CHILICON INSTALLATION GUIDANCE

Chilicon Power
A GENERAC COMPANY

OCTOBER 2021

Overview

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01 Pre-Installation

02 Roof Work

03 Gateway Setup

04 Array Map

1) Pre-Installation

Size the PV array

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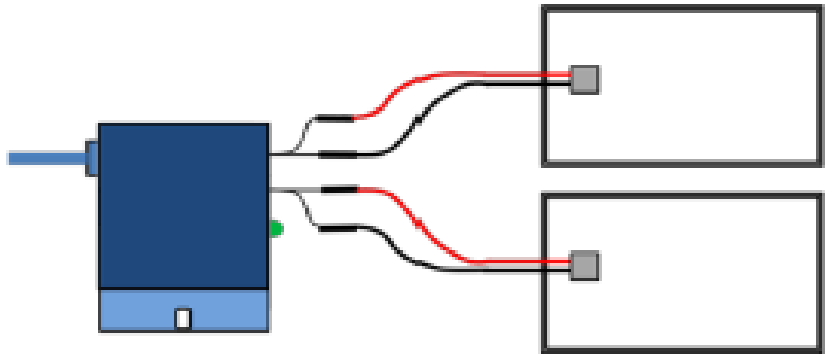
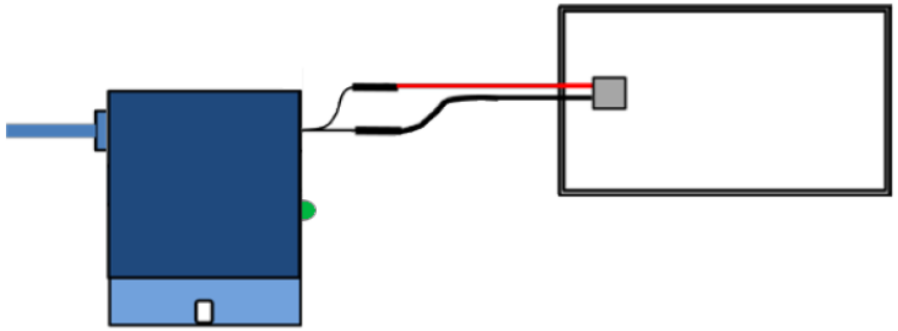
Determine PV module compatibility and wiring configuration (see PV sizing sheet)





Plan out branch circuits and maximum number of microinverters per string

	Recommended Power* (Nominal STC)	Min/Max Start Voltage	MRPT Range	Max. Microinverters per String (30A / 240V)**	Max. Microinverters per String (30A / 208)**
PM2-720	190-450W	55-102V	56-82V	8	7
PM1-290	190-420W	26-51V	26-41V	20	18

*each PV module **see specs sheet for sizing with current limiting enabled

Plan Gateway location

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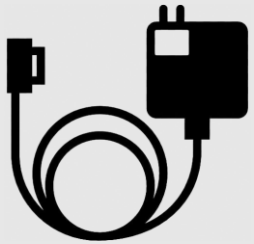
Identify a practical location for the gateway and **avoid**:

