

***Commissioning a commercial Enphase Energy System***

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## Applicable countries

- United States of America
- Puerto Rico
- Canada
- Mexico

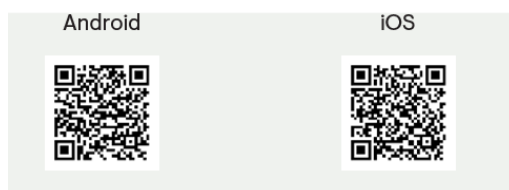
## Overview

This technical brief is for installers commissioning commercial Enphase Energy Systems with IQ8 Commercial Microinverters. Follow the steps in this brief to establish successful communication between commercial Enphase Energy System components and validate that the system operates as designed.

If you are not the original installer of the system, you must be granted access to the activation as a system maintainer. Contact Enphase Support at (877)-797-4743 or through [our main support page](#).

## Preparing for commissioning

Commercial Enphase Energy Systems should be commissioned using the Enphase Installer App with software version 3.29 or later. You can download the app from Google Play for Android and the App Store for iOS, or scan one of the QR codes below.

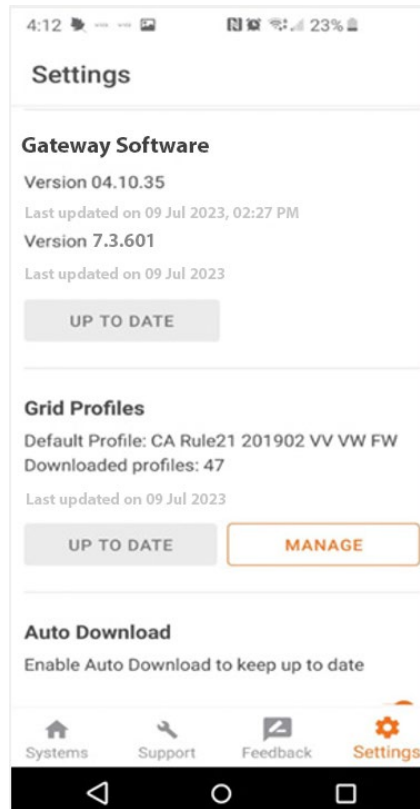


For commissioning and operation, the site's Enphase IQ Gateway must have software version 7.3.601 or later. The Enphase Installer App can be used to update the gateway software if necessary.

To complete commissioning, a system activation must be created. This can be accomplished beforehand using the Enphase Installer Portal or onsite using the Enphase Installer App.

Downloading the latest IQ Gateway software to your mobile device and creating an activation beforehand can help save time in the field. To complete an activation onsite, the Enphase Installer App must have internet access through cellular data or Wi-Fi.

The **Settings** tab in the Enphase Installer App has a **Gateway Software** section with an **UPDATE SOFTWARE** button for downloading the gateway software. When your gateway software is updated, this button will appear as **UP TO DATE**.



The Enphase Installer App automatically selects the right version for commercial sites.

A stable Wi-Fi connection is required to successfully download the IQ Gateway software from the Enphase Installer App to the gateway. Do not move the phone around or step out of the Wi-Fi range (30 ft, line of sight) while downloading the software. You can also do this by using a Cradlepoint or cellular modem through AP mode.

## System activation using the Enphase Installer Portal

To complete commissioning, a system activation must be created. This can be accomplished beforehand using the Enphase Installer Portal or onsite using the [Enphase Installer App](#).

Follow these steps to create a system activation:

- A. Go to <http://enlighten.enphaseenergy.com> and log in with your username (email) and password.  
Confirm that you are logged into the correct branch office. If your branch office is not yet set up in the Enphase Installer Portal, contact your administrator.
- B. In your Dashboard, on the **Activations** tab, click **Add New System**.

System

\*Name

Installer Reference

\*Type

Commercial

Third Party Owned (ex: PPA or Leased)

PV Installer

Enphase Energy

Owner

First Name

Last Name

Email

Phone

Location

\*Street Address

Enter a location

Street Address 2

\*City

\*State/Province

\*Zip/Postal Code

\*Country

United States

Latitude

Longitude

Envoy

Grid Profile

Factory Installed Settings

N/A

Add Another Envoy

PV System

\*Total Number of Enphase Microinverters

\*PV Module

Select a Manufacturer

Module Type

\*Power Rating (W)

Installation

Microinverter Attachment Type

Select one

Array Type

Select one

Installation Map

Scan or photograph installation map(s) and upload the file(s) here.

