

# Inseego Wavemaker™ PRO 5G Outdoor Modem FW2000e

## Installation Guide



inseego

# About the FW2000e

## Description

The 5G Outdoor Modem FW2000e delivers high-speed data over both 5G and 4G LTE networks using a proprietary high-gain antenna array. The FW2000e connects to the optimal cellular network and provides data connectivity to the existing in-building network.

## Durability

The FW2000e has an environmental rating of IP67 for water and dust ingress and can operate within a temperature range of -30°C to 70°C (-22 to 158°F).

## Preparing to Install

### Tools and materials

- Installation handle
- Ladder
- Installation PoE\* cable (RJ45 fittings attached)
- Smartphone/device for Inseego Mobile App
- SIM card (4FF nano)
- Phillips-head screwdriver
- M6 4mm hex driver
- Drill
- 14mm socket wrench/driver
- Needle nose pliers or tweezers
- Permanent round Cat6A PoE cable
- Ground wire
- Two RJ45 connector fittings for PoE cable
- Crimp tool to attach RJ45 fittings
- Cat6A Ethernet cable
- Sealing/weatherproofing material

Your FW2000e comes in two packages:

- Device, PoE injector, SIM tool
- Mount, device elevation bracket, hardware

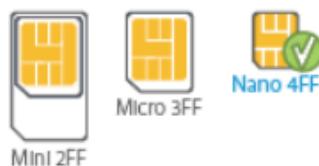
\*Power over Ethernet

## Pre-Installation

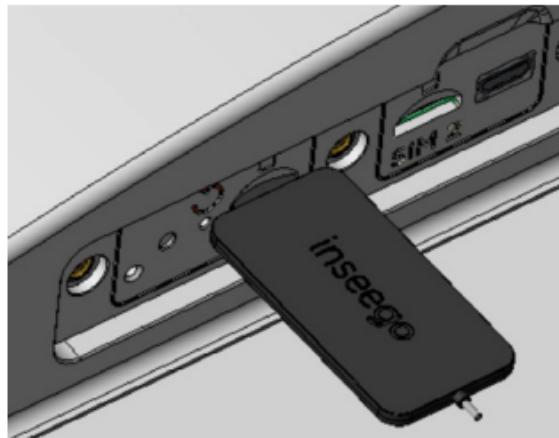
1. Unscrew the protective shield over the SIM slots using a Phillips-head screwdriver.



**NOTE:** This device supports only Nano SIM cards.

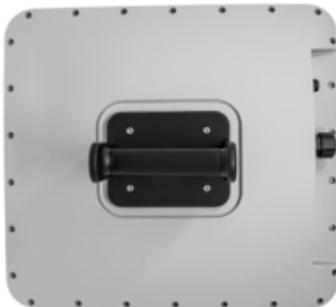


2. Use the included SIM tool to insert a Nano 4FF SIM card into the appropriate SIM slot.



3. Reattach the protective shield cover to a torque of 1.2 Nm (0.885 ft/lb).

4. For ease of carrying during the location survey, attach the installation handle to the back of the device with a Phillips-head screwdriver.



5. Unscrew the PoE gland cap and insert one end of the installation PoE cable.

**NOTE:** This is for location survey purposes only. You will install the permanent PoE cable later. Set aside the bushing and cap.



6. Insert the other end of the cable into the PoE injector **Data & Power Out** port. Plug the PoE injector into an earthed AC outlet.

## Location Survey

1. Scan the QR code to download the Inseego Mobile App from Apple Store or Google Play Store, or visit <https://inseego.com/inseego-connect-get-app> to download the App.
2. Follow instructions within the Inseego Mobile App to connect to the FW2000e and perform a 5G site survey to identify the ideal location to install.



# Installing the FW2000e

## Installing the PoE cable

1. Remove the installation PoE cable used for the location survey from the device using needle nose pliers or tweezers.
2. Remove the rubber pin from the PoE gland bushing and assemble the gland cap, putting the bushing inside the spacer and into the cap.

*Rubber pin and gland bushing*



*Gland cap assembly*

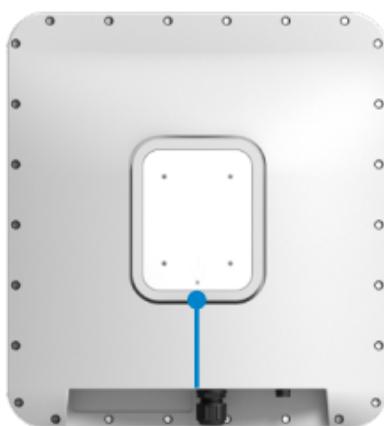


3. Thread the permanent PoE cable through the hole in the assembled PoE gland cap and attach a RJ45 connector to the cable.
4. Insert the connector into the FW2000e and screw on the gland cap. The cap will keep the PoE connection secure and watertight.