Noisy circuits



Connecting through a powerstrip or UPS

Plan AC connections

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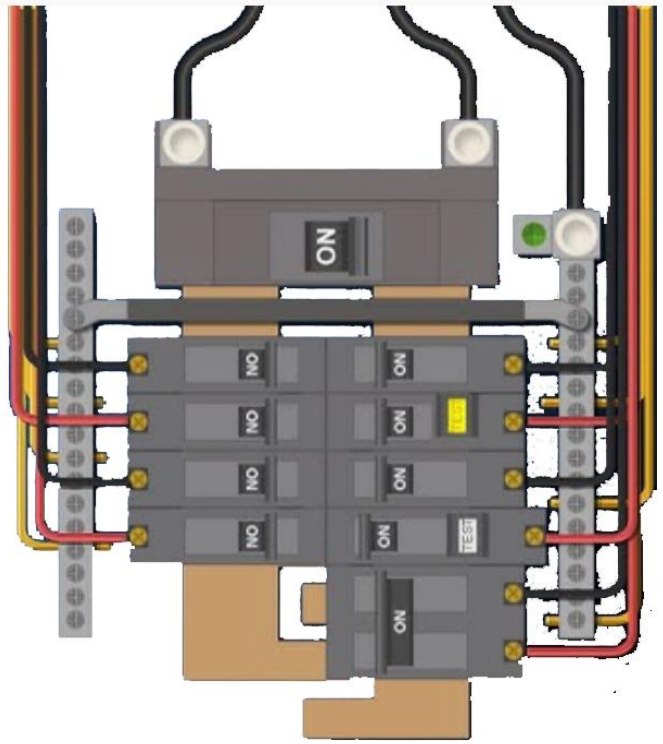
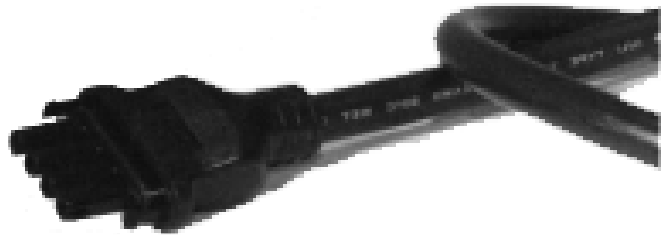
Utilize a dedicated 15A circuit for the gateway when possible and for larger installations

Plan AC connections

Breaker Locations

Ensure the breakers for the PV backfeed and for the gateway's outlet will land in the same distribution panel

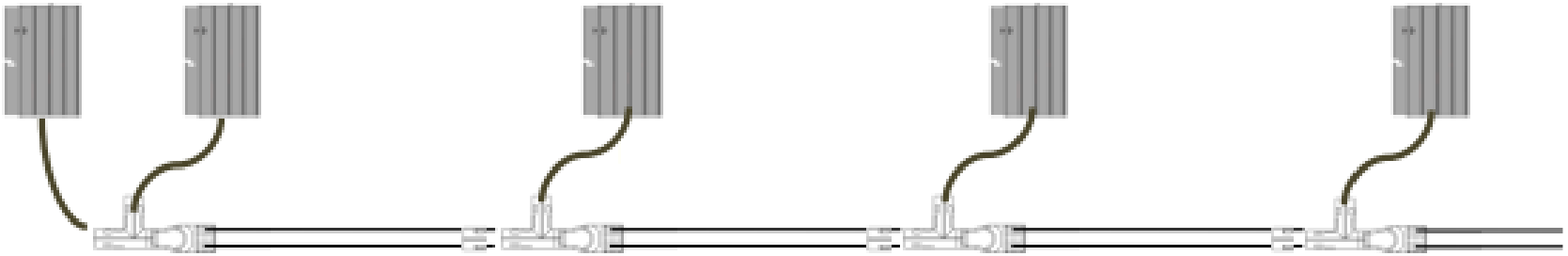




Plan AC connections

Designing Roof Cabling

Design trunk cable lengths and quantities for the array (see AC Cabling Guide)



2) Roof Work

Complete PV racking and mount microinverters

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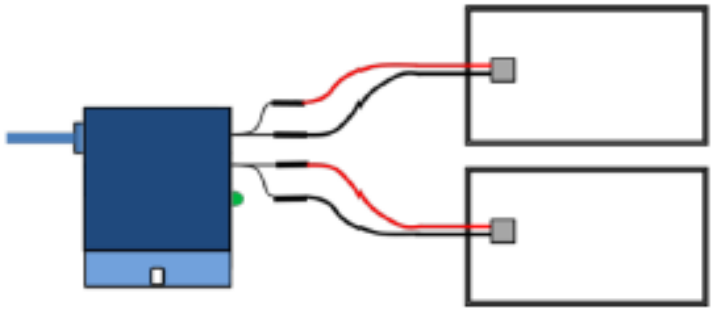
Align trunk cable T-connections with microinverters

