

Ground Plane Antenna Plans for 146 MHz, 220 MHz and 440 MHz

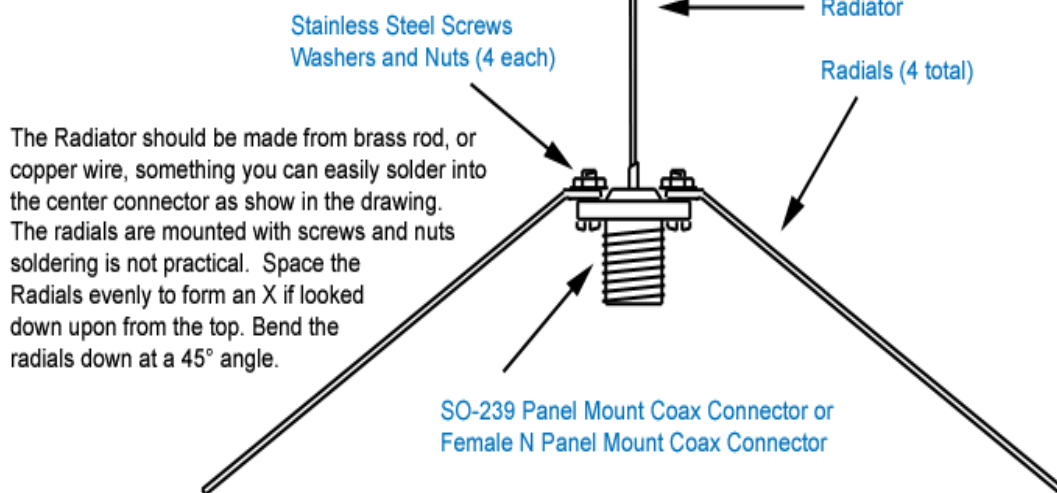
By AI4JI

Ground Plane Antennas for 2m, 1.25m, and 70cm

Lengths:	146 MHz	220 MHz	440 MHz
Radiator	19.25"	12.75"	6.4"
Radials	20"	13.4"	6.75"

Tuning the antenna to resonance:

The antenna is tuned by varying the length of the Radiator. To lower the frequency, add to the Radiator, to raise the frequency, trim the Radiator. Trim carefully, about 1/8 of an inch at a time to achieve a 1:1 match in the center of the frequency range in which you transmit.



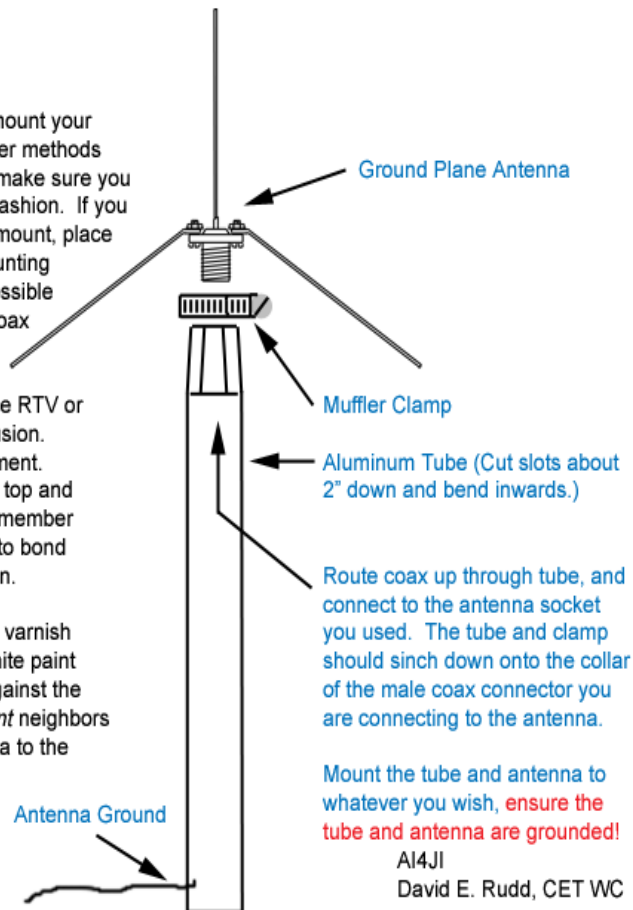
AI4JI
David E. Rudd, CET WC

Mounting Suggestions for the Ground Plane Antennas

This drawing shows a very good way to mount your ground plane antennas. You can use other methods that suit your particular installation. Just make sure you ground the base of the antenna in some fashion. If you use a PVC pipe or other non-conductive mount, place a ground wire under one of the radial mounting screws and route that wire as close as possible to the antenna connector and down the coax to a good ground.

