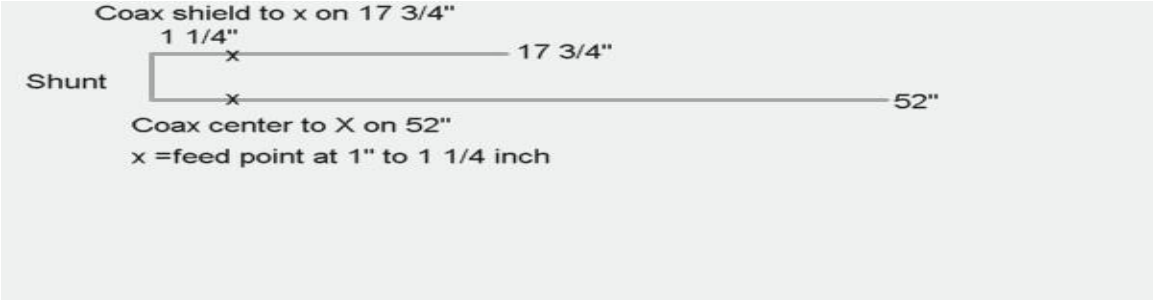
The BIG STICK ,VHF ANTENNA ½ wave over ¼ wave by KB5WMY Carl

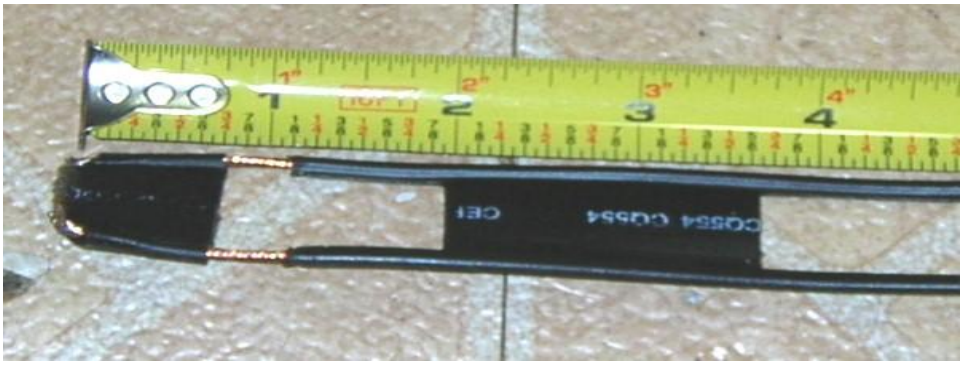


NOTE: To avoid confusion, The PVC Big Stick internal wire measures 52 inches on the side fed by the coax CENTER and the coax SHIELD feeds the 17 3/8” inch side. Some photos show wire lengths for a FREE HANGING (NO PVC) antenna.

I thought I would put together a few notes and photos to help. I use 1 inch PVC cut 6 feet long , or more.Six feet gives over a foot to mount the antenna. I drill a hole, large enough to slip the coax in at 55 inches from the top of the PVC ,you decide which is TOP. I make the hole at an angle DOWN from the top to put less strain on the coax.

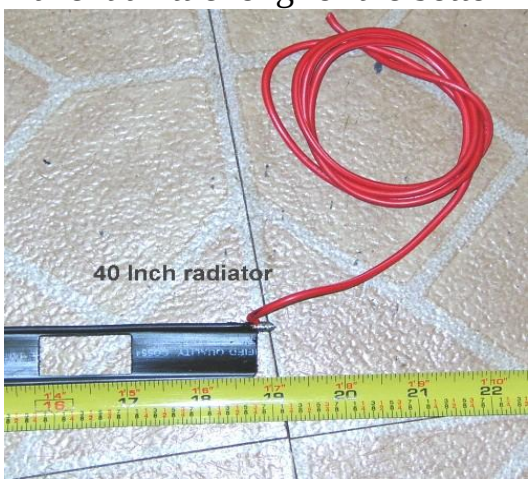
I then set that aside and make a 6 foot , or longer piece of coax with a PL259 connector. Next I cut about 20 inches of ladder line .

