SAFETY WARNINGS

Radio Frequency (RF) Safety

To avoid possible radio frequency (RF) interference, follow any special regulations for using radio equipment, and follow the safety advice listed here:

- Operating the device close to other electronic equipment may cause interference if the equipment is inadequately protected.
- Observe any warning signs and the manufacturer recommendations. Different industries and businesses restrict the use of cellular devices. Respect restrictions on the use of radio equipment in fuel depots, chemical plants, or where blasting operations are in process. Follow restrictions for any environment where you operate the device.
- Do not place the antenna outdoors, unless in an outdoor-rated enclosure.
- Switch OFF your wireless device when in an aircraft. Failing to observe this restriction may lead to suspension or denial of cellular services to the offender, legal action, or both.
- Switch OFF your wireless device when around gasoline or diesel fuel pumps and before filling your vehicle with fuel.
- Switch OFF your wireless device in hospitals and any other place where medical equipment may be in use
- Refer to Potential Interference with Pacemakers and Other Medical Devices.

Potential Interference with Pacemakers and Other Medical Devices

Radio frequency energy (RF) from cellular devices can interact with some electronic devices, causing electromagnetic interference (EMI). The FDA helped develop a detailed test method to measure EMI of implanted cardiac pacemakers and defibrillators from cellular devices. This test method is part of the Association for the Advancement of Medical Instrumentation (AAMI) standard. This standard allows manufacturers to ensure that cardiac pacemakers and defibrillators are safe from cellular device EMI.

The FDA continues to monitor cellular devices for interactions with other medical devices. If harmful interference occurs, the FDA will assess the interference and work to resolve the problem.

Precautions for Pacemaker Wearers

EMI can affect a pacemaker in one of three ways:
- Stop the pacemaker from delivering the stimulating pulses that regulate the heart's rhythm.
- Cause the pacemaker to deliver the pulses irregularly.
- Cause the pacemaker to ignore the heart's own rhythm and deliver pulses at a fixed rate.

Based on current research, cellular devices do not pose a significant health problem for most pacemaker wearers. However, people with pacemakers may want to take simple precautions to avoid EMI from cellular devices:
- Keep the device on the opposite the side of the body from the pacemaker to add extra distance between the pacemaker and the device.
- Avoid placing a turned-on device next to the pacemaker (for example, don't carry the device in a shirt or jacket pocket directly over the pacemaker).

Antenna

The antenna intended for use with this unit meets the requirements for mobile operating configurations and for fixed mounted operations, as defined in 2.1091 and 1.1307 of the FCC rules for satisfying RF exposure compliance.

Enphase Customer Support: http://enphase.com/global/support-request/

140-00068-06

⊖ ENPHASE

Enphase Mobile Connect Installation Guide

This guide provides instructions on how to install Enphase Mobile Connect™ with the Enphase Envoy-S™ and the Enphase IQ Envoy™. This guide is intended for use by professional installation personnel. For details about the Envoy-S or IQ Envoy, refer to the Installation and Operation Manual.

How Mobile Connect Works
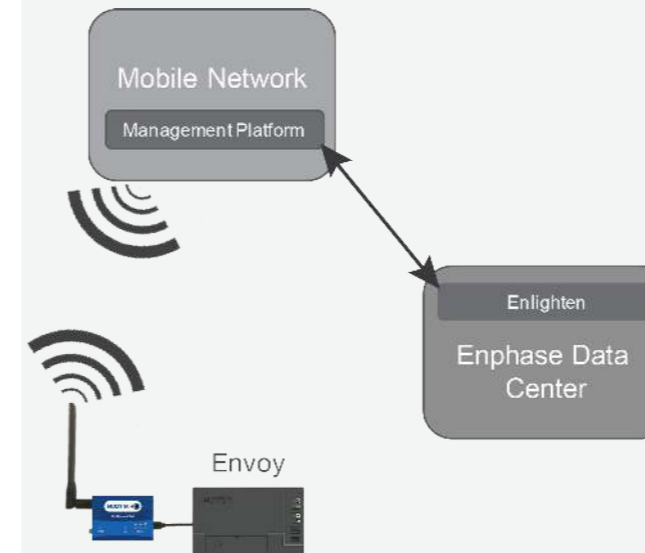
Enphase Mobile Connect is a modem package that connects to the Enphase Envoy-S or IQ Envoy, and eliminates the need for an on-site Internet connection to monitor an Enphase Microinverter System. The addition of Mobile Connect to an Enphase System enables greater installation flexibility and provides reliable system monitoring independent of the Internet service on site.

Enphase Mobile Connect is pre-configured for data service and becomes activated when connected to the Envoy.

The Envoy collects module-level and system-level production data, and, if configured, consumption data, at pre-defined periods of time, typically at 15-minute intervals.

The report setting for an Envoy with Mobile Connect is **low bandwidth mode**, which transmits data to Enlighten four times a day. The transmission times occur within a five-minute window, at 3 am (03:00), 9 am (09:00), 3 pm (15:00), 9 pm (21:00). After transmission, the data may take several minutes to display in Enlighten.

