



User Manual **CPS Connect APP**

04 / 25 / 2018

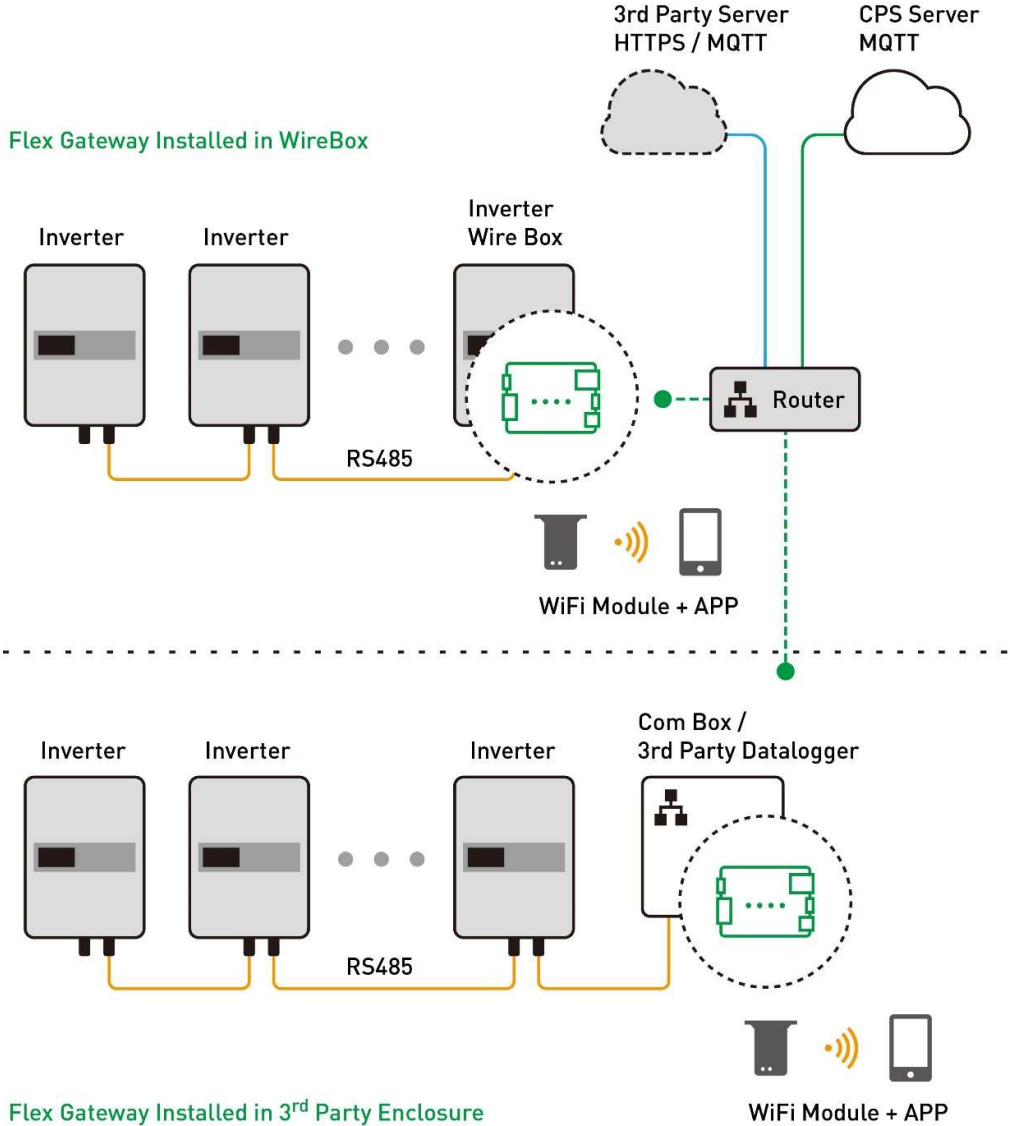
Revision 2

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1. CPS Data & Controls System Description

Chint Power Systems (CPS) offers a complete inverter data acquisition and controls solution for its customers in North and Central America. Our platform aims to:

- Enable advanced inverter data communications & control
- Reduce communications HW cost and installation labor
- Support seamless 3rd party integration
- Reduce O&M costs and improve field performance
- Enable customers with direct data access

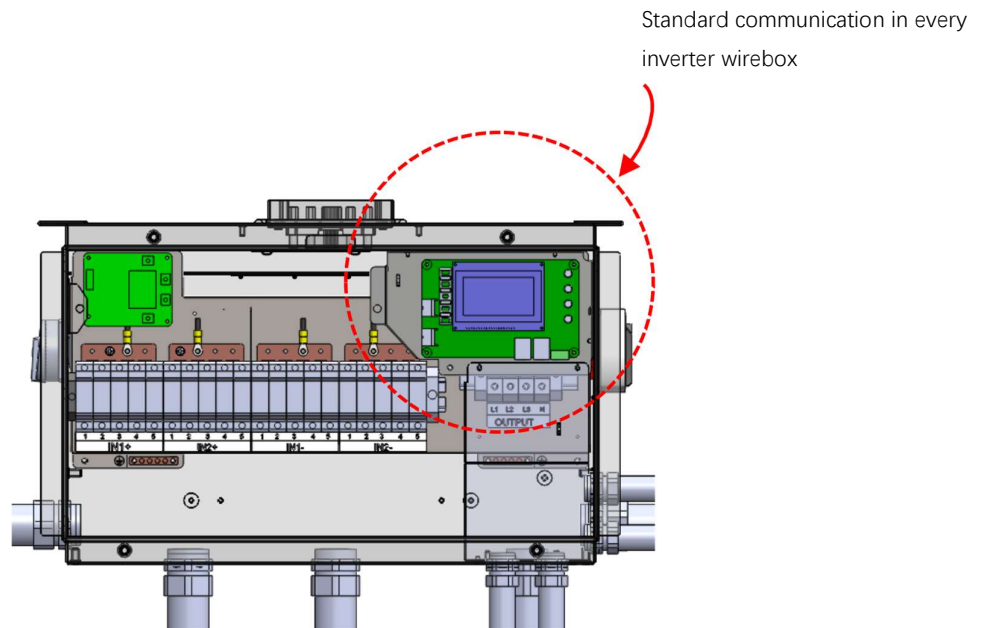


The system comprises of four key components:

- *Standard Inverter Modbus Communications*
- *Optional Flex Gateway Communications Card*
- *Chint Power Connect (CPS Connect) Mobile App*
- *CPS Service Web Portal*

1.1) Standard Inverter Modbus Communication Card

Each CPS three phase string inverter (Models SCA23KTL-X, SCA28KTL-X, SCA36KTL-X, SCA50KTL-X, SCA60KTL-X, SCA100KTL-X, SCA125KTL-X) ships standard, at no charge, with Modbus communications capability. This built in communications capability offers both data read access to approximately 32 parameters, depending on inverter model, but also advanced and remote controls of as many as 56 parameters.



To enable inverter level data access, each inverter must be connected to a 3rd party monitoring gateway via standard RS-485 twisted shield pair Modbus daisy chain.

Modbus wiring instructions are provided in the respective inverter product manuals. Application guides and Modbus data maps are available at the website at <https://www.chintpowersystems.com/downloads.html> or by contacting CPS applications engineering at 1-855-584-7168.

