THE DL6WU YAGI FOR 23CM
BY M1EEV

Introduction:

**For the home constructor, the design by DL6WU is a premium choice.
These yagi's are unequalled in terms of matching and broadband performance, both On transmit and receive and the, db gain, and the radiation pattern. And if properly built and constructed, will out perform any commercial bought antenna on the market today. These Including the Tonna, sandpiper, J-beam and Severnside.**

If you wanted to buy one off the shelf it would cost you about £100 from wimo.de. However you can build one for around £20. Most of the pieces can be bought from Your local B&Q warehouse and from maplin Electronics. And provide you follow The details and diagrams below you will end up with a very efficient antenna.

Design.

The antennas were first built in 1983 following the DL6WU design. The Original design has now been modified and the boom diameter has now changed to 15mm and a special folded dipole with a semi rigid balun has been constructed. Which has proved to be the best method. Since then hundreds have been built by amateurs all with excellent results. Non insulated element mounting requires protection against corrosion. If the element looses contact with the boom severe detuning will occur.

**To construct a yagi for 23cm on a 15mm boom with 4mm diameter elements and non insulated element mount you need a robust and dimension tolerant basic design. Element lengths are very critical on 23cm and shortening factor is 67% of the boom diameter, ie 10mm for a 15mm boom. Elements have a thickness
Of 0.017 wavelengths and the boom diameter is 0.065 wavelengths. This corresponds to a 135mm diameter Boom with 36mm thick elements for an equilvent 144 MHz yagi. Tonna couldn't or didn't tackle this problem this is why there 23cm yagi elements are mounted on silly bits of plastic. The DL6WU design has all the necessary features to guarantee a successful construction. By virtue of its logarithmic element profile, its broadband with built in safety factor for mechanical tolerances and bad weather, it provides high gain, low side lobe pattern and good match to 50 ohms.**

Construction.

To Construction this antenna please follow my plans and photos contained within this PDF file on how to build it .

Important Note:

**In order to make the antenna, accuracy is very important and all measuring, cutting and drilling must be accurately done, otherwise detuning of the antenna will occur.
It is recommended you have a series of sharp drill bits, small files, and a pair of digital Measuring callipers, a good ruler, and a good sharp saw and vice to clamp things in.**

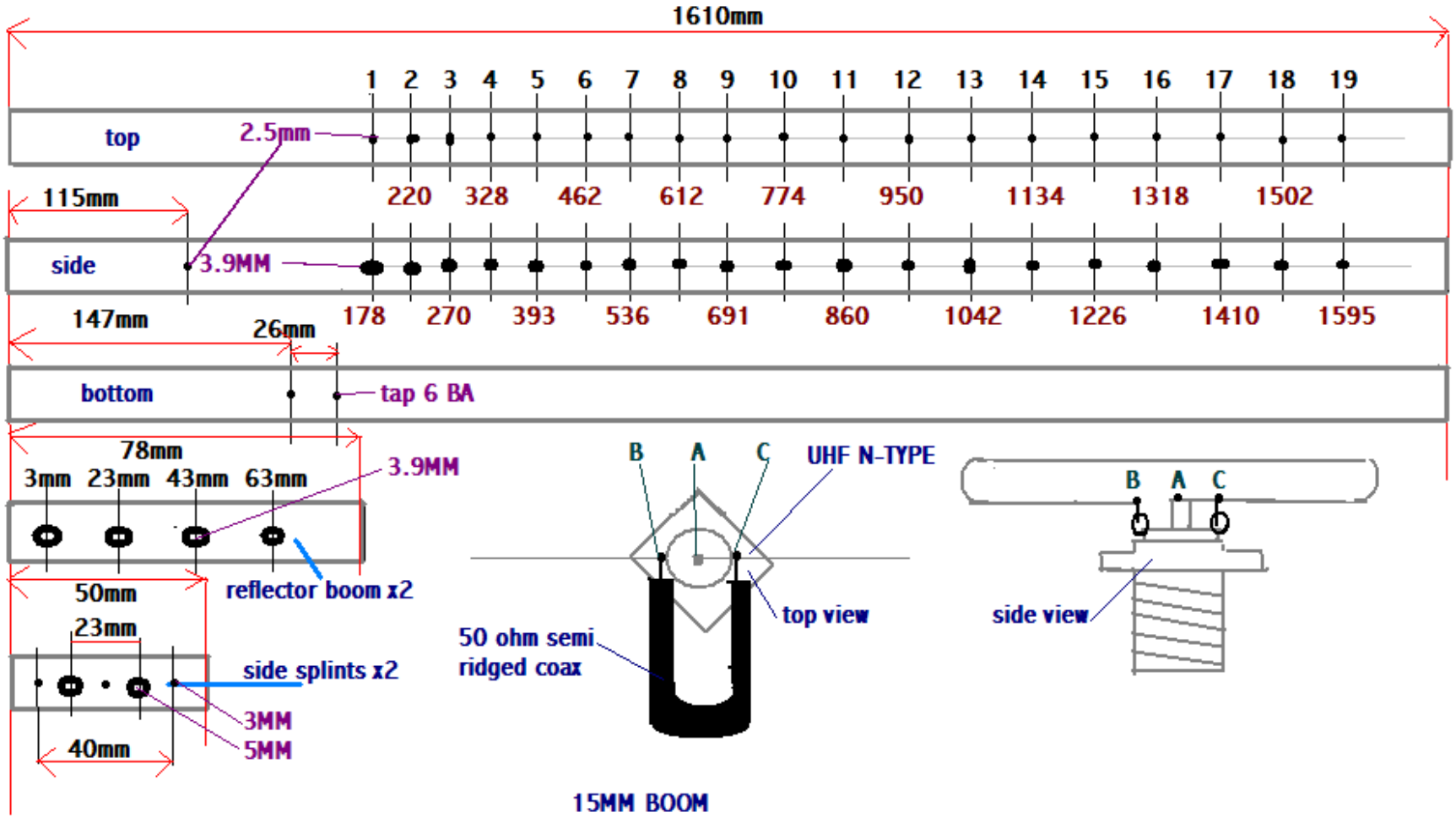
**Should you require any further help or pictures to help you construct your antenna? Or would like me to build one for you then you may contact me
By sending an email to the following address chris@cqtv.co.uk**