About Enphase Mobile Connect

The Envoy paired with Mobile Connect provides plug and play connectivity to the Enphase Enlighten™ monitoring platform. Mobile Connect includes the following:
- MultiTech 4G LTE Category M1 cellular modem (**CELLMODEM-M1**) or 4G cellular modem, MultiTech Cell 100 Series LAT1 (**CELLMODEM-03**) or 3G cellular modem MultiTech Cell 100 Series MTC-H5 (**CELLMODEM-01**)
- Five-year M2M data plan, upgradeable to 12 year plan (add 7 years) available for purchase
- SIM card - industrial grade, pre-configured, tested, and installed
- Antenna (some models have two antennas)
- USB Y to mini-USB or USB to mini-USB cable. The Envoy connects to the modem using a USB cable. The USB cable also powers the modem.
- Mounting hardware
- Four round plastic feet to allow use as a free-standing modem

Mobile Connect is available in regions where there is adequate (non-roaming) cellular service in the installation area, including the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands.

The basic Mobile Connect plan is available for systems of up to 60 microinverters. To monitor systems of more than 60 microinverters, additional charges apply.

The Enphase Mobile Connect modem cannot be transferred to a second Envoy after initial installation. Any attempt to do so will deactivates the modem.

Installation Guidelines

- Enphase recommends that you install the Envoy-S or IQ Envoy and Mobile Connect modem in a non-metal enclosure. **For outdoor installations, you must use an outdoor rated enclosure.** The Envoy data sheets and installation guides list acceptable enclosure types.
- If you use a metal enclosure, you must install a dome antenna on the outside of the unit. Contact Enphase Customer Support for suggested dome antenna models.
- Orient the antenna for best reception, typically, a vertical alignment.
- Although Mobile Connect comes with an antenna, you can use other compatible antennas. Contact Enphase Customer Support for suggested antenna models.

INSTALLATION

A. Updating the Envoy to 4.9 (or Later)

The newest Mobile Connect modem (CELLMODEM-M1) requires that the Envoy be updated to Envoy release 4.9 (or later). **Other models do not requires this update.**

1. Download the Enphase Installer Toolkit mobile app and open it to log in to your Enlighten account. With this app, you can connect to the IQ Envoy to track system installation progress. To download, go to enphase.com/toolkit or scan the QR code at right.
2. Log into Enphase Installer Toolkit on your mobile device to download the latest version of Envoy software. To do so, go to the **Envoy Resources** screen in the Installer Toolkit **Settings**.
3. Turn on the circuit feeding the Envoy.
4. On the Envoy, if the AP Mode LED is not lit, press the AP Mode button.

5. On your mobile device, go to Settings and join the Wi-Fi network "Envoy_nnnnnn" (where "nnnnnn" represents the final six digits of the Envoy serial number).
6. The app informs you if the software on the Envoy is not the latest version by displaying the Envoy Software Update message. If the app displays this message, follow the on-screen instructions to update the Envoy.
7. For a short period (5-10 minutes), you must keep your mobile device near the Envoy. Follow the on-screen instructions while the update takes place.

The update may take up to 20 minutes. The Envoy reboots several times during the update and the LEDs light up in varied sequences until the update is complete.

All four LEDs flash amber during boot up (approximately 3 minutes). When boot up is complete, the Envoy's Device Communications LED ⇆ lights solid amber, indicating that devices are not yet detected.

B. Mounting the Modem

Mount the modem, either on a wall using the slide-in tab, or attach the rubber feet and place on a flat surface.

Using a Mounting Tab

1. Locate the groove on the back of the device.
2. Slide the mounting rod into the groove.
3. Place the modem on the mounting surface.
4. Secure to the surface using the holes at each end of the mounting rod.

Mount the Modem on a Flat Surface

You can also rest the modem on a flat, stable surface after applying the four adhesive plastic feet.

C. Connecting the Modem

1. Connect one antenna to the connector labeled **CELL** on the modem. If your modem has a second antenna, connect the second antenna to the connector labeled **AUX**.
2. Connect the USB cable:
   a. First, connect the USB cable to the USB port(s) on the Envoy.
   b. Then, connect the mini-USB connector to the Mobile Connect modem.

The power LED lights when the modem has power. After about two minutes, the Link Status LED flashes to indicate a network connection. The Signal LEDs indicate signal strength according to the Signal LED table.

No additional configuration is needed. The Envoy automatically starts reporting to Enlighten via the cellular modem.

For the Envoy-S or IQ Envoy, check the Network Communication LED to verify connectivity to Enlighten. Refer to the Enphase Envoy-S or IQ Envoy Quick Install Guide for LED status indications.

> ⚠️ **WARNING: If you have already installed and connected the cellular modem to the Envoy, do NOT move the modem to another Envoy. This deactivates the modem.**

D. Checking Connection Status and Cellular Signal Strength

An Envoy with Mobile Connect automatically reports to Enlighten. When the Envoy establishes an Internet connection through the cellular modem, the Envoy Network Communications LED ☁ lights solid green in the Envoy-S.

