

## TS-670 Tx Expansion mod (24MHz)

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\*\*\* PLEASE TRY AT YOUR OWN RISK \*\*\*

This mod is originally invented by JJ1ILR.

### Problems:

Although TS-670 utilises the same TX circuit for the range between 6.6-8MHz and 21-30MHz, it cannot transmit outside the ham bands. This is because pin19(P61) of IC20 in the Control Unit can't get the status HIGH, and thus Q42 can't get switched on, even if PTT is pressed.

### Solution: ([diagram \[PDF 205KB\]](#))

To put the collector of Q42 into LOW status when PTT is pressed, use PTT signal to gate this behavior. On circuit diagram, connect between the SS terminal of CN3 in the Control Unit and the collector of Q42 with a diode. Anode of the diode is for the collector of Q42 and cathode is for SS terminal.

Step by Step:

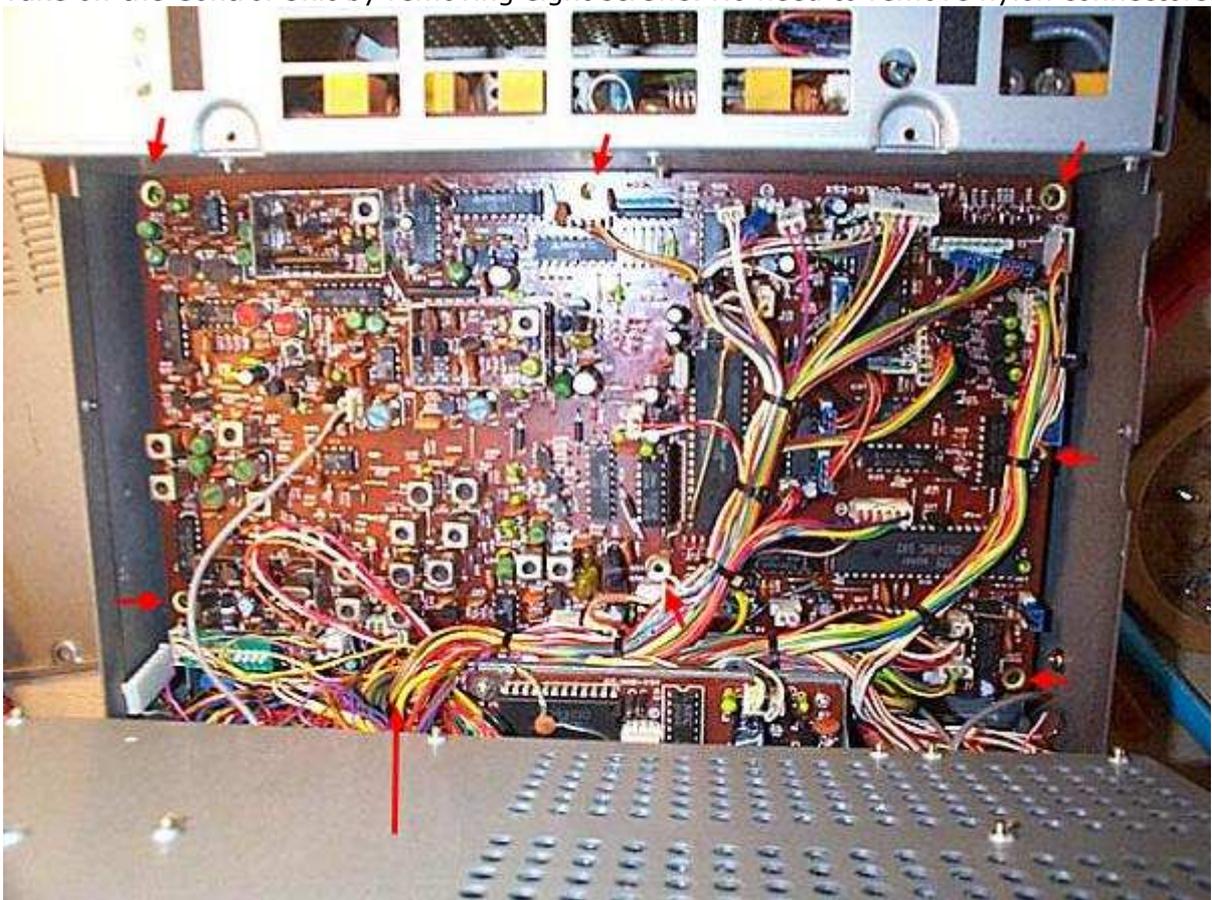
1. Remove the top cover of your 670.



