CHOKING BALUN FOR LOW BAND VHF

Choking balun for upper HF to lower VHF bands. (10MHz - 60MHz).

Requiring a choking balun to isolate the potential common mode RF on the coax cable for a new 6m band Ringo antenna.

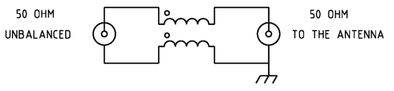

Figure 1 Schematic of the 1:1 choking balun

Type	Choking Balun
Ratio	1:1
Frequency Range	14 ~ 54MHz
Choking Impedance	2k Ohms minimum. *Ref: Figure 3*
Core Used	FT140-43 Ferrite Toroid Core
Number of turns	8 (4 + 4). *Ref: Figure 2*
SWR	1:1 *Ref: Figure 4*

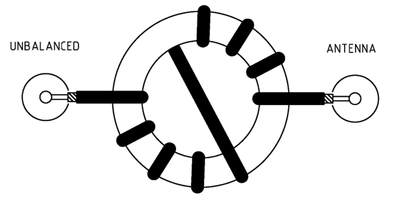

Figure 2 Winding details of the 1:1 choking balun

Construction

The construction was simply to wind 8 turns of RG174 coax onto a FT140-43 Ferrite Toroid Core. The result of 8 turns achieved an average of 40uH lumped value inductive reactance to common mode RF currents from approximately 10MHz to 70MHz.

Parts list.

- FT140-43 Ferrite Toroid Core
- About 0.3mtr of RG174 coax.
- 2 x N type chassis mount connector
- Sealed Polycarbonate Enclosures 82 x 80 x 55mm

Photo 1 Low band choking balun assembled.

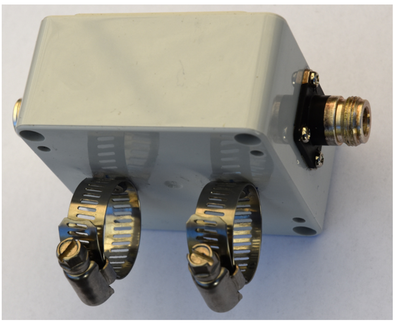

Photo 2 Rear view of the Low band choking balun assembled showing the hose clamp mast attachments.

Testing

The AIM 4170C antenna analyser recorded in Figure 2 show the Impedance as measured in the coax shield presents an acceptable 2000 Ohms or greater from 14MHz to about 54MHz.

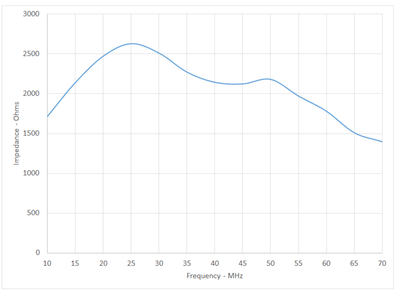

Figure 3 The evaluation of the choking impedance of the balun over a bandwidth from 10MHz- 60MHz.

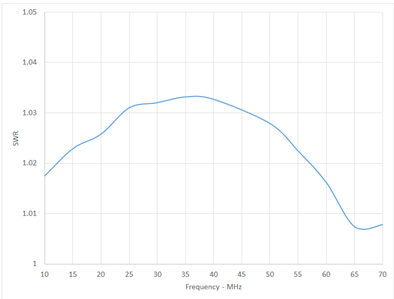

Figure 4 The evaluation of the balun with a 50 ohm load over a bandwidth from 10MHz- 70MHz. The balun shows a very low SWR from the ideal 1:1 and despite the visual appearance in the graph this result is almost perfect and flat.

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 Reisert choking balun. (1.0MHz - 30MHz). FT240-43 Ferrite Toroid Core.
CHOKING 1:1 BALUN - HF BANDS Reisert 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 9:1 voltage unun using a FT140-43 ferrite core (0.5 - 60MHz).

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