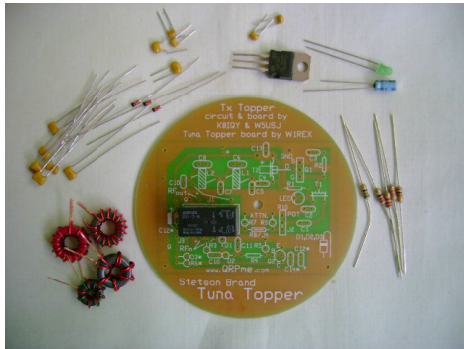


Tx/Tuna Topper Assembly

W5USJ Drawing v2 10 Dec '08



Tuna Topper PCB and Parts

Overview

Before you start, inventory parts and make decisions about the amplifier configuration you want.

1. No attenuator, either a dB pad or 500 Ohm pot.
 - a. No attenuator -- use jumper from K1 to C1 or...
 - b. dB pad -- select resistor values for R7, R8, R9 and wattage (optional) or...
 - c. 500 Ohm trimmer (R10) -- See LOM (optional)
2. Fast or slow T/R switch (assembly is different)
 - a. Fast T/R -- character switch -- use R6* and not C14**
 - b. Slow T/R -- word switch -- use C14 and not R6, J3

Assemble in the order suggested as follows

[] J1, J2, J3, J4 – Jumpers, J1 always, J2 with dB pad, J3 with slow T/R, J4 w/trim pot, J4 no atten's – K1 to C1

[] C10 – 0.01pF

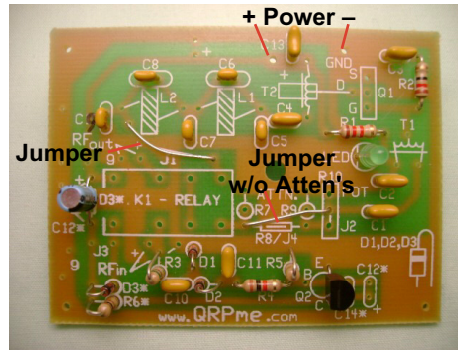
[] C1 thru C4, C11, C13, C14** – 0.1pF

Solder and trim all leads

[] R1, 1r2k 1/4 W, Brn Red Red

[] LED, short lead to PCB ground

Solder 4 leads -- trim two as shown then test LED. **Use Care.** If you connect 12 Volts directly to both LED leads it will be damaged. Connect 12.6 Volt supply – plus lead to supply side of R1 and neg side to LED ground lead. LED should light and the LED voltage should be about 2 to 2.1 Volts. Disconnect power and trim remaining leads. **LED must light to avoid Q1 damage.**



TxTopper PCB and Partial Assembly ("wings" sheared off)

Fast T/R switch assembly

Cont.

[] R2, R3, R4, R5, R6* – 12, 51, 1k, 47k & 100 Ohms

Solder and trim all leads

Note: D3 and C12 locations are different depending on T/R switch selection

[] D1, D2 and D3 – 1N914 (or 1N4148) observe polarity marked on PCB

[] C12 – 2.2uF electrolytic, observe polarity

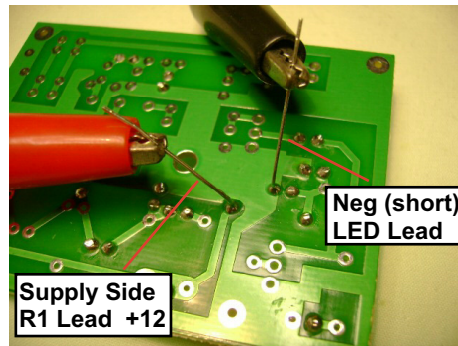
The following capacitor values depend on band selection. Use care in assembly, observe value marking carefully.

[] C5, C6, C7, C8, C9 – lowpass filter, see LOM.

Solder and trim all leads

[] K1 – DPDT relay

Hold in position and solder all leads



Connections to test LED

Cont.

Prepare toroids T1, T2, L1 and L2 for band selected

[] T1 – bifilar-wound input transformer

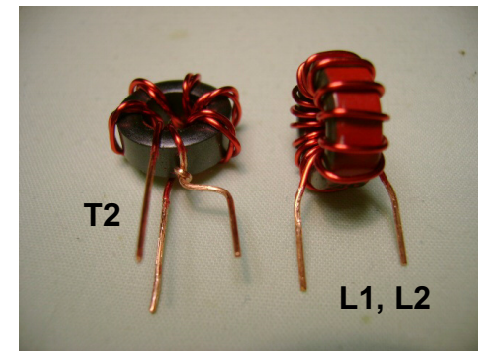
Insert in position marked, solder and trim leads.

[] T2 - bifilar-wound output transformer

Form leads as shown to facilitate assembly
Insert in position marked, solder and trim leads.

[] L1, L2 – lowpass filter inductor toroids

Form leads as shown to facilitate assembly
Insert in positions marked, solder and trim leads.



Lead forming for easier assembly

Note: Q2 can be a metal can or plastic TO-92 part. Board holes for straight-line or tripod leads are provided.

[] Q2 – 2N2222 (or 2N3904) transistor

Insert in holes, solder and trim leads

Final Assembly and Test

Before installing FET Q1 measure resistance between power connection point and ground – greater than 10k Ohms. Initially high and lower as capacitors charge.

[] Q1 – FET TO-220 Insert in holes, solder, trim leads

Attach power leads of at least 16 gauge and length to accommodate assembly into final enclosure. Reducing voltage drop to amp with a heavier gauge is advisable.

Apply power and verify voltages throughout circuit. Disconnect power and continue assembly into enclosure.

Note: A heatsink of adequate capacity is required to avoid heat damage to Q1 during operation with RF drive.