You then bare the lower legs to make the shunt feed and also bare the feed point at about 1” to 1 ¼” inches from the soldered shunt.

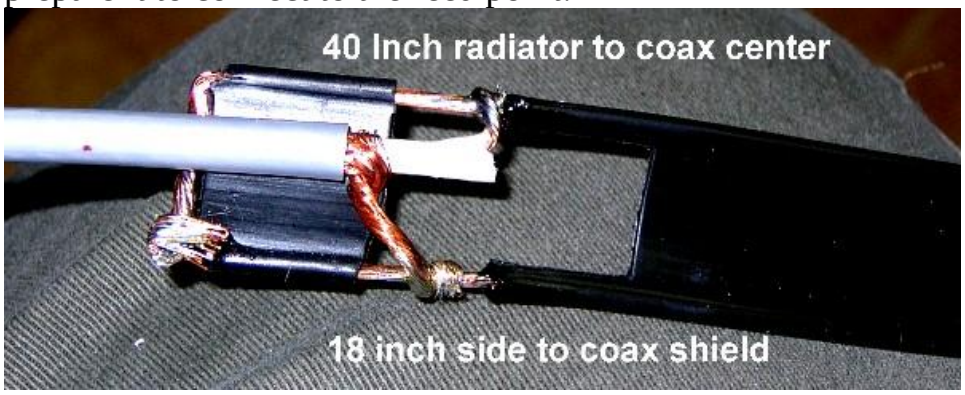


You then add about 35 inches of good wire , for the radiator ,to one side of the ladder line on the end away from the feed area . NOTE: The center of your coax connects to the LONGEST side (Total of 52 inches) and the shield connects to the 17 3/8” side.

NOTE: 59 inches and 18 ½” used for FREE HANGING(No PVC antenna).The long side can be cut 59” and one side cut to 18 ½” for a free hanging J Pole Don’t forget to make it a little long for the bottom SHUNT.



Once you have the SHUNT shunted and feed point bare , grab the PVC and slide the antenna end of your coax up through the PVC to the TOP of the antenna. Now is when you find out that at least 6 feet of coax is really needed. Bare the end of the coax and prepare it to connect to the feed point.



It should look like this, Note this was fed at just over 1 1/2” inches because it was for Air Band and not 2 Meters , but good enough photo of feed point. Yours should be about 1 ¼” inches from the bottom shunt.

Now you tape or heat shrink the coax and feed area to give a bit of strength and insulation from the PVC (It does conduct RF). Pull the feed coax back through the PVC and pull till all but the last ¼” inch of wire is in the PVC. I used an eyelet connector

when the photo was taken ,you can just let a 1/4”inch of wire fold over the top of the PVC and the CAP will support the antenna

The final measured length of 17 3/8” with 52” to the radiator end , NOTE: the ring connector , when used required a 51 5/8” length I no longer use the ring connector so a 52 inch total length works fine with plain wire.

You can then tape the coax where it comes out of the PVC and drill holes for mounting Or for a bolt or cotter pin for setting the antenna on a smaller ,or in a larger support pipe. A EYE bolt can be added to hang the antenna from a rope(no metal wire) but you need to glue or use self tapping screws to give strength to the CAP. When hanging this and other antennas , you must give a rope support for the coax or it will be bad in a hurry. Also the coax can pull enough to damage your Big Stick .

Typical SWR on the Big Stick (depending on surrounding structures) is about

2 to one at 144 MHZ
1.6 to one at 145 MHZ
1.5 to one at 146 MHZ
1.2 to one at 146.5 MHZ
1.5 to one at 147 MHZ
1.6 to one at 148 MHZ
2 to one at 149.5 MHZ