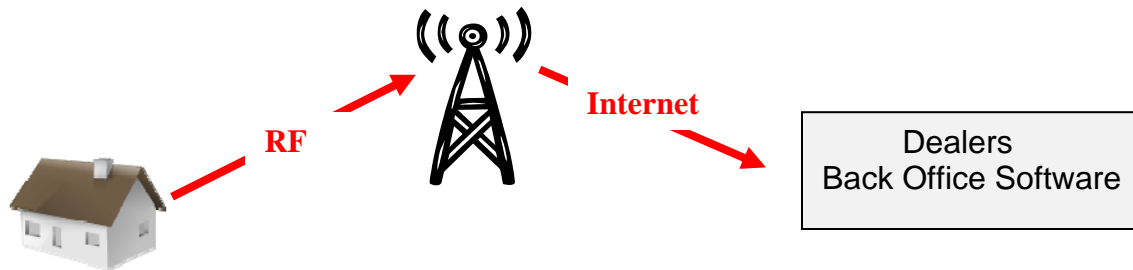


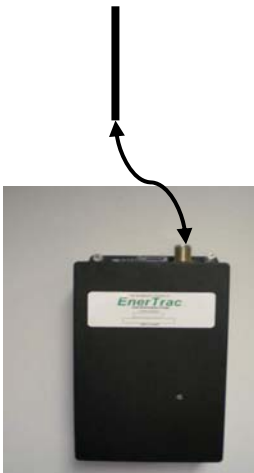


EnerTrac Network Deployment

The EnerTrac Transmitters send an RF signal to EnerTrac receivers which in turn connect to an Internet router. The data is then sent back into the dealers Back Office Software. This document details the network development and deployment process.



There are three types of EnerTrac receivers and a network extender (Repeater) that may be used to obtain and forward the EnerTrac transmitters signals:



- **Tower Receivers** are designed to go on cell towers or other towers in an area where there is a high concentration of tanks. The range of this receiver may be 30 miles or more (depending on topography) and may receive transmission from tens of thousands of transmitters. The tower receiver utilizes a standard Hammond 4ft antenna mounted as high up on the tower as possible and “stood off” from adjacent antennas by at least 4 ft. The antenna is then connected to standard shielded co-axial cable which is in turn run down to the base of the tower where it is connected to the 8 lb. receiver itself. The receiver is then plugged into an Internet Router port and 110V power. There are two types of Tower receivers:

RF Shielded (8 lb) which is designed with hardened resistance to other RF devices such as cell arrays that emit large amounts of RF “noise”

Non RF Shielded (7.5 in x 4.5 in X 2.25 in, 1.3 lbs.) for use where there is little ambient RF interference anticipated.

Please contact EnerTrac for assistance in the determination of which type of Tower receiver is appropriate for your environment

Probable Range: If you provide EnerTrac the address and approximate height of the antenna mount, we will provide a probable coverage map. You may also do this for yourself using Google Map/Google Earth by simply entering the address, adding the antenna height and moving the cursor outward until the topography exceeds the height of the antenna mount. That not blocked by the earth (a hill)



- **Building Receivers** are designed to be installed on the top of buildings or in church steeples that you have access to and will receive signals from Transmitters 2-15 miles away (based on topography). An attic version (installed inside a church steeple as an example) that does not require a sealed antenna environment is also available at less cost. The Building receiver utilizes Power over Ethernet (POW) technology whereby the receiver is self-contained within a 5 ft. tall PCV enclosure weighing less than 4 lbs. The receiver comes with a standard 50 ft CAT 5 cable designed to bring into the building. At the end of the CAT 5 cable the unit splits into a 110V plug drawing 4w and a standard CAT 5 cable plug designed to be plugged into any available port on any Industry standard Internet router.