Upload A File

Choose file

Must be PNG, JPG, GIF, OR PDF files under 2MB in size.

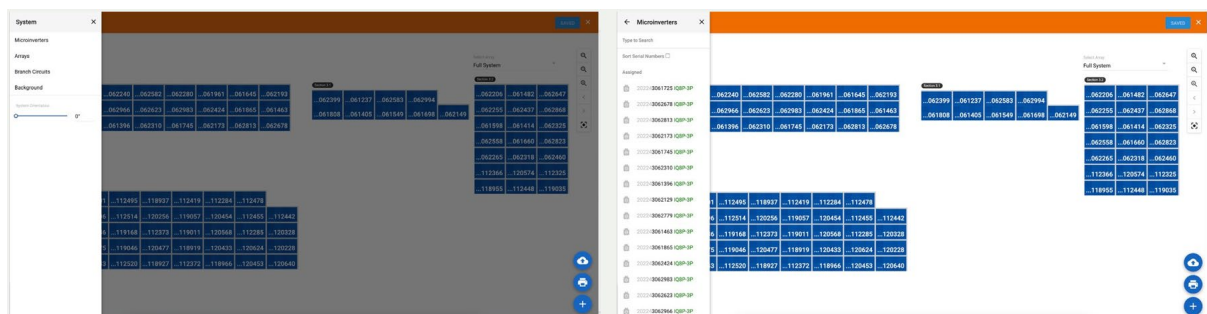
Install Map Label

e.g. Branch Circuit 1, South Roof Face

- In the **System** section under the **Activations** tab, select **Commercial** in the **Type** drop-down.
- For all commercial sites, select the **Voltage and Phase** information.
- For all commercial sites, you must also select the **PV Module** manufacturer, model, type, and power rating.

## Array building using the Enphase Installer Portal

Use the Enphase array builder to build your virtual array. The link to the array builder is on the system activation form or the settings page. The array builder allows you to import .png and .jpg files for background details.

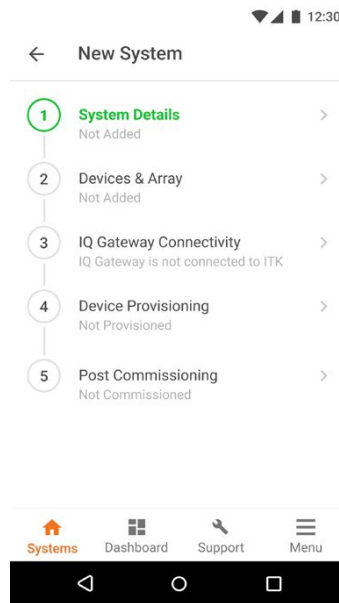


## Commercial Enphase Energy System commissioning using the Enphase Installer App

Follow these steps to commission a commercial Enphase Energy System using the Enphase Installer App.

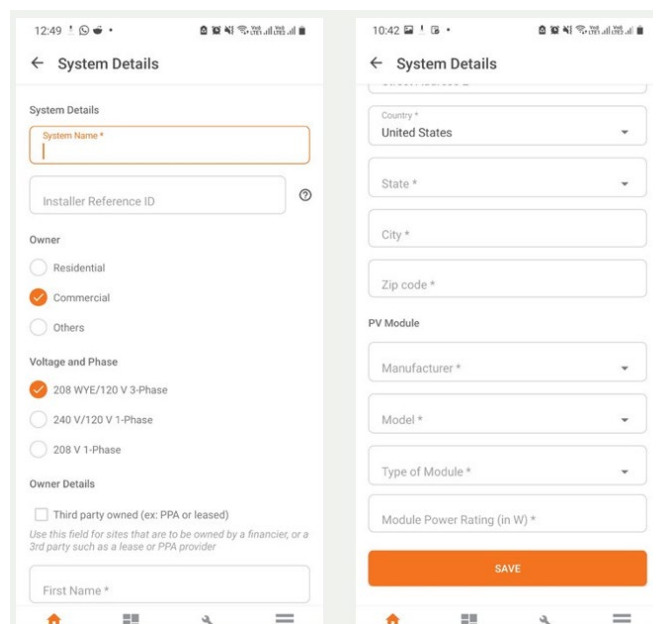
### System details

- A. Open the Enphase Installer App. Tap the **Systems** tab on the lower left side of the screen.



