

Meter Inverted Vee for 30, 40 or 80 Meters

Most DXers have towers. Most DXers put directional antennas for 10 through 20 meters on those towers. Most DXers hang dipoles or inverted V's from the sides of those towers. Most DXers are happy with their directional antennas. Most DXers are disappointed with their dipoles and inverted Vs.

If you've ever seen the EZ-Nec plots for dipole or inverted V antennas, you know why they are called *Cloud Burners*. Signals go straight up. Great for local QSOs; lousy for DX. The good news is that – without building a new antenna or spending a dime – you can re-orient your existing dipole or inverted V and create a high performance DX antenna: the vertical inverted V.

This article describes the characteristics and dimensions of vertical inverted Vs for 30, 40, and 80 meters. I've built and used the antenna on 30 and 40, but do not have a tower high enough (100 feet) for an 80 meter version.

The electrical characteristics of the viV make it attractive to most hams:

- Characteristic impedance near 50 ohms (feed directly with RG/8 or equal)
- Low VSWR across the entire band (under 2:1 calculated; 1.5:1 measured)
- Low angle of radiation (20 degrees, good for DX)
- Uni-directional pattern (2db f/b lobe)

Mechanically, the viV is merely an inverted V laid over on its side. One end of the V is at the top of the tower; the other end of the V is at the base of the tower; the feedpoint of the V is drawn away from the tower by a guy wire or its own feedline. (See diagram) To ensure the results predicted by the EZ-Nec model, you need to comply with the following:

- The feedpoint of the viV should form a 90 degree angle
- The ends of the antenna should not be within 2 feet of the tower
- The feedline should leave the feedpoint horizontally – either drawn directly back to the tower or pulled directly away from the tower (in other words, do not align the feedline with either leg of the viV)

Here are the dimensions of the viV:

In the interest of Full Disclosure... the following EZ-Nec model illustrates the viV attached to a tower with a bed of 8 32 foot radials. This roughly corresponds to the wires already in the ground for my shunt-fed tower. Without a radial bed, your VSWR curves may be higher than those indicated, and you may have to install a balun, coil some coax at the feedpoint, or bury some radials to achieve similar results. (reference: W8NN installation)

Diagrams go here