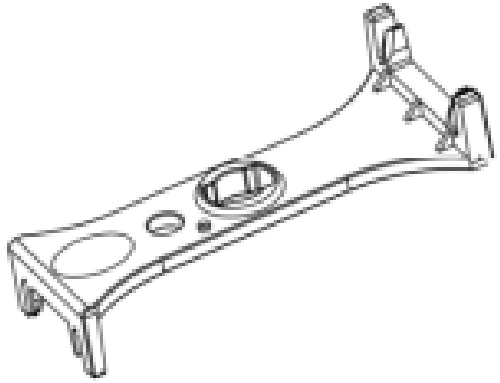
Before energizing the AC grid connection, wait for appropriate LED sequence

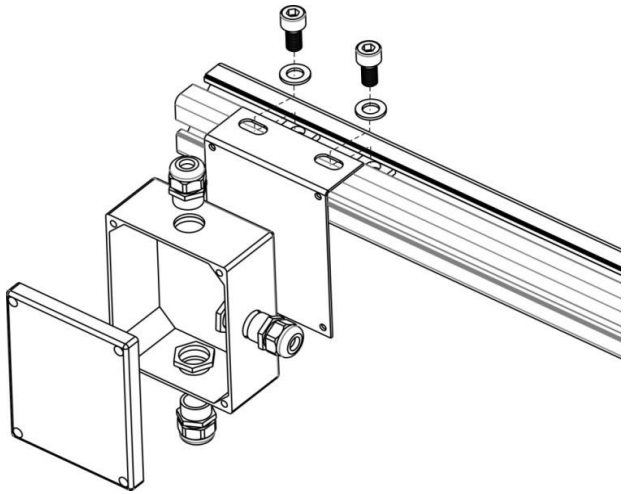
Wire up the PV modules to microinverters

- Sizing Guide for DC wiring configuration
- Solar pre-charges microinverters
- LEDs indicate pre-charge ready



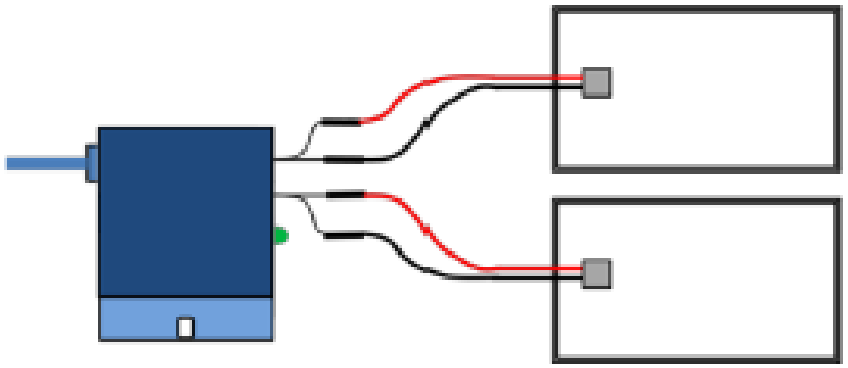
Do not leave in this DC-only state for more than 60 days





Energize AC and wait for 1 blink per 8 seconds (5 - 15min)

LED Blink Sequence	Description
Slow — 1 blink every 4 seconds	DC Connected, pre-charging, WAIT to energize AC grid connection
Rapid blinking	DC Connected, microinverters are pre-charged and ready for AC to be applied
1 blink per 8 seconds	Normal production, inverter NOT bound to gateway
1 blink per 16 seconds	Normal production, inverter bound to gateway
2 rapid blinks per 4 seconds	Initializing after grid present (5 — 15 minutes)
3 — 4 rapid blinks per 4 sec	ERROR — grid voltage out of range
5 rapid blinks per 4 sec	ERROR — PV voltage out of range



3) Gateway Setup

- Plug in the gateway
- Connect internet
- Select time zone
- Register system
- Ensure strong PLC communication
- Find microinverters
- Add Z-Wave devices