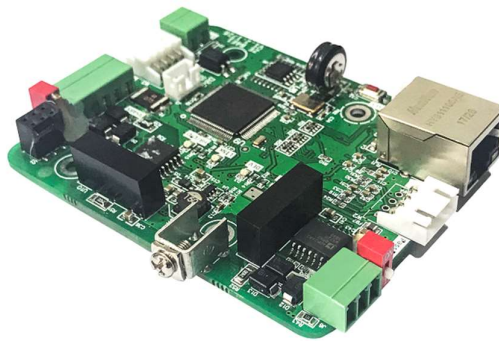
1.2) Optional Flex Gateway Communications Card

The optional Flex Gateway card offers a site level inverter communications capability to customers and to CPS Service. This card works as a Modbus master gateway (site level) and connects to the inverter Modbus daisy chain network.

The Flex Gateway enables the following additional features above standard Modbus communications:

- *Remote inverter firmware upgrade support by CPS Service*
- *Remote diagnostics by CPS Service*
- *Broadcast controls commands to speed up control loops for advanced applications like power quality management or zero export requirements*
- *Direct customer data from the Flex Gateway via a programmable Ethernet XML Sunspec Data Exchange connection for customers who want to manage their own data directly*
- *Pass thru Modbus communications to a 3rd party gateway*

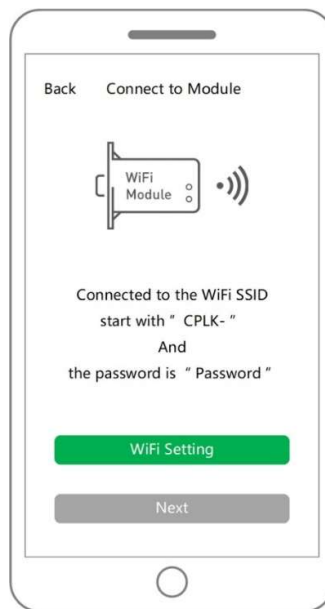
Optional Flex Gateway



1.3) Chint Power Systems Connect (CPS Connect) Mobile App

The CPS Connect mobile application is used to wirelessly program and setup the Flex Gateway in the field. It is intended to be used by installers, operations, maintenance and other site personnel to program the communications equipment. The app is available at the Apple iOS store and at the Google store for Android based devices.

Each Flex Gateway ships with a Wi-Fi Module that connects to the Flex Gateway to create a local Wi-Fi network. Once connected to the Flex Gateway, all inverters on the Modbus daisy chain network can be programmed.



1.4) CPS Service Portal

The CPS Service Portal is a web based interface intended for use by the CPS service team. This advanced portal enables remote diagnostics and FW management of connected systems.

2. Role of Users



CPS Service
Master-Account



Employee
Sub-Account

- Self-register the Site owner's master-account on Web Portal:
<https://monitoring.chintpowersystems.com>
- Manage all the sites and Flex gateway under the account.
- Create the sub-accounts for the customer (Master Account only) .



Installer/Customer

- Download the **CPS Connect** App by scanning the QR-code.
- Access to the hardware directly from the app via the Wi-Fi Module.
- Initialize and configure the inverter.
- Create and configure the Flex Gateway and the site.

3. Download the CPS Connect App

You have the following options to get an CPS Connect App:

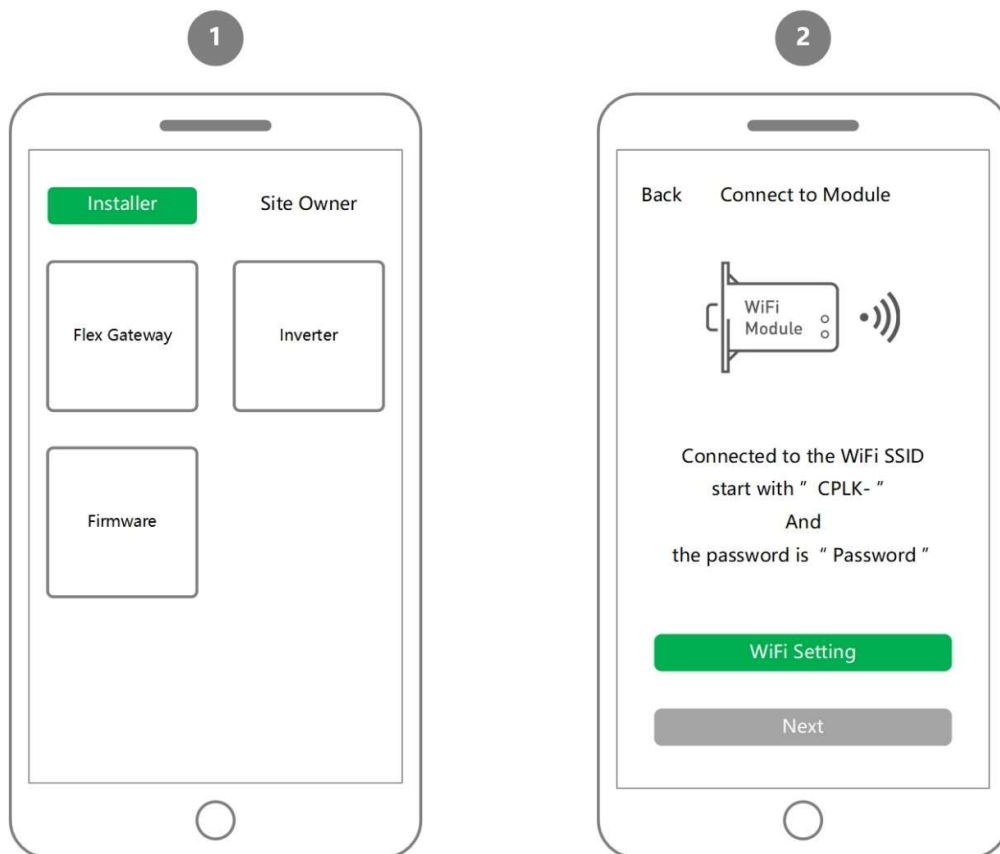
- User can download iOS version at Apple store or Android version in Google store.
- User can scan the following QR-code to complete App download and installation by using the mobile phones that can access the internet.



