

TS-64 Mastr II Modification for COS Triggered Tone Output

The TS-64Mstr II had the jumper set for a positive signal for tone detect from the factory, so no change was required. This should be checked to make sure the jumper is not closed.

The transistor mod is installed on a blank space on the board, and is simple to add. The only reason for adding the transistor and interrupting the orange wire is to allow the tone to only be transmitted during input COS or remote base activity. In band links are easily implemented with this set up on a repeater. Just put a radio on the repeater frequency with tone encode and decode enabled and the radio will only see the user, not the repeater IDs or squelch tail.

Unlike the stock GE tone board, the TS-64Mstr II will encode and decode at the same time, and it plugs into the existing tone board connector.

It has the advantage of a filtered discriminator output which has the incoming tone removed. This output is fed to the controller input and allows having a tone output without the beat between the incoming tone and the output tone. This beat goes into and out of phase and results in very unreliable tone detection for receivers on the output of the repeater.

The TS-64Mstr II can be easily modified to only output the tone while a user is keyed on the input of the repeater and not during the ID and squelch tail. A external input is provided so that the tone can be active during a link input also. With this set-up an in-band link can be established to the repeater without any modification to the repeater. Using a link radio with both encode and decode capability used will let the link operate without seeing the ID or squelch tail.

As many additional link CAS/CTCSS detect lines as desired can be added to the transistor NOR gate by simply adding additional 200 K resistors in parallel with the ones shown. Use the RXMute signal input from GE receivers as the tone detect line output since by lightly loading the line with a 200 K input resistor to the NOR gate, the RXMute input is converted to an output.

Using the TS-64 Mstr II and some spare frequency select pins on the rear of the GE Mastr II Base Station chassis, the complete interface to an external controller can be done by just plugging into a couple of Molex connectors on the rear of the card file.

See the schematic of the modification in the:

TS-64Mod.pdf file in this directory.