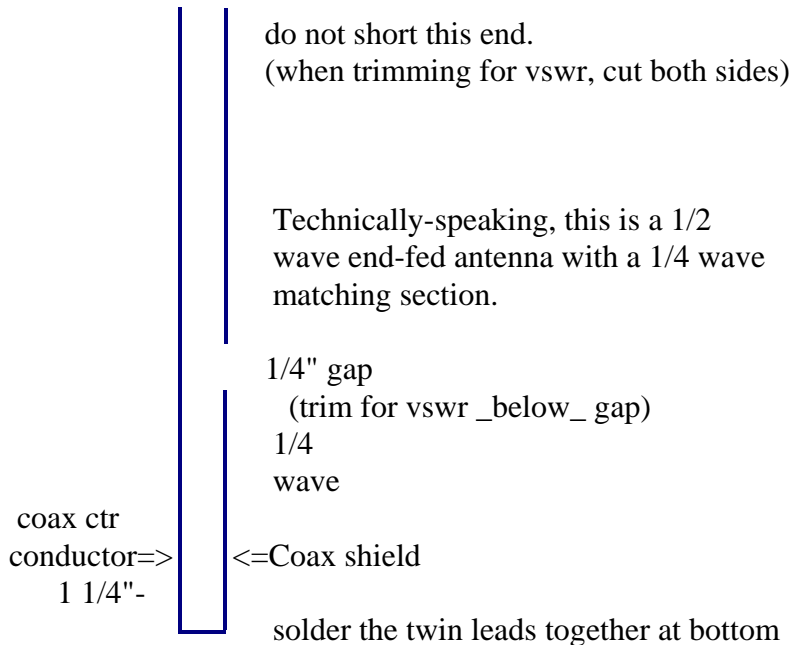


TV Twin-lead J-pole design

The following is a description of a J-Pole antenna made from 300 ohm TV twin-lead. They have quite a few advantages which include improved performance for HTs, portability, and low cost.



For a center frequency of 146 MHz:

1. Start with @54" of TV twin lead (flat, NOT foam core)
2. Strip 1/2" of insulation at bottom and solder wires together.
3. Measure 1 1/4" from soldered wires and strip insulation on both sides. This is the solder point for a coax feedline.
4. Measure 16 3/4" from coax shield solder point and cut out 1/4" notch.
5. Measure 50 1/3" from coax center conductor solder point and trim off twin lead at that point.
6. Feed with a length of RG58U coax. Tape coax at feedpoint to the twin lead for strength and seal coax for weather protection.

To get the best possible match, in step three above simply MARK the "solder points" and measure from the mark for step 4 and 5. Now solder straight pins to your conductor and your shield. Insert the pins at the marked point and test for VSWR at the design frequency (146MHz). If necessary, probe up or down till you reach 1:1 (close as possible). Solder at the best points. To try this, you may want to start with the twin lead a little long and trim down to resonant length - note: you'll need to trim in a 3:1 ratio to maintain the 3/4 to 1/4 wave.

It has been noted that this design can lead to rf coupling onto the

feedline. To avoid, put ferrite beads on the coax at the feedpoint, or use 3-5 turns of coax (1"-2") taped together at the feedpoint.

You may attach an alligator clip to the plastic on the top of the antenna in order to easily hang it. Alternately, punch a hole near the top and use a length of fishing line to hang.

FYI, the 1/4 wave sections for other center frequencies are:
144 MHz =17 inches, 145 =16.88, 146 =16.75, 147 =16.65, 148 =16.54
Just go ahead and solder the coax in place and trim down to as close to 1:1 vswr as You can get. Then use the MFJ vhf antenna analyzer and a frequency counter and afterwards test with a radio and in-line swr/power meter. When done, the antenna should also present 1:1.2-3 vswr in the center of 444MHz band as well.