4. Setup a Flex Gateway

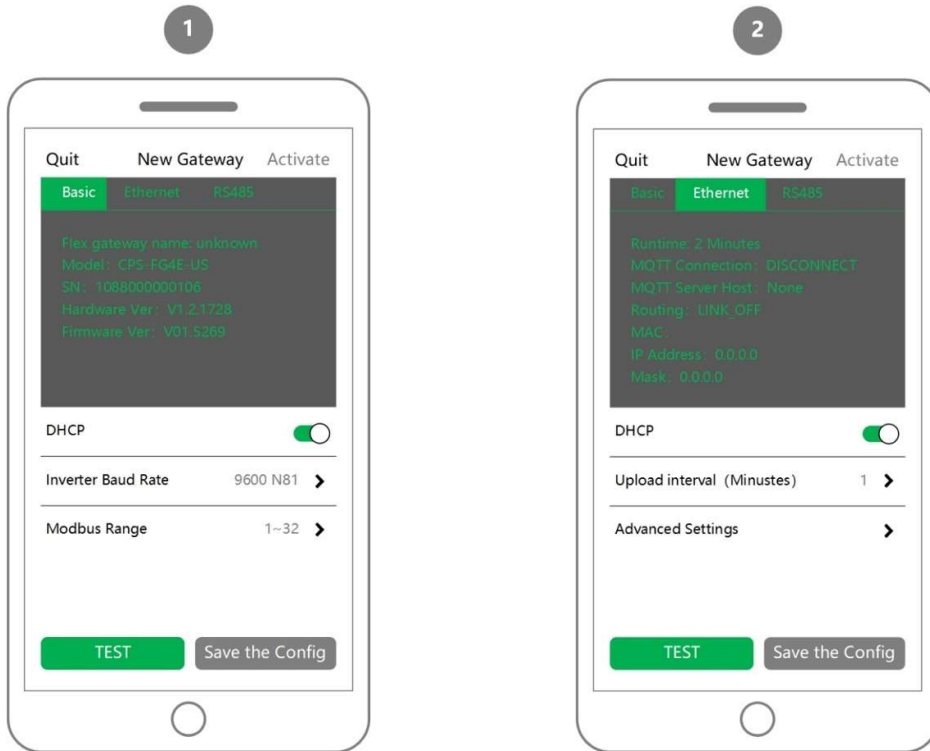
4.1) Connect to CPS Connect App

- Installer to open the application and select **Flex Gateway**.
- Click WiFi Setting and switch to the WiFi configuration of mobile phone.
 - Ensure to connect the SSID starts with **CPLK-XXXXXXX** .



4.2) Basic Settings

- This page displays basic connection settings. The Ethernet tab displays real time networking and connectivity data.



DHCP: If the button enabled, Flex Gateway requests IP addresses and networking parameters automatically (recommended). If disabled, user needs to manually assign IP addresses.

Inverter Baud Rate: Speed 2400 / 4800 / **9600** / 14400 / 19200

Parity **E** / N / O

Data **8** / 9

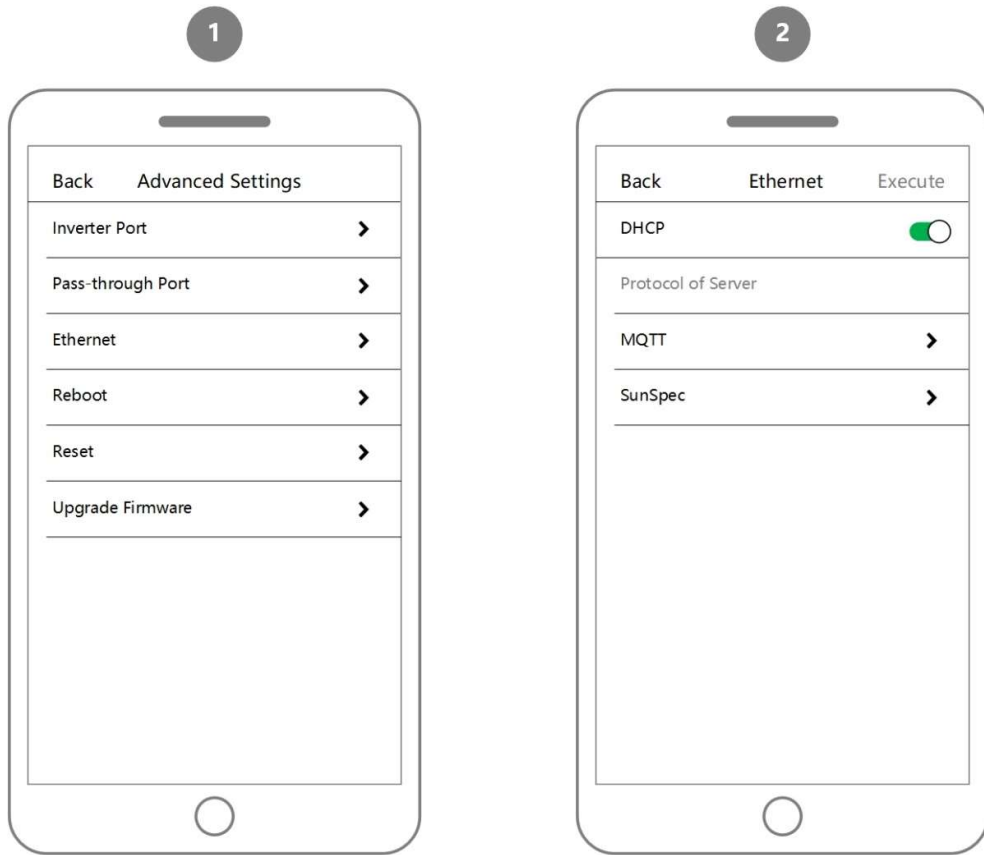
Stop **1** / 2

Modbus Range: User can enter the range of the modbus device, but the maximum is no more than 128. The device type is default as CPS403X.


Upload Interval (Minutes): The interval that the Flex Gateway sends the data to the Cloud.

4.3) Advanced Settings

- This page allows the user to execute advanced settings including **Reboot** (please refer to Section 3.6), **Reset** (Please refer to Section 3.7) and **Upgrade Firmware** (please refer to Section 5.3, 5.4, and 5.5)
- In the **Ethernet** area, the user can connect the Flex Gateway to the two different server types.



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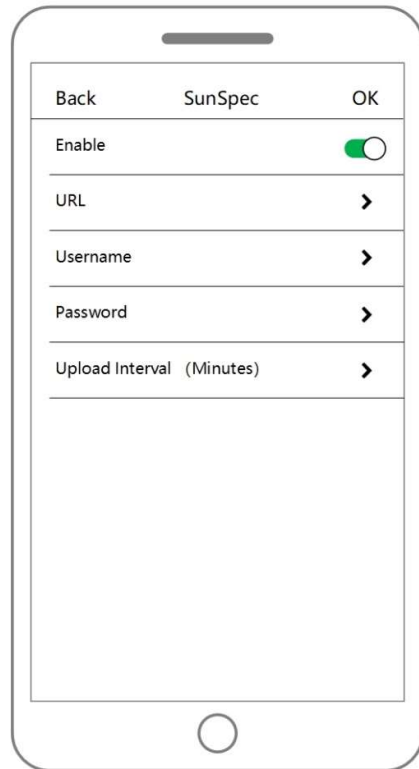


Back MQTT

Server Host	>
Server Port	>
Upload Interval (Minutes)	>

Empty text input area below the table.

4



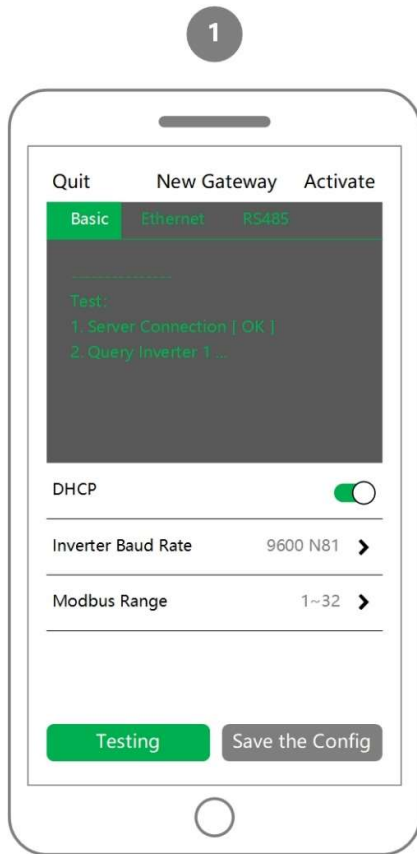
Back SunSpec OK

Enable	<input checked="" type="checkbox"/>
URL	>
Username	>
Password	>
Upload Interval (Minutes)	>

Empty text input area below the table.

