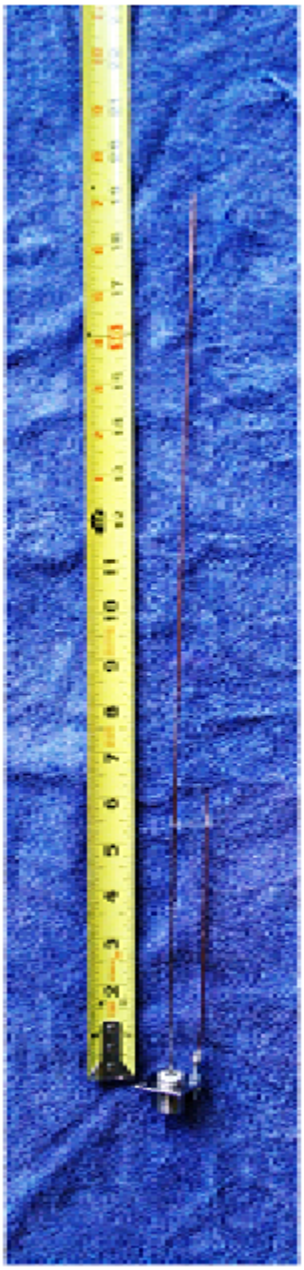
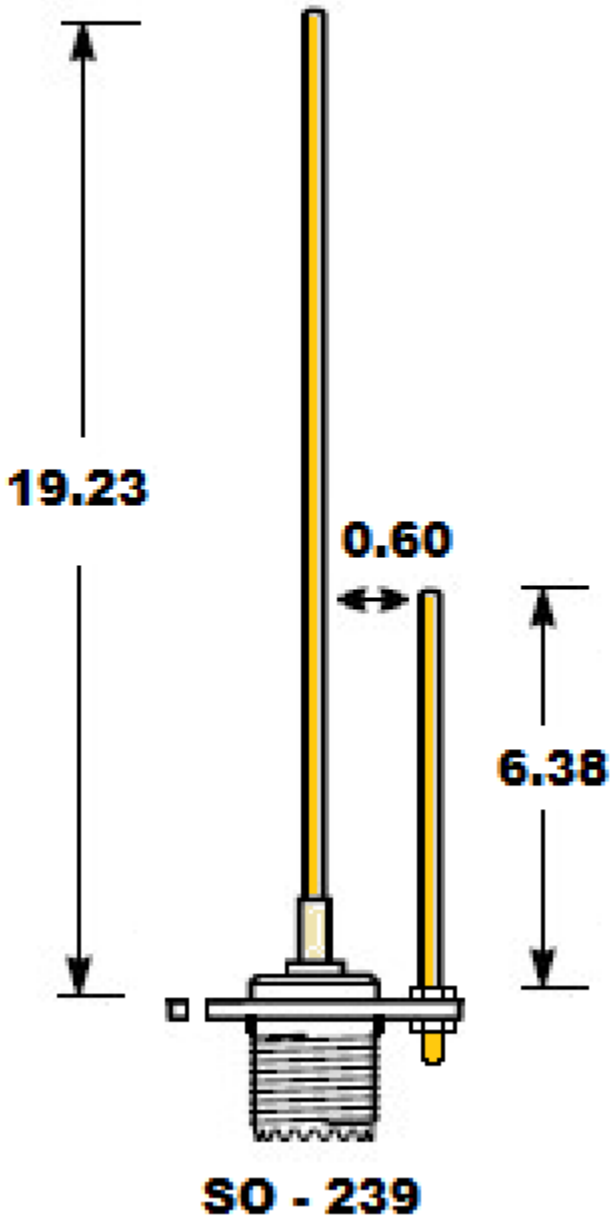
