

# Medium Wave Vertical Aerial

Good results have been obtained using this short vertical whip aerial.

A 6 metre high helically wound base loaded aerial which is designed to self-support in the back garden.

The ground stake is used not only as the earth connection but also to support the vertical pole above the ground.

Its easy to construct, using the pre-wound loading coil, using the following instructions.

Unscrew end stop of pole. Bolt together the copper tube, coil assembly and fibreglass whip as shown.



The coil assembly, bolted through the copper pipe and Glass fibre whip.



Ensure that the coil is the right way up. The coil is wound, 10 turns times five at the top, followed by 2 sets of 20 turns and a further 10 turns, which will be at the bottom.

Extend the fibreglass sections, one at a time and secure with the electricians tape over the join.

Once this is completed, the black aerial wire needs to be attached and wound around the entire length of the pole.



Starting at the coil end, secure the black wire with the electricians tape to the fibreglass pole at the coil end. Ensure you have enough wire in order that it makes contact with the top connection on the coil. Wind the wire around the pole so that there is one complete revolution every 100mm or thereabouts. (the gap is not that crucial, you can just guess it)



Wind the wire to the end and secure it by putting through the eye at the end of the last fibreglass section.

The helically wound aerial wire needs to be attached to the upper most connection on the coil. If possible, it needs to be soldered to avoid bad connection. Due to rain and dampness.



Finished aerial with loading coil.

Transmitter connections are made so that the ground connection is attached to the copper rod at the lower coil bolt. The signal connection from the transmitter is via one of the tapings on the coil.

Expect to use an upper coil tapping for 1500 - 1600KHz and lower tapings for the lower frequencies. (1200- 1400Khz etc)

The ground stake is banged into the soil/ground to at least 400mm depth, for stability. The completed aerial assembly is then slid over the protruding stake.

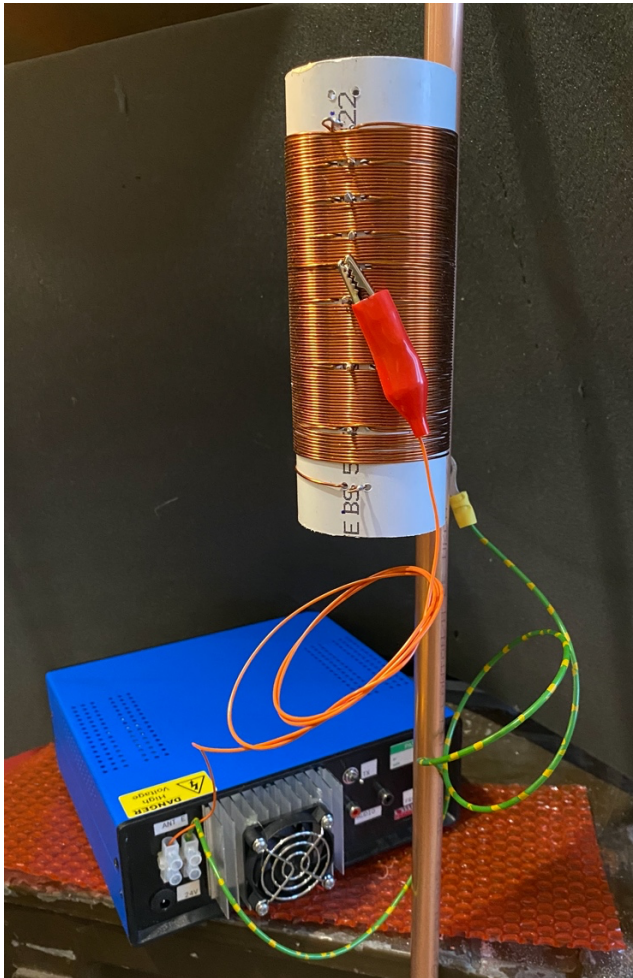
If you are concerned about wind loading, you can use angling nylon wire to secure it as stays.



Tuning is achieved by using a 'field strength meter' to obtain maximum signal.

It is a bit fiddly, but adjust the coil connection whilst adjusting the transmitter coil and capacitor in order to maximise the loading. You will probably use the first tapping (10 turns) for frequencies around 1600KHz, maximum turns for 600KHz and in-between for frequencies in between. The Field strength meter is essential for tuning the aerial. Suitable Field strength meter is available on Ebay for as little as £25.

Connecting the transmitter to the Aerial is shown below:



The Transmitter output is connected directly to the Loading coil by the orange conductor with a crocodile clip. The earth connection of the transmitter is connected to the earth rod via the green cable and fitted to the M6 stud. The top of the Loading coil is connected to the top-most lug of the Loading coil. Use a signal-strength meter to set the tapping Of the transmitter via the croc clip. NB....Do not use Coax cable. It does not work!