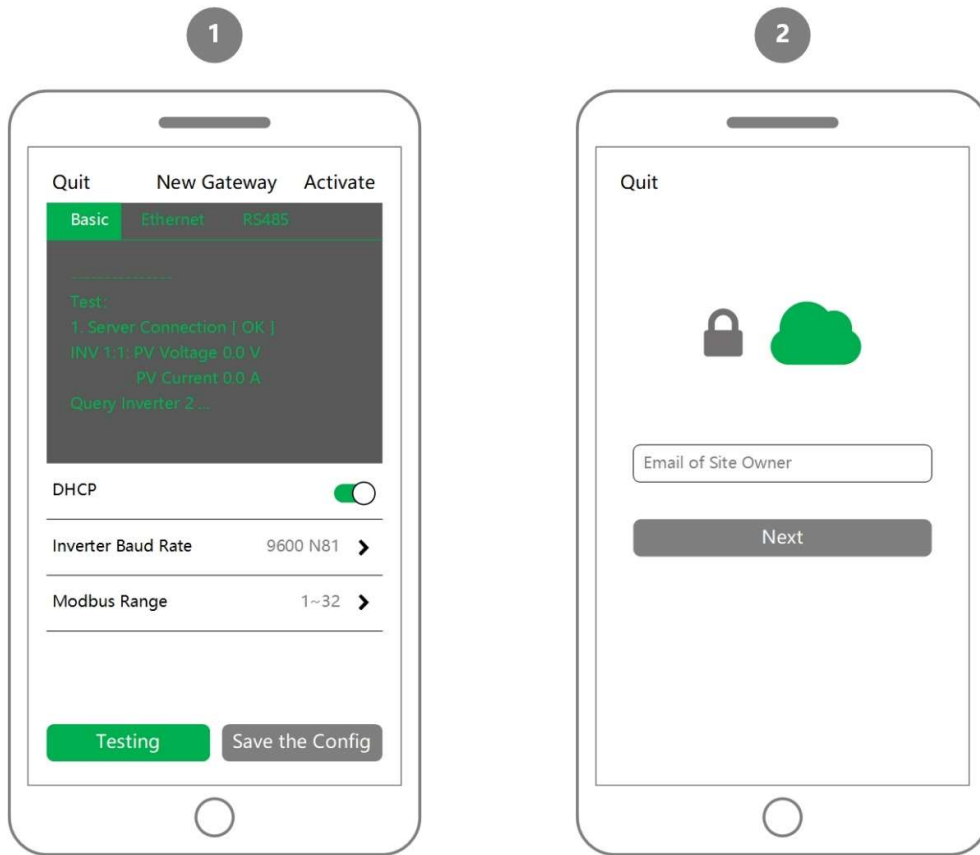
4.4) Test and Save the Configuration

- Click **Test** to check the default configuration.
- The APP will send the default configuration to the Flex Gateway and start testing.
 - ☑ Click **Save the Config** to ensure all settings take effect.



4.5) Activate Flex Gateway

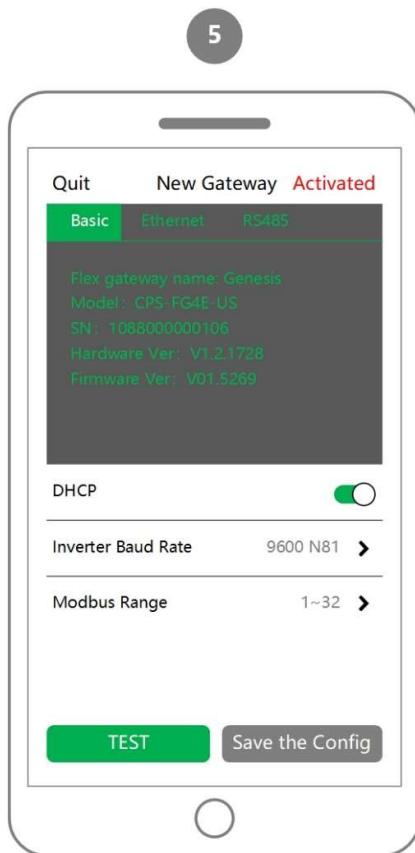
1. After testing and saving the config, the **Activate** button will be enabled.
2. Click **Activate** and move to the next step
 - Ensure the mobile phone is connected to the Internet.
3. Input the site owner's e-mail address and click **Next**



4. Name a new site or choose an existing site.
5. Name a new flex gateway.
6. Choose the time zone of the site.
7. Click **Apply** to proceed with activation.



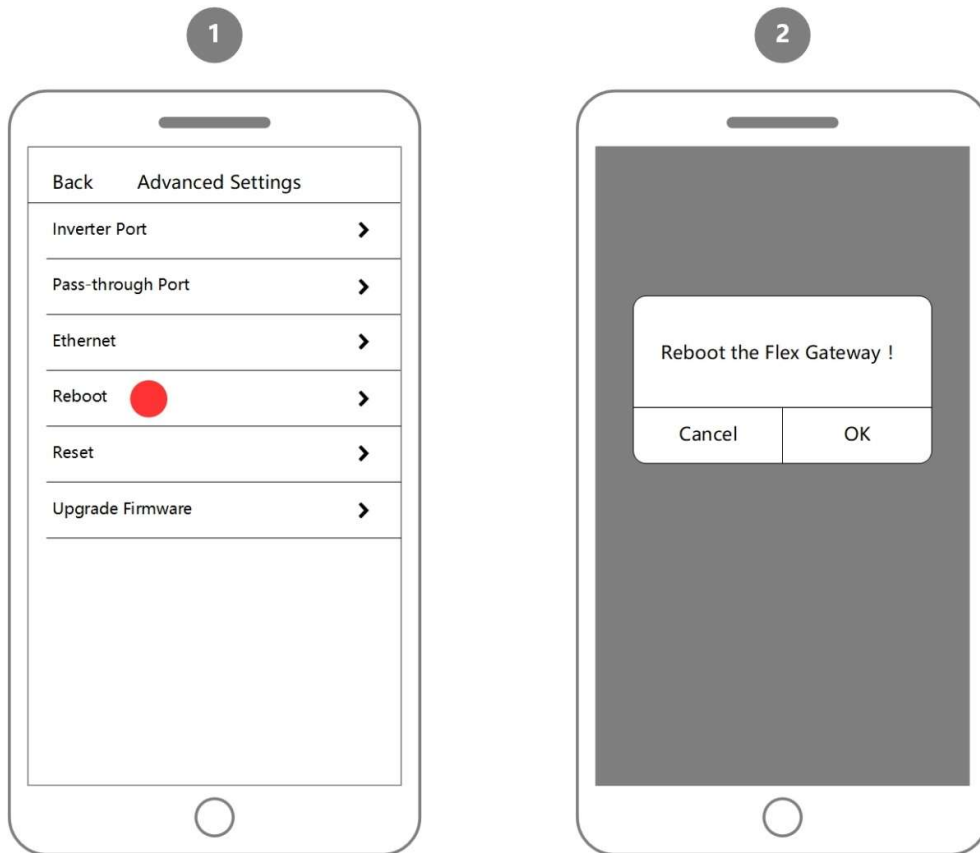
- When the Installer logs out and back to the area of the same Flex Gateway again, this Flex Gateway should be shown as **Activated**.
- Click **Activated**.
 - ☑ It displays the basic information of this Flex Gateway including the date of the last upload and the connection status of HTTPS server.



