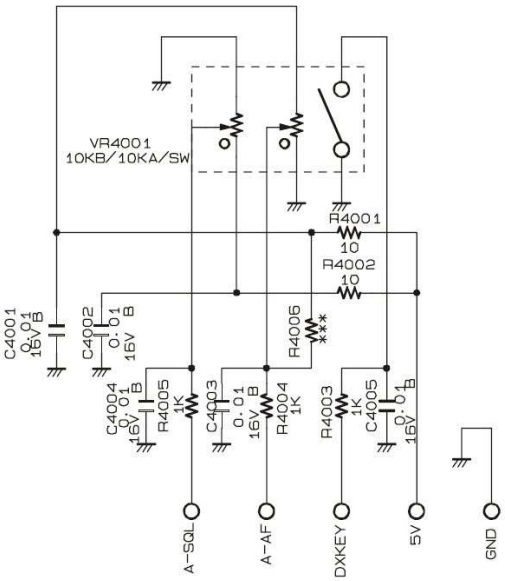
I used a microscope and a conductive work surface bonded to the soldering iron tip.

Good luck & 73,
Harley
KI7XF

After step 5.

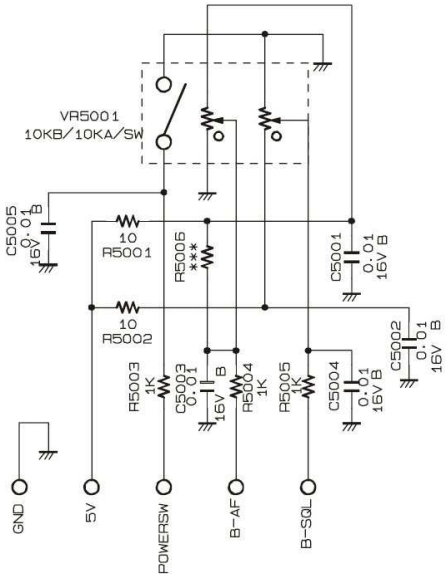


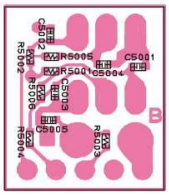
After step 6.



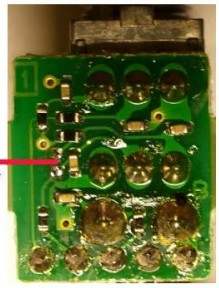
Location of
removed resistor

Left Side





Location of
removed resistor



Right Side