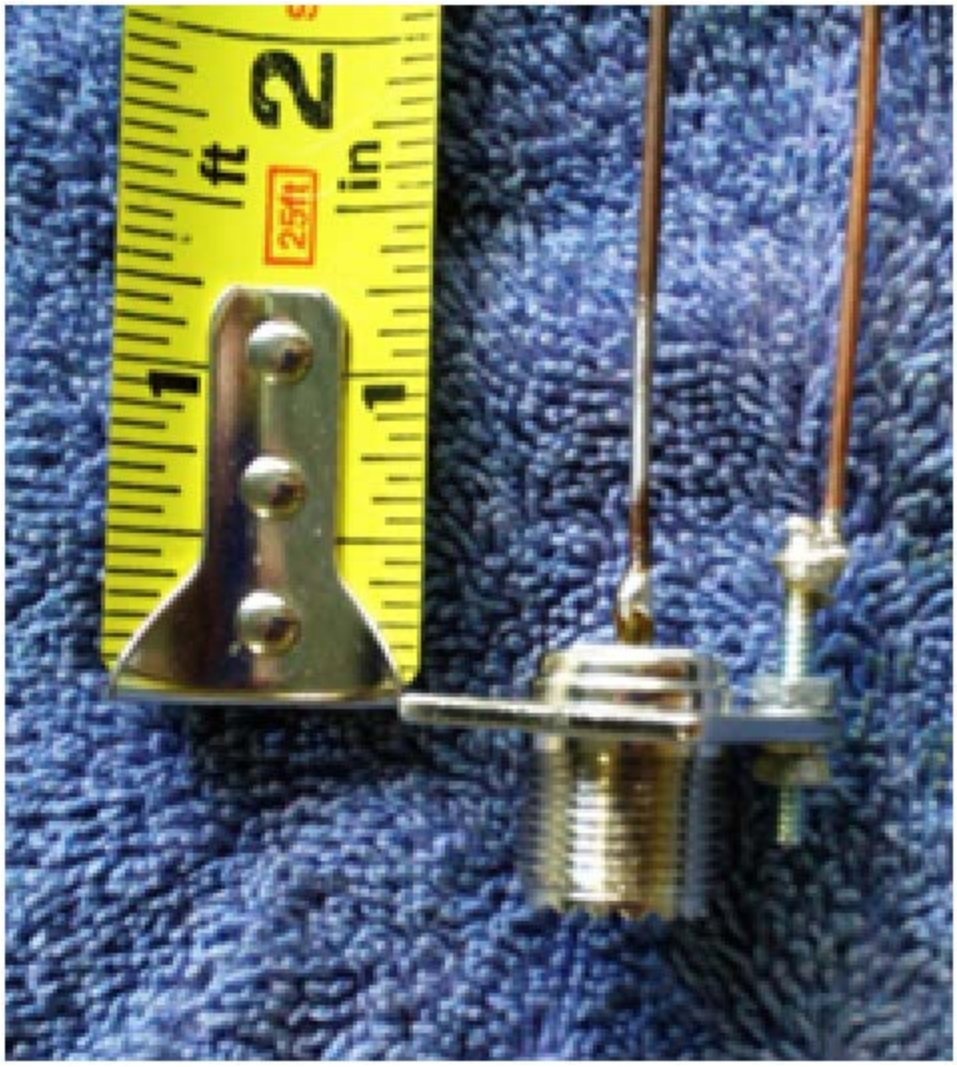
Building a Dual Band 2M / 70 cm J-Pole Antenna

