

Fiberglass 40 meter Vertical - Revised: 2015-11-06

The fiberglass 40 meter vertical ground plane was installed in the Summer of 2008. The supporting structure is made of fiberglass tubing but the radiation is from a wire taped to the tubing. The supporting structure is made of progressively smaller sections of 8 foot tubing for a total height of 47 feet. Three sloping radials, attached to the tubing at about 25 feet, double as guy wires. The other end of the radials are fastened to eight foot wooden posts buried 2 feet in the ground. A balun connects the coax feed line to the radials and vertical element. The vertical element is taped to the 22 feet of tubing above the radial attachment point. Since the element is a bit short for 40 meters, a loading coil wound around the tubing tunes the vertical to 40 meters.

BASE AND SUPPORTING STRUCTURE

The base and supporting structure are similar to the 80 meter fiberglass vertical. See 80 Meter Fiberglass vertical for details.



Base



Balun and connection of the radials to the fiberglass pole



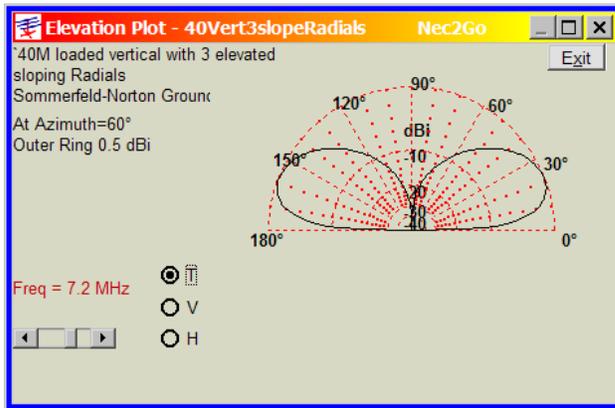
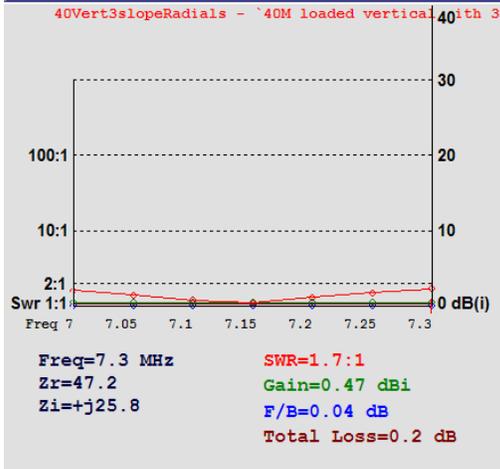
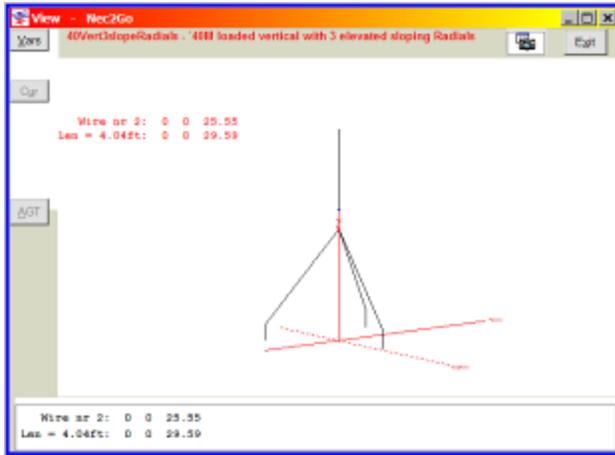
Guy posts keeps people from tripping over guy wires and double as a bird house support



The effects of a heavy Minnesota March wind on the antenna.

ELECTRICAL

The figures below summarize the electrical modeling by Nec2Go (a very fine antenna modeling program – see www.nec2go.com). The vertical wire and loading coil are #14 AWG house wiring including the black insulation. The guy wire radials are #14 bare stranded antenna wire. The radiator wire is loosely wrapped around the supporting structure, one turn every four feet and taped to the supporting structure every two feet. Since the supporting structure sways in the wind, it is important to keep the wrap loose. Wrapping likely changes the tuning a bit but is needed so that the wire doesn't dangle away from the supporting structure.



Performance is typical of a vertical antenna on 40 meters and is better than a low 40 meter dipole. It has been an excellent performer in local contests and even snags some DX with 100 watts.