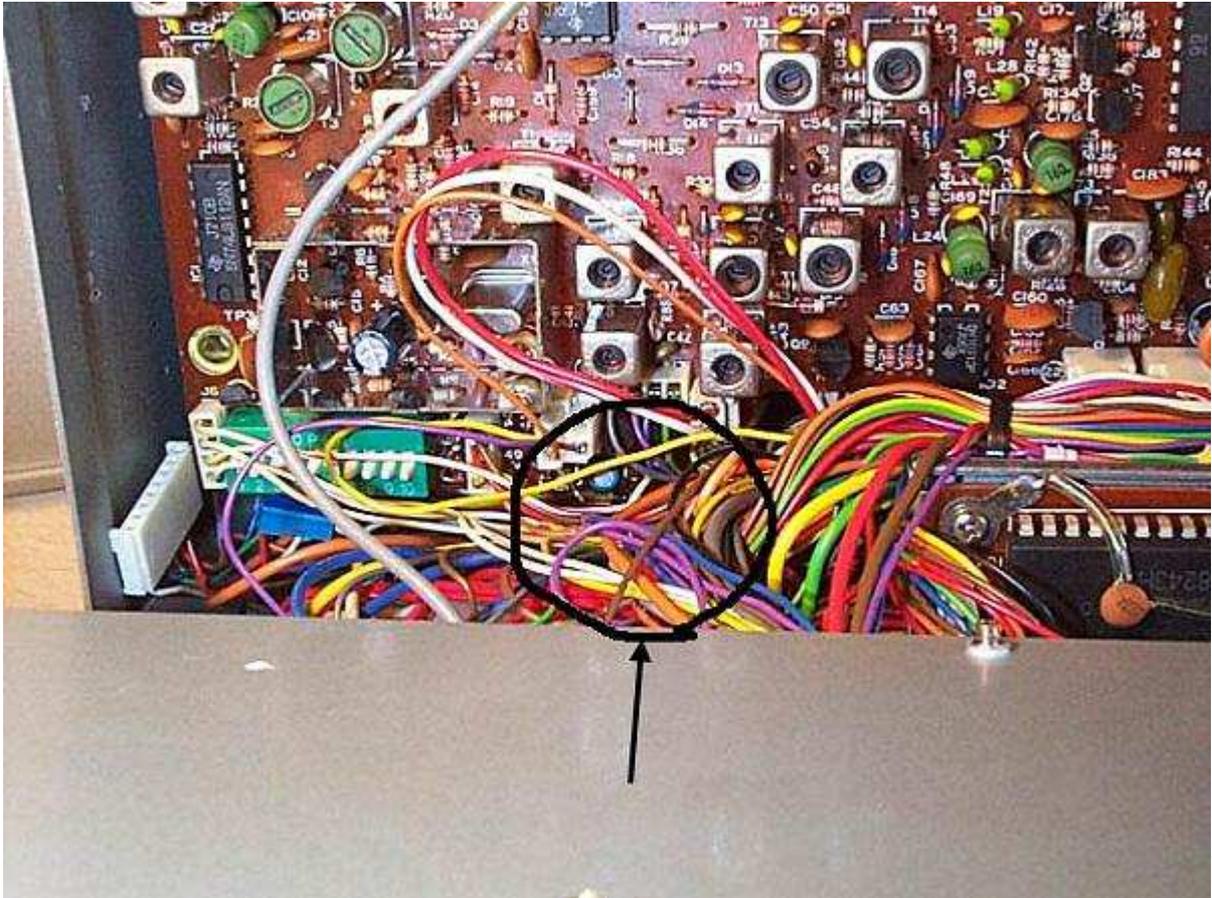
2. Lift the IF Unit by removing the two screws (shown with red arrow in the above picture).



