

Ceecom 10/11m Moxon antenna

The Ceecom 10/11m band Moxon antenna is a simple, but effective two-element antenna that is lightweight and offers a wide bandwidth for its size.

Invented by antenna guru Les Moxon, G6XN back in the 1950s, the Moxon is a two-element Yagi-Uda antenna with folded dipole elements, and with no directors.

It is rectangular, with slightly less than half of the rectangle being formed by the driven element (radiator) and the other part (slightly more than half) being the reflector. The ends of the elements are bent backwards (radiator) or forwards (reflector) acting as a capacitive load, which gives greater bandwidth and lower losses.

The element lengths are approximately 70% of the equivalent dipole length, giving it an overall size of 47cm x 390cm. The two-element design gives modest directivity, with a free space gain of 6.01dBi/3.86dBd, but with a large null towards the rear of the antenna, yielding a high front-to-back ratio of 42dB.

The Moxon is supplied by Ceecom, a relatively new company run by telecommunications specialist Mike Coles, 2EOHQ. As his Ebay profile states: "I aim to provide high-quality amateur radio antennas at very affordable prices."

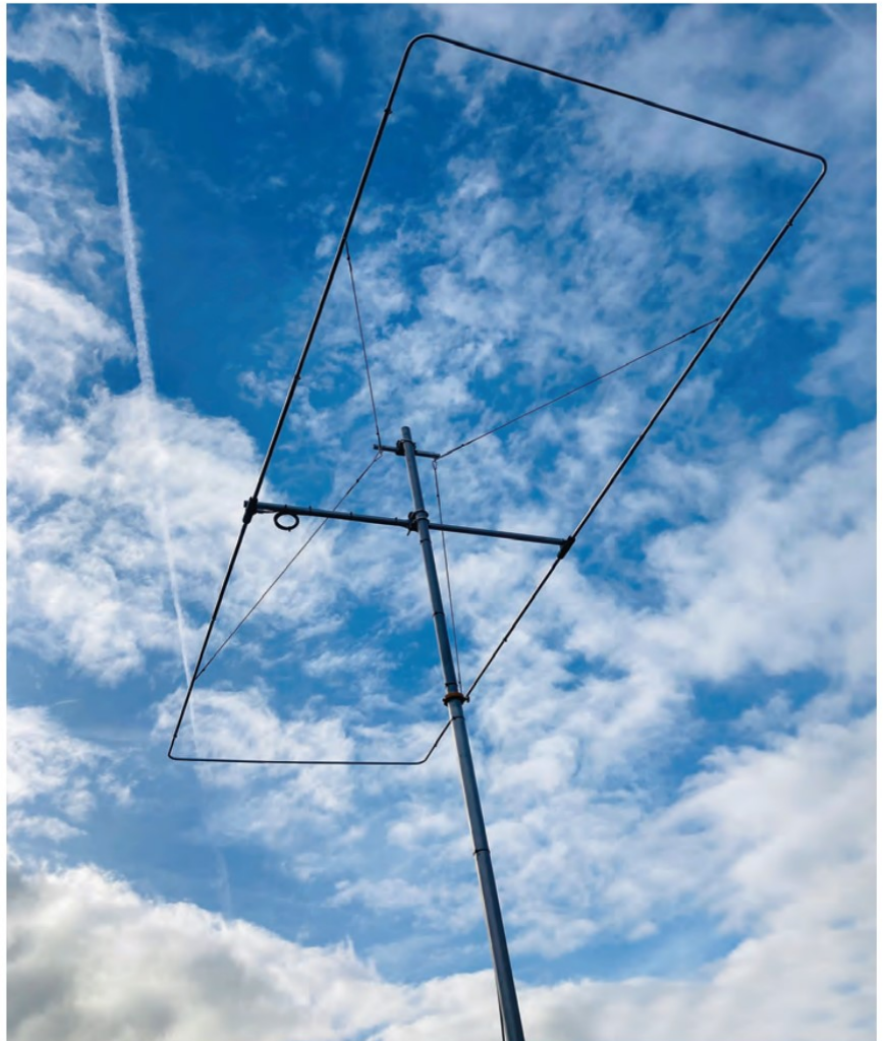
First impressions

The Moxon was delivered to Chris, GODWV's QTH in Norfolk and arrived well-packaged. The extensive use of cardboard meant that the antenna pieces were held very securely and couldn't move around.

The antenna comes with a comprehensive 12-page instruction manual that is very easy to follow. You will need a 19mm, 13mm and 10mm spanner, plus medium-sized Phillips and flat-head screwdrivers.