- B. If an activation has not previously been completed using the [Enphase Installer Portal](#), complete Step 1 in the Enphase Installer App (input system details including address, grid profile, phase/voltage details, and so on).

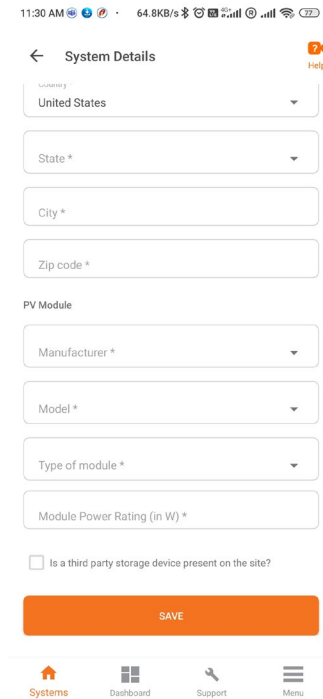
A grid profile is not selected by default for an activation created in the Enphase Installer Portal. When prompted, select the default profile for your area.





**NOTE:** If you select a grid profile incorrectly (with the wrong nominal voltage) at a site, change the profile to the correct one and reboot the IQ Gateway (Envoy). If that doesn't work, contact [Enphase Support](#).

- C. In the Enphase Installer Portal or Enphase Installer App, under the **Activations** tab, select a **Commercial** system.
- D. For all commercial sites, select the **Voltage and Phase** information.
- E. For all commercial sites, you must also select the PV module rating, type of module, manufacturer, and model.



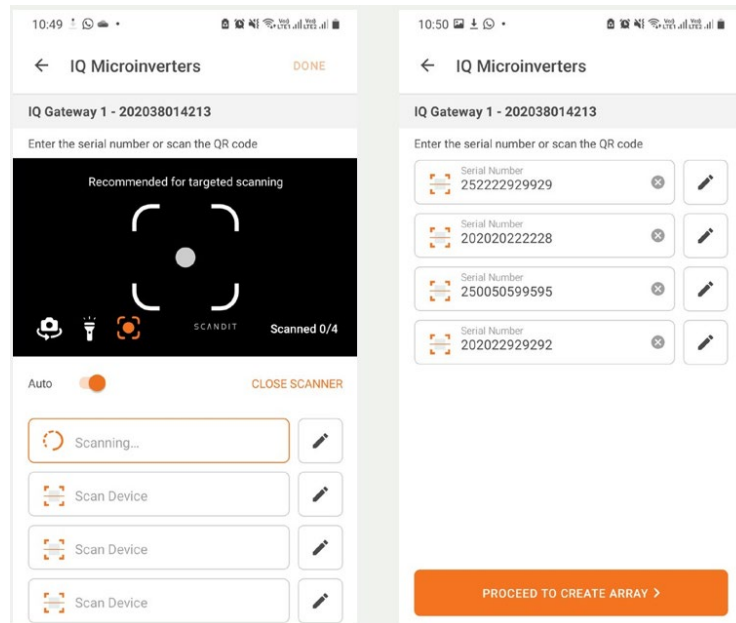
## Devices and array

- A. Enter the total count of each device type to be added to the system.  
When retrofitting an existing site, microinverters appear in the activation.
- B. Add the IQ Gateway by using a camera scan to read the barcode.
- C. Select the correct grid profile applicable to your region that meets the PV system requirements. Contact [Enphase Support](#) to request a new custom grid profile if no pre-existing grid profile meets local Authority Having Jurisdiction (AHJ) requirements.
- D. Use the Enphase Installer App array builder to build your virtual array. After building the array, scan all the microinverters using the Enphase Installer App camera scan to read the barcodes and create an array from the scanned microinverters.  
Assign an IQ8 Commercial Microinverter to each panel in the array builder.

The array builder in the Enphase Installer App or Enphase Installer Portal supports assigning each panel to a microinverter. It allows importing PNGs and JPGs used for background details, and it also allows uploading a photo of the layout to scan multiple inverters.