3. Take off the Control Unit by removing eight screws. No need to remove nylon connectors.

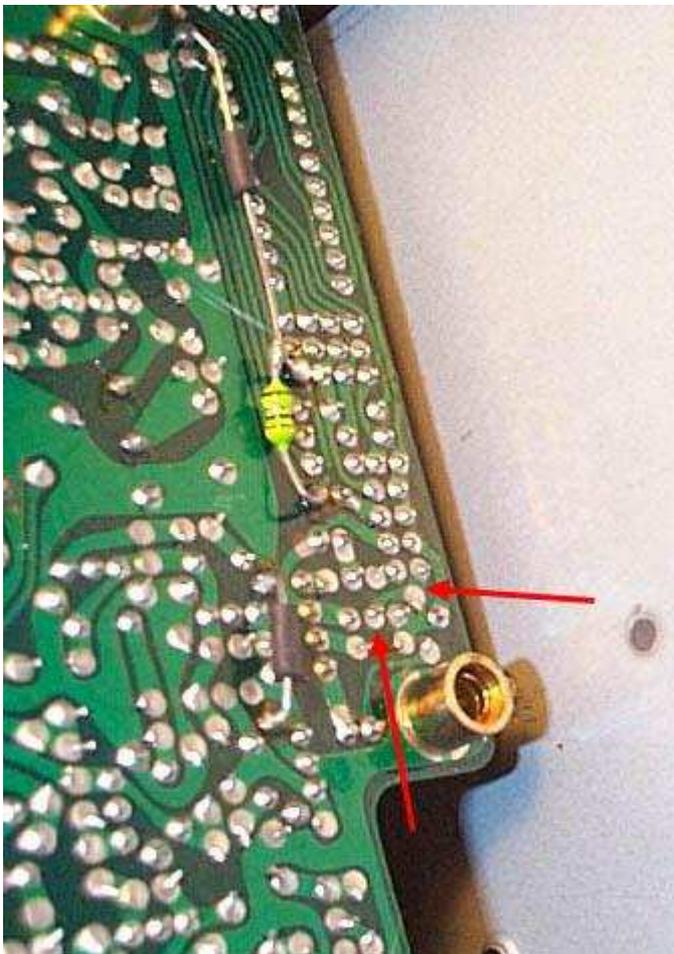


4. Eight screws are indicated by red arrows. One of them is very difficult to find (with the long arrow).

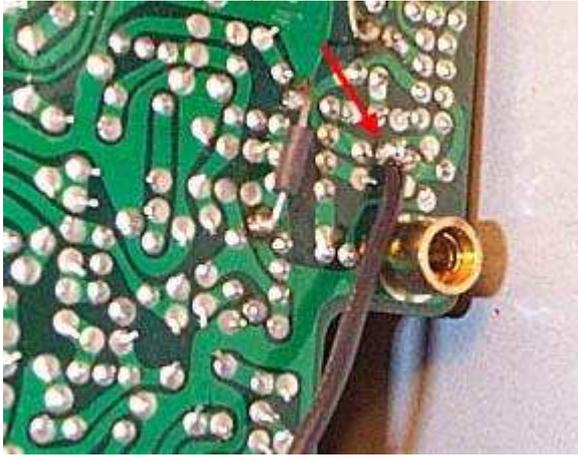


5. Difficult to find screw is located somewhere around here.

6. Now, reach the back of the Control Unit PCB. Near the above 'difficult to find' screw, you should find the land for Q42 collector (indicated by arrow below). It is connected with R176 and R177 there.



