

INSTALLATION GUIDE

Rooftop GPS Antenna

Standard Antenna and Anti-Jam Antenna

The best place to mount a GPS antenna is outside, with an unobstructed view-of-the-sky. Following are instructions for determining a good mounting location and mounting instructions using the supplied kit.

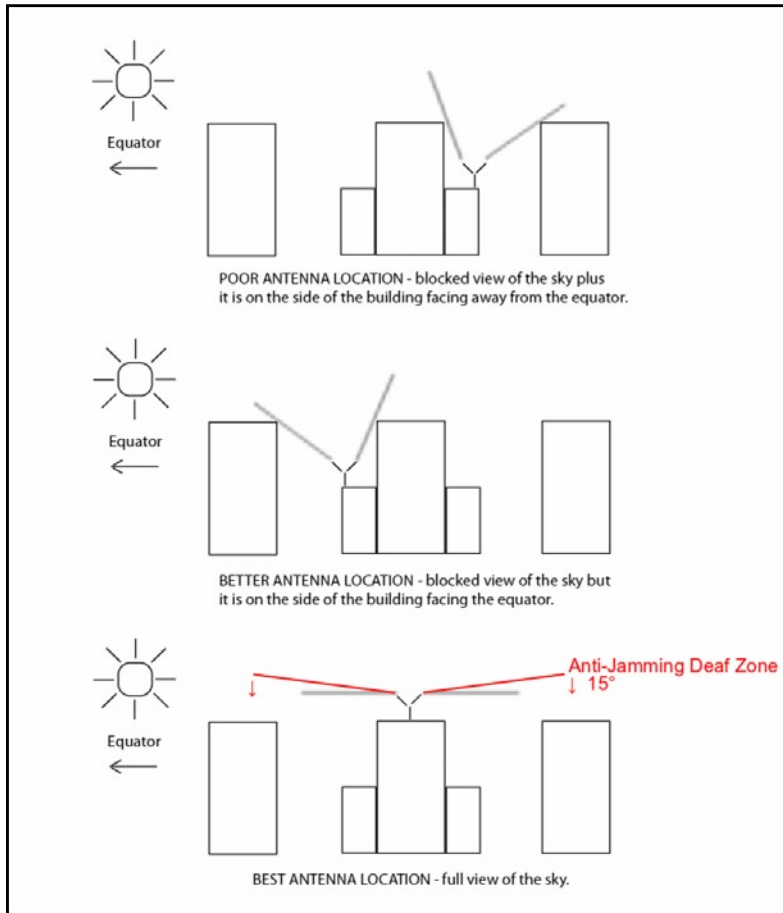


Figure 1. Unobstructed View-of-the-Sky is Best

Locate Mounting Site

1. Make sure no obstructions: Your antenna works best with an unobstructed and clear view-of-the-sky (see Figure 1). Are there high-rise buildings partially blocking the view? Anything blocking the view is a possible problem. Note: For the Anti-Jam Antenna an unobstructed view of the sky is most important because the deaf zone already blocks 15°. For this reason, do not use the window-mount.

2. Face in the best direction if mounting on the side of a building: If you are near the equator then you can mount your antenna on any side of the building. However, the further you are from the equator, then the more the direction matters. So, if you are far from the equator and in the Northern hemisphere, then mount antenna on the south side of the building. In the Southern hemisphere, mount antenna on the north side.

3. Mount as close to vertical as possible. This maximizes the view-of-the-sky.

4. Avoid other radiating antennas: Mounting near another antenna may jam the GPS signal.

Mount the Antenna

See the reverse for detailed instructions on how to mount your antenna with the supplied kit.

About Coax Cable

The GPS signal frequency is highly affected by impedance mismatches and discontinuities in the transmission cable. All RF coax cables have a minimum bend radius. In order to prevent damage, cable should not be bent into tight curves. It is important during installation that kinks are not allowed to form in

the cable. If the cable is bent too much, then damage to the inner construction of the cable may result. This can lead to much higher levels of loss and a non-functioning GPS receiver.

Care should also be taken to ensure that the cable is not crushed, or likely to be crushed later. This can also lead to a non-functioning GPS receiver. Keep these precautions in mind and do not treat the GPS coax cable like a garden hose or extension cord.

Recommended Cable

The factory-supplied GPS cable is an RG-59 type. There is wide variation in performance between RG-59 cables from different manufacturers. EndRun uses Belden 9104 or Belden 1505A. Both cables are double shielded, low loss cables and have performance at the GPS frequency with loss of 10 dB/100 feet. We supply Belden 9104 for most installations. Belden 1505A is used for very long cable runs (> 700 ft.)

If you are supplying the cable, then you must make sure the cable you install is comparable to these cables, with 10 dB or less of loss per 100 feet at 1.5 GHz. If the cable length is longer than 700 feet, you must make sure your cable has equivalently low DC resistance to the Belden 1505A type. Choosing an inferior cable type can cause a myriad of GPS reception problems.

GPS Antenna Rooftop-Mounting Guidelines

Step 1

Separate mounting adaptor from antenna as shown below (see Figure 2 or 3).

Step 2

Run cable up through the mounting pipe and through the mounting adaptor as shown. Thread the mounting adaptor onto the mounting pipe and connect cable TNC connector to antenna connector.

Step 3

Install antenna onto the mounting adaptor.

Step 4

Secure mounting pipe to available pipe or roof structure using hose clamps as shown.