## Attaching the device to the device elevation bracket

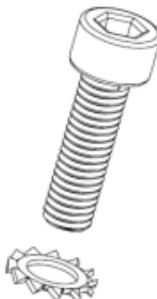
1. Remove the installation handle from the device.
2. Attach a ground wire to the back of the device with the ground screw.

*M5 10mm ground screw / washer*



3. Place the M6 external locking washers on the M6 21mm bracket mount bolts.

*M6 21mm bracket mount bolt and washer*



4. Mount the device to the device elevation bracket using a hex driver to tighten the bolts to 2.0 Nm.



## Installing the mount

The mount is adjustable and can be mounted on vertical, horizontal, and slanted exterior surfaces.

The mount is attached using the four roof mount lag screw in the corners of the base.

*Roof mount lag screw*



1. Pre-drill holes in the surveyed location.
2. Attach the mount using a hex driver to tighten the lag screws.

**NOTE:** Concrete anchors are provided if mounting to concrete or brick.

## Securing the device elevation bracket to the mount

1. Attach the device elevation bracket to the mount and tighten the square neck bolts along the back to 2.0 Nm using a ratcheting socket wrench.
2. Ground the ground wire to an appropriate earth ground.

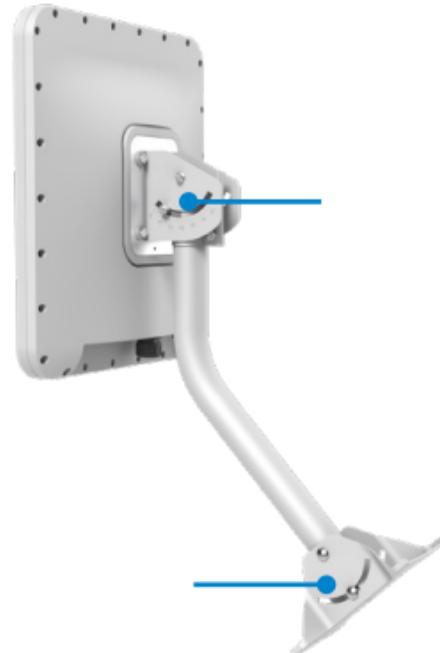


## Orienting the device

1. Run the PoE cable to the desired location of the PoE injector.
2. Attach a RJ45 connector fitting and insert the cable into the **Data & Power Out** port on the PoE power injector.



3. Take a racheting socket wrench and device/smartphone with the Inseego Mobile App to the FW2000e location.
4. Use the Inseego Mobile App and the positioning bolts on the device elevation bracket and bottom of the mount to fine tune the horizontal and vertical angle of the FW2000e for the best signal.

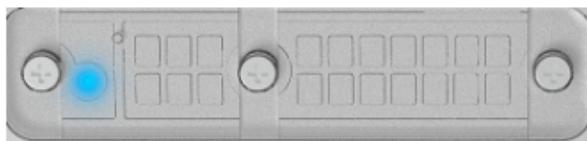


5. Tighten the positioning bolts to 15.0 Nm.
6. Use sealing/weatherproofing material to seal any holes drilled in the structure to run the PoE cable.

# Testing the connection

## Checking the LED on the device

The LED is located in the SIM compartment and is visible through the protective shield.



LED Color	Operation	Meaning
Blue	Solid Blinking	Strong 5G connection (3 – 5 bars) Weak 5G connection (1 – 2 bars)
Green	Solid Blinking	Strong 4G connection (3 – 5 bars) Weak 4G connection (1 – 2 bars)
Yellow	Solid	Software update is in progress
Red	Solid Blinking	Router is booting up No service, SIM error, or locked SIM card

## Connecting a device

You can connect any router or device with Ethernet capability and an Internet browser to the FW2000e. Connect an Ethernet cable from the **Data In** port on the PoE power injector to the connecting device.

## Monitoring and managing your FW2000e

You can use multiple options to monitor and manage your 5G Outdoor Modem:

- **Inseego Mobile App** - Use the same mobile app you used to install your FW2000e to perform basic device monitoring and management.
- **FW2000e Admin Web UI** - Access the Web UI at <http://192.168.1.1> for a full set of device management features. The initial sign in password is: "Fast5G!".
- **Inseego Connect** - Go to [connect.inseego.com](http://connect.inseego.com) to sign up for a free Inseego Connect account, which provides the fullest experience for monitoring and managing FW2000 devices from anywhere in the world with access to a web browser.

# Important information

## **Inseego Mobile App requirements**

Smartphone or device on iOS 13 or above, or Android 9.0 or above.

## **System requirements**

Any device with Ethernet capability and an Internet browser. The FW2000e is compatible with the latest major operating systems and versions of Web browsers.

## **Approved firmware versions**

This device will only operate with firmware versions that have been approved for use by your wireless carrier and the device manufacturer. If unauthorized firmware is placed on the device it will not function.

## Support and more

### **More information**

To access a User Guide, go to:

[www.inseego.com/support-documentation/](http://www.inseego.com/support-documentation/)

### **Customer service and troubleshooting**

Please contact your reseller.