

HF FEED-LINE INTERFACE CHOKE AND 1:4 BALUN

HF ladder feedline to coaxial cable choke and 1:4 balun. (0.1MHz - 30MHz).

The main HF antenna is a 42m multi-band Doublet antenna fed with open wire ladder-line and enters the radio room with a sort of length of coax run through the roof and building wall to a T-Match tuner. The un-balanced coaxial cable is connected to the balanced feed line with the combination of a 1:1 choking balun and a 1:4 impedance step up balun connected in series. The antenna, feed lines, balun and antenna set-up is shown below in Fig 1.

The 1:1 choking balun is to mitigate common mode RF currents on the coax cable, reduces noise pickup on the coax from within the building entering the antenna system and also produce a balanced antenna system that will have a more predictable radiation pattern.

The 1:4 impedance step up balun is included to more broadly match the range of impedance at the antenna/feed line with the nominal 50-ohm impedance of the coax.

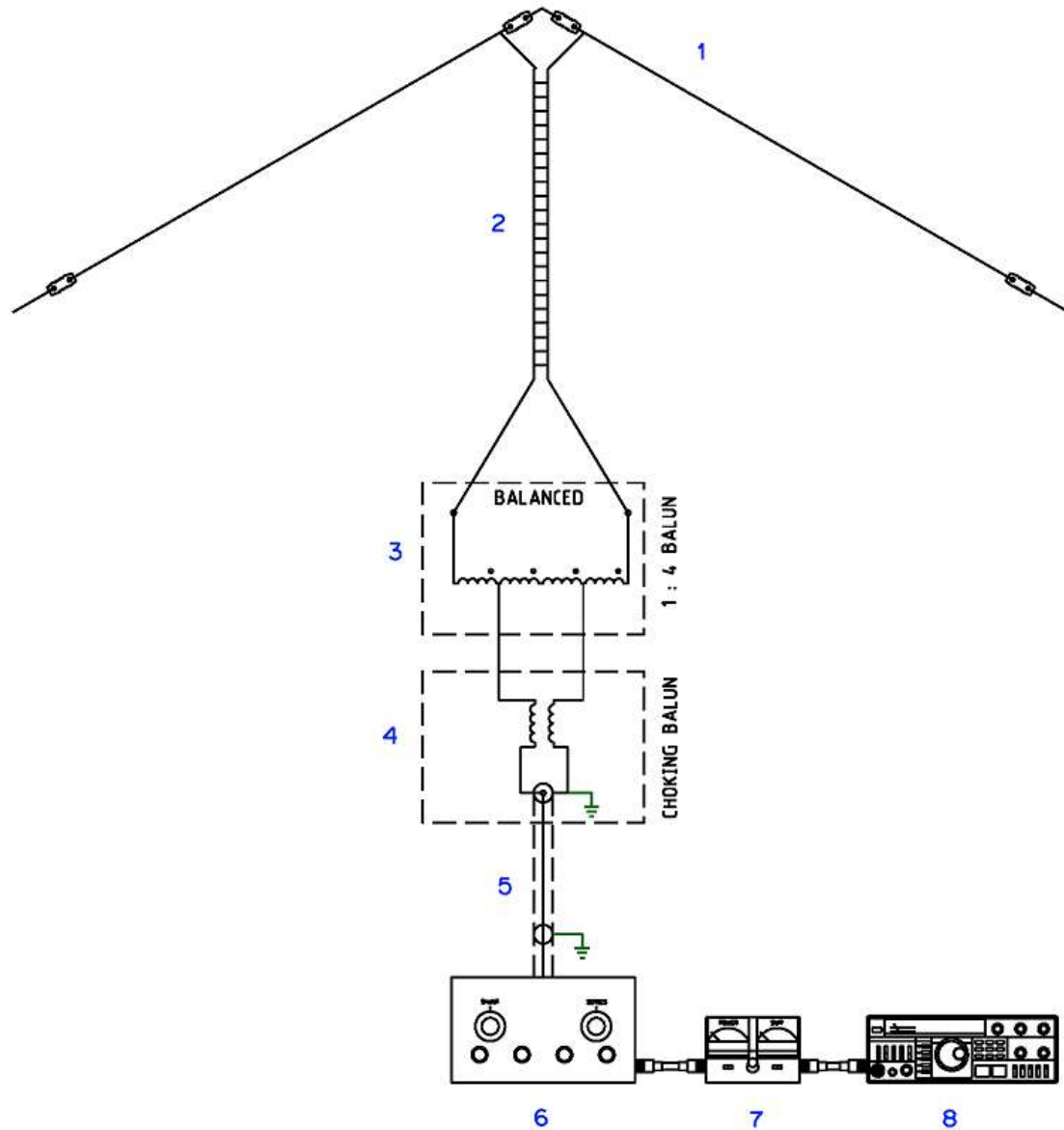


Figure 1 Multi-band Doublet, feed-lines and balun configuration

Basic Multi-band Doublet Arrangement

- (1) Inverted 'V' Dipole. (42Mtr total length)
- (2) 450 Ohm Ladder Line. (7.5Mtr)
- (3) 1:4 Current Balun. See
- (4) 1:1 Choking Balun. See
- (5) LDF4-50 Heliax (3.5Mtr)
- (6) T-Match Tuner.
- (7) VSWR Meter.
- (8) HF Transceiver.

Construction

The 1:1 choking balun is a length of RG58 50ohm coax wound with 14 turns on a single FT240-43 ferrite toroid core. See Fig 2 for the connection details and Balun Choke HF for the 1:1 choking balun details.

The 1:4 current balun has two ideally 100ohm transmission lines wound evenly spaced in the same direction around a single FT240-43 ferrite toroid core. See Fig 2 for the connection details and Balun Guanella Current 1:4 Single core for balun details.

