

Zigbee range extension FAQ

- **What is ZigBee range extension and why is it important?**

Zigbee range extension refers to techniques used to improve Enphase Energy System Zigbee RF network link quality. Range extension is recommended if the Range Test fails at planned equipment locations at a site.

- **How do I know that my selected equipment locations meet Enphase's RF link quality?**

Range Test can be conducted to determine if the selected equipment locations meet Enphase's RF link quality. Details of Range Test can be found in [Zigbee Range Test user manual](#). Range Test should be performed during planning/design phase of a project.

- **How many types of Zigbee range extenders are recommended by Enphase?**

Two types of Zigbee range extension are recommended by Enphase:

Zigbee Wireless Range Extender

A Zigbee dongle that can be installed mid-way between the equipment. It must be installed on a backed-up circuit.

Wired USB Extender

A USB over ethernet receive/transmit pair is used to relocate the Communications kit in IQ Gateway to a new location. It must be installed on a backed-up circuit.

- **What are the main steps to determine if a Zigbee Wireless Range Extender will help?**

Conduct Range Test as outlined in the [Zigbee Range Test user manual](#). Determine if range extension is needed.

Select a backup up circuit which is a good location for installing the Zigbee Wireless Range Extender. Rerun Range Test by following instructions in the Enphase Installer App. If the test passes, then Zigbee Wireless Range Extender will help.

- **What support material do I have access to and where can I find it?**

[Zigbee Range Test user manual](#)

Provides details on ordering test nodes, conducting the Range Test, and interpreting results to decide the right kind of range extension.

[Zigbee Wireless Range Extender data sheet](#)

Has specifications of the product.

[Designing an Enphase Zigbee network tech brief](#)

Provides detailed technical information on wireless and wired range extender solutions

[Zigbee Wireless Range Extender installation guide](#)

A step by step guide to installing and provisioning the Zigbee Wireless Range Extender using the Enphase Installer App.

[Zigbee Wired USB Extender installation guide](#)

Provides details on ordering the USB over ethernet kits and installing the Wired USB Extender.

- **Which USB charger and outdoor rated enclosures are compatible with the Zigbee Wireless Range Extender?**

The Zigbee Wireless Range Extender can be powered using a 5V, 1A USB wall charger commonly used for charging cell phones for indoor installations.

For outdoor installations, use of a NEMA rated weatherproof enclosure is recommended.

Europe

Europe indoor 5V USB wall charger [here](#)

Europe outdoor IP Rated Socket with integrated USB [here](#). Note: Double socket it required to allow enough space for the USB adaptor

Europe right angle USB extender cord [here](#) (required to allow socket enclosure door to be closed to maintain IP rating)

- **UK**

UK indoor 5V USB wall charger [here](#)

UK outdoor IP Rated Socket with integrated USB charger [here](#).

Note: Double socket it required to allow enough space for the USB adaptor

UK right angle USB extender cord [here](#) (required to allow socket enclosure door to be closed to maintain IP rating)

North America

North America indoor 5V USB wall charger [here](#)

North America indoor right angle wall charger [here](#)

North America outdoor IP Rated Socket with integrated USB charger [here](#).

Note: Double socket it required to allow enough space for the USB adaptor

North America weatherproof non-metallic receptacle cover [here](#)

North America right angle USB extender cord [here](#) (required to allow socket enclosure door to be closed to maintain IP rating)

- **What are the performance requirements of an Ensemble Zigbee Range test?**

A threshold has been set at RSSI > -60dBm and PER (packet error rate) < 3% to be able to pass the Range Test.

- **Where can I buy the Zigbee Wireless Range Extender?**

The Zigbee Wireless Range Extender is available at [Enphase Store](#). It requires a standard 5V, 1W USB power adapter for indoor installation. For outdoor installations, the Zigbee Wireless Range Extender is required to be housed inside a NEMA 3R rated weatherproof enclosure.

- **Where can I get the USB over ethernet equipment for Wired USB Extender?**

USB over ethernet equipment for Wired USB Extender is a commercial off-the-shelf product available [here](#). The recommended product contains a transmitter, a receiver, an USB cable, and a power adaptor. In addition, outdoor rated CAT5e or CAT6 cable of appropriate length needs to be purchased.

- **What steps do I need to follow to install a Wired USB Extender?**

To relocate the Communications kit by installing a Wired USB extender, follow the below steps:

Power off the IQ Gateway, open the enclosure door.

Plug the free end of the Type-A USB cable into the USB port on the IQ Gateway. Run the cable through the conduit.

Plug the other end of the USB cable into the USB port on the receiver unit.

Install the transmitter near the desired final location of the Comms kit.

Tightly connect the power adapter to the transmitter. The transmitter is powered through using the power adapter which requires a power socket that is on a backed-up circuit.

Plug one end of the fiber/ethernet cable into the port for the cable on the receiver, plug the other end into the port for the cable on the transmitter.

Plug the Enphase Communications kit into the USB port on the transmitter.

When installing outdoors, install the transmitter and the Communications kit inside an NRTL-certified, NEMA type 3R (or better) enclosure.

Power on the IQ Gateway and the transmitter.

- **Do I need to follow any special instruction to commission a Wired USB Extender?**

The steps for commissioning an IQ Gateway with a Wired USB Extender are the same as the steps for commissioning an IQ Gateway without a Wired USB Extender. Please refer to the [Communications kit Quick Install Guide](#) for details.