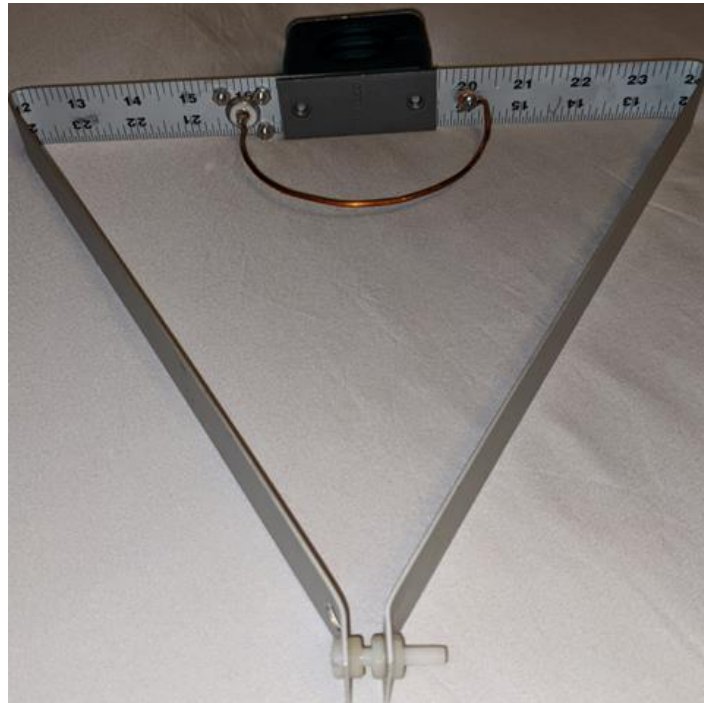


Detailed Construction Instructions for W4RQ's 2m Triangle SSB Antenna Project

Our Thursday night 2m SSB group needed a simple to build horizontal omnidirectional antenna. A detailed presentation is [here](#).

Randy, K9BCT came up with the simple triangle loop which we modified to use a simple feed loop.



Components:

Quantity	Component
1	Ace Hardware 36" aluminum Rule
1	Chassis mount SO-239 (UHF) female connector
4	#440 x 1/2" machine screws and nuts
1	9" long #12 AWG solid copper wire
1	#10-32 x 3/4" machine screw (for the feed loop)
1	#10-32 star nut (for the feed loop)
3	#10-32 x 1" Nylon machine screw for the SO-239 connector
3	Nylon #10-32 nuts for the SO-239 connector
1	Beta, or Stauff saddle block clamp assembly for the size of the mast or tower leg the antenna will be mounted on. Available at Ace Hardware or often on e-bay. Prices vary depending on source and mast size (\$3 -\$12).

Construction:

Start the build by bending the first half inch, and last 1/2" of the 36" Rule 60 degrees in the same direction (i.e.: Up).

The Rule is then bent 120 degrees in the opposite direction (i.e.: Down) at the 12" mark and again at the 24" mark to form the triangle, with the two 1/2" ends parallel.

Clamp a round screwdriver shaft in the vice with the Rule so the bends are not made too sharp.

Drill a thru-hole in the center of the 1/2" parallel ends. Install the #10-32 Nylon screw and three Nylon nuts. The Nylon screw and three nuts will be used to adjust the resonant frequency of the antenna.



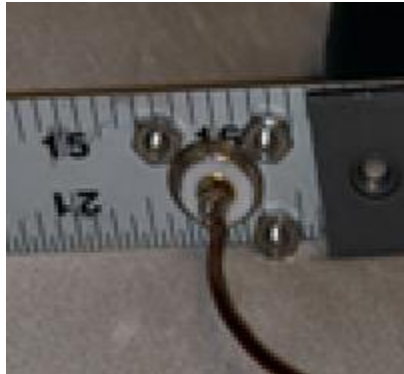
Drill a hole at the 16" mark, for the #10-32 machine screw that will secure the end of the feed loop wire.



Match the position and drill the Rule for the mast Saddle Clamp assembly.



Drill and mount the UHF connector at the 20" mark. Scrape the surface of the Rule to make good contact and use antioxidant compound (i.e.: Noalox).



Solder one end of the 9" wire to the center pin of the UHF connector, then form an 8" loop, using the extra 1" of wire to form an "eye" used to secure it to the Rule with the #10-32 machine screw and star nut at the 16" mark, using Noalox after scraping the aluminum when securing the "eye" to the Rule.



Set the resonant frequency with an antenna analyzer. This antenna is very forgiving, adjustable from below 139 MHz to above 148 MHz by adjusting the gap with the Nylon screw.

Results:

Cost to build the antenna was less than \$10 plus cost of the Saddle Clamp Assembly.

It took less than an hour to build the antenna.

Band Width: 2.16 MHz @ 2.15 VSWR points.

Resonance: 144.200 MHz, Return Loss: 36 dB

Impedance: 49.4 Ohms. R: 49.4 Ohms. X: -1.43 Ohms