

# Two-meter Vertical Dipole

Larry Nelson - K5IJB

This antenna project was inspired by Richard Frazier - W7LPN. Richard suggested an air-wound balun at the feedpoint to minimize RF along the feedline.

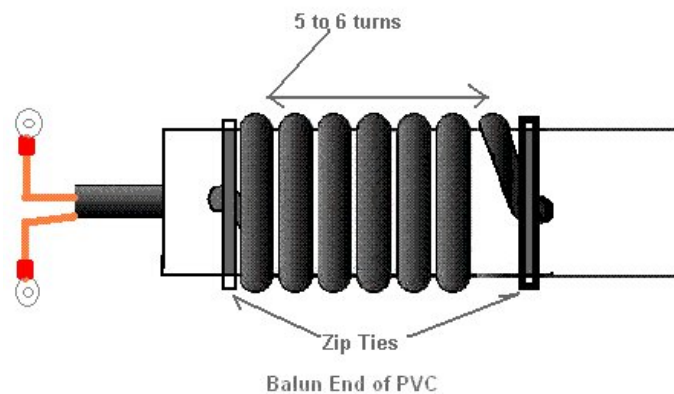
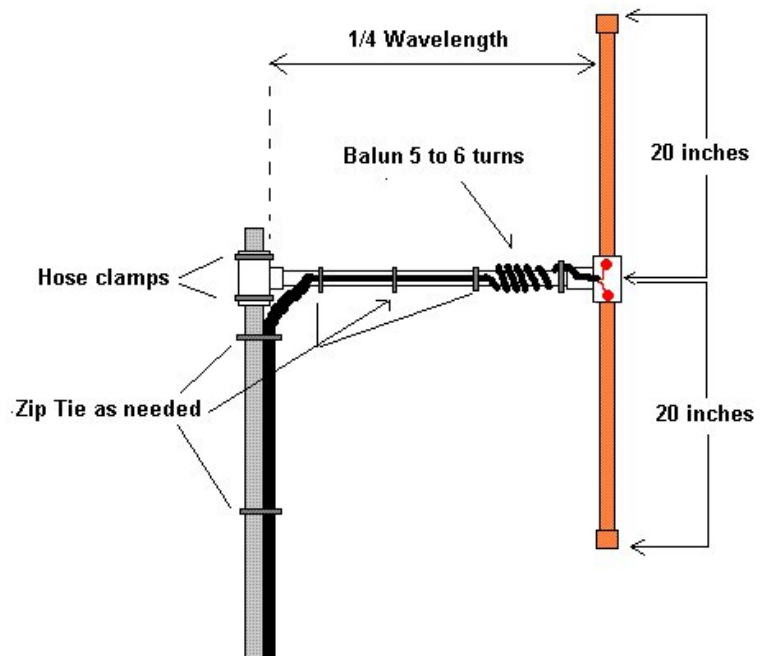
A 2-foot section of PVC painted gray along with various junk-box antenna parts were used in the construction. The antenna was mounted at a height of 8 feet on an HF dipole support pole between the house and rock wall. Nylon string was needed for support to keep the 1/2-inch PVC from possibly bending under the weight of the antenna.

The top section of the vertical consists of a 3/8-inch rod 19.5 inches long, with the bottom section also consisting of a 3/8-inch rod 19.5 inches long. SWR is fairly flat across the 2-meter band showing 1.5:1 at 144 Mhz and 1.4:1 at 148 Mhz.

The air-wound balun was wound on the 1/2-inch PVC horizontal mast using 6 turns of RG-8X coax. Plastic cable ties were used to secure each end of the balun to the PVC pipe.

Performance is exceptional. Two repeaters in the New Mexico MegaLink system can be accessed from a distance of 100+ miles. The Caballo, New Mexico MegaLink repeater can be accessed using 5 watts from a distance of 100 miles, while the Little Floridas repeater in Deming, New Mexico can only be accessed using 25 watts from a distance of 106 miles.

The vertical dipole works well for repeater operation and simplex operation, even when mounted at only 8 feet.