4.6) Reboot

- To reboot the Flex Gateway, click **Reboot** under the menu **Advanced Settings**.

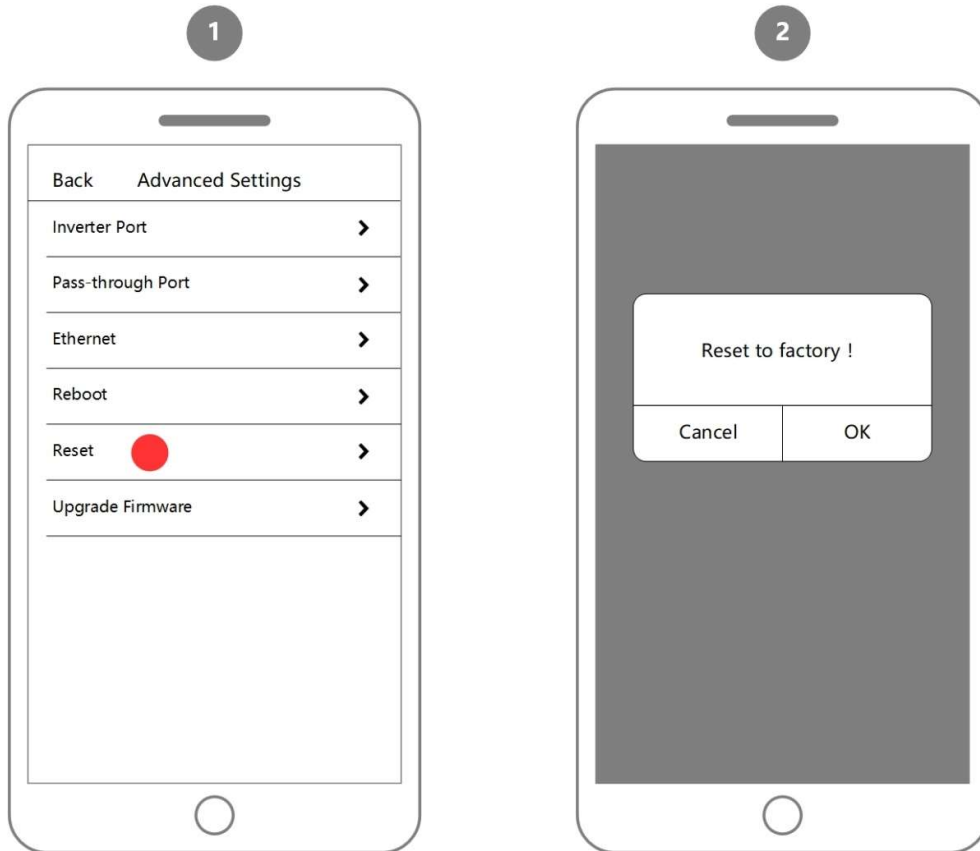
Note: Reboot is only an action of restart. The data saved in the Flex Gateway will not be changed.



4.7) Reset

- To reset the Flex Gateway to factory setting, click **Reset** under the menu **Advanced Settings**.

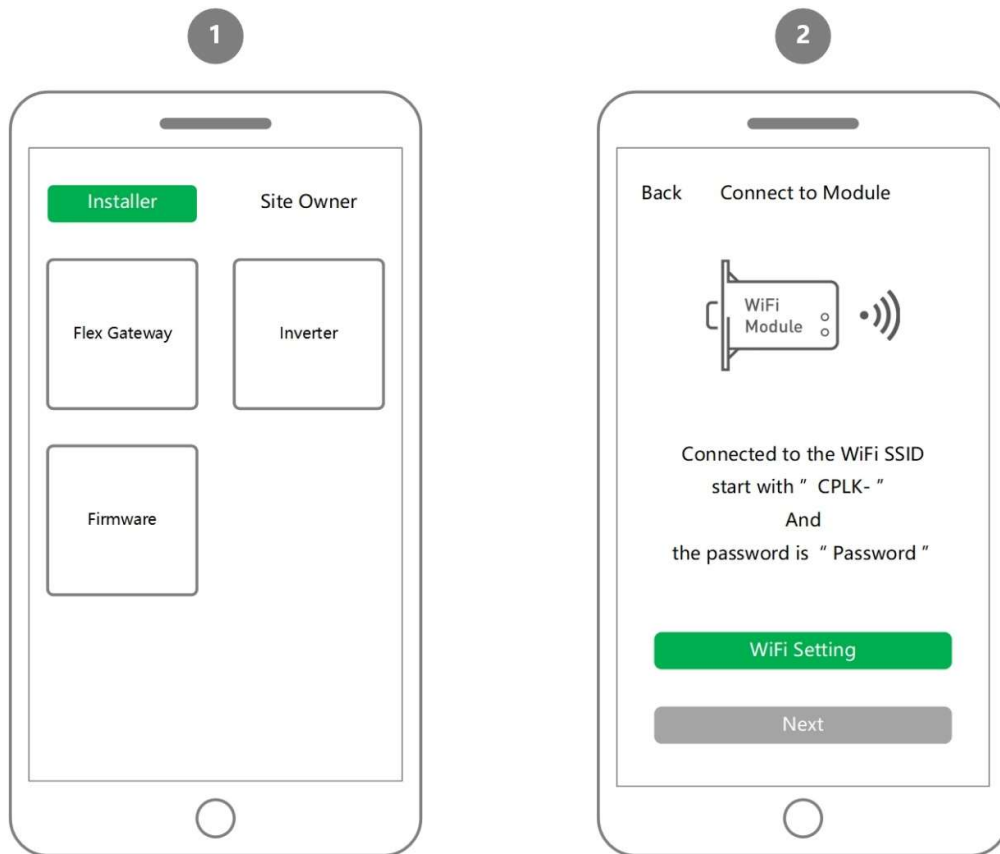
Note: All data saved in the flex gateway will be deleted after resetting to factory.



5. Inverter Setup

5.1) Connect to an Inverter

- Installer to open the App and select **Inverter**.
- Click **WiFi Setting** and switch to WiFi configuration of the mobile phone.
 - Ensure to connect the SSID starts with **CPLK-XXXXXXX** .



5.2) Initialize the Inverter

- Inverter parameters can be programmed via the CPS Connect App. Please refer to the inverter operating manual for detailed inverter setup parameters and instructions.

Regulation: Selecting a grid standard.



INSTRUCTION:

Please check with your local electricity supply company before selecting a grid standard. If the inverter is operated with a wrong grid standard, the electricity supply company may cancel the interconnection agreement.

