Resonant Feedline Dipoles for 4m and 2m

The resonant feedline dipole (which is a halfwave end fed antenna), has been in existence for many years and is capable of excellent performance. It is an ideal project for home construction and is best suited for temporary /P operation hung from a tree branch for example, or for use indoors hung from a rafter in the attic. It can, of course, be fitted in a suitable plastic tube and mounted on a mast – in which case the dimensions of the dipole elements will need to be reduced by 3to4% to compensate for the dielectric effect of the plastic.

The performance of the antenna **depends very much** on the effectiveness of the resonant choke at the base of the dipole. The dimensions of the coil of coax have been carefully chosen so that the inductance of the coil together with its self capacitance forms a parallel resonant circuit at the frequency in use and consequently presents the highest possible impedance to the common mode currents on the coax outer.

The dimensions given are for 70MHz (4m), and 145MHz (2m) versions. The photos and drawing should clarify the construction technique.

Antenna and Coil Dimensions

70MHz (4m)

L = 6ft 4 3/4in , (195 cm)

COIL = 9t on 1 5/8 in (4.1 cm) Former

145MHz (2m)

L = 39in , (99 cm)

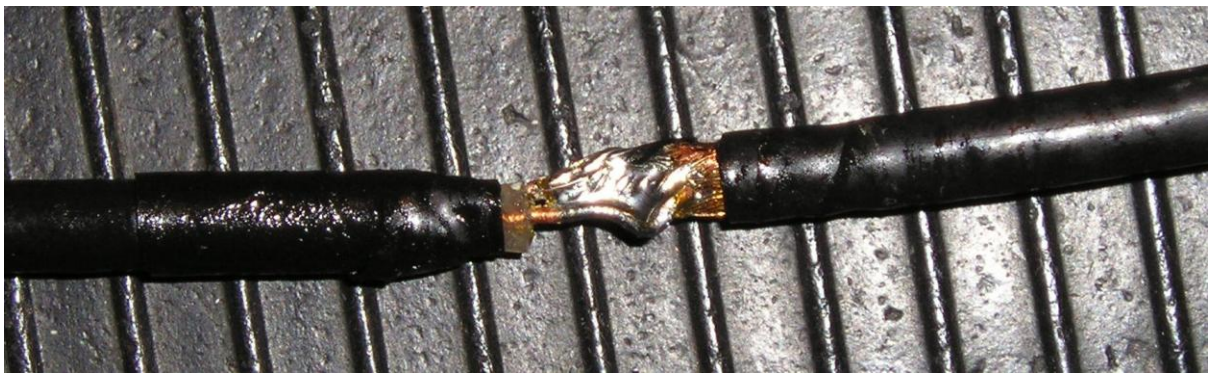
COIL = 4 1/2t on 1 5/16 in (3.3 cm) Former.

Notes The antennas were constructed and tested using UR43 coax because it has a solid centre core which best suits this application. However, it should be possible to utilise RG58 coax (the coil may need slight adjustment to allow for the slightly different characteristics).

Joint at the centre of the antenna

The photo of the 2m antenna may be a little confusing because it almost looks like one length of co-ax. However, to make the diameter of the top and bottom sections of the antenna the same, I have simply joined (soldered) the inner and outer of a separate piece of co-ax to form the upper section and then taped over the joint.

This photo shows the joint with the tape removed.

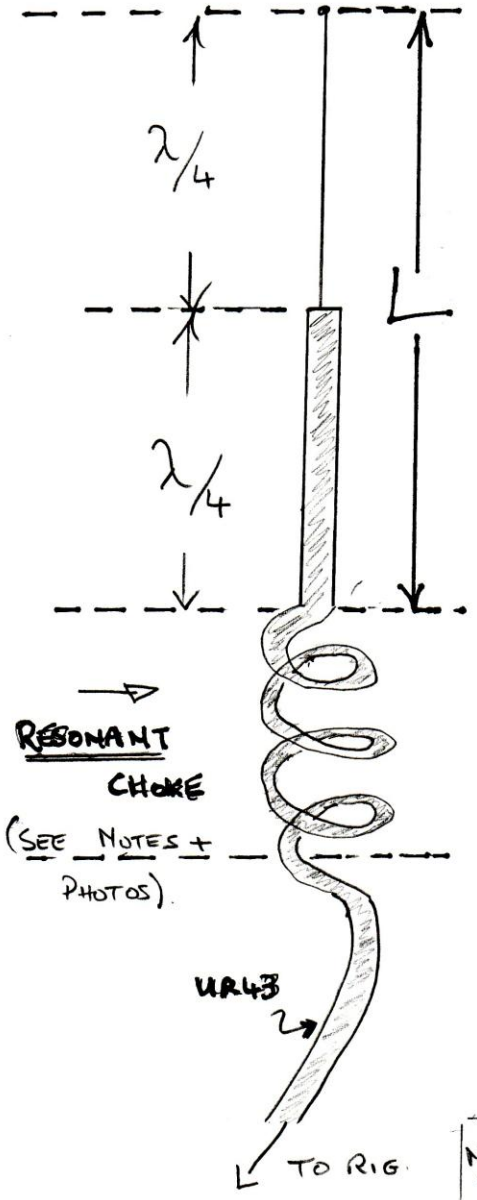


The bottom section is to the Left and the top section the Right.

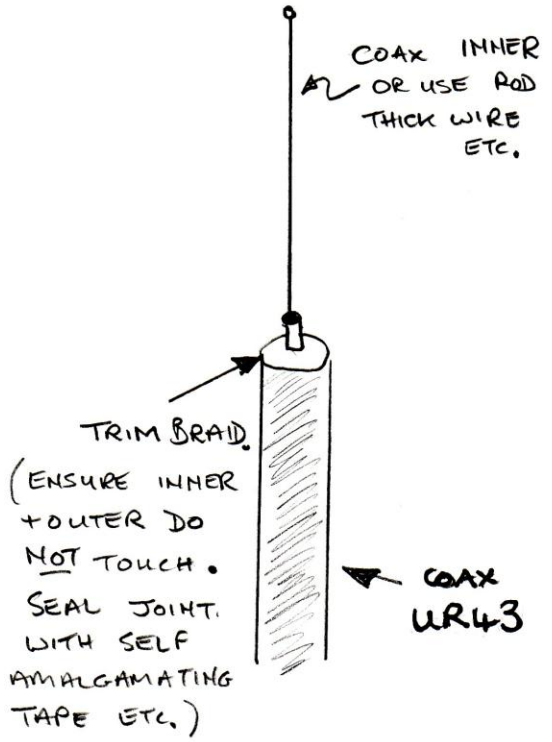
Note that the braid has been neatly trimmed back on the bottom section and then covered with insulation tape to prevent any possibility of it shorting to the inner. The whole joint can then be covered with self-amalgamating tape to waterproof it.

RESONANT FEEDLINE DIPOLES (4M & 2M)

GENERAL FORM OF CONSTRUCTION



ANTENNA DETAIL



NOTE: UR43 IS LOSSY ON 2m AVOID LONG RUNS OR USE IN LINE CONNECTORS TO JOIN THE ANTENNA TO RG213 LOW LOSS FEEDER.