CHEAP AND EASY TO BUILD
2 METER ANTENNAS

By N4UJW

Are you interested in ultra low cost 2 meter antennas that are easy to build using cheap parts; that require no tedious matching and adjusting; that are almost invisible; that are portable, compact, quickly assembled; and that can be converted into a beam?

If so read on!
These antennas are somewhat based on the "V" designs in other projects on this site.
They include the Ultra-simple wire version in figure 1
The Table Top version in figure 2
The 2 element beam version infigure 3

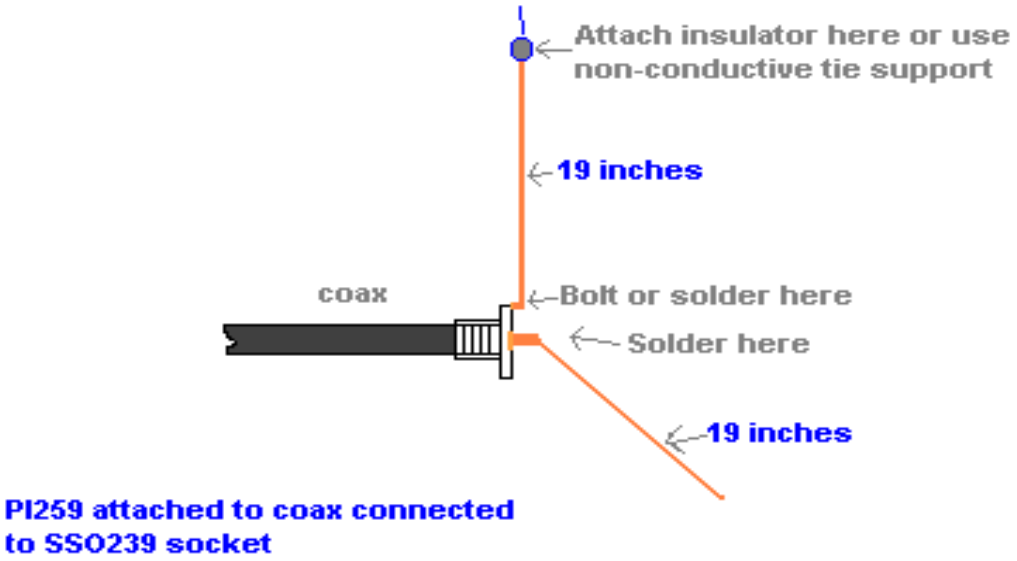

Fig. 1 Ultra-simple "wire" version above made on an SO-239 connector. Designed for hanging from any handy support and can be hung from trees, used inside motel rooms or as a "stealth" antenna.

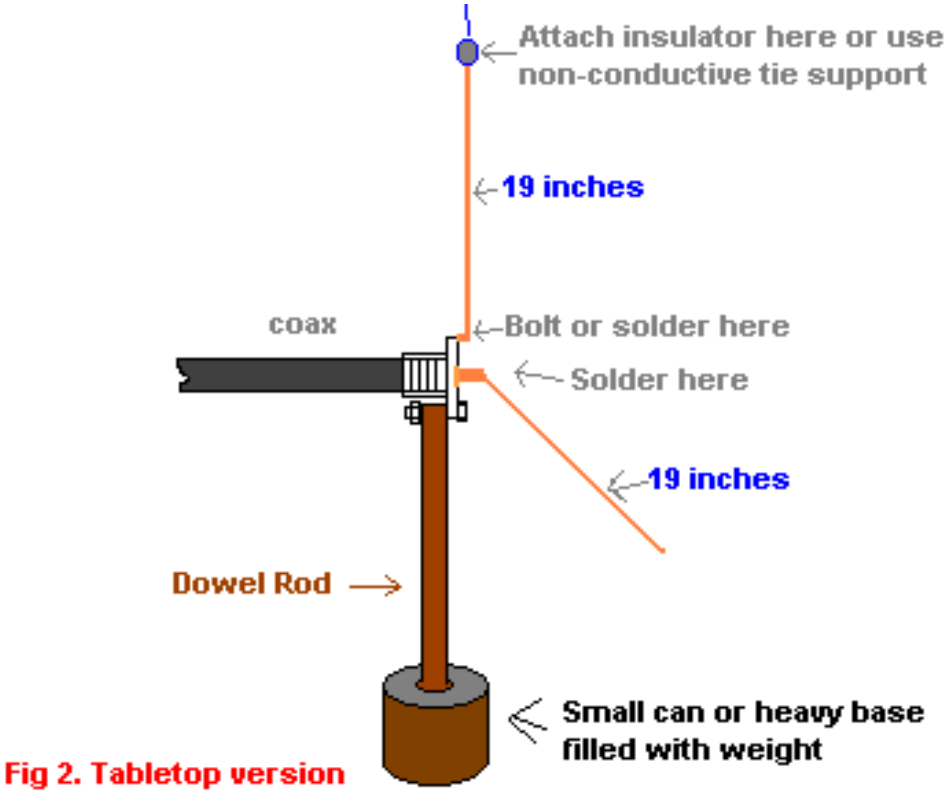

Fig 2. **Table top "wire" version above using a dowel or other simple base. Upper and lower elements must be self supporting. Use aluminum or copper tubing.**
Disregard the reference to the upper insulator in figure 2

