

Useful Mods for your Tuna Tin 2 Kit

Here are a couple of simple modifications that you can make to your TT2 transmitter kit to make it better and easier to use. They include: (1) a cure for the chirp, (2) addition of a keyer chip, and (3) output power increase.

All mods are shown in the schematic on the next page.

Chirp Fix

The TT2 circuit has a tendency to "chirp" when keyed, as do many simple transmitter circuits. (A "chirp" is a small shift in frequency on each dit or dah as heard on the receiver, often due to the buffering used in these simple designs.) This chirp may be solved by adding a 2N3906 key-switch in the power line.

Basically the objective is to get the key out of the power circuit and put the 2N3906 in it - rather than your key acting as the on/off switch, the 2N3906 acts as the switch. You can use four components - R8 (1K ohm), R9 (470 ohm), C12 (0.1 uF), and Q3 (2N3906).

1. Disconnect the V+ from the key jack and remove C9.
2. Connect the V+ line to the emitter of the 2N3906.
3. Connect the collector of the 2N3906 to J1 where the power gets to the circuit.
4. Remove the line from the other terminal of the key jack.
5. Ground the key jack.
6. Connect R8 (1K ohm) to the "hot" terminal of the key jack - the one at the tip of the plug.
7. Connect the other end of R8 to the base of the 2N3906.
8. Run R9 (470 ohm) from the 2N3906's emitter to its base.

9. Run C12 (0.1 uF) from the 2N3906's collector to its base.

Adding a Keyer Chip

It is a piece of cake to add the popular Embedded Research "TICK" keyer chip to the TT2 transmitter, thus allowing you to use paddles instead of a straight key. This turns a "novelty" TT2 transmitter into a "regular use" transmitter because it's so much easier to make lots of contacts, and to have longer QSOs using a paddle. See the simple circuit in the schematic on the next page ... it ties in very conveniently with the 2N3906 mod above for the chirp. Just follow the schematic and you should have no problems.

The TICK chip by Embedded

Research is available from Bill Kelsey at Kanga US, 3521 Spring Lake Dr., Findlay, OH 45840
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 Output Power Boost

You can increase the TT2 power output to about 250-400 mW by adding a 1K pot (one of those little board mounted pieces) in parallel with R7. You could gradually decrease Q2's emitter resistance until Q2 gets hot. Some of us have been able to turn the pot to minimum value with no heating of Q2. I now have about 12 ohms at Q2's emitter.

I hope this info is helpful. I've had a lot of fun with this little rig - have about 60 QSOs on it in the first month it was on the air.

NOTE: These TT2 application notes were originally published in QRP Homebrewer for Winter 2000, as submitted by Jake Carter, N4UY in Vienna, VA. You can email Jake at

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