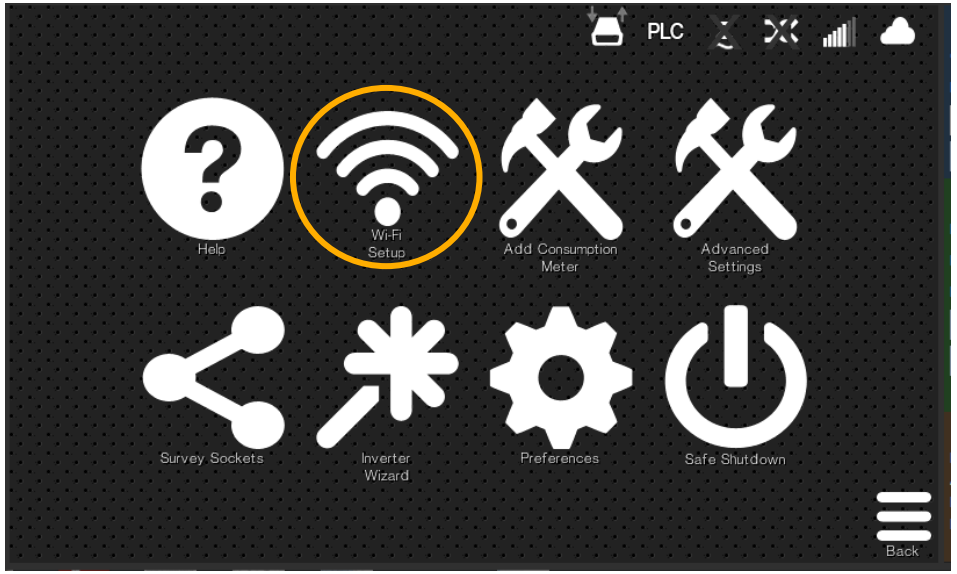
Connect internet

WiFi and ethernet are supported (only one is required)

Internet connection required for:

- firmware updates
- full product warranty

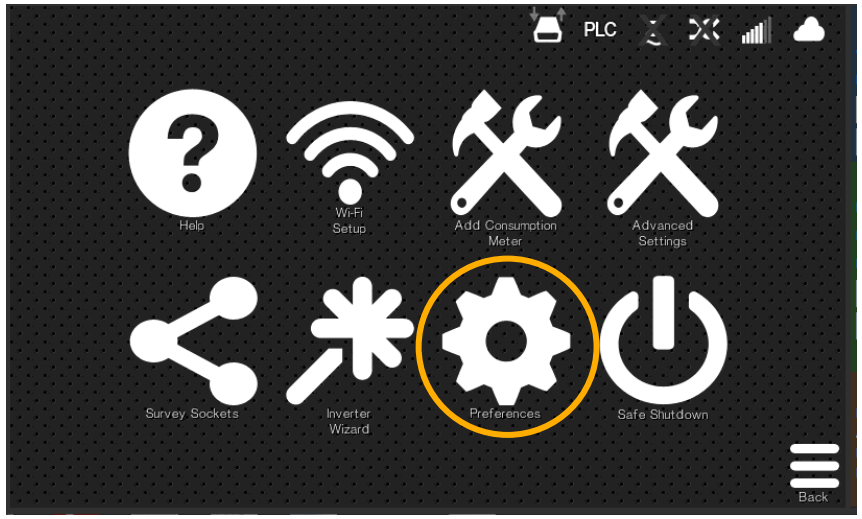
To connect WiFi, select ***Menu*** → ***Wifi Setup*** →
Enter the customer's WiFi information



