

# Installing the Enphase Ensemble™ Communications Kit

The Enphase Ensemble Communications Kit (COMMS-KIT-01) contains a wireless USB adapter to install in an Enphase IQ Combiner™ or near an Enphase IQ Envoy™. The kit enables wireless communication between the Enphase IQ Envoy or Enphase IQ Combiner™ and Enphase Encharge™ storage as well as Enphase Enpower™ Microgrid Interconnection Device (MID). Note that you must install the Ensemble Communications Kit to enable complete functionality of the Ensemble energy management system. The kit includes a 2.4 GHz wireless radio.

The Enpower and Encharge devices communicate with the Envoy and with each other via 2.4GHz band wireless communication. Wireless communication range is affected by site layout and obstacles. During installation please ensure that:

- 1) The distance between devices is not greater than 75 feet with line of sight\* (i.e. no obstacles between the devices).
- 2) The distance between devices is not greater than 30ft with no line of sight (i.e. there are obstacles present between devices).
- 3) There are no more than 2 walls (with wooden studs and drywall) between devices .
- 4) There are no metallic obstacles i.e. studs or wire mesh inside walls between equipment.

If the above requirements are not satisfied, equipment will need to be moved closer to meet requirements or an extender to extend the range of communication will need to be used.

\*Line of sight range implies general levels of interference or noise in the environment. Significant noise in the 2.4GHz band could affect this range..

Read and follow all warnings and instructions in this Guide. If you do not fully understand any of the concepts, terminology, or hazards outlined in these instructions, refer installation to a qualified electrician or installer. These instructions are not meant to be a complete explanation of a renewable energy system. All installations must comply with national and local electrical codes. Professional installation is recommended.

## SAFETY

### IMPORTANT SAFETY INSTRUCTIONS

#### SAVE THESE INSTRUCTIONS

This guide contains important instructions that you must follow during installation of the Enphase Ensemble Communications Kit.



### Safety and Advisory Symbols

	<b>DANGER:</b> This indicates a hazardous situation, which if not avoided, will result in death or serious injury.
	<b>WARNING:</b> This indicates a situation where failure to follow instructions may be a safety hazard or cause equipment malfunction. Use extreme caution and follow instructions carefully.
	<b>NOTE:</b> This indicates information particularly important for optimal system operation. Follow instructions carefully.

### Safety Instructions

	<b>DANGER:</b> Risk of electric shock. Risk of fire. Do not attempt to repair the Enphase Ensemble Communications Kit. It contains no user-serviceable parts. If the equipment fails, contact Enphase Customer Support for assistance or replacement equipment ( <a href="http://enphase.com/en-us/support/contact">enphase.com/en-us/support/contact</a> ).
	<b>DANGER:</b> Risk of electric shock. Do not use Enphase equipment in a manner not specified by the manufacturer. Doing so may cause death or injury to persons, or damage to equipment.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or add parts to the IQ Combiner or IQ Envoy.
	<b>DANGER:</b> Risk of electric shock. All sources to equipment being serviced must be disconnected external to the device. In particular, the storage system may energize conductors, so storage circuits must ALWAYS be isolated via circuit breaker or disconnect before working on any portion of the system.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Only use electrical system components approved for wet locations.

	<b>DANGER:</b> Risk of electric shock. Risk of fire. Ensure that all wiring is correct and that none of the wires are pinched or damaged.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Do not work alone. Someone should be in the range of your voice or close enough to come to your aid when you work with or near electrical equipment. Remove rings, bracelets, necklaces, watches etc. when working with batteries, photovoltaic modules or other electrical equipment.
	<b>DANGER:</b> Risk of electric shock. Risk of fire. Before making any connections verify that the circuit breakers are in the off position. Double check all wiring before applying power.
	<b>WARNING:</b> Before installing or using the IQ Combiner, read all instructions and cautionary markings in the technical description and on the equipment.
	<b>NOTE:</b> Using unapproved attachments or accessories could result in damage or injury.