This antenna easy to build indoor or portable on 70cm or dual band 2M & 70cm. This combination antenna operates as a J-Pole at 70 cm and 1/4 wavelength at 2M. You will need an SO-239, Chassis mount connector, 1/16 Copper coated welding rod and #6 fasteners.

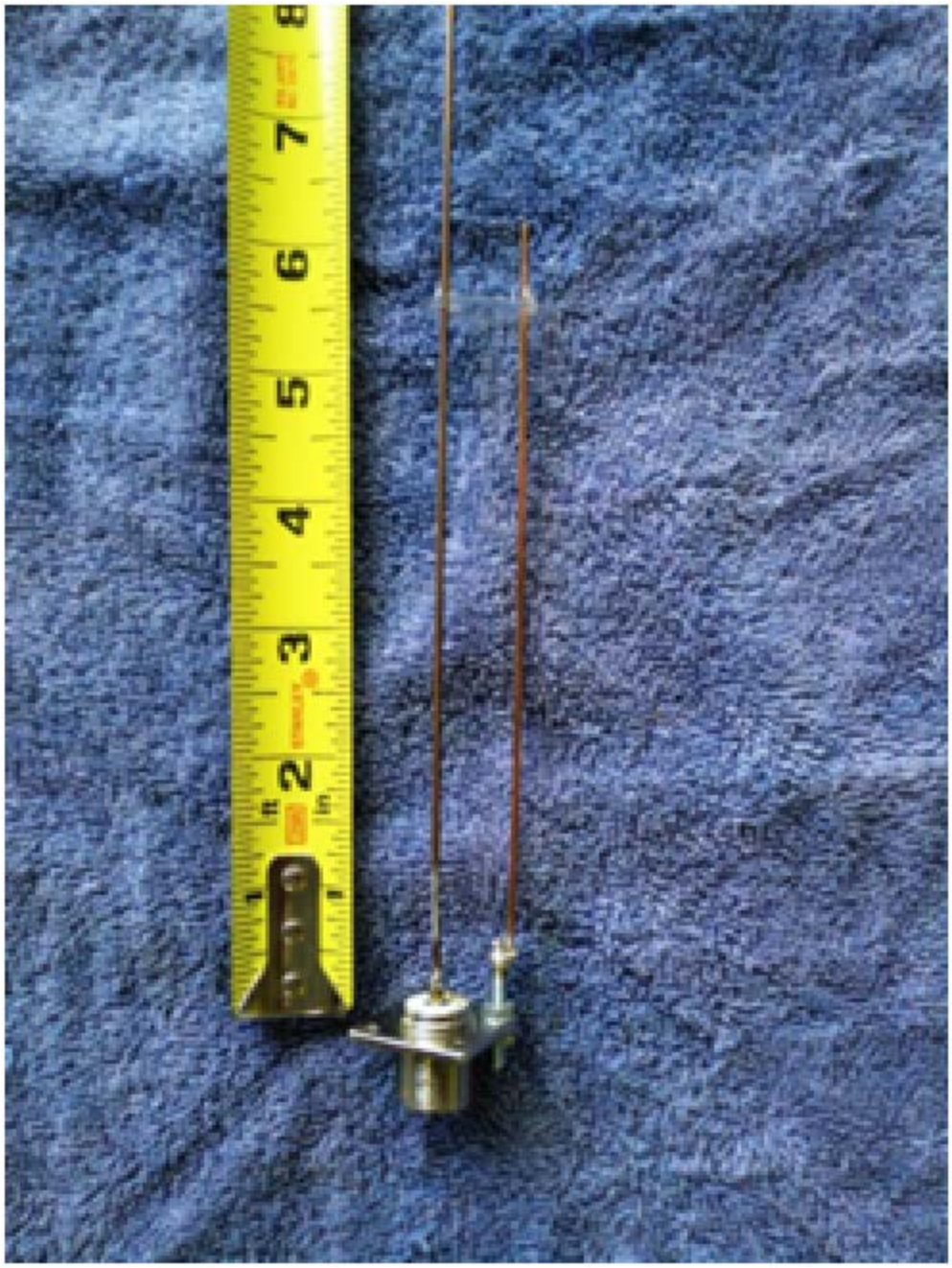




The key step in making this antenna is spacing the elements 0.60 Inches as the SO-239 spacing is closer to 1/2 Inch. Construct an eccentric or off-center connection using a 6-32 screw and solder the side of the screw to the side of the welding rod to form the 1/4 wavelength element. See detail in picture below. This arrangement provides to adjustments; spacing can be varied by rotation to get the 0.60 Inches and fine tuning of the 6.38 Inches with the vertical screw position.

