

10 m Rotatable Dipole for WSPR

By Kevin Mc Donald ZS6KMD



Well the digital mode bug has bitten me thanks to reading many pages by Eddie ZS6BNE, Pierre ZS6A and various other sources. Who knew it could be so easy and so much fun. WSPR for me has been about getting the most efficient antenna at the most affordable price and working the longest distance at the lowest possible power... A whisper of a signal decoded as proof that the thing works.

When I initially set up the station to decode WSPR I used just a simple audio setup for RX, audio from the radio through an isolation transformer into my PC microphone socket. Levels were a mission at first, but I got the hang of it soon enough. For an antenna I used a 4.5 m aluminium pole with a UNUN feedpoint and tried vertical. It worked, but was not as effective as I wished. That is when I noticed that Eddie and Pierre were checking efficiency on each other's antennas and decided to drop myself into the fray and design my own antenna and check what it would do. I also bought a Signalink USB device to ensure that I could RX/TX with the same signal quality that Eddie and Pierre were using.

The design below is simple, efficient and very cheap to build. All in all under R 200.00.

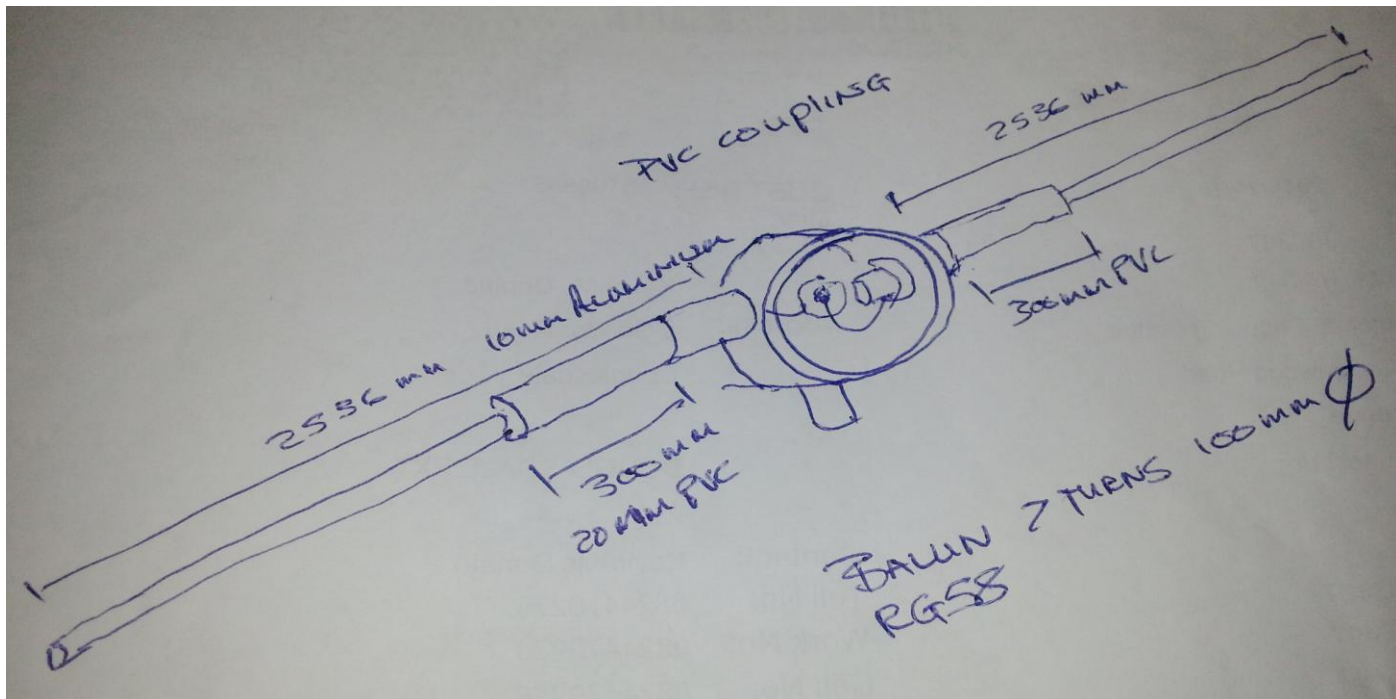
What you will need is two 2.5 m lengths of 10 or 12 mm aluminium tube, two 100 mm pieces of aluminium rod to fit inside the aluminium tube, two 300 mm lengths of 20 mm PVC pipe, four glands (grommets) for the PVC pipe, one 3 way PVC inspection coupling, one SO239 socket, some PVC glue and a little time.

Start with making up the centre of the antenna by gluing the two lengths of PVC pipe to opposite ends of the PVC coupling. Insert the grommets from two of the glands inside the openings inside the PVC coupling. This will hold the aluminium tube in the centre and also waterproof the connection. Drill the hole for the SO239 connector and fit it ensuring that it is watertight.

Insert the aluminium rod into each tube ensuring that 36 mm is protruding (depending on where in the band you wish to work, you can adjust the length for best SWR). Drill and rivet or use a small self tapping screw to fix in place, wrap the joint in amalgamating tape. Slide a gland over each leg so you can attach it to the PVC pipe in the centre, make sure you use the rubber grommet to seal the joint and centre the aluminium tube in the PVC pipe. Leave a gap of 25 mm between the two aluminium pipes in the middle of the PVC coupling. Drill a hole in each leg and attach a short length of wire to each leg and to the SO239.

For a balun I used seven turns of RG58 coax 100 mm diameter wrapped in PVC tape at the feedpoint. Mounting I will leave to you as I have hoisted mine 4 m above my roof which is a double volume roof on a 25 mm aluminium TV antenna mast. Remember that it is rotatable and the signals hit it broadside. I have mine facing NNW as that is the most active area I wish to work.

Immediate tests showed a drastic improvement over the vertical and SWR was at a perfect 1:1 to 1:1.5 for almost 200kHz.



I am currently working on a trapped version for 20 m based on the Buddy Pole and hope to have some test results as soon as I am done with the build. The great thing is that these are cheap antennas and easy to replicate.

Good building and hope to hear you on WSPR soon.

73 de Kevin ZS6KMD