

1:4 GUANELLA CURRENT BALUN - HF

1:4 Guanella Current Balun for HF and MF bands. (0.3MHz - 30MHz).

Requiring a balun to feed a balanced feed line from an un-balanced T-Match tuner, a 1:4 Guanella Current balun design using a single FT240-43 ferrite toroid core was selected. An impedance transformation balun is required due to variations in impedances that are nearly always on the higher side of the nominal 50 ohms when feeding a multi-band balanced antenna system. The balun may be required to step up the feed impedance presented at the T-Match tuner to improve the matching range.

Construction:

The 1:4 current balun consists of two double bifilar windings of 11.5 turns each, wound evenly spaced around the FT240-43 ferrite toroid core, as shown in figure 2.

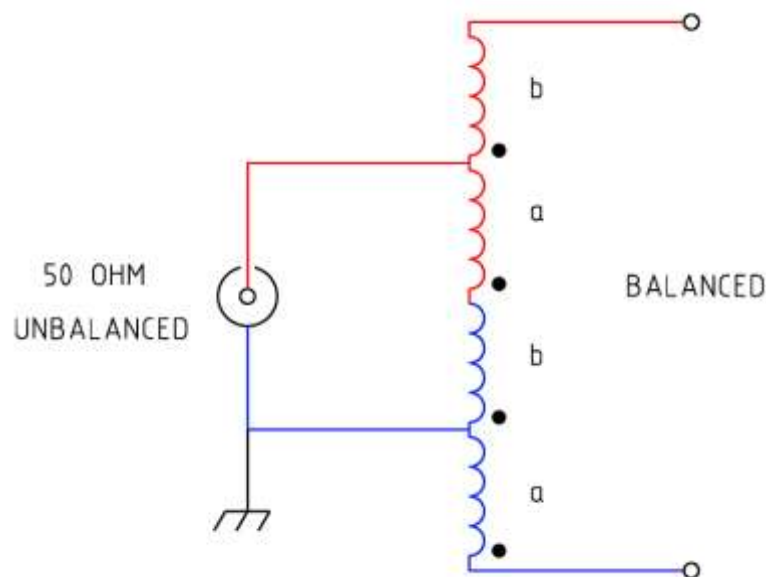


Figure 1 Schematic of the 1:4 Guanella Current balun.

Type	Impedance transformation
Ratio	1:4
Frequency Range	1.5 ~ 30MHz
Core Used	FT240-43 Ferrite Toroid Core
Number of turns	a = 11.5 tuns plus b = 11.5 turns
SWR	1.2:1 or less. Ref: Figure 3

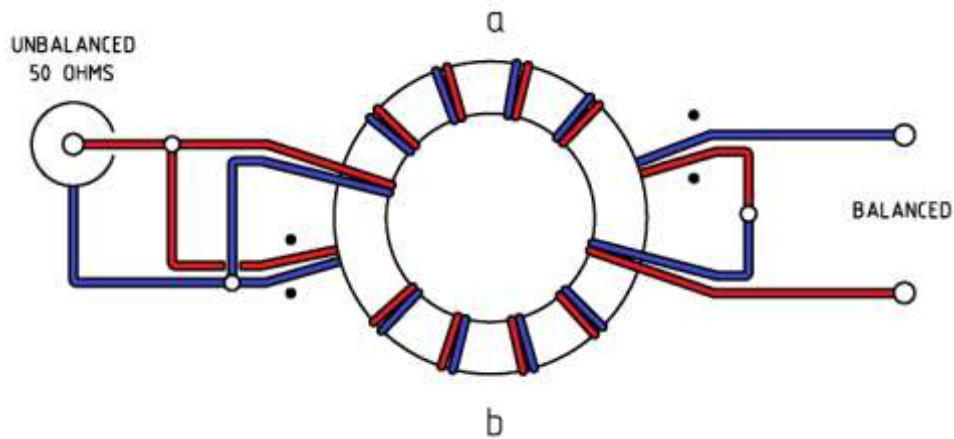


Figure 2 Wiring of the 1:4 Guanella Current balun.

Note this drawing shows winding connections and not the number of turns required. See article for details.

Parts list.

- 1 x FT240-43 ferrite toroid core.
- 4 x 800mm of PTFE silver plated copper wire, 1.0mm, AWG 18, WHITE