

N1RIK'S 6 METER MOXON



Editors note: Bill is busy with converting this moxon into a 3 element moxon. We'll post that info as soon as we get it.

My name is Bill, and the callsign is N1RIK. I have and still am very impressed with your website here. I have since built a moxon for 6 meters, and one for 2 meters which I gave away to a local ham for SSB.

I'm enclosing in this email pictures of my 6 meter Moxon. It looks much similar to WA0WOX's 6m moxon.

I decided to build a PVC "U" frame out of 1/2" PVC. I opted out of using an epoxy to hold the pvc together, and used a thin wrap of duct tape to put on the ends of the pvc sections to twist into the pvc elbows and T connectors for a tight fit.

On the driven element, I used 2 sheet rock screws to go through the pvc t connector and pvc arms for extra strength, and to hold washers into place for the connections of the RG-58 coax and the driven element.

3 inches below the connection for driven element on the coax, I installed a Palomar BA-58 1:1 current balun bead set so I wouldn't have to add extra coaxial loss.

From the pvc T connector, I added a 2 ft. section of 1/2" pvc to hose clamp to my fabricated PVC mast. I overlapped 1 ft. of the 2 ft. section, which keeps the Moxon 1 ft. above the PVC mast.

I used zip ties to keep the elements onto the PVC frame, and wrapped coaxial connections to the driven element with silicon self-sealing wrap and Scotch 33 tape.

For element materials, I used Radio Shack #8 gauge aluminum ground wire. Radio Shack has discontinued this project, so I had to buy it on ebay.

PVC Mast:

My 19 foot PVC mast is made from a 10 ft. section of 2" Sch. 40 and a 10 ft. section of 1-1/2" Sch. 40, which overlap by 1 foot, and is held together with 4 sheet rock screws. I currently have this mast bungy corded to my porch up to 5 feet up, and seems pretty stable. At this height, the antenna is a full wavelength above the ground.



Tuning:

I built this antenna to specs on the software, however once I started playing with it, I noticed my SWR @ 50.2 was 1.6:1. and 1:1 @ 48.2 MHz. I started trimming the antenna with my analyzer and now have it 1.1:1 @ 50.2 MHz. Here's the new dimensions :

A = 85.25 in

B = 10.25 in

C = 5.25 in
D = 15.5 in
E = 31.0 in

The overall length of the driven element is 105.75 in and the reflector is 116.25, which is a 9% difference. I was thinking about shorting the reflector, however the performance seems to be to spec.

Performance:

I was checking the F/B ratio on a station about 200 miles away in South Carolina who was running about 1KW. He was S8 to 9 with me pointed on him, however an S4 with my backside to him. That's a 4 S-unit difference, and at 6 db per S-Unit, approx. 24 db F/B ratio, which is around spec.

During normal conditions via groundwave, I can talk about 200 - 250 miles out with my antenna 20 ft. AGL.

SWR:

48.5 MHz - 2.0
49.0 MHz - 1.5
49.5 MHz - 1.2
50.0 MHz - 1.1
50.5 MHz - 1.1
51.0 MHz - 1.2
51.5 MHz - 1.3
52.0 MHz - 1.4
52.5 MHz - 1.5
53.0 MHz - 1.6
53.5 MHz - 1.7
54.0 MHz - 1.8
54.5 MHz - 2.0

My 2:1 SWR Bandwidth is greater than 6 MHz and 1.5:1 bandwidth is greater than 3.5 MHz. This antenna is very wide banded and covers the whole 6 meter band. Also it has a 2:1 bandwidth of 11 MHz from 158 - 169 MHz, and 162 - 164 MHz is flat 1:1.

I plan to rebuild this antenna into a 3 element Moxon for some extra gain. I also may replace my feedline, which is 29 ft. of RG-58.

From my home in Southern Pines (Vass), NC (FM05), I can check into nets in Virginia and South Carolina with actual signal readings on my S-Meter. The materials cost me less than \$10 for the antenna and \$10 for the 19 foot mast.

Thank you for the website. I'm so glad I built this antenna verses paying about \$100 for PAR's Stressed Moxon

73 ~ Bill, N1RIK