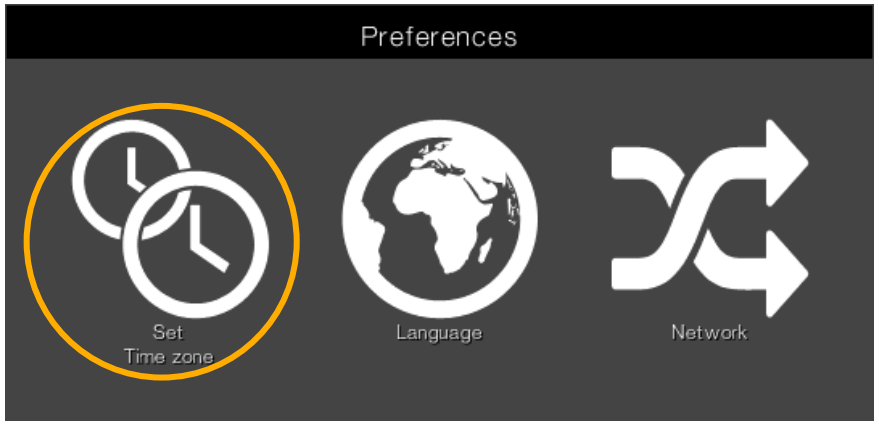
Select time zone

Select zone from pulldown menu

And select **OK**



Select ***Menu*** → ***Preferences*** → ***Set Time zone***



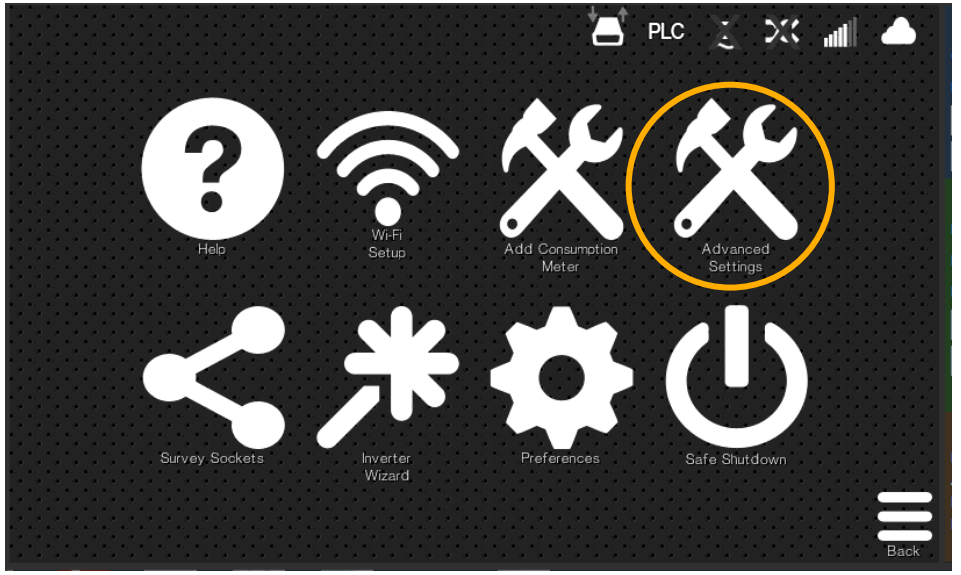
Register system

- Enter the customer and installer information

  NOTE: Please double check for the correct email address
- Ensure the confirmation email was received by customer
- Use the link to sign into **cloud.chiliconpower.com**

Customer's login credentials will allow monitoring of the system from a computer and the mobile app

Select **Menu** → **Advanced Settings** → **Cloud Setup** to register the site to the Chilicon cloud monitoring system



Ensure strong PLC communications

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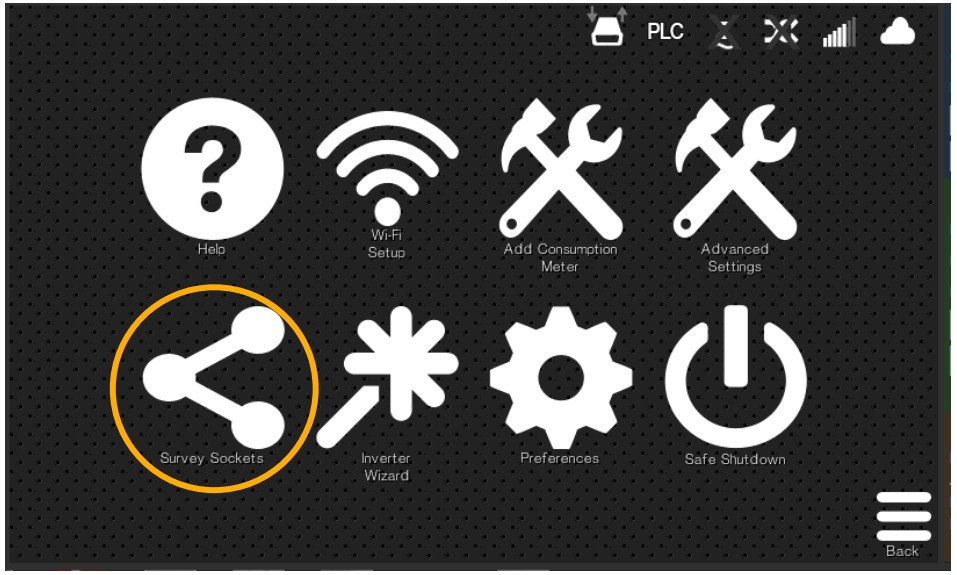
Detailed Stats	
PLC Success Rate:	
Good split-ph.:	95 %
Bad split-ph.:	0 %
Tri-ph. 213:	0 %
Tri-ph. 299:	0 %
Tri-ph. 43 :	0 %
Tri-ph. 128:	0 %
Tri-ph. 384:	0 %
Tri-ph. 469:	0 %

