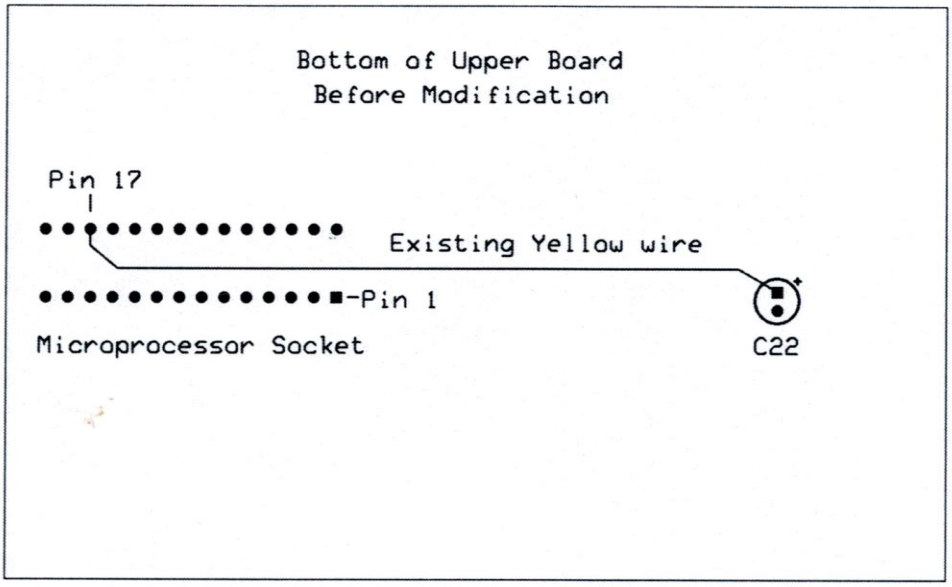
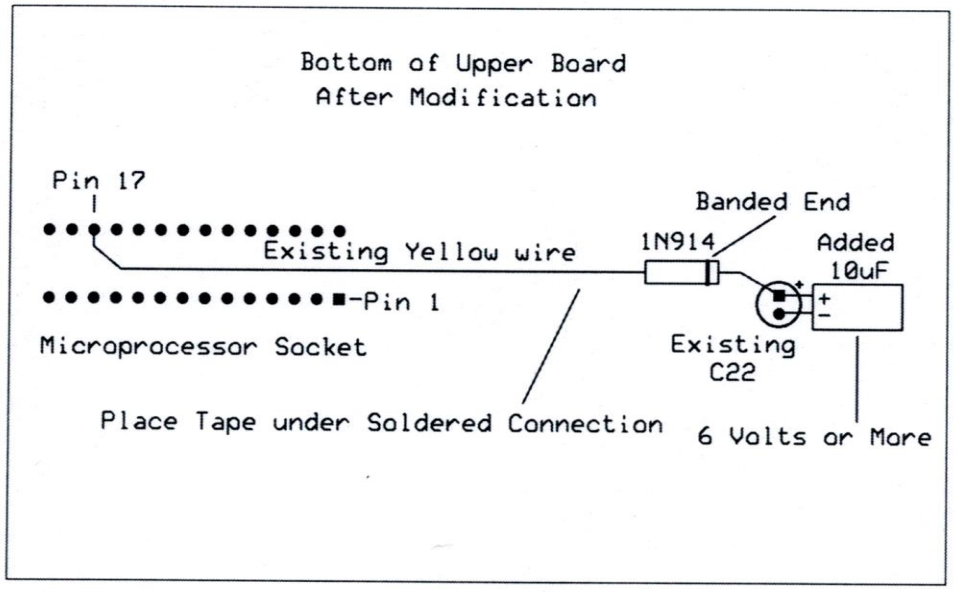
TR-25 Version V.0.20 Sidetone Hardware Mod Note

This modification note only applies to TR-25 transceivers that show V.0.20 on the OLED display upon turn-on.

Some users prefer to have a very low sidetone level. When attempting to set the level near the low end of the sidetone level adjustment pot range, you may start to hear transmitt-receive switching transients that sound like clicking noises. These are not transmitter clicks, and they only affect the receiver when the sidetone level is low. The fix for these clicks is to slightly extend the the falling edge of the microprocessor-generated receiver gain reduction pulse. This mod is something that you can do yourself if you need a low-level sidetone, and if you feel comfortable with a soldering iron. You should observe standard anti-static precautions such using a static grounding strap, and perhaps working inside a large metal cookie sheet. Or, you may return your unit to me to have this mod installed at no charge. If you use a more moderate sidetone level and are not hearing the clicks, you do not need to be concerned with the mod. No one will be quized if they try this mod themself and something goes wrong. Just return the unit to me for a no-charge fix with no questions ask.

The modification requires that a diode and a 22uF capacitor be added to the upper PC board. The diode (1N914 or similar) is added in series with the yellow wire on the bottom of the upper board that connects the microprocessor pin 17 to the 10uF capacitor C22. An additional 10uF capacitor is then bridged accross the existing 10uF capacitor C22. This added capacitor may be any working voltage above 6 volts. The diode may be a 1N914, 1N4148, or just about any Schottky diode such as a 1N5817. Even the lowley 1N4000 series rectifier diodes will work so long as they don't have too much forward voltage drop. Several 1N4002 and 1N4003 diodes were tried, and all worked fine. If the diode has too much forward voltage drop, and if any of the FETs that receive this pulse have a gate threshold voltage that is at or above the upper specified limit, they may not turn on properly. I think this is more of an abstract possibility than a real issue. I tried about 8 different diodes on three different TR-25 units and all seemed to work just fine. See the drawings for before and after the modification.


Bottom of Upper Board
Before Modification
Pin 17
Existing Yellow wire
Pin 1
Microprocessor Socket
C22


Bottom of Upper Board
After Modification
Pin 17
Banded End
1N914
Added
10uF
Existing Yellow wire
Pin 1
Microprocessor Socket
Existing
C22
Place Tape under Soldered Connection
6 Volts or More

7/15/2021