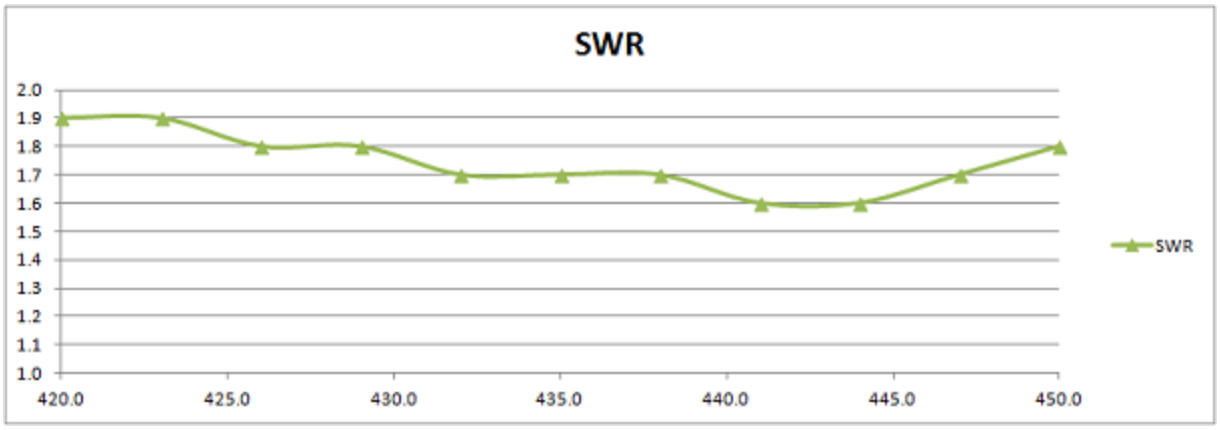


A common problem with small antenna elements is maintaining the spacing between the elements as the 1/16 Inch Rod is easily bent. Adding a plastic spacer about five inches up the elements with a drop of RTV silicone works great. See detail in picture below. In fact I have found a good use for the indestructible plastic packages used for display packages. Just cut a 1 X 1/2 Inch plastic scrap and drill two holes spaced at 0.60 Inches.

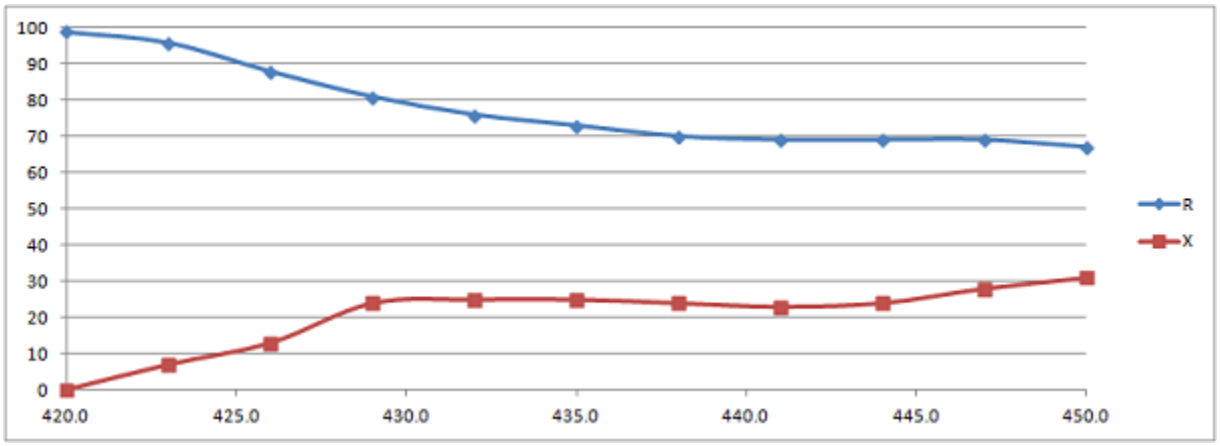


For dual band operation add three 20 Inch radials to the unused S0-239 holes.

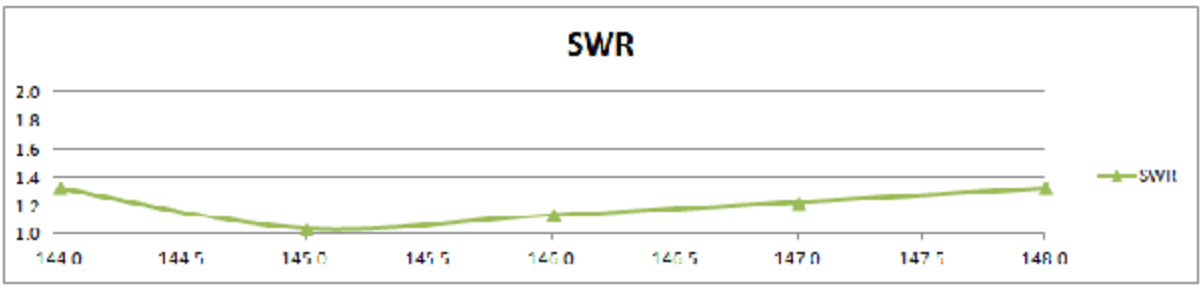
70 cm Measurements



MHz	R	X	SWR
420.0	99	0	1.9
423.0	96	7	1.9
426.0	88	13	1.8
429.0	81	24	1.8
432.0	76	25	1.7
435.0	73	25	1.7
438.0	70	24	1.7
441.0	69	23	1.6
444.0	69	24	1.6
447.0	69	28	1.7
450.0	67	31	1.8



2M Measurements



MHz	R	X	SWR
144.0	40	10	1.3
145.0	48	3	1.0
146.0	57	3	1.1
147.0	63	5	1.2
148.0	6	10	1.3