

CHOKING BALUN - Version 1

Choking balun for lower HF and MF bands. (1.8MHz - 10MHz).

Requiring a choking balun to isolate the potential RF pick up on the coax cable as it runs past equipment such as computer within the radio room at lower HF and MF frequencies a simple method of winding RG58 coax onto a Powdered Iron Toroid Core was constructed.

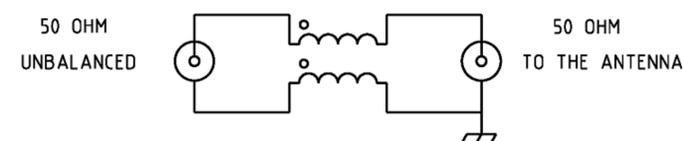


Figure 1 Schematic of the 1:1 choking balun

Construction

The construction was simply to wind as many turns of RG58 coax onto the T250-26 Powdered Iron Toroid Core as would fit. The result of 23 turns achieved a 130uH series inductive reactance to common mode RF currents.

Parts list.

- T250-26 Powdered Iron Toroid Core (Micro Metals)
- About 3mtr of RG58 coax.
- 2 x N type chassis mount connector
- Sealed Polycarbonate Enclosures 165 x 125 x 75mm



Photo 1 Low band choking balun assembled.

Testing

The AIM 4170C antenna analyser recorded a 130uH inductive reactance with intertwining capacitance resulting in a series resonates at approximately 3.2MHz. Figure 2 show the inductive reactance as measured in the coax shield presents acceptable reactance from approximately 1.8MHz to about 10MHz.

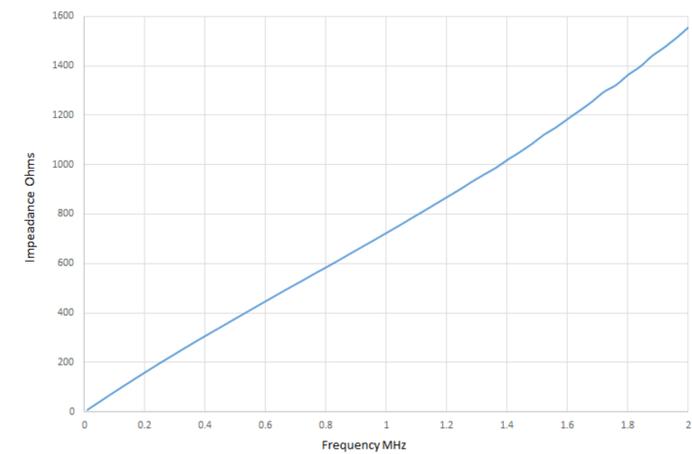


Figure 2 The evaluation of the choking impedance of the balun over a bandwidth from 10 kHz- 2 MHz

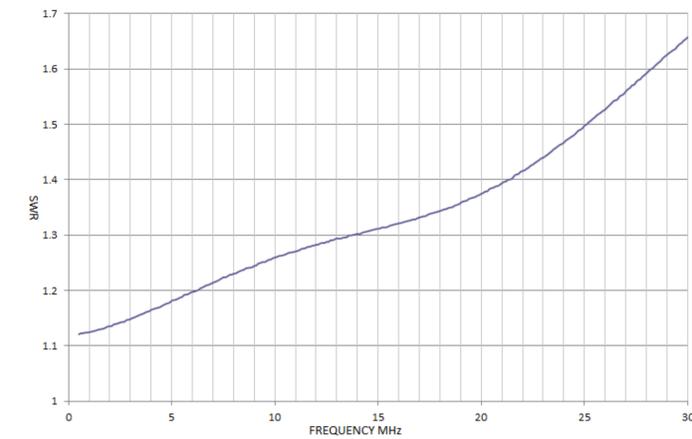


Figure 3 The evaluation of the balun with a 50 ohm load over a bandwidth from 100 kHz- 30 MHz. The balun is shows increasing SWR against increasing frequency from the ideal 1:1.