Step 5

Run the antenna cable into the building and connector to GPS antenna connector on your unit. During cable installation, do not bend the cable too tightly as this may result in permanent cable damage and a non-functioning GPS receiver.



Installations subject to lightning strikes should use a lightning arrestor installed at the building entrance. A lightning arrestor suited for this purpose is available through EndRun Technologies. The arrestor must be installed according to the manufacturer's instructions.



Do NOT route the antenna wiring near or with AC wiring (Class 1 circuits per the National Electric Code (NEC)). Do NOT mount the antenna wiring where it may become energized by nearby AC wiring or components should they fall.

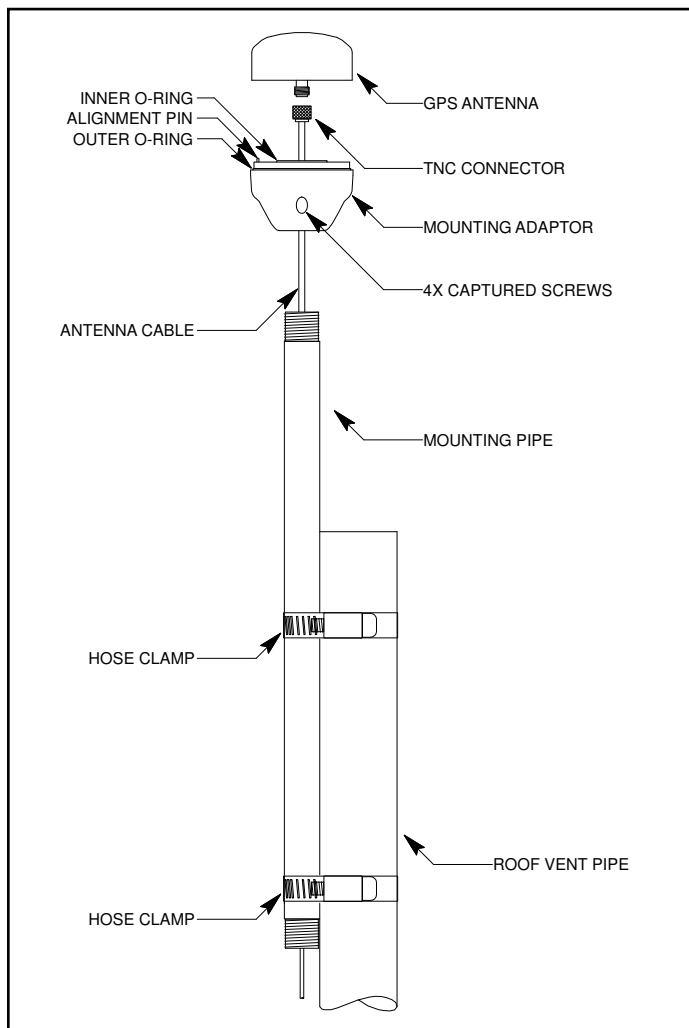


Figure 2. Standard Antenna

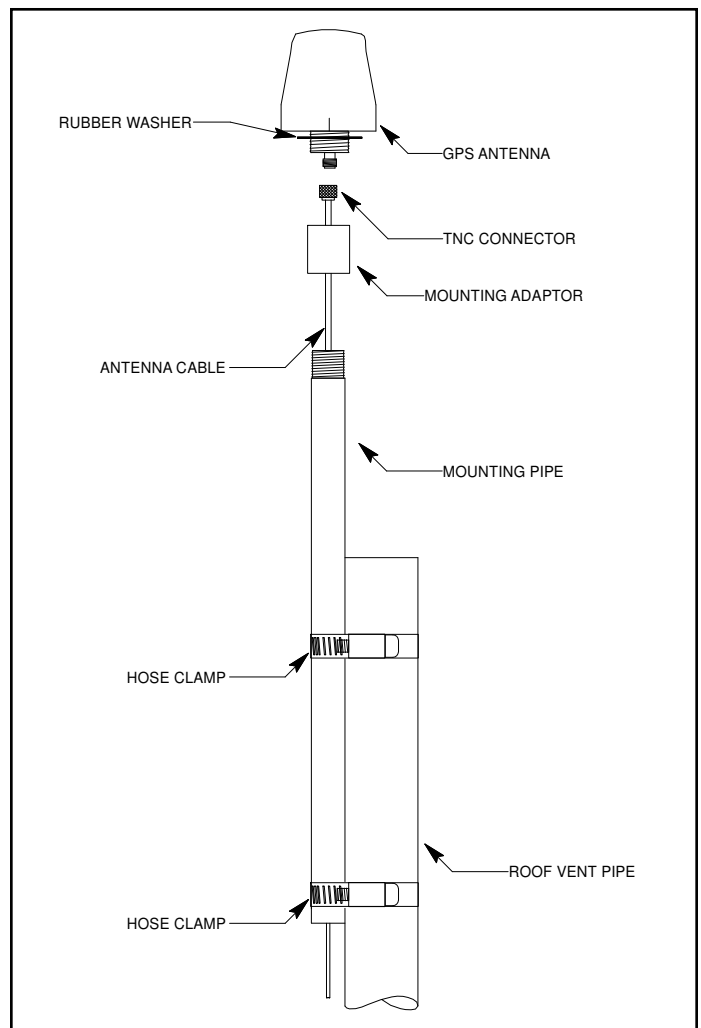


Figure 3. Anti-Jam Antenna