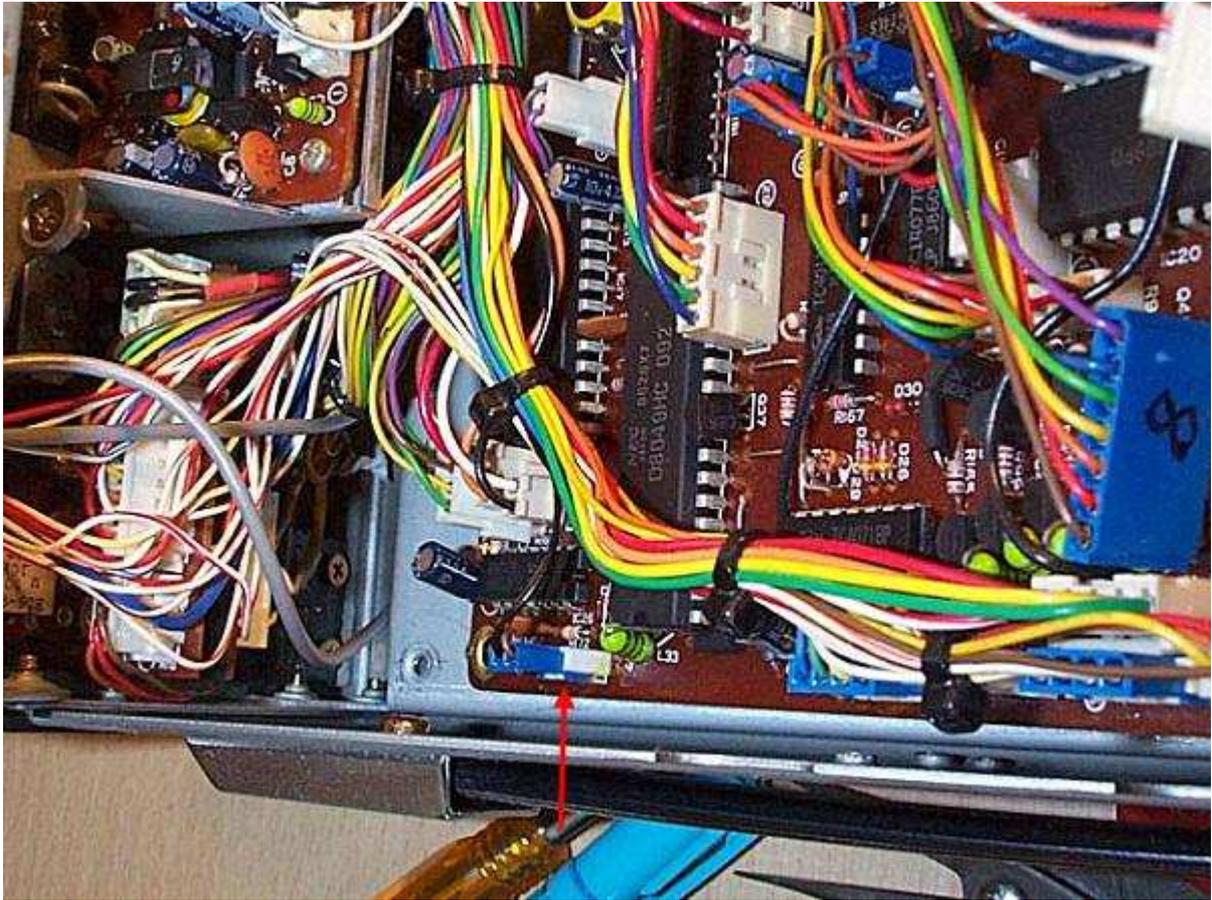
7. Solder carefully a piece of wire there.