References

Dubus And DJ9BV

For More Information on gain figures and for the latest price please visit the Wimo Website on http;//www.wimo.de

Chris M1EEV (chris@cqtv.co.uk)



23cm wideband high gain tv antenna

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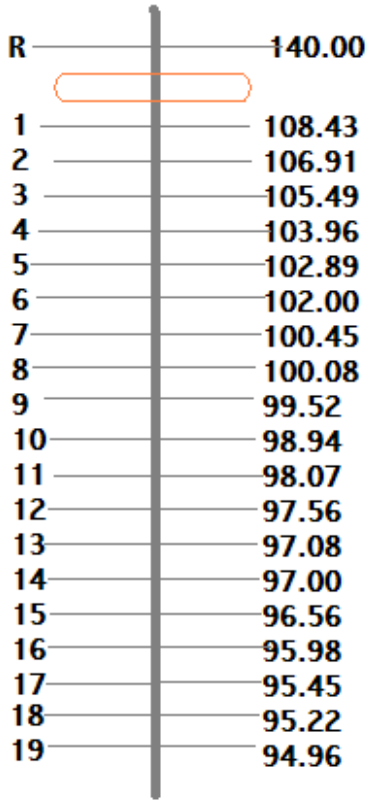
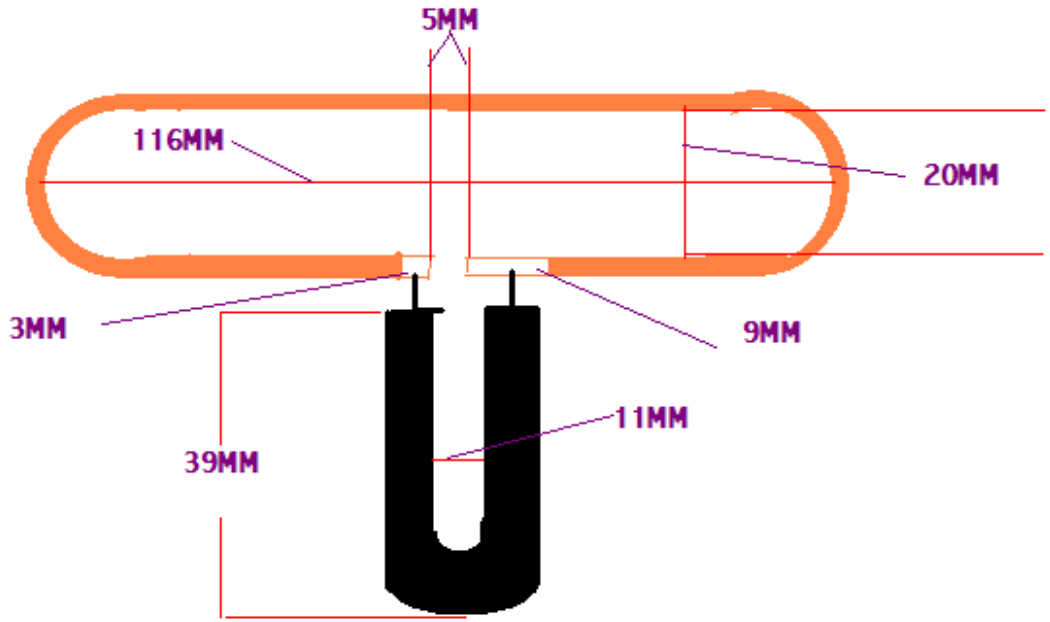