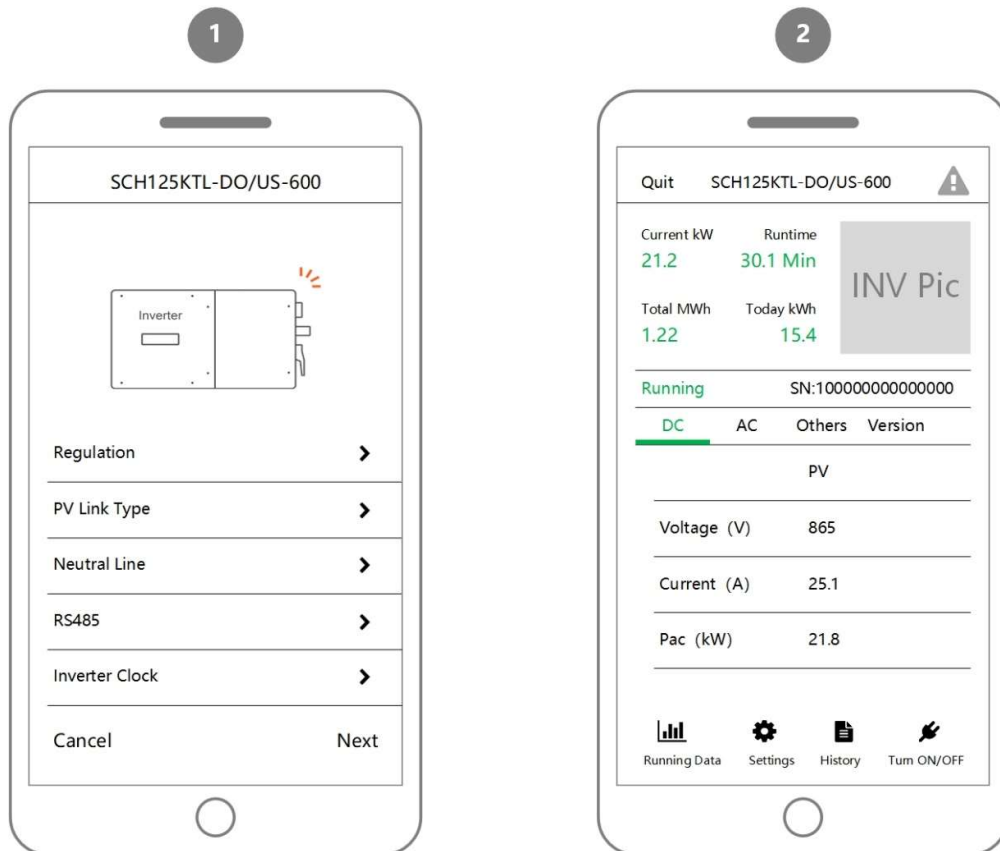
Placing the inverter into operation before the overall system complies with the national rules and safety regulations of the application is not permitted.

PV Link Type: The working mode of the DC input connection and MPP Tracker may be configured to **Independent** or **Parallel** (refer to inverter manual)

Neutral Line: Setting the neutral line as connected or not.

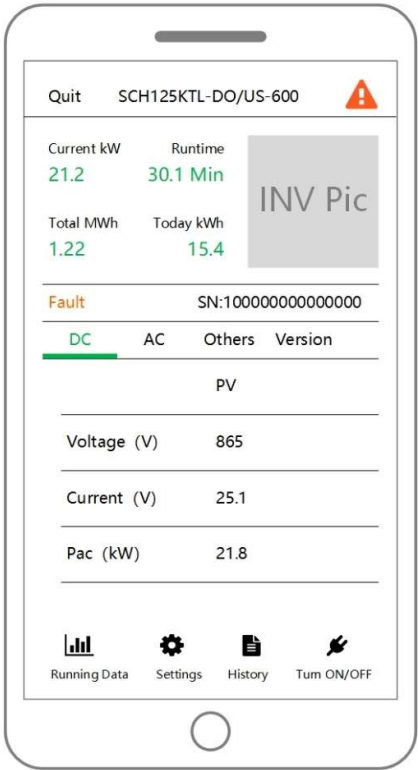
RS485: Choosing the communication data Modbus Address and Baud Rate.

Inverter Clock: Synchronized with the clock of mobile phone.

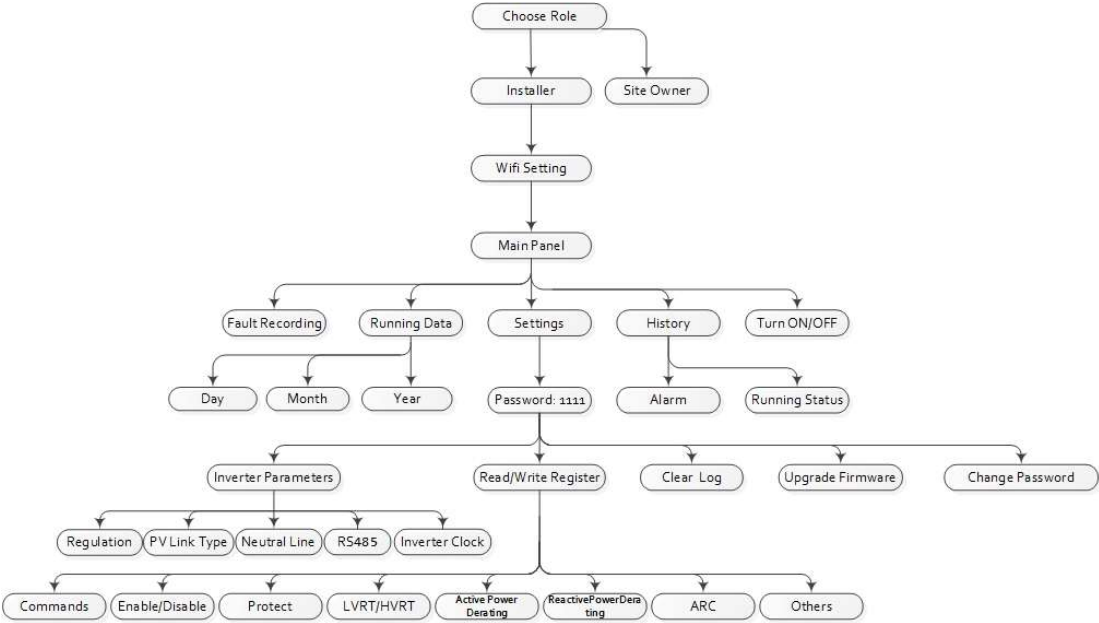


- When the device screen shows the normal operation status and the “RUN” light on the inverter’s LED panel is illuminated, this is an indication that the grid connection and power generation are successful.
- If the inverter fails to operate normally, the inverter’s “FAULT” light will illuminate and the fault information will show on the Device screen. You can skip to **History** check the detail.