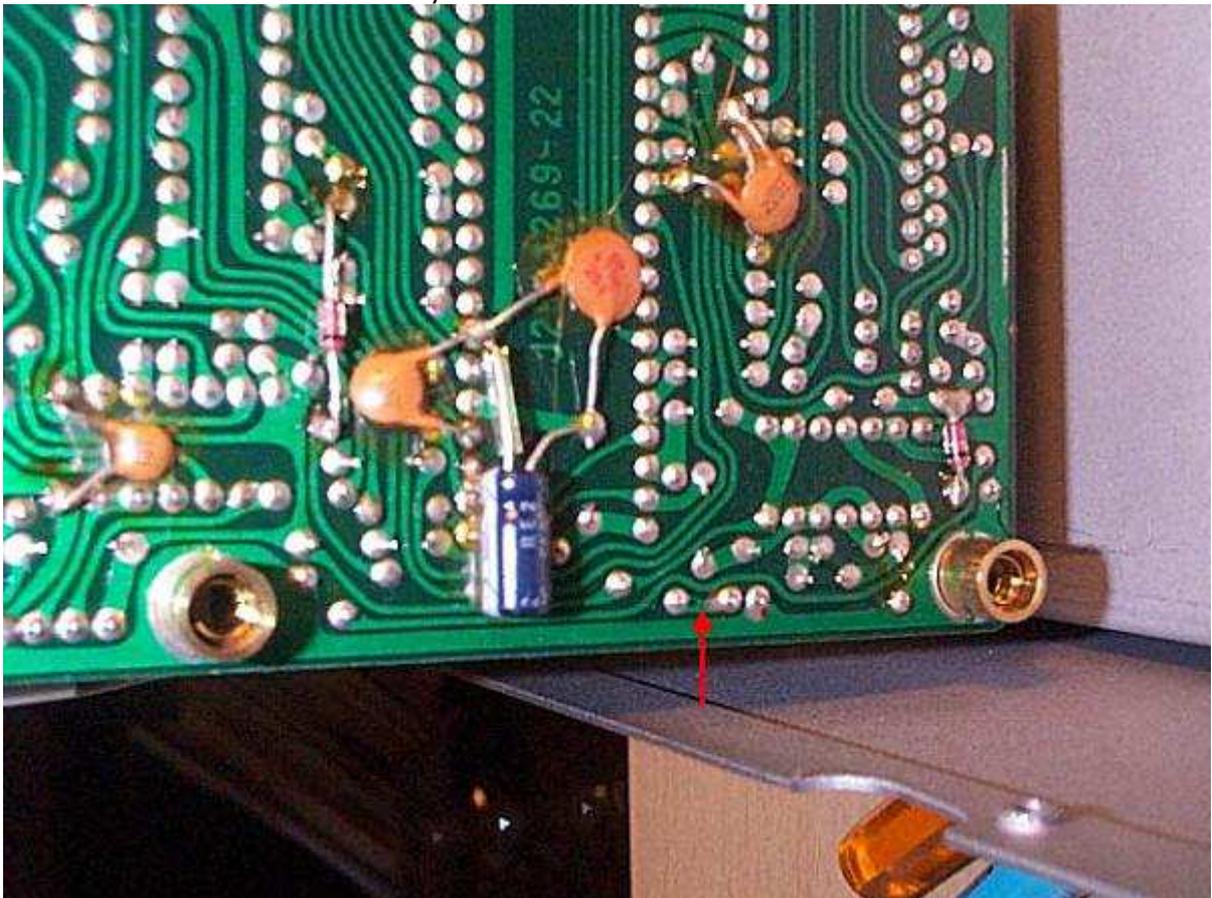
8. As a diode, you can use any kind of cheap switching diode.