ELEMENT LENTHS IN MM



BOOM DIA=15MM
ELEMENT DIA=4MM
DRIVEN ELEMENT DIA=2.5MM

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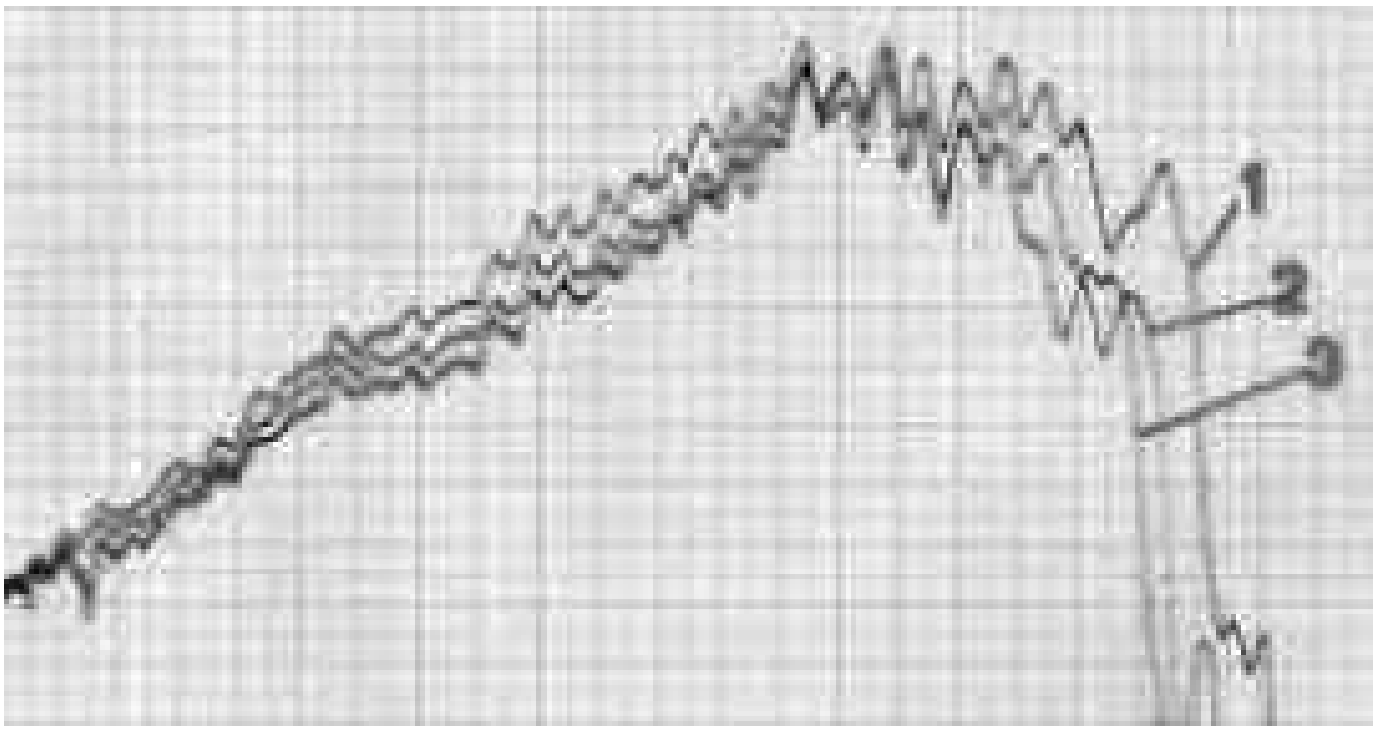
TRACE FROM SPECTRUM ANAYLISER