The parts are held together with the supplied stainless steel self-tapper screws and Jubilee clips. To make life simple, Mike has included adhesive printed labels that show just how far the elements need to be extended before tightening the Jubilee clips.

Other fittings, such as the SO239 support, are moulded plastic. Another novel feature is that the driven and reflector elements are separated by fibreglass rods upon which the



PICTURE 1: Moxon antenna in use.

aluminium elements have been crimped onto. It makes for a very sturdy end product.

Finally, the bracket holding the antenna's boom has been riveted in position, which means it is perfectly balanced out of the box.

The Moxon also comes with pre-measured and prepared nylon support cords that are fixed to the elements with stainless steel eyelets and clips.

The only other 'tool' you will need is a tape measure. This is used to adjust the elements to resonate the antenna where you want to operate. The instructions have dimensions for everything from 27MHz to 30.1MHz, but note that the antenna typically has a 1MHz

bandwidth with the VSWR below 1.6:1, with a low SWR point typically below 1.2:1 at its resonant point.

So, you can tune it for 28.5MHz and have a usable antenna for the CW, data and SSB segments of the 10m band. To be honest, it will even work up to the AM/FM segments around 29-29.680MHz with a low-ish SWR, even if tuned for a lower frequency.

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PICTURE 2: Chris, GODWV installing the antenna.

The entire antenna weighs just 4.2Kg so is easily manhandled.

It takes about one and a half to two hours to put the antenna together and, having placed it on Chris's mast, we connected up the coax after forming a four-turn 'ugly' balun.

Testing

With the mast raised to about 50ft we tested the antenna's SWR and found it to be 1.04:1 at 28.5MHz and about 1.6:1 at 28MHz and 29MHz.

Initial impressions were good and we were soon working stations in Europe. We had a propagation pipeline to Greece and received three beacons from SV land, some of which were using only 5W. Pointing the antenna to the southwest we also received the LU4AA, OA4B and YV5B IBP beacons in Argentina, Peru and Venezuela on 28.200MHz.

Running 400W SSB (the antenna is rated at >1kW) notable contacts then included working Bernard, 5R8BM at S9 in Madagascar and Hadi, YC2DBW in Indonesia, also at 5/9.

We then worked Milo, DV2DLX in the Philippines at 5/7. Over the weekend of 4 and 5 March, Chris went on to work more than 400 stations on 10m in the ARRL DX SSB contest.

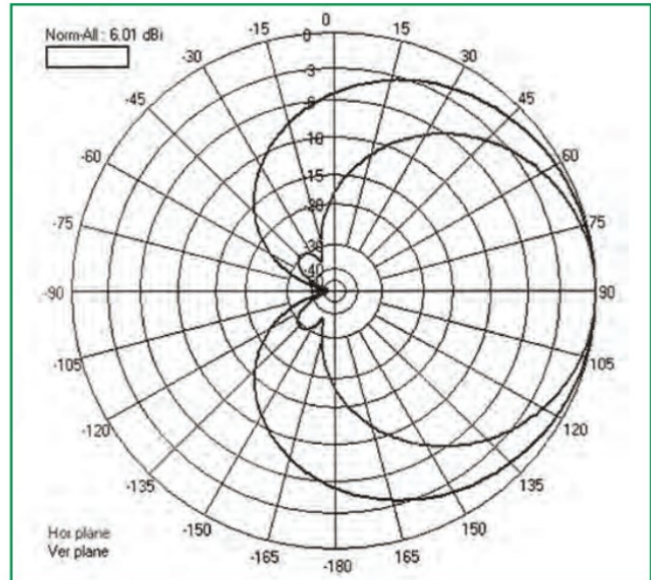
In a back-to-back test, we found that the Moxon was down about 10dB on Chris's Optibeam at a similar height, although some signals were similar, depending upon their arrival angle. Considering that the Optibeam has six active elements on 10m and cost more than 20 times as much, that's quite a result!

Chris said that the antenna's wide frontal lobe means you don't have to be spot-on with your beam heading. As a result, it meant that it was easy to work many stations without having to touch the rotator controls. The huge null at the back was also useful to notch out some stations if you wished.

Conclusion

In all, we were surprised by the antenna, which worked perfectly and gave a good account of itself, especially considering its small size. With 28MHz coming alive as we head towards sunspot maximum now is a great time to have a beam on the 10m band.

The 10/11m Moxon costs £250 from Ceecom (www.ceecom.co.uk), excluding postage. Our thanks to Mike for the loan of the antenna.



PICTURE 3: Moxon antenna polar plot.



PICTURE 4: the antenna feed point.



PICTURE 5: unboxing the antenna.