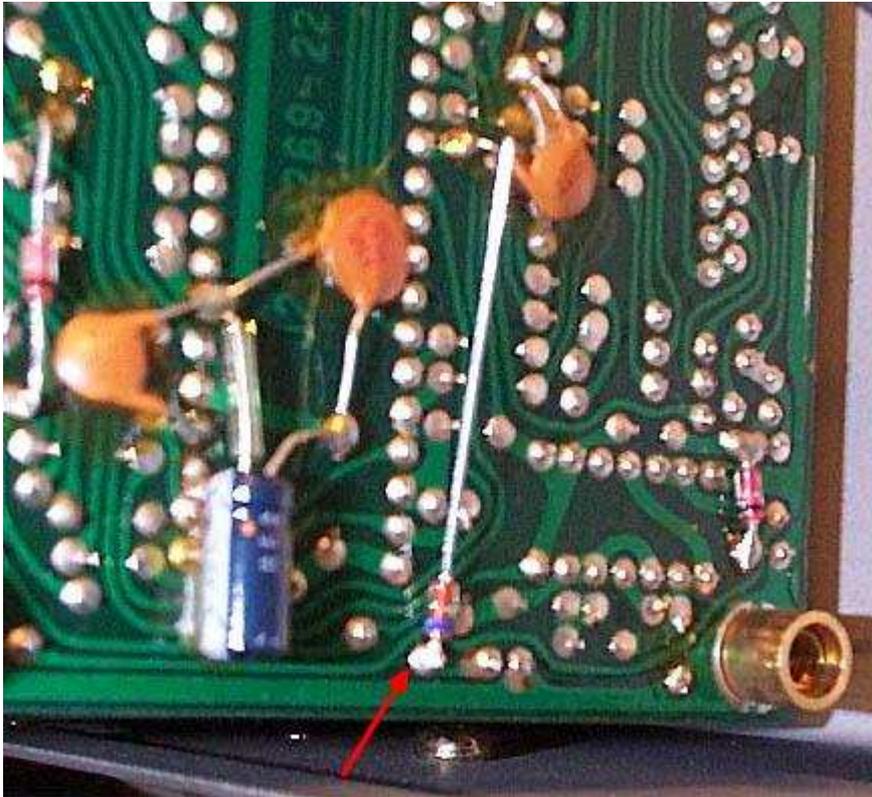
9. Locate the CN3 connector. It is easier to find than the Q42!!



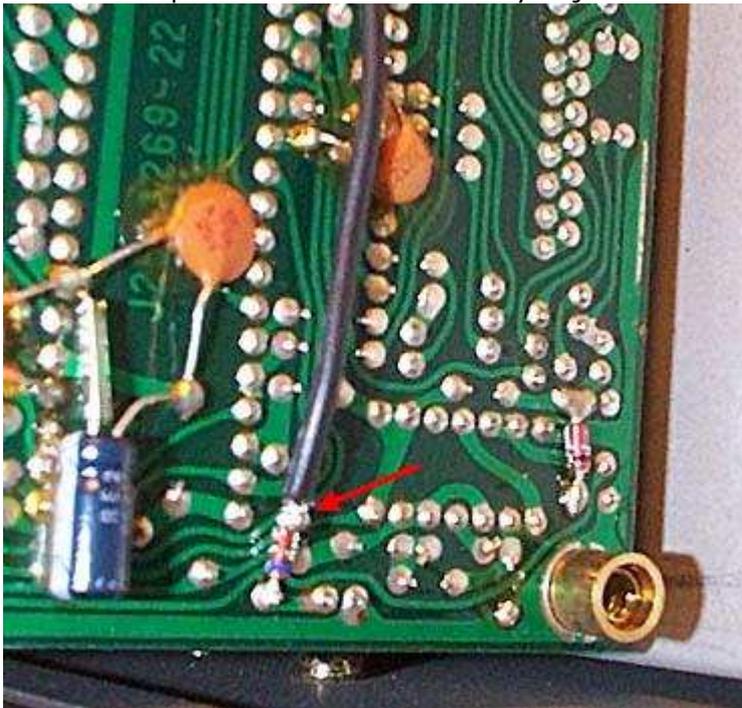
10. Reach the back of the PCB and you should find the land for SS terminal.



11. First, solder the cathode of the diode.



12. Then hook up its anode with the wire you just soldered at Q42.



13. Now you have DONE it!! You get 24MHz TX.



rin JG1VGX, 2004/Dec/30

See also [this article](#) (1 Mb) from International Radio and Computer INC.

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# CONTROL UNIT (X53-1370-00)