You can use the Enphase Installer Toolkit to check the modem status and cellular signal strength. The Envoy's AP (Access Point) Wi-Fi network allows you to connect your mobile device (smart phone or tablet) to the IQ Envoy.

1. On the Envoy, the AP Mode LED ⊡ lights solid green when the network is available. If the AP Mode LED is not lit, press the **AP Mode** button.
2. On your mobile device, go to **Settings** and join the Wi-Fi network "Envoy_nnnnnn" (where "nnnnnn" represents the final six digits of the IQ Envoy serial number).
3. Launch Installer Toolkit and tap Connect to Envoy.
4. Tap **Network**.
5. Under **Network Configuration**, tap **Cellular**.

   The app displays Connection Status and an indication of signal strength.
6. Check the connection status and verify that signal strength is **at least two bars** for adequate data transmission.

Checking the MultiTech Status LEDs

This MultiTech modem has the following status LEDs

- Power
- LS
- Signal

The following tables list LED indicator status. The LEDs may be difficult to see if you view them from an angle. View the LEDs straight on.

Power

LED	Indicates
Off	DC power not present
On	DC power present

LS (Link Status)

LED	Indicates
Lit solid	The modem is not registered to the cellular network.
Flashing	The modem is registered to the cellular network.

Signal

| LEDs	Description	Indicates
○○○	All off	Very weak signal
●○○	Bar 1 ON	Weak signal
●●○	Bar 1 and 2 ON	Good signal
●●●	Bar 1, 2, and 3 ON	Very good signal

Troubleshooting

Issue	Action
No communication with Enlighten after connecting the cellular modem to the Envoy.	1. Disconnect the USB cable. 2. Power cycle the Envoy. 3. Wait until the Envoy boots completely. 4. Reconnect the cellular modem USB cable.
I want to disconnect the modem and re-use it at a different site.	Moving the modem to a different Envoy deactivates the modem. Contact Enphase Customer Support if you need to re-install the modem at a different site.

MultiTech Modem Dimensions
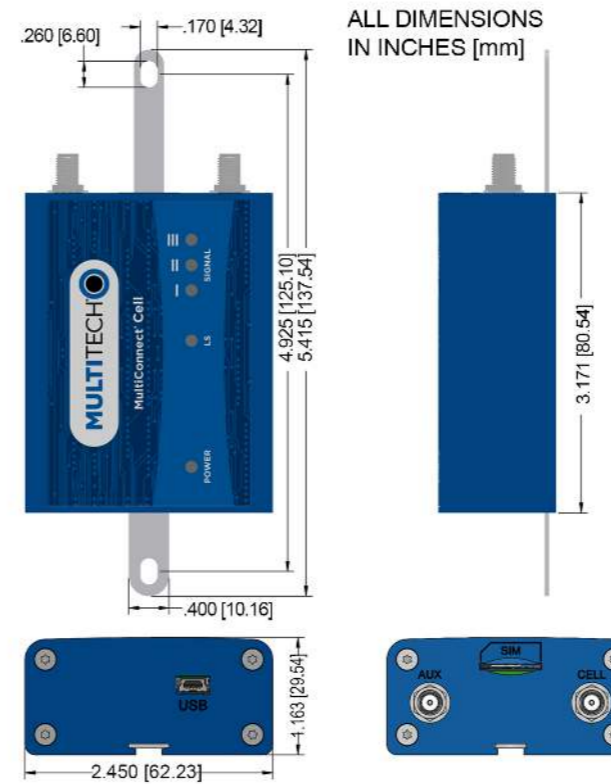
REGULATORY NOTICES

FCC - Antenna - Wireless Products only

The antenna intended for use with this unit meets the requirements for mobile operating configurations and for fixed mounted operations, as defined in 2.1091 and 1.1307 of the FCC rules for satisfying RF exposure compliance. If an alternate antenna is used, please consult user documentation for required antenna specifications.

FCC - 47 CFR Part 15 Regulation

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the 47 CFR rules. Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

⚠️ **WARNING:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Class B Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Reglement Canadien sur le matériel brouilleur.

This device complies with Industry Canada RSS Appliance radio exempt from licensing. The operation is permitted for the following two conditions:
1. the device may not cause harmful interference, and
2. the user of the device must accept any interference suffered, even if the interference is likely to jeopardize the operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:
1. l'appareil ne doit pas produire de brouillage, et
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Industry Canada and FCC

This device complies with Industry Canada license-exempt RSS standard(s) and part 15 of the FCC rules. Operation is subject to the following two conditions:
1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avec Industrie Canada RSS exemptes de licence standard (s) et la partie 15 des règles de la FCC. Son fonctionnement est soumis aux deux conditions suivantes:
1. l'appareil ne doit pas produire de brouillage, et
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

EMC, Safety, and R&TTE Directive Compliance

The CE mark is affixed to this product to confirm compliance with the following European Community Directives:

Council Directive 2004/108/EC of 15 December 2004 on the approximation of the laws of Member States relating to electromagnetic compatibility;

and

Council Directive 2006/95/EC of 12 December 2006 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits;

and

Council Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment;

and

Council Directive 1999/5/EC of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.