# INSTALLATION



**DANGER!** Risk of electric shock. Always de-energize the IQ Combiner if planning to remove the deadfront during the following procedure.



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## 1 Preparation

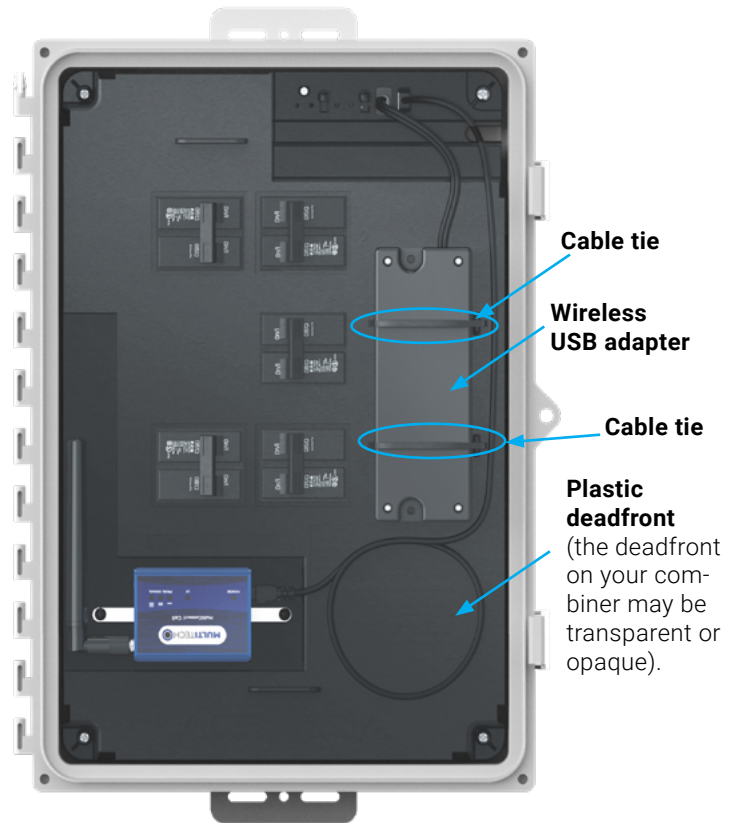
The IQ Envoy gateway requires the Ensemble Communications Kit to communicate with the Encharge batteries and Enpower.

- A) You must install the Ensemble Communications Kit before commissioning the Ensemble system.
- B) If you plan to remove deadfront, check that the IQ Combiner is de-energized.

## 2 Install the Communications Adapter

The kit includes the wireless USB adapter with USB cable (for power and communications) and tie wraps. To install the adapter adjacent to an Enphase IQ Envoy or in an Enphase IQ Combiner, do the following:

- A) If installing in an IQ Combiner, open the enclosure door.
- B) Select or locate the installation position for the adapter:
  - For IQ Combiner (Model X-IQ-AM1-240-B), place the adapter on the bottom interior surface of the enclosure, taking care to allow room for the door to close completely.
  - For IQ Combiner 3 and IQ Combiner 3C (Models X-IQ-AM1-240-3 and Model X-IQ-AM1-240-3C), place the adapter on the front side of the deadfront on the right side (see image to the right).
  - For the IQ Combiner+ (Model X-IQ-AM1-240-2), place the adapter on the front side of the deadfront on the left side.
  - For IQ Envoy (Model ENV-IQ-AM1-240), select a mounting location near the IQ Envoy, so that the USB cable can reach between the IQ Envoy and the adapter.
- C) Plug the free end of the USB cable into a USB port on the IQ Envoy.
- D) If installing in an IQ Combiner, use the tie wraps and adhesive patch to hold the adapter in place in the designated location. Either weave the tie wraps through the openings in the dead front, or use the adhesive patch to hold the adapter in place. You can use both, if needed.
- E) If installing the adapter with an IQ Envoy not housed in an Enphase Combiner, you can use screws to mount the adapter to the wall or a board. Use one screw in each of the two recesses of the adapter. To avoid damaging adapter housing, do not over tighten the screws



**IQ Combiner 3C with Ensemble Communications Kit installed**

### 3 Upgrade the IQ Envoy Software

You must upgrade the IQ Envoy software to version 6.0.x or higher to work with the COMMS-KIT-01 and other Ensemble components.

