

TET-EMTRON

TB-41K

4:1 Balun Kit

1kW PEP Current Balun.

Tools Needed:-

Soldering iron and solder.
No.1 Phillips head Screwdriver.
Small pliers.

Heat Gun
Sharp Craft Knife.
8mm Socket

Parts List.

Part No.

607 Balun Box with lid x 1.
205 F14 Ferrite ring x 1.
184 335mm clear Heatshrink x 2.
165 425mm of 1.00mm enamelled copper wire x 4.
454 SO239 2 hole connector x 1.
31 M3x12mm bolts x 2.
41 M3 Nyloc nuts x 2.
204 Small solder tag x 1.

Part No.

35 M5x20mm bolt x 1.
82 M5 Wing Nut x 1.
0 Plastic button x 1.
45 M5x12mm Bolts x 2.
28 1/4x5/8 Flat Washers x 2.
14 M6 Spring Washers x 2.
760 Balun Kit Sticker x 1.
761 Clear sticker x 1.

What we are going to make a Guanella balun using two 100 ohm transmission lines, and connect them in parallel on one side and series on the other. The parallel side is 50 Ohms and the series side is 200 Ohms.

Instructions.

1. Unpack the kit and make sure it is all there according to the parts list at the top of this page.
2. Bolt the connector on using the 2 x M3 bolts, M3 Nyloc nuts and the solder tag. I usually put the solder tag on the right, as in the photo(Fig.1). Make sure the solder tag is facing up, so you can bend it down over the nut to solder to it. Another helpful hint is mount the connector so the open side of the pin you solder to is at the top.
3. Wipe a black permanent marker along two of the wires so you can see them clearly in the heatshrink. Put one of the marked wires and one of the clear wires into a piece of heatshrink. Have about 40mm of each sticking out as in Fig.2. Do the same to the other two. Keep the wires as straight as possible.
4. Shrink the heatshrink down onto the wires. When a bit colder I usually roll something over the wire to help them get parallel again. Then an extra hit with the heat gun to keep the shrink tight.
5. Start with the heatshrink just clearing the edge of the ferrite and wind 7 tight turns around until the heatshrink just clears the ferrite again. IT IS VERY IMPORTANT THAT YOU DO NOT CROSS OVER OR TWIST THE WIRES DURING THIS PROCESS. Refer to Fig.3. Wind the second one in the other direction. Keep the matched wires (i.e. both the dark ones), on either the top of the wind or the bottom of the wind. Refer to the photo.
6. Strip the enamel off the four wires. Twitch both dark wires together, and then both the light wires at the end that you started with, that is the connector end.
7. At the other end (antenna end), twitch one of the dark and one of the light wires from opposite sides together and trim short T in all the wires. Refer to Fig.4.
8. Place the wound ferrite in the box and solder the bottom connections on. Trim the top connections and crimp and solder them also.
9. Next screw the M5x20 bolt through the hole from the inside. Best way is with a drill and socket.
10. I usually pump some non-acidic silicone under the balun, and on top, before I glue the lid on. This is to hold the internals sturdy, act as a buffer to heavy handling, and stop movement on the solder joints.
11. Glue the lid on using a good glue. I recommend and use "Holdit CA80", but any good "superglue" style or epoxy will work. Use a vice or similar clamp to hold the box together for a good bond.
12. When dry, put the cable strain relief hanger disc and wing nut on.(Fig.6) Put the flat washers and then the spring washers on the brass mounts with the M5x 12 bolts and your balun is complete.
13. All that left is the stickers. It is best to write them on a flat surface, using a ball point pen or a fine permanent marker. The clear sticker is to put over where you have written. This will protect it from the weather.

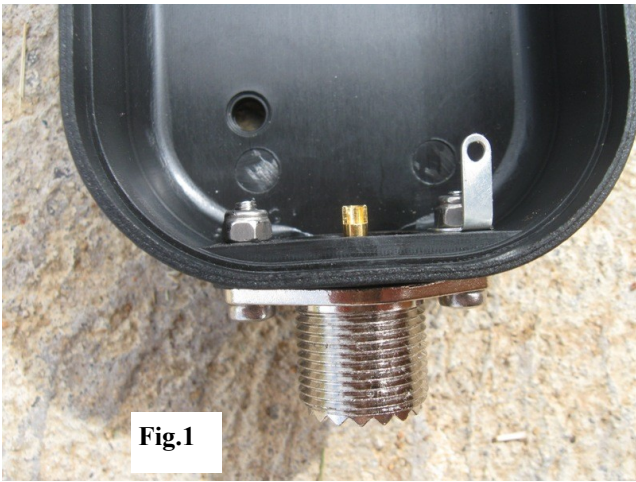


Fig.1

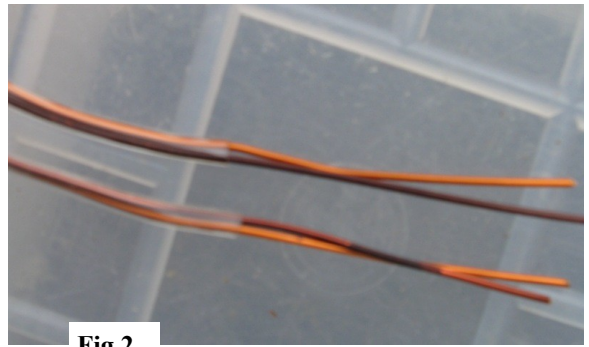


Fig.2



Fig.3



Fig.4



Fig.5



Fig.6

TET-EMTRON.

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