- Select **Menu → Survey Sockets**
- Check to see that a 90%+ signal is received on the "good" phase
  - ✓ This indicates that the gateway's outlet is bonded to **L1** (black wire from microinverters)

If the signal indicates a connection on the "bad" phase

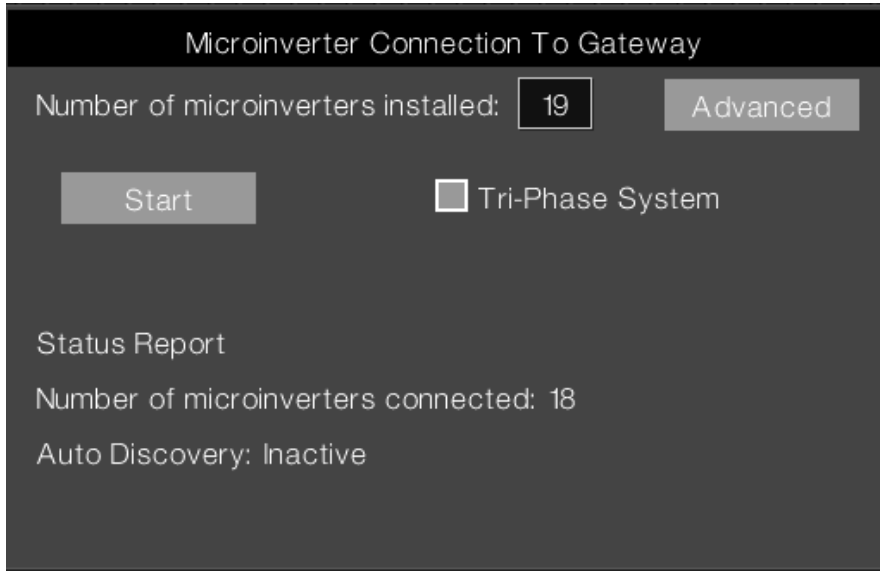
- Relocate gateway to properly phased outlet
- Move the outlet's breaker to the "good" phase at the distribution panel
- Swap the PV wiring (**L1** & **L2**) in the combiner panel to switch phasing

