

IK2CLB'S 40/30 MOXON



History:

My first Moxon was a single band 30-meter Moxon, in the spring of 2008 and it broke in the summer of same year. For my construction I used fishing rod 10 meters long, I used support aluminum angle (2 mm) but it could not resist a summers storm as you can see below:



above and below the twisted remnants of Marco's original moxon.



Ok, last autumn, I decided, with the help of ik2bcp and ik2ded, to build a new, more resistant moxon for 2 bands-- 30/20 meter.

Easy...in less than 2 weeks, the moxon was on my house roof, ready to set up. Nice bandwidth, nice ROS, Nice FB in 30m. , less in 20 m. but antenna was low (3 meter above roof) and not free from other tv antennas





I supported the fishing rods by 2 iron TV pipes (3 meters long), Impossible to break or twist. I used only half of fishing rod, so no need wire rods for fishing rod buckle.

Woot! Antenna was ready, but it was really too perfect... in my opinion adding about 2 meters to rod, it should be less resistant, more awry but works for the fantastic 40 M band

This is the story:

About technical:

Materials:

- 4x 10 meter fishing rod (delta) removing last 2 meter.
- 2 TV antenna support pipe Galvanized iron, 3 meters long
- Copper wire PVC covered (common electrical civil installations) 1 mm Dia
- A piece of tv sat 75 ohm cable.
- Water pvc pipe (red) (support wire at centre and system match) 3 meters
- Moxon software

First moxon resonance (for 30 meter in 2008) was 9.9 mhz using 10.100 mhz and 1 mm wire in the moxon software. Maybe the wire I used produced an electrical stretch, because antenna was too long .

So I decided to recalculate the two moxons 300khz higher than the original center frequency.

Testing it on the roof during set up, the resonance was:

7.200 (1.4:1 Ros) [Ros means SWR]

10.280 (1.5:1 Ros)

But the antenna must lay above a 30 meters (100ft) tower, last experience teach me that the resonance decrease about 50 khz when put antenna a top of tower.



IK2DED with Moxon ready for assembly on the 30 meter tower



Moxon installed on the tower top. Rotor is a prosistel 3 D.



Connection two dipoles was made with short 75 ohm tv sat cable, so, we do not modify correct space between each dipoles. I try to feed dual band with symmetrical line (like a spiderbeam feed) but I prefer coaxial 75 ohm because , in my opinion, is better for the 40 meter tuning.

The finally ROS resonance result are:

- 7.000 - 1,2
- 7,130 - 1,1
- 7,200 - 1,8
- 10,100 - 2,1
- 10,150 - 1,9
- 10,230 -1,4
- 10,400 - 1,9

Performance:

40 meters is great! F/b ratio is really about 30 db, low radiation angle and nice gain over dipole.

30 meters Fb not more of 15 db, low radiation angle, gain over dipole, but not same performance like 40 meter Maybe its resonance is too high, next spring we will do fine set up.

The 30 meters tower is above a 700 meters hill, and we have a nice drop till south-east to west direction, perhaps the trick is that! But during autumn and winter, EU season, we contact usa west coast daily via long path, both 30 and 40 with only 100 w. and gets nice reports from VK and ZL (about antipodes for Italy), now 40 meter is open for the dx all day long





The tower is 30 meters high, (about 100 ft) from the ground, it is above a hill, and in some directions (south , east and west) there is a gradient ground, the antenna in south east (w6 Long path) looks more then 40 or 50 meters drop.



Ciao de ik2clb Marco

Brescia North Italy.