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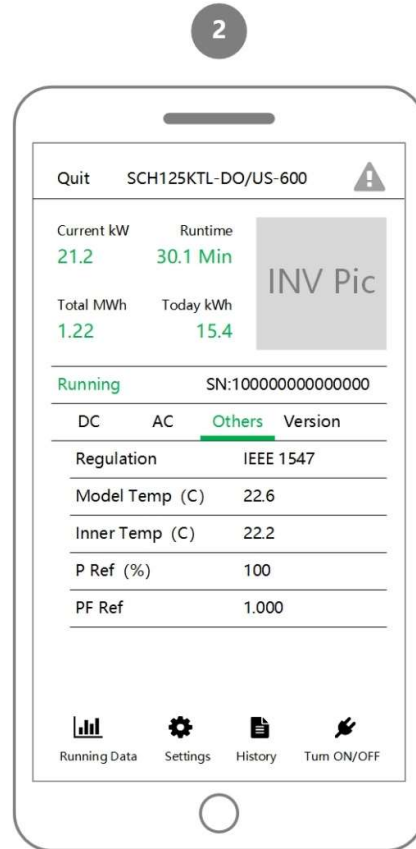
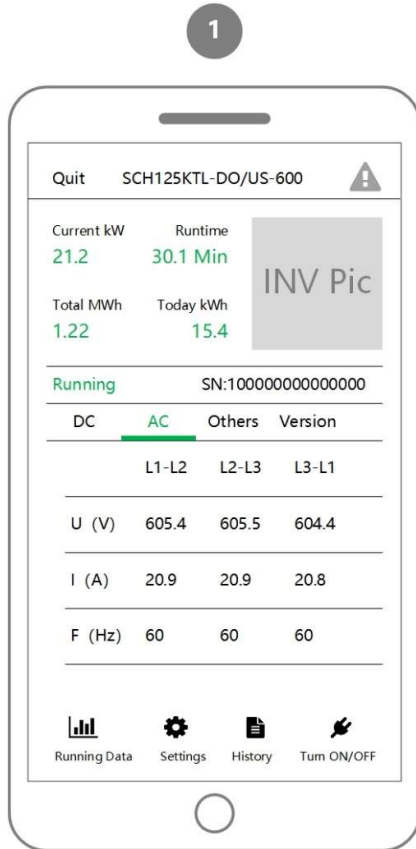


5.3) Function Overview



5.4) View Running Data

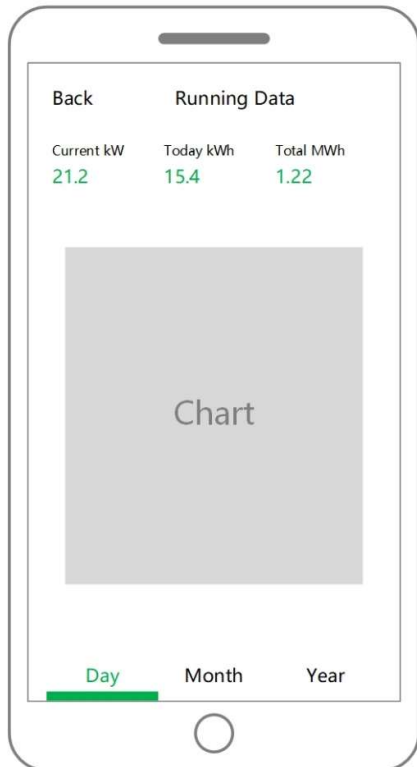
- In the main panel, user can view the main information related to the status, the DC, AC, Others and Version data of the inverter.
- Click **Running Data**, user can view the chart of inverter and switch the Day, Month, Year.



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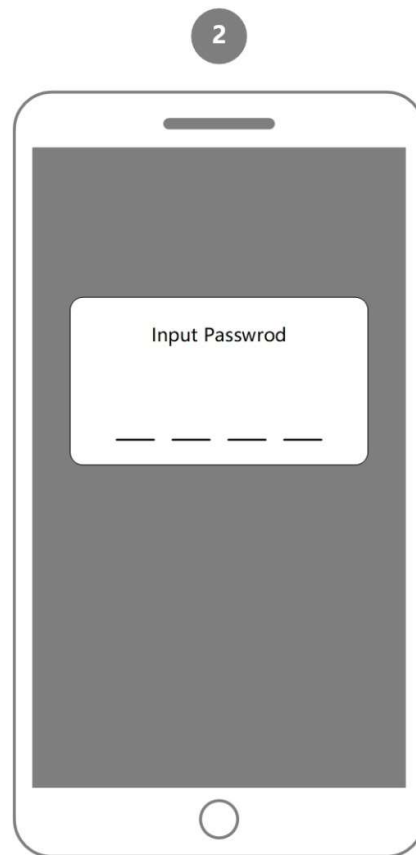


4



5.5) Setting Advanced Inverter Parameters

- Contact CPS Service at 1-855-584-7168 to obtain a password for advanced inverter settings.
- Click **Settings** and input the password.
- User can access the function as below.
 - Inverter Parameters
 - Read/Write Register
 - Upgrade Firmware



3



5.6) Read/Write Register

- In the Read/Write Register area, the following functions are available. Please note, consult the site operator and local codes and requirements before changing any of these parameters.

Commands: including PowerOn/Off, Force Restart, Factory Restart, MPPTScan, ArcDetect and ArcAlarmClear

Enable/Disable: is used for enable or disable the function and protect parameters

Protect: is used to display and set the Protect parameters of the AC grid voltage, frequency and recovery, etc.

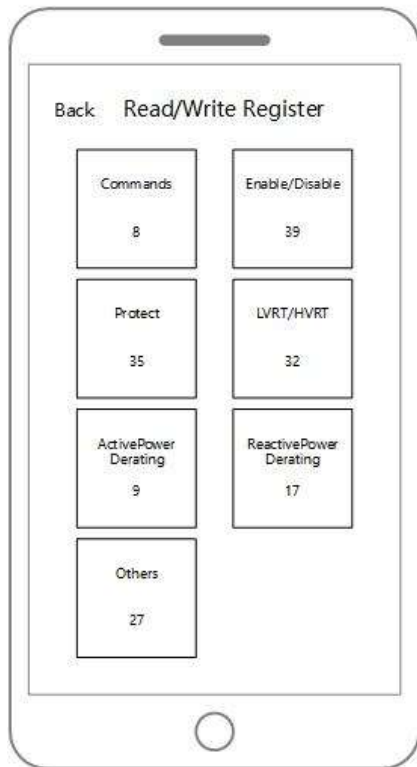
LVRT/HVRT: is used to set the LVRT (Low voltage ride through) and HVRT (High voltage ride through) parameters

ActivePowerDerating: is used to set the active power derating parameters including Active Power Derating, Over frequency derating and High temperature frequency derating, etc.

ReactivePowerDerating: is used to set the Grid reactive power derating parameters including PF parameters and Qu parameters, etc.