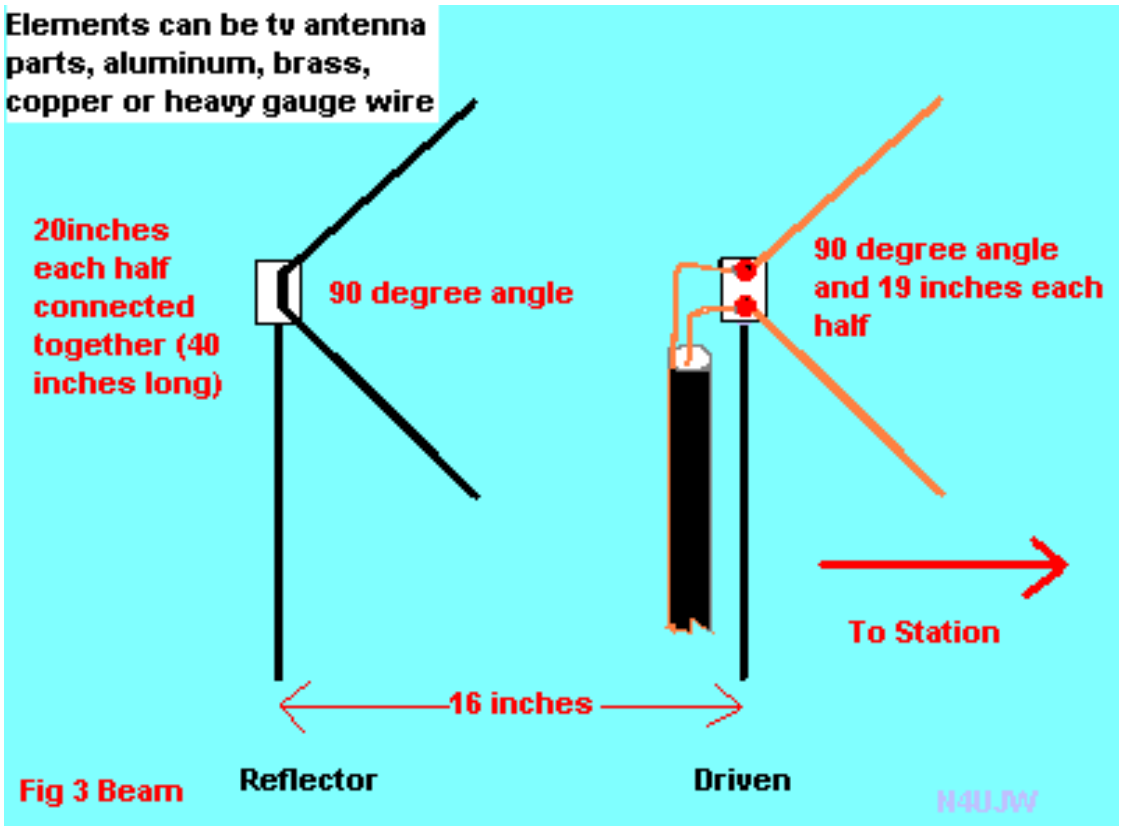

Fig 3. Yagi or Beam version above
This is a variation of the designs above.
By adding the extra reflector element about 16 inches behind the driven element and increasing it's length to 20 inches each side (5%), some gain can be realized! According to the article, this version had not been tested but should work with a bit of experimentation. It's no more than a standard dipole with a reflector added to come up with a 2 element yagi with all elements bent forward at a 90 degree angle.

CONSTRUCTION NOTES AND TIPS

In all of these designs, please note that the center conductor from the coax connection is connected to the element in the "down position". According to the article from which these designs were taken, this helps in adjusting swr!

Simply change the angle and or trim each half a very small amount for best swr. Remember on these antennas that the driven elements have to be insulated from each other and also their support.

The beam version can be made in a "T" shape with an insulated boom between the driven element and reflector and the "T" portion for the support mast. Small diameter PVC would be a good choice.

You will have to use your ingenuity for the mounting of the elements to the support so the antenna will maintain the approximately 90 degree configuration. Experiment.

An alternate version of each antenna can be built with all elements either vertical or horizontal instead of in the form of a sideways "V".
These designs can be used from HF up thru 440 or above with a little experimentation.
Just dig out that old formula you should have learned for a starting point for the lengths.....468/freq = half wave dipole (driven element) and add 5 percent to the length for the reflector.
The spacing should be a little less than .25 wave lengths from driven to reflector. (According to the article, using a director and driven element arrangement would cause problems with a poor match and the spacing would be a lot closer.)
Using an MFJ 259b or equal would help with tuning the antenna for your particular choice of frequency, but if you're not that lucky, then just use the old swr meter and very low power while testing. As always, start with longer elements and trim down. It is very difficult to add length!
DON'T FORGET TO ID WITH YOU KNOW WHAT WHILE TESTING!