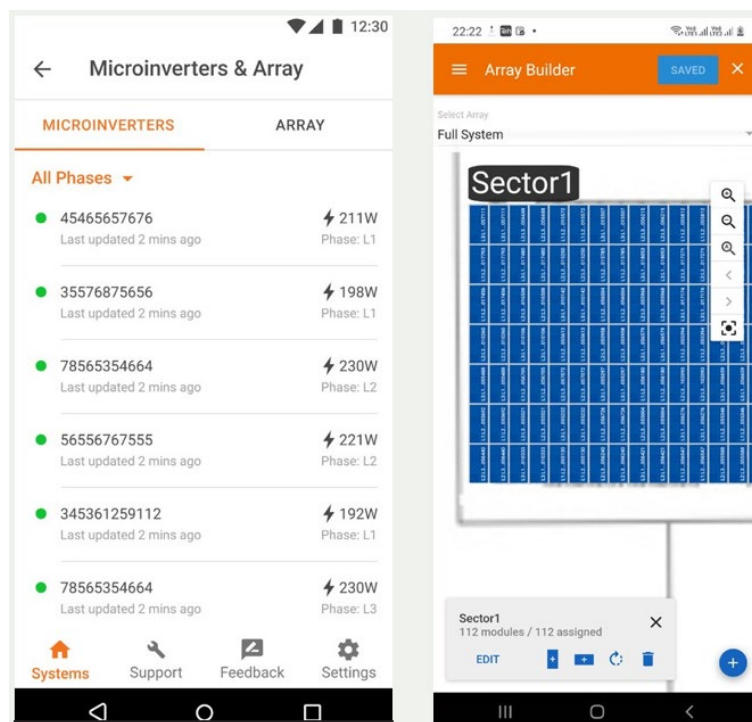


**NOTE:** Do not use the PLC scan function on the IQ Gateway to detect the IQ8 Commercial Microinverters. Use the barcode scanner for the best results.



You can see the line-to-line connection information in the array builder to confirm the microinverter phase connection. You can also filter microinverters based on a line-to-line connection in the Enphase Installer App.

All inverters must have the grid profile set before proceeding to phase association. Depending on your system configuration, grid profile setting, provisioning, and phase association may take a few minutes.

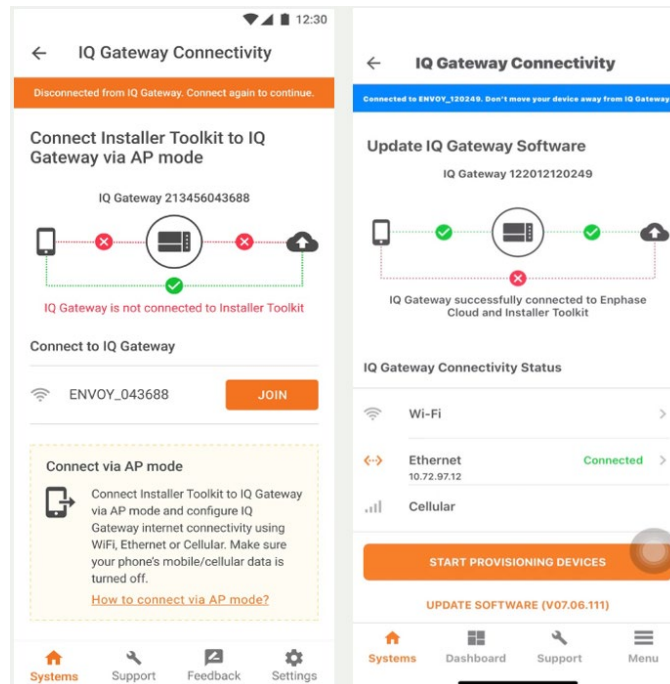


## Set the utility tariff

[Setting the utility tariff](#) is optional and can be skipped, but selecting a tariff is a meaningful enhancement to help the customer understand their ongoing utility cost savings. Contact [Enphase Support](#) for any questions.

## IQ Gateway connectivity

After completing the devices and array step, the **IQ Gateway Connectivity** screen is displayed, as shown below. It indicates your mobile device's connectivity to the web and the gateway. Your mobile device should be shown as connected to the web, but not to the gateway.



- A. To provision the devices, connect to the gateway using AP mode.
- B. On the gateway, press the AP mode button (first button from the left) for about one second. The LED will turn solid green.
- C. Go to your mobile device settings and connect to the gateway's local broadcast network. The gateway will show up on the available Wi-Fi network as Gateway, with the appended digits being the final numbers of the gateway serial number. Tap this network to connect. After connection, the Enphase Installer App shows your phone connected to the gateway but not to the web.
- D. If you have trouble connecting to this network, repeat Step E through G to turn AP mode off and ON again.
- E. Configure the IQ Gateway using Wi-Fi or Ethernet. Enter the network and password information in the Wi-Fi section. To connect to Ethernet, plug the cable into the gateway.
- F. Before device provisioning, the IQ Gateway must have software version 7.03.711 (or later) installed. Tap **UPDATE SOFTWARE** to complete this process, which takes approximately 30 minutes.
- G. Ensure the phone is close to the gateway and do not move it away while upgrading it. Moving the phone away from the gateway could cause problems during the upgrade.

