



Geoforce Gateway Use Case Overview

GTx asset devices provide valuable asset utilization data for sparsely distributed outdoor field assets. These assets, however, are not always outdoors and are occasionally serviced or stored indoors or stacked for storage in such a way that impacts or disables the use of the device's long-range satellite based radio technology.

As an example, assets such as small tanks that are GTx tagged and seasonally stored indoors cannot determine or transmit their GPS location status as the sky may be completely obstructed by dense metal roofing. In these cases, the primary utilization of the GTx device is defeated, and the assets essentially go missing since data reception and delivery are blocked.

Geoforce Gateway Cellular Connection Note

Stock Geoforce Gateway installations utilize LTE cellular connectivity so it is assumed the area of service is within good LTE cellular coverage. Typically, if a cell phone works in the area, it is a good candidate for Geoforce Gateway operation. If there is no cell phone coverage, a custom Ethernet or Wi-Fi enabled Geoforce Gateway may be required for data backhaul. These configurations are not standard, and require a custom development and deployment agreement with Geoforce to complete.

Geoforce Gateway Operational Overview

The Geoforce Gateway is a simple data collection and interface device used to minimize the impact and effects on GTx devices from densely obstructed sky views. A Geoforce Gateway listens for and collects any nearby critical GTx device transmissions and conveys the information in those transmissions over wired or cellular wide area networks.

Geoforce Gateways will therefore enhance any related asset location data within the Geoforce application for any GTx devices located nearby. Single or multiple Geoforce Gateways can be used to cover the obstructed facility areas, thus creating positive confirmation of asset location and status.

The Geoforce Gateway device is designed generally for indoor installation locations. However, this installation guide describes both indoor and outdoor installation location methods. It is recommended that outdoor location installations be performed by a skilled technician or electrician to ensure installations are properly deployed.

Geoforce Gateway Indoor Installation Guide



The Geoforce Gateway may be procured from Geoforce, and SKU# "GWI-LTE" can be used for ordering. The Geoforce Gateway is designed for easy installation indoors, and must be mounted to protect its power plug from water intrusion or exposure to outdoor elements. Each Geoforce Gateway device must be plugged into a wall receptacle providing 110/220VAC, 50/60Hz.

Step 1: Selecting a Mounting Location

To ensure ideal performance it is advised to consider the following:

- Select a mounting location that provides the best line-of-sight view of the internal facility area.
- Select a mounting location that provides access to a 110/220Vac outlet for each Geoforce Gateway.
- If power is unavailable, an electrician will be required to install a 110/220Vac electrical outlet for each Geoforce Gateway.
- If multiple Geoforce Gateways are being used, it is recommended that those locations be spaced apart by ~100ft.
- Be mindful that radio obstructions such as walls or equipment may degrade the Geoforce Gateway reception range and may require additional Gateway devices to fully cover a desired area.
- Mount the Geoforce Gateway on the flattest and hardest surface available.
- Mount the Geoforce Gateway such that the power plug and vent are pointing at the ground ensuring the enclosure is level.
- Select a mounting location that isolates the Geoforce Gateway from damage.
- Recommended mounting area size is 9.0"L x 6.0"W.
- Thoroughly clean the mounting area, especially if using VHB mounting.
- DO NOT PAINT OR COVER THE GEOFORCE GATEWAY - Doing so may negatively impact radio range.

Step 2: Selecting a Mounting Method

Mechanical Mounting

Self-drilling Sheet-metal Screws (#8 or #10 screw diameter)

For installations with thinner mounting surfaces where a quicker install is needed. - [Minimum 2 needed]

Drywall Screws with anchors (#8 or #10 screw diameter)

For installations that can be installed into building structure. [Minimum 2 needed]

Socket or Hex Head Cap Screws (#10 screw diameter)

For installations that can be installed into building structure. [Minimum 2 needed]

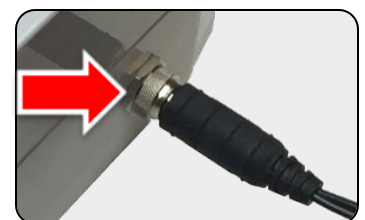
It is highly recommended to use mounting fasteners made of a material that resists galvanic corrosion and environmental weathering such as stainless steel. This is especially important for outdoor applications.

VHB Adhesive Mounting

For installations that are **isolated from** abuse, extreme weather and temperatures VHB adhesive tape that can be used to "peel and stick" the Geoforce Gateway to any clean surface. Installation must occur above 50F (10C). The Geoforce VHB Installation and Removal Guide provides general cleaning and installation guidelines and **MUST** be followed to ensure proper adhesion to the installation location. Not recommended for dry wall, brick, or other porous or rough surfaces.

Step 3: Secure in Place and Plug in Power Adapter

- Ensure the enclosure is level with power plug and vent pointing down.
- Install screws into the Geoforce Gateway enclosure mounting ears in at least two positions.
- Secure any loose wiring to prevent snags or power interruptions. **NOTE:** A service loop in the wiring may be required to ensure water does not collect or drip into the enclosure.
- The Geoforce Gateway should come with its power adapter already installed into the enclosure, but if this is not the case then ensure the power supply plug locking ring is **fully seated and secure**.



Step 4: Survey the GPS location of the Geoforce Gateway Installation

- a. Using any common smartphone GPS application, note the local GPS coordinates of the installation. Contact Geoforce for any assistance.
- b. Provide that surveyed GPS location coordinate and address to Geoforce for final setup.