A) Download the Enphase Installer Toolkit version 3.x mobile app from the iOS App Store or Android Play Store 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.

You may also download the app from the Enphase website at [enphase.com/toolkit](https://enphase.com/toolkit).

B) Log into the Enphase Installer Toolkit on your mobile device and download the latest version of Envoy software. To do so, go to the **Settings** tab in the installer toolkit and use the **Update Now** button under **Envoy Software** as shown.

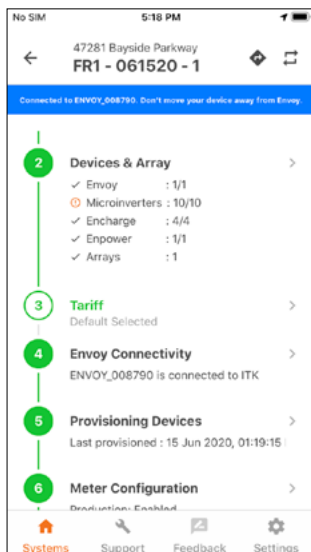
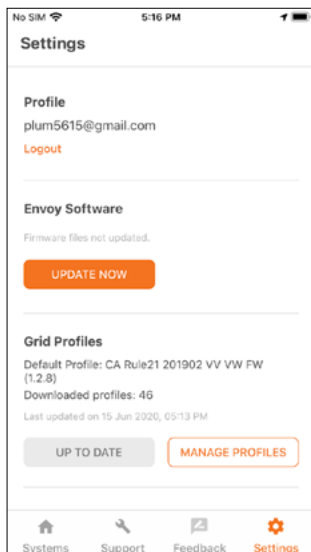
C) Use the Installer Toolkit app v3.x app from the iOS App store or the Android Play store and follow the commissioning procedure for Ensemble installation sites as documented in the "Enphase Ensemble 1.0 Commissioning Guide" ([enphase.com/ensemble-commissioning](https://enphase.com/ensemble-commissioning)) to ensure the Encharge batteries and the Enpower are connected to the Envoy. Ensure that you have updated the Envoy software as part of Step 3B above.

The image to the left shows Envoy Connectivity.

**Note:** The Envoy software update process may take up to 25 minutes. During the software update, the LEDs on the Envoy flash green one at a time from right to left. During this time the Envoy will reboot multiple times. All four LEDs flash red when the Envoy reboots.

D) During provisioning of devices, with your mobile device in hand, walk from the IQ Envoy toward the Encharge and Enpower. This helps to ensure that all devices are provisioned over using Bluetooth Low Energy (BLE).

- Starting near the IQ Envoy, walk to the Enpower and Encharge units. Installer Toolkit shows the Enpower and Encharge units as **Not Discovered** while the circle next to these devices spins indicating that Installer Toolkit is trying to discover the devices using Bluetooth.
- Wait near the Enpower and Encharge units until Installer Toolkit shows them as **Waiting for Provisioning**.
- Return to the IQ Envoy. All devices should show as **Waiting for Acknowledgment**. Installer Toolkit is waiting for Envoy to confirm communication with the Encharge units and Enpower.
- Wait until all devices show as **Provisioned**.
- Provisioning is complete. The Enpower and Encharge units are ready to communicate with the IQ Envoy.



### 4 Verifying Wireless Communication After Commissioning

After commissioning you can verify wireless communication between IQ Envoy and other Ensemble components using the Enphase Installer Toolkit mobile app.

A) Navigate to **Devices & Array** -> **Encharge** or **Enpower**-> **<serial number>**.

B) You should be able to see the signal strength of the communication between the COMMS-KIT-01 and Encharge/Enpower devices under **Wireless Communication Kit** as shown.

**Note:** Three or more bars (out of five) represent a good communication level.