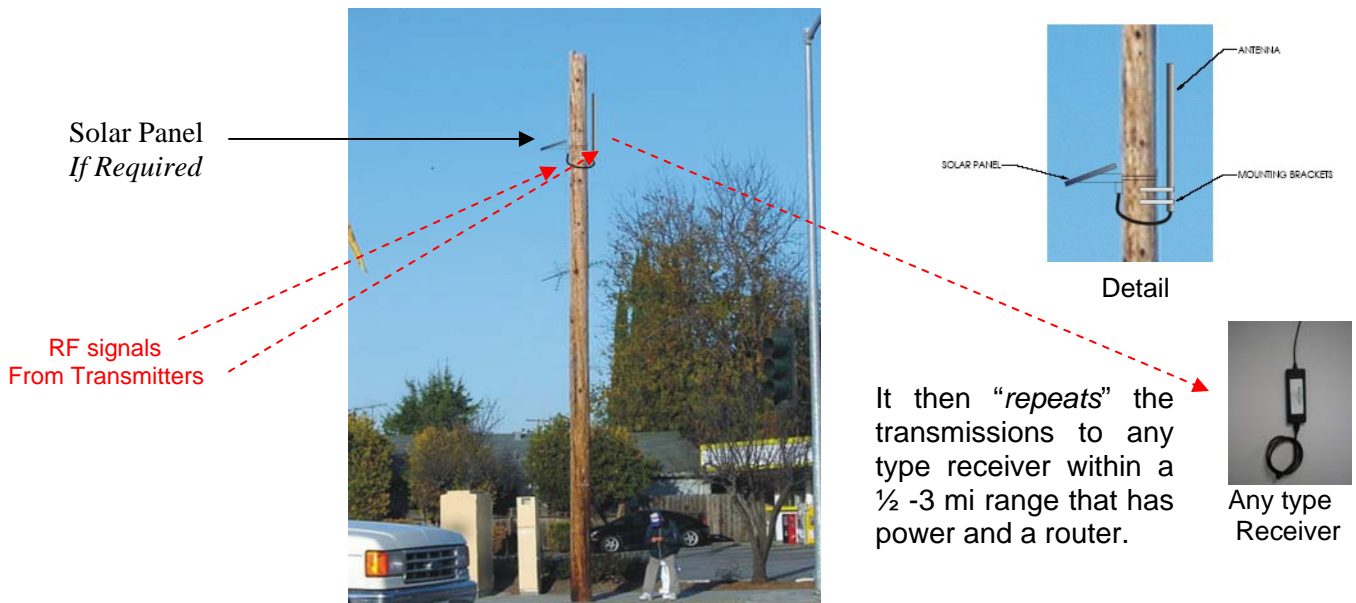
Range: Again, utilizing Google earth you may easily determine probable range or if you provide EnerTrac the address and approximate antenna height, we can do this for you.

- **In-Home / Neighborhood receiver:** is utilized when a small “shadowed” area is found or when deployment of more expensive receivers is financially impractical (because there are only a few tanks in a small area). It plugs into 110V and a router and may see unlimited numbers of transmitters for a distance of approximately ½ mile.



- **Truck Mount Receiver:** The same Neighborhood receiver may be mounted on any truck and/or service vehicle. As the trucks deliver fuel, they pick up tank monitors in the area (about ½ mile range). The receivers can use existing internet connection on the truck (if available), or a dedicated cell modem.

- **Repeater:** The repeater has two applications. The first is to install in a “shadowed area” where there are a number of transmitters to be installed and entrance into a Home for a Neighborhood receiver is undesirable. The second case is where access to the optimal mounting location for a Receiver is difficult in terms of power or internet availability. In either case, an EnerTrac Repeater may be used



There is both a solar powered version and a 110V version.

Initial Testing: ...Building or In-Home/ Neighborhood receivers ?

Option 1: For initial testing purposes the customer may install a Building Receiver on any readily available location that will allow reception from the initial testing transmitters. This could be a dealer owned location or one you have access to: *the higher the better*. Again, Google Earth www.earth.google.com provides a free download that may be used to easily identify the optimal (highest) locations to consider. By entering an address, Google Earth will focus in on that location and you can determine surrounding topography simply by moving the cursor around the selected location.

