

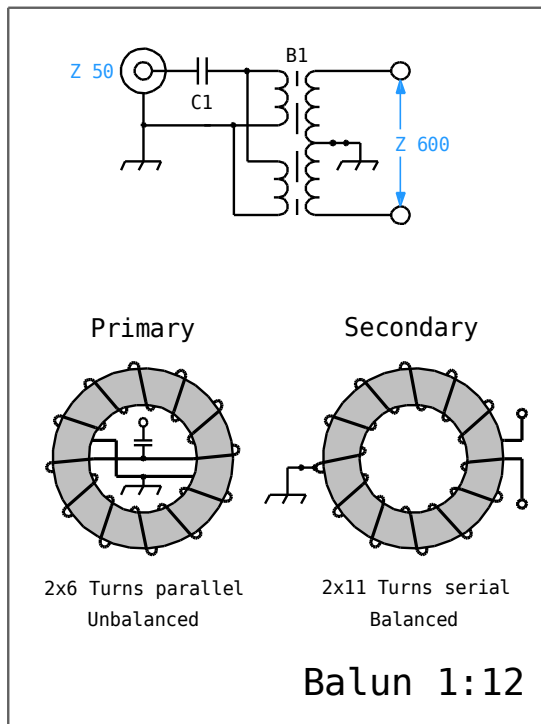
Single coil balun 1:12

This is a short description of wide band antenna transformer used as impedance transformer for high impedance balanced antennas; T2FD's, end fed V-antennas and verticals. This medium power balun can handle up to 100W transmitter power. It is of balanced, single coil, magnetic voltage transformer type, with secondary loop optionally grounded. This construction is based on **ZL2BBJ**'s ideas, modified for windings over 36 mm ferrite toroid core.

(Info: <http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=22656>)

- Unbalanced to balanced, impedance **1 to 12**, 50 Ω to 600 Ω.
- Frequency range from **2 to 30MHz** with SWR less than **1 : 1,6**
- Power handling capacity over **50W** carrier, with proper antenna.

Circuit Diagram



Toroid core

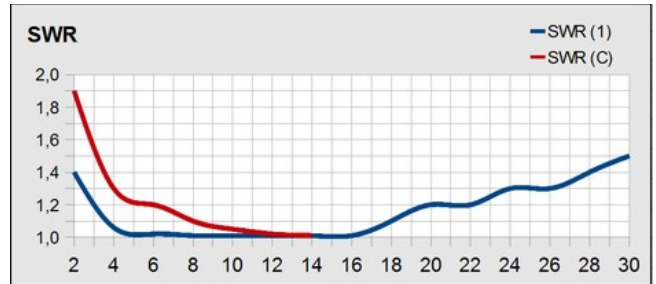
With protos we used **Ferroxcube TX36x23x15**, material **4C65**. Also Amidon **FT140-61** might be suitable... but iron powder not.

Winding

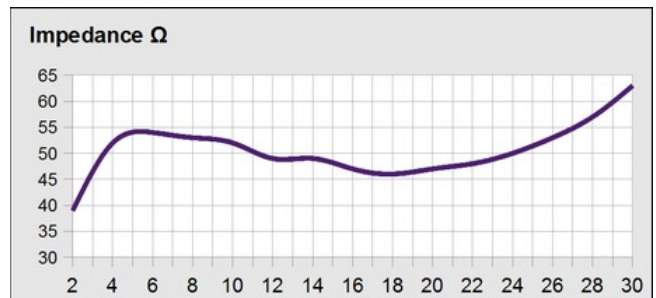
Details on pictures. The primary is parallel connected **2 x 6 turns** of \varnothing **1,0mm** enamelled copper wire. The secondary is serial connected **2 x 11 turns** of Suhner Radox 125 **0,25mm²** high temperature equipment wire. Also some PTFE insulated coaxial inner conductors work fine. The secondary may be grounded at the center point. This grounding should be connected with T2FD's; do not connect with end fed V-antennas, with ground balance wire. The secondary is wound very tightly over the primary with minimal inter-winding capacitance. Series capacitor **C1 (3300pF 1250V, Wima FKP1)** is optionally used to minimize SWR on lower bands.

Enclosure

The protos were boxed into ABS enclosures, Hammond 1594BBK, output connectors are heavy duty wire terminals and the coaxial connector is standard BNC female with flange. The enclosure was finally potted with beeswax. The box is intended to fix with M3-7 insulated spacers, at the bottom of the box.



This SWR curve was measured with antenna analyzer, balun loaded with 680Ω low inductance resistor, Vishay RHC50 680 Ω 50W . The red plot is SWR **without** capacitor C1.



Toroid Coil



Enclosure

