Balun 1:4 UNBAL to BAL

How to make the Toroids

Use two pieces of 0,5 mm enameled wire, one 25cm, one 20cm. Use them parallel, the shorter one is to help the wires to be identified after the windings have been done.

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Wind 3 turns trough the toroid, keeping the wired allway parall.Pay attention never to cross the wires.

Count the turns INSIDE the toroid. The picture shows 3 turns.

The 4th turn goes through the toroid and ends at the opposite part of the toroid as shown in the picture above.

At the opposite again count 3 turns. The complete count now is up to 7 turns. The reason to cross the toroid is to have start and end of the turns at opposite ends of the toroid.
At both sides of the toroid you should have a short and a long end of wire now.

Make the second ring in the same manor as the first. If it is ready, put one toroid over the other. Place the turns of toroid 1 into the free space of torroid 2 as shown in the picture below.
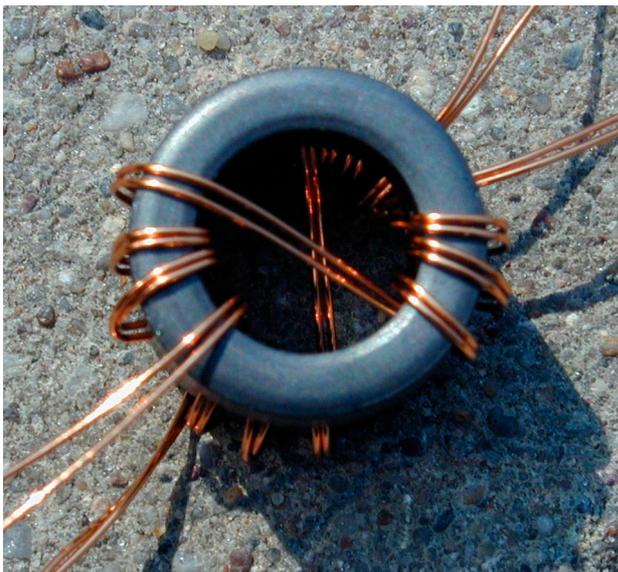
Start at one side of the torroids. It does not matter, which side you start. Twist the two short of both rings and the two long wires of both rings together. This side is the UNBAL 50 Ohm side. Solder the ends carefully next to the ring and cut the wire above the soldered part.

No at the opposite part twist the short wire of one ring and twist it together wit the long wire of the other ring. Solder an cut just above the ring. The remaining short an long wire are the BAL 200 Ohm output of the balun.

If you want to use the balun in the QRPproject format, prepare the enclosure and solder the UNBAL part as short as possible to the BNC connector. The BAL side has to be soldered to the two 2mm banana jacks.

If you tray to use the BalUn inside an ATU, keep the 50 Ohm UNBAL leads as short as possible . A good match depends dramatically of the length of this leads. If you must use longer leads, please use coax line.