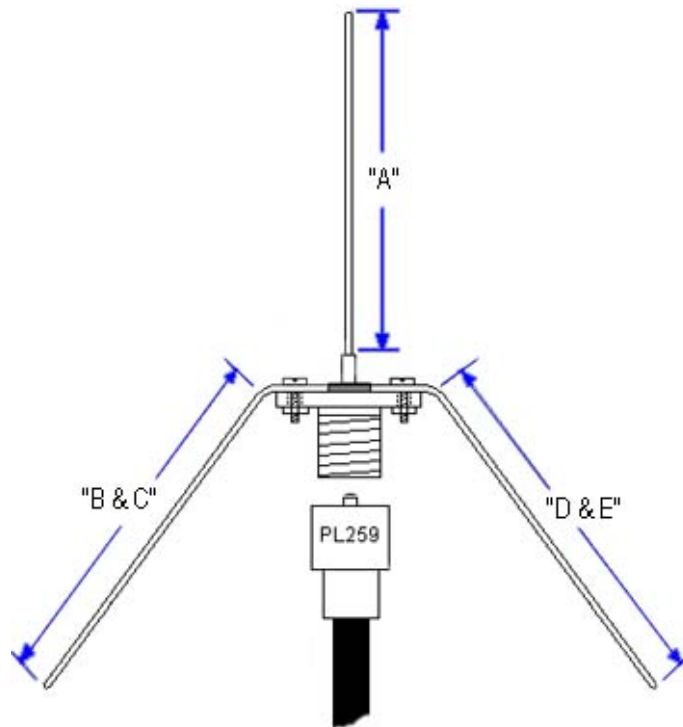
# Two-meter 1/4 Wave Ground Plane

Dee Almquist - W4PNT

If you are just starting out or have the desire to build an antenna, here is a simple and fun project. This antenna is perfect for those hams living in the primary coverage area of a repeater.

The radials can be made of no. 12 copper wire. The vertical radial (A) should be soldered to the center connector of the SO239. The four base radials (B & C) and (D & E) can be soldered or bolted to the SO239 mounting holes using 4-40 hardware. The four base radials then should be bend downward to a 45 degree angle.

The antenna can be mounted by clamping the PL259 to a mast or even passing the coax through a 3/4 ID PVC pipe and compression clamping the PL259. Either way, let your creativity flow. If you plan on mounting it outside, experience teaches to apply sealant around the center pin to keep water out of the coax.



Make each radial a 1/4 wave of your desired frequency. Sometimes it helps to add a little extra length to the radials. This will give you some snipping room when you adjust the SWR.

Frequency (mhz)	A (inches)	B&C/D&E (inches)
146 mhz	19-5/16	20-3/16

# Two-meter L-Antenna

Larry Nelson – K5IJB

Designing a 2-meter version of the 10-meter L-antenna described by W4RNL, the 1/4 wavelength mag mount antenna is tuned for 146 MHz. According to L. B. Cebik, the feedpoint impedance is about 45.5 ohms at center frequency. SWR is basically 1.3:1 across the entire 2-meter band 144-148 Mhz.

An older version of the 2-meter mag mount antenna from Larson (model MM) is shown mounted on top of a 6-foot bookshelf. The vertical element is the typical 3/16-inch rod at 1/4 wavelength with the horizontal element made of 14-gauge wire. RG-58/U coax 12 feet in length is used from the antenna plus 6-feet of RG-8X coax added in order to reach the 2-meter FM transceiver.

L. B. Cebik suggests the vertical element be slightly shorter than the horizontal element for better 50-ohm matching. The initial length of the vertical element was 19.75" with the horizontal element length 20.5". In the end and after very careful pruning of both elements, the vertical and horizontal elements were found to be around 19.5 inches in length. Pruning the horizontal element had a greater affect on SWR than pruning just the vertical element.

Three ferrite beads were attached to the coax feedline to help minimize common mode currents in the coax feedline. Local repeaters were easy to connect to using 10 watts.