Diagram 1:

TRACE 1 : = Dry Antenna

TRACE 2 : = Slightly Humid Antenna

TRACE 3 : = Humid Antenna

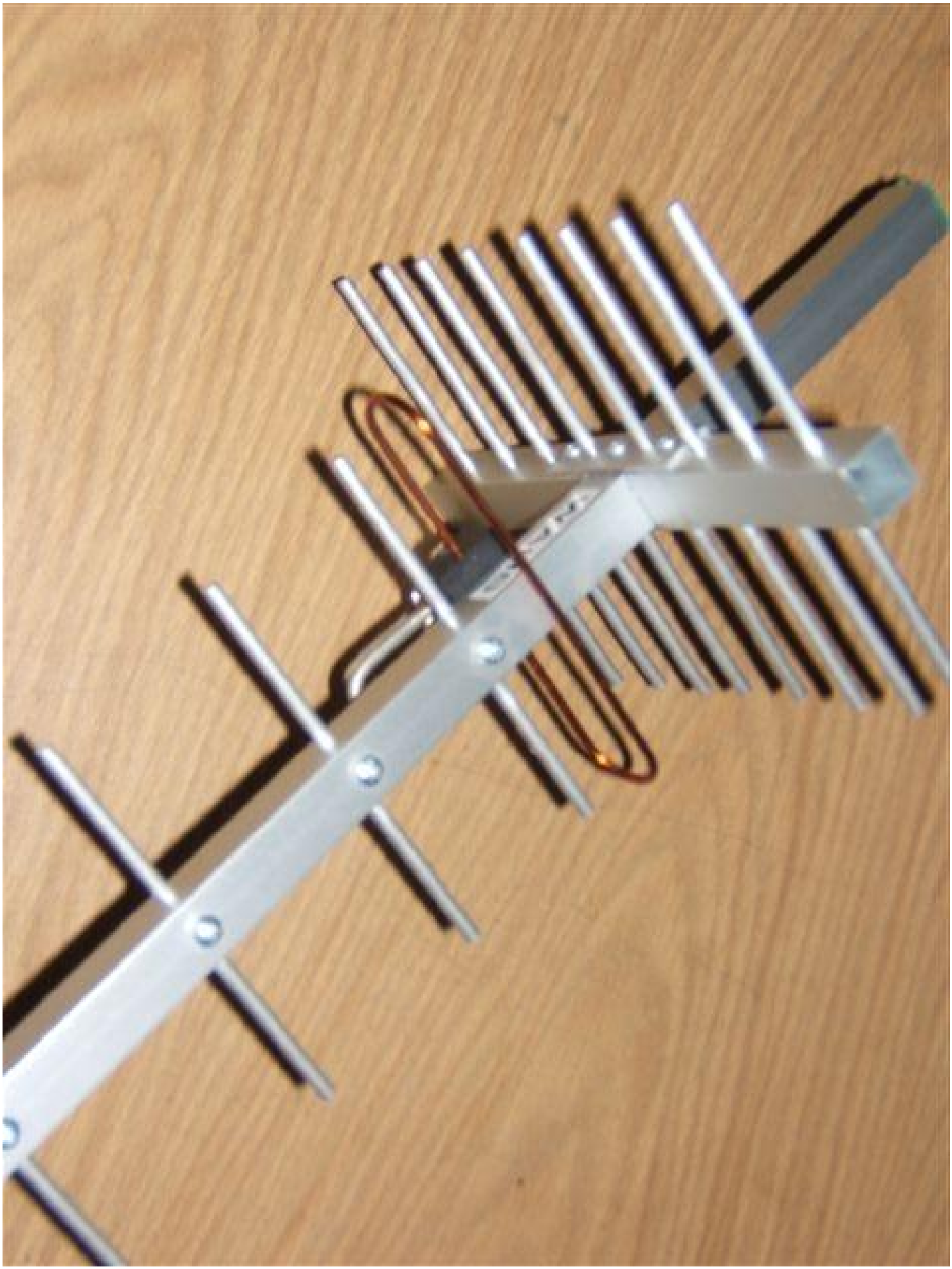


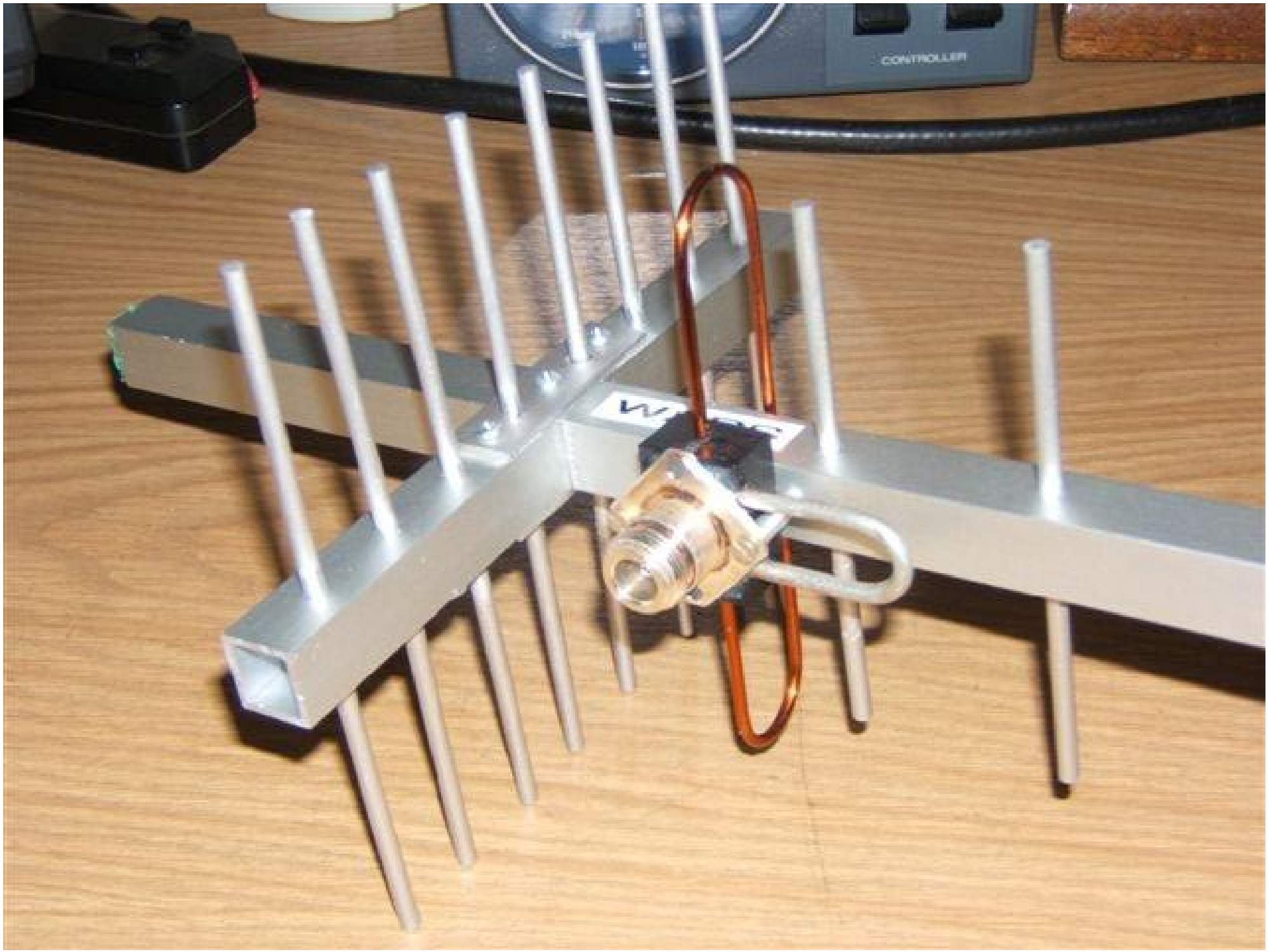
LEFT **RIGHT**

Tech Report

The leftmost side of the picture displays the measurement frequency 1200 MHz. And the rightmost side of the picture represents approx. 1365 MHz. The three curves were taken at different humidity levels of the antenna. The lowest curve was taken with a wet antenna and the dipole being totally submerged in water.

As you can see the antenna maintains the mid-band resonance as per specification. Only the gain drops a little bit over 1300 MHz.

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