



## Installing an “Inside Coax” Ventenna

The “inside coax” version of the Ventenna offers the ultimate in stealthiness for your installation. In the standard Ventenna, the coax exits the side of the antenna, a few inches up from the bottom. The coax is then run across the roof to some convenient place to bring it into the house. But this allows some keen-eyed observer to notice the coax and wonder about it. For the “inside coax” version, the coax comes down inside the vent pipe, making it completely invisible. The only drawback is the requirement for the vent pipe to be modified to allow the coax to exit the pipe inside the house, typically in the attic, under the roof. There are a few different ways to do this.

**The best option is** to use a 2" ABS “Tee” pipe coupler. This provides a large side opening through which the cable can easily be retrieved. A short piece of pipe and a pipe cap can be used to seal the side opening of the “Tee”, with the cable exiting via a file notch as described below. The advantage of the “Tee” is that you can leave the side exit un-glued, in case you need to access the coax later. Note - Robert - KM4ORN suggests putting a coax connector in the pipe cap, for easy changing of the extension coax.



**Another option** is to saw the vent pipe completely through, and install an ABS 2" pipe coupler ring. After the pipe is cut, file a vertical notch in one of the cut ends, using a ¼ inch rat-tail file. The notch should be about 1 inch long, (or about ¼ inch longer than the pipe insert dimension of the coupler ring). Make the notch long enough so the coax is not pinched when the ring is pressed into place on the pipe. The coax is then placed in the notch, the coupler ring installed to keep the coax in place, and the other end of the pipe put into the other side of the ring. Once you see that it all works, take it apart again, and re-assemble it using the appropriate cement to permanently bond the coupler and the pipe ends.

**The last option** is to drill a hole in the vent pipe, and retrieve the coax through the hole. This requires about a 1 inch hole in the pipe, to be able to snag the BNC connector and get it through the hole, because the diameter of the BNC connector is about 1/2 inch, and the cable must be pulled through the hole with the connector on it. Or, the factory-installed connector could be cut off, and a new connector installed after the coax is pulled through the hole. This connector installation could be a difficult operation, however, in a tight space in the attic.

Whichever option you use, after the coax is retrieved from the pipe, the opening **MUST** be completely sealed, to prevent sewer gas from getting into the attic. We use a sealer called “E6000”. We don’t recommend standard RTV sealant (the type which releases acetic acid), because it seems to react with the outer covering of the coax cable, and could cause problems. Non-acidic RTV should be OK, but it’s hard to find. The large hole in the pipe is much more difficult to seal, because the sealant tends to “slump”. Typically, the large hole requires a couple of passes to fill the hole properly, and seal it completely.

**One last point** – Test the Ventenna, *with the coax extension you intend to use*, on the ground **BEFORE** installing the Ventenna on the roof. Since this is a permanent installation, you want to be sure there is no problem with either the antenna or the coax.