Your phone screen must stay active while this update occurs. Allowing your phone to go to sleep will interrupt the update.

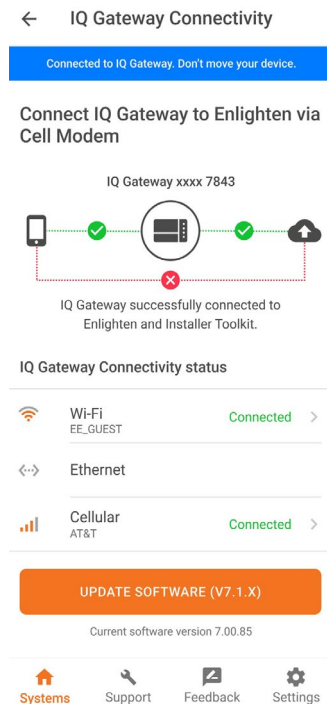
After the gateway software has been updated, the gateway will restart.

- While the gateway restarts, all four LEDs flash red together.
- After the restart is complete, the network communications LED lights solid green.

When the IQ Gateway reboots, your phone will lose AP mode connectivity. After the gateway reboots successfully, reconnect to the gateway's AP mode using your mobile device's Wi-Fi settings menu.



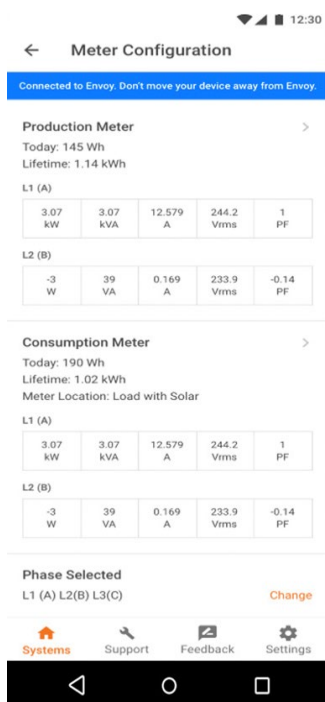
- H. If you have issues connecting to AP mode, turn off AP mode on the gateway by pressing the AP mode button for one second, and then choose to forget the AP mode network in your mobile device's Wi-Fi settings.



- I. Repeat Step E through Step G to reconnect to the IQ Gateway.  
After rebooting the IQ Gateway, the Enphase Installer App takes approximately 10 minutes to display system metrics, including web connectivity, correctly. The gateway requires communicating with the web to display internet connectivity. For more information, contact [Enphase Support](#).
- J. Ensure the gateway's Wi-Fi access or Ethernet connection and cellular modem connection are configured.  
If, after completing the previous step, the gateway software version shown on the **UPDATE SOFTWARE** button does not match the gateway software version below the button, then the update has failed, and you must tap **UPDATE SOFTWARE** again.
- K. Tap **Start Provisioning Devices** at the bottom of the **IQ Gateway Connectivity** screen.

## Configuring Production and Consumption CTs using the meter wizard

- Verify that the configuration matches what is installed (solar + load or load only).
- Enable the meters by verifying the readings in the meter wizard (required). Ensure there is a minimum of 1 kW per CT before advancing.
- While in the production meter wizard, wait for the minimum values to settle.
- Switch off the PV breakers as instructed to ensure the readings go to zero before enabling.

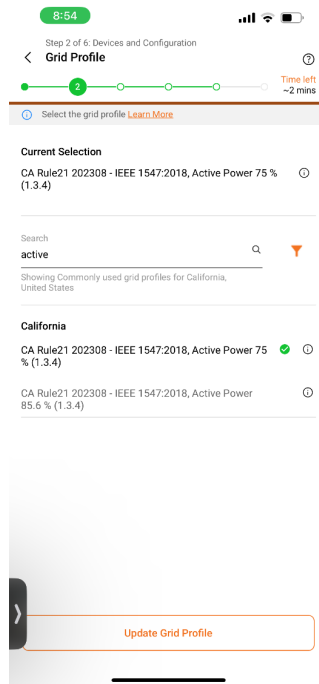


- E. While in the consumption meter wizard, turn on the PV and a known load in the building to confirm consumption rises as expected and select the meter location (solar + load). See [these detailed instructions](#) for commissioning the CTs.
- F. To generate a summary report for your commissioned system, tap **Summary**. To share the document, use the **Share** button.