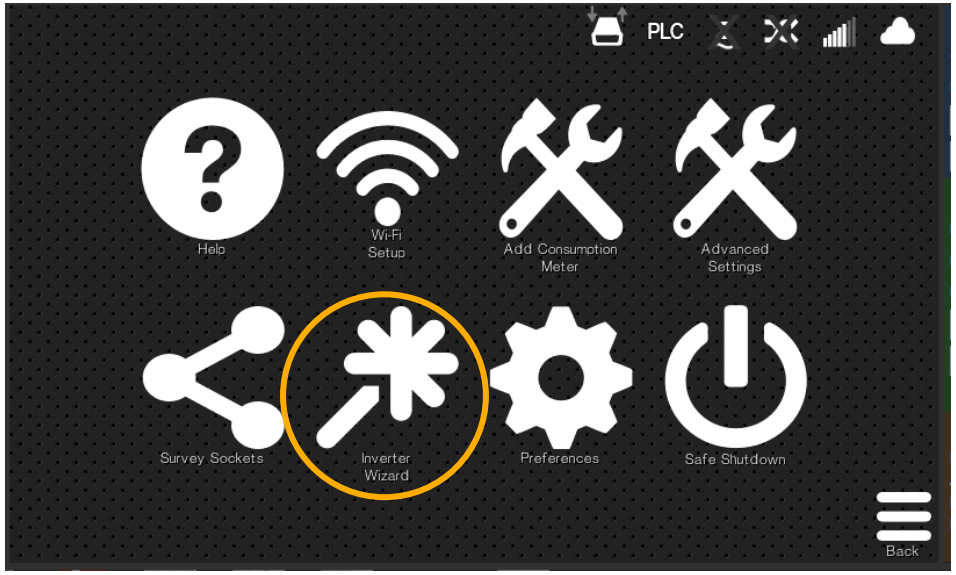


Find microinverters

1. Enter the number of installed microinverters
2. Choose Split Phase or Tri-Phase depending on system (split phase is the residential standard)
3. Wait for the microinverters to be found and bind (one beep for every unit found)

Select **Menu** → **Inverter Wizard**





Safe shutdown

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Before powering down the gateway

- Press **Safe Shutdown** in the menu
- De-energize during the countdown
- Otherwise, gateway will re-boot

Add Z-Wave devices

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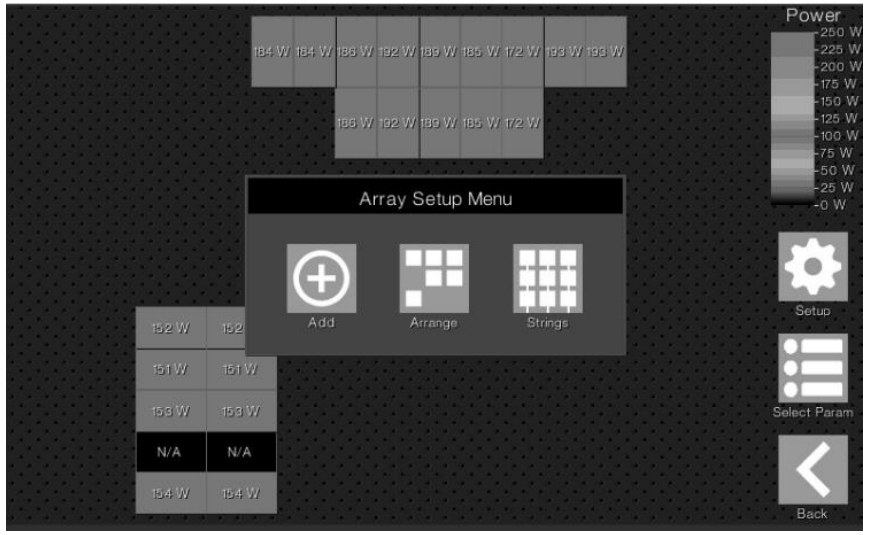
- Gateway (CP-100 and GW-110) supports Z-Wave (wireless communication protocol)
- 3rd party electronics such as consumption monitors and security components can be programmed into the gateway
- If any Z-Wave devices are installed such as a HEM consumption meter, reference *Section 4.2* of the **Installation Guide**

Z-WAVE

4) Array Map

- Click on the dial on the home splash page to edit location of tiles (solar panels)
- As new tiles are added to the map, they will be assigned to bound microinverters
- Since PM2-720 units commonly have two connected PV modules, the second tile will need to be "twinned“
- Twinned tiles share a common inverter ID

  Note: The array can also be designed by logging into the Chilicon Power monitoring portal
- For further assistance, reference the Array Mapping Guide



Additional Resources

For fastest response from our support team, please email Support@chiliconpower.com

The email thread will create a ticket to best track the resolution of your concern

- PV Sizing Sheet
- Installation Guide
- Array Mapping Guide
- AC Cabling Guide
- Product Support Materials