Weather-proof your antenna. Use Silicone RTV or a similar product to prevent moisture intrusion. Seal at the top, around the Radiating element. Use a good coax sealing tape around the top and bottom of the coax connector sleeve. Remember to leave some bare metal for the tubing to bond against if using the clamp mount as shown.

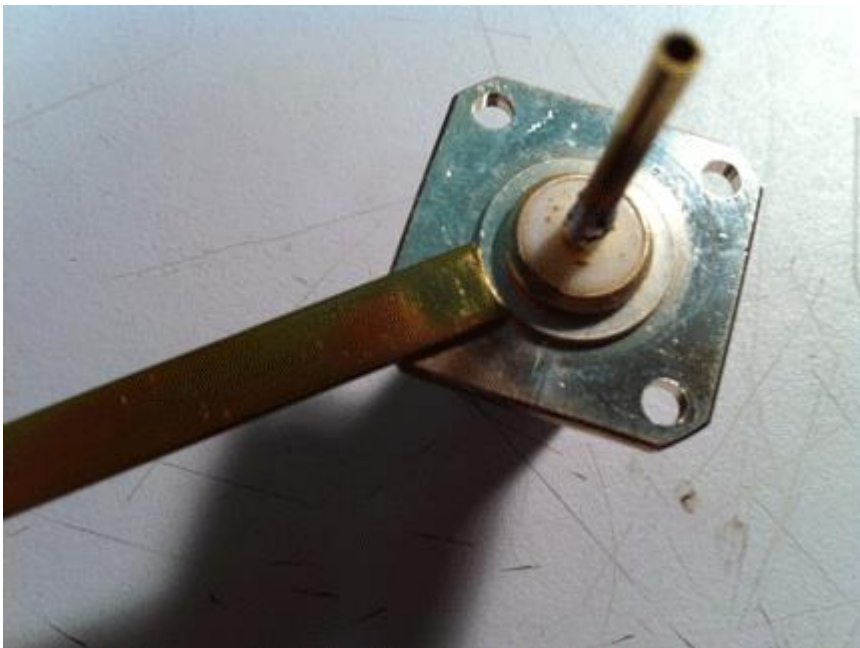
You can also use non-conductive paint or varnish to keep your antenna from corroding. White paint will help make your antenna disappear against the sky. It also helps to prevent those *ignorant* neighbors from complaining about your "CB" antenna to the neighborhood association!





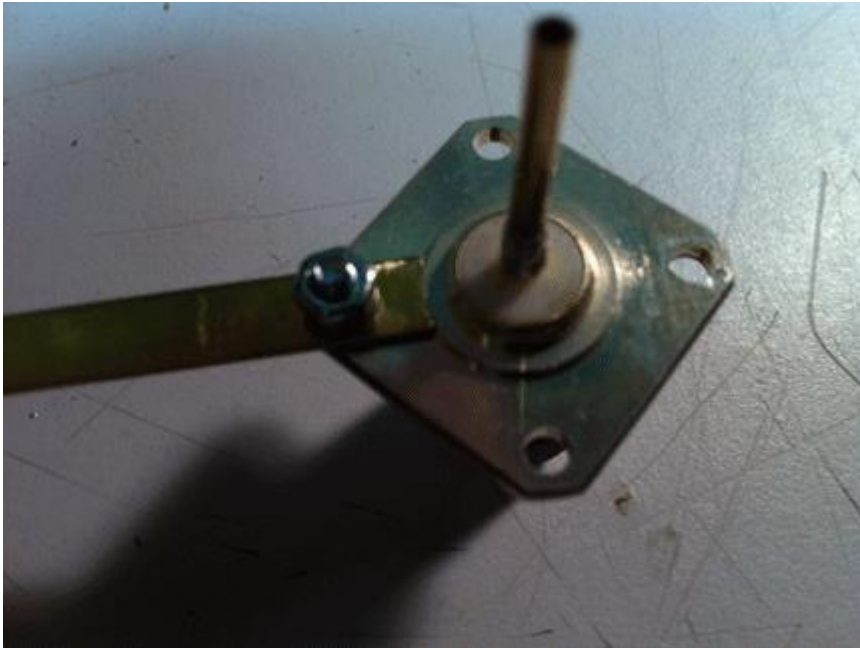
Solder an inch or so copper tube into the center post of your connector. strap for the Radials. Note the concave end of the lower radial.

Here I used Brass



I use a half-round needle file to make the concave cutout.
with the raised circular portion of the connector.

Match the end



Mark and drill the holes in the end of the radials.
the connector as shown. Do all 4 and bend down to 45°.

Bolt the radials to



Mounted for testing. I spray painted the antenna a flat primer grey to protect it, and make it less reflective to blend into the background easier. These make great emergency antennas, stealth antennas, attic antennas, etc.