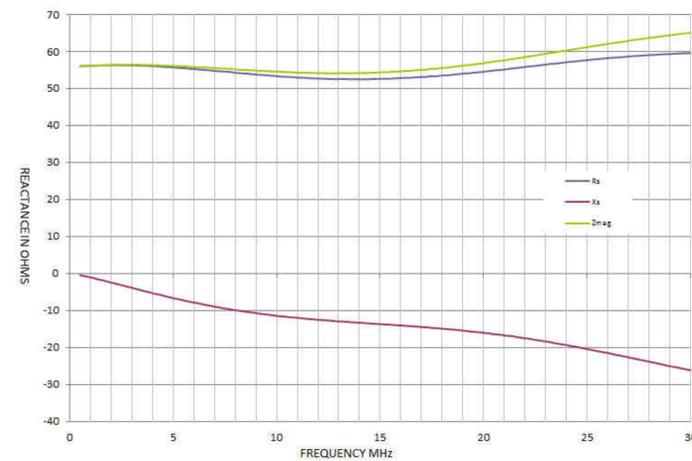


Figure 4 The evaluation of the balun with a 50 ohm load over a bandwidth from 100 kHz- 30 MHz. The balun is shown to introduce some capacitive reactance from the ideal load.

Also see other baluns and ununs:

- [BALUN 1:1 CHOKE & 1:4 BALUN](#) HF ladder feed-line to coaxial cable combination choke and 1:4 balun. (0.1MHz - 30MHz).
- [BALUN 1:1 CHOKING](#) Choking balun for lower HF and MF bands. (200kHz - 10MHz).
- [CHOKING 1:1 BALUN - HF BANDS](#) Reiserst choking balun. (1.0MHz - 30MHz). FT240-43 Ferrite Toroid Core.
- [CHOKING 1:1 BALUN - HF BANDS](#) Reiserst choking balun. (1.5MHz - 30MHz). FT140-43 Ferrite Toroid Core.
- [CHOKING 1:1 BALUN - LOW VHF BAND](#) Choking balun. (10MHz - 60MHz). FT140-43 Ferrite Toroid Core.
- [BALUN 1:1 CURRENT](#) 1:1 Guanella Current balun using a L15 ferrite core (1.8 - 30MHz).
- [BALUN 1:4 CURRENT](#) 1:4 Guanella Current balun using a L15 ferrite core (1.8 - 30MHz).
- [BALUN 1:4 SINGLE CORE CURRENT](#) 1:4 Guanella Current Balun, single FT240-43 ferrite toroid cores. (0.3MHz - 30MHz).
- [BALUN 1:1 VOLTAGE](#) 1:1 Ruthroff voltage balun using a T-200-2 powdered iron toroid core (1.8 - 30MHz).
- [BALUN 4:1 VOLTAGE](#) 4:1 Ruthroff voltage balun using a T-200-2 powdered iron toroid core (1.8 - 30MHz).
- [BALUN 6:1 VOLTAGE - VERSION 1](#) 6:1 Voltage balun using a L15 ferrite toroid core (1.8 - 30MHz).
- [BALUN 6:1 VOLTAGE - VERSION 2](#) 6:1 Voltage balun using a FT140-43 Ferrite Toroid Core (1.8 - 30MHz)
- [BALUN 9:1 VOLTAGE - VERSION 1](#) 9:1 Voltage balun using a L15 ferrite toroid core (1.8 - 30MHz).
- [BALUN 9:1 VOLTAGE - VERSION 2](#) 9:1 Voltage balun using a FT140-43 Ferrite Toroid Core (0.5 - 60MHz).
- [UNUN 9:1 VOLTAGE](#) 9:1 voltage unun using a T-200-2 powdered iron toroid core (1.8 - 30MHz).
- [UNUN 9:1 VOLTAGE VERSION 2](#) 9:1 voltage unun using a L15 ferrite core (1.8 - 30MHz).
- [UNUN 9:1 VOLTAGE VERSION 3](#)