Option 2: Alternatively, the dealer could install an In-Home / Neighborhood receiver in one home or building in a neighborhood. This receiver could receive signals from hundreds of transmitters located within ½ mile.



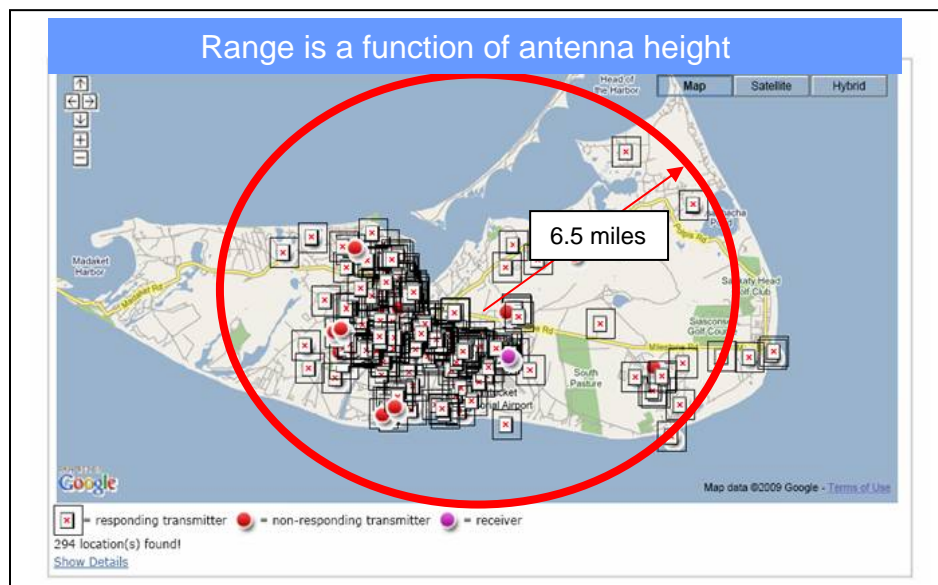
Range Tester: The EnerTrac Range tester is designed to act like a transmitter. In this way the user simply switches the tester on and a text or email message will be sent within 20 sec if the transmission is received by any type EnerTrac receiver within range of the tank.

Network Deployment: ...Where are the customers?

Once the dealer is comfortable and wishes to move to larger deployment, the following process is normally followed:

1. The dealer provides EnerTrac a spreadsheet listing all customers addresses and zip codes (or geo co-ordinates), identifying (if possible) which addresses are commercial accounts.
2. EnerTrac will then load these addresses into a Google Earth map that will “map” all your customers onto a Google Earth image.

This Map may then be used to illustrate optimal Tower receiver locations. The commercial customer accounts are often the best place to mount Building receivers as they are both customers and usually more business friendly. Then fill in the shadowed areas with either Repeaters or In-Home / Neighborhood Receivers.



Choosing the optimal locations.....*things to consider*

- Is the antenna located at an altitude that is HIGHER than my customers?
- Is the antenna mounted HIGHER than the surrounding tree line?
- If mounting on an existing RF tower; if there are working high RF output antennas like cell arrays already mounted , an RF shielded Tower Receiver should be used and the antenna itself should be mounted to minimize proximity with other antennas.
- Tower vs Building receivers:

The Tower receiver/s is designed for use where access to the top of the tower is limited or expensive. The Tower electronics are all located at the bottom of the tower. Range is slightly impeded because of the inherent RG 8U Coax cable signal degradation. The range is, of course, made up for (and more) because of the height advantage a Tower receiver provides.

The Building receiver is far less expensive and utilizes Power over Internet (CAT 5) cabling that has no signal loss however the electronics are largely in the antenna itself so access in case of any problem requires access to the mounting location (usually a roof)

- Is the mounting location easily accessible? If so, the Building receiver is optimal
- If mounting on a building, wood is preferable to metal
- Try to minimize proximity to other buildings, especially if they are metal.

Installing the Receivers

Each receiver type has a corresponding EnerTrac Installation Guide that provides specific step by step instructions for successful installation.