## Enabling PCS for power export limiting

The power export limiting (PEL) feature in the Enphase Energy System ensures that the aggregate power exported to the grid does not exceed the limit set by the installer. For PCS using IQ8P-3P Microinverters, a maximum of 276 microinverters can be connected on a single gateway. This can be achieved using grid profiles that limit the active power generated by each microinverter. This method does not require Consumption CTs as no active control is performed by the IQ Gateway.

Let us consider an example. If an installation has 85 IQ8P-3P-72-E-US Microinverters, the total system can produce 40.375 kVA (85 \* 475 VA). If the utility requires a 30 kW power export limit, the installer will set an active power limit of approximately 75% (30,000/40,375) for each microinverter. During commissioning, the installer will select the appropriate profile in the Enphase Installer App.



If there is no pre-existing grid profile for the required active power limit, you should contact Enphase Support to request a new custom grid profile.

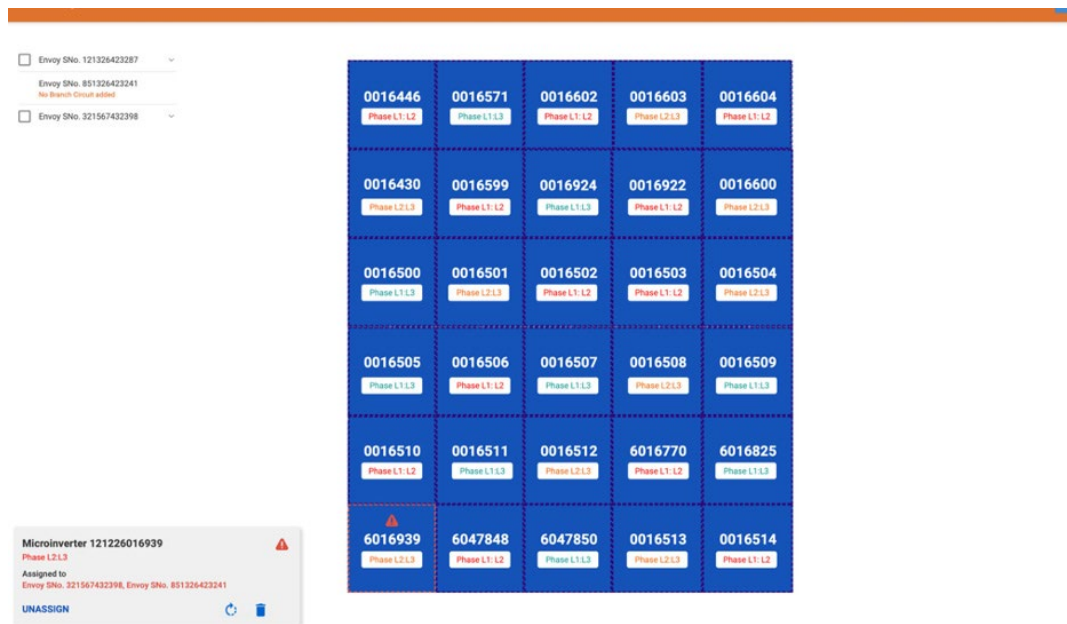
Regarding labeling, if PCS with Export Limit is enabled, you need to fill out the specified label and paste it in the subpanel where the IQ8P-3P Commercial Microinverters are installed. This ensures proper identification and compliance with the export limit settings.

THE MAXIMUM POWER BACKFED BY THE SOLAR SYSTEM TO THE  
UTILITY SERVICE MAY BE CONTRTOLLED ELECTRONICALLY.  
REFER TO MANUFACTURER'S INSTRUCTIONS FOR MORE INFORMATION.

PCS CONTROLLED POWER SETTINGS:  kW

## Troubleshooting during commissioning

To identify cross-talking microinverters in an array, the Enphase Installer Portal highlights the microinverters in an array view that are communicating with multiple gateways at the site that are reporting or have reported, at least once in the previous 30 minutes of commissioning.



## Revision history

Revision	Date	Description
TEB-00113-3.0	May 2025	Updated “Enabling PCS for power export limiting” section.
TEB-00113-2.0	December 2024	Added PCS section.
TEB-00113-1.0	November 2023	Initial release.