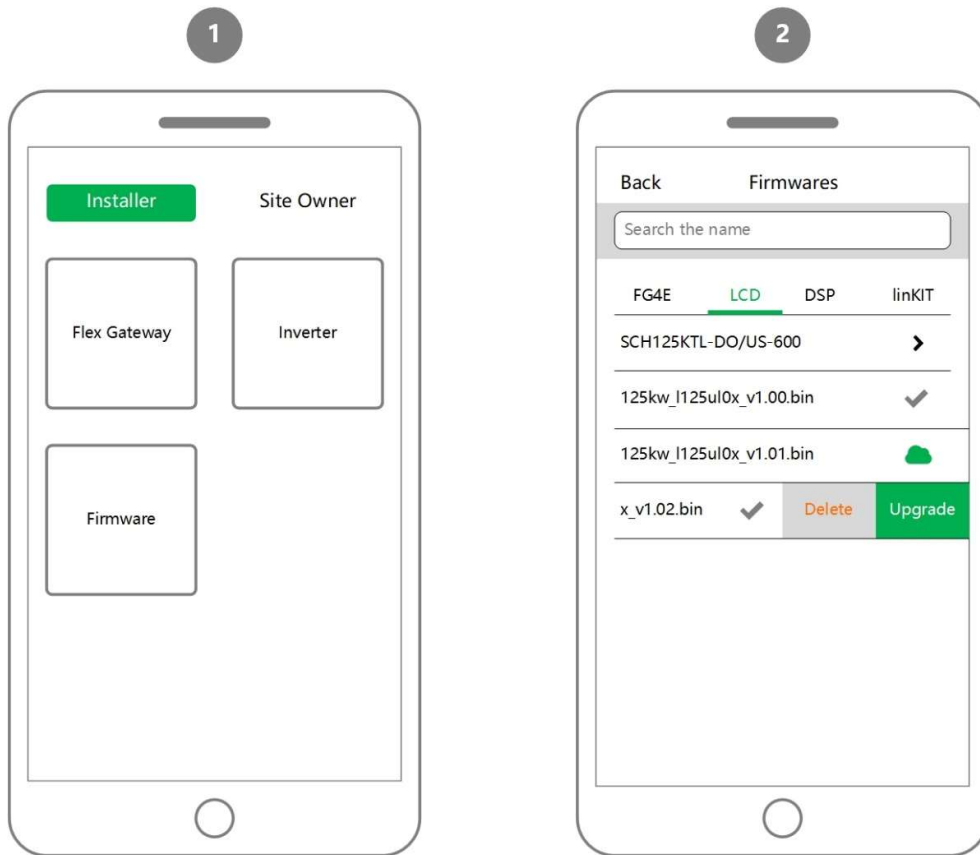
Others

1



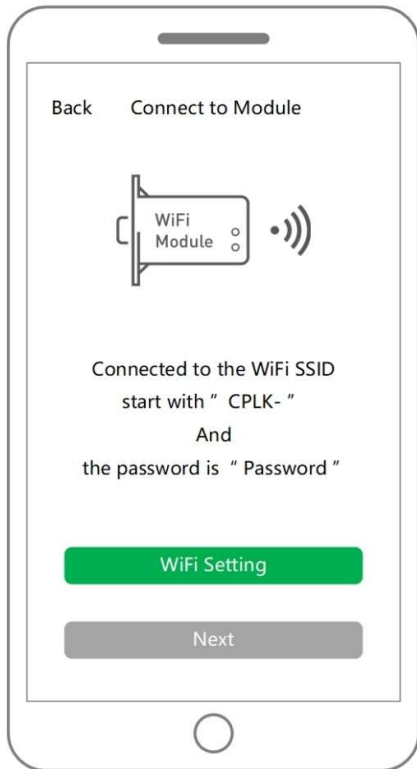
5.7) Upgrade Firmware

- Installer to open the CPS Connect App and select **Firmware**.
 - ☑ Make sure the mobile phone can access the Internet.
 - ☑ Select the LCD or DSP firmware of No-LCD inverter and download it. Contact CPS Service to confirm the desired FW version before upgrade.

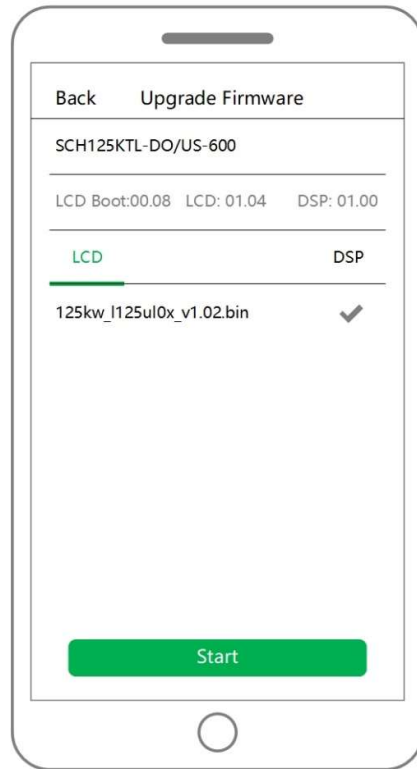


- Select an inverter model and the firmware, then click **Upgrade**.
- After connecting to the CPC Wi-Fi module, user can **Start** the firmware upgrade.
- Upgrading the LCD will be completed in 5 minutes.
- Upgrading the DSP will be completed in 10 minutes.
- During upgrade the firmware, **DO NOT** switch off the APP or the Phone.

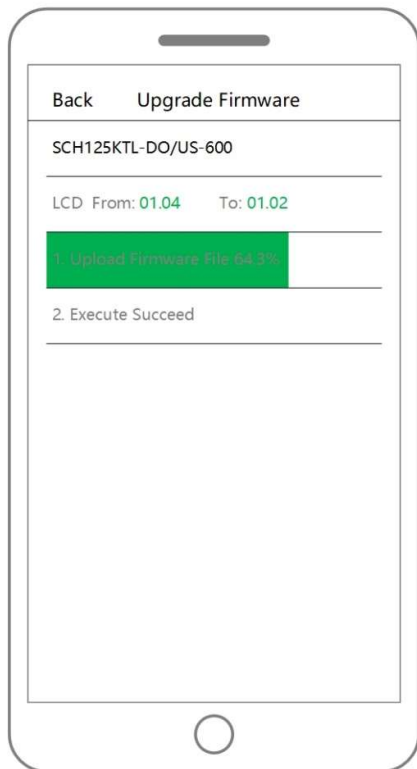
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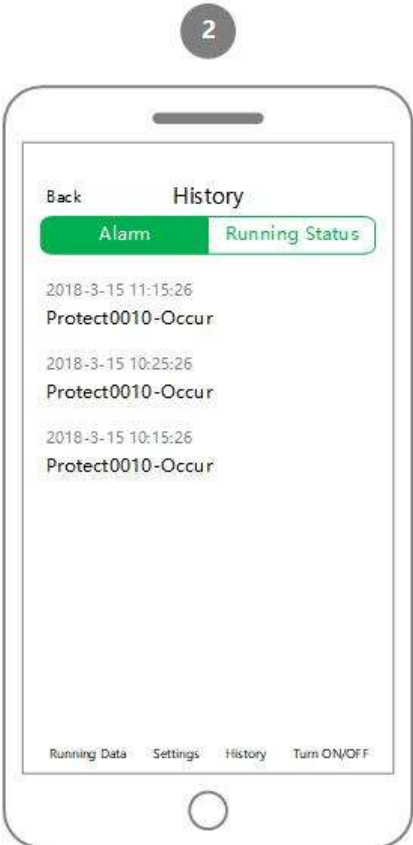


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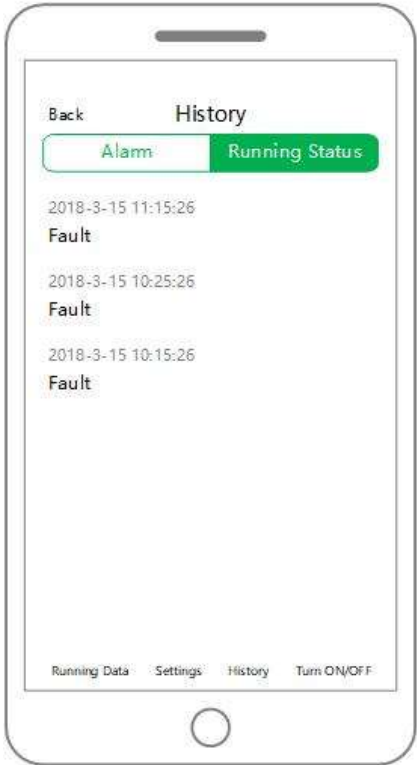


5.8) Check the History

- In the **History** area, it displays the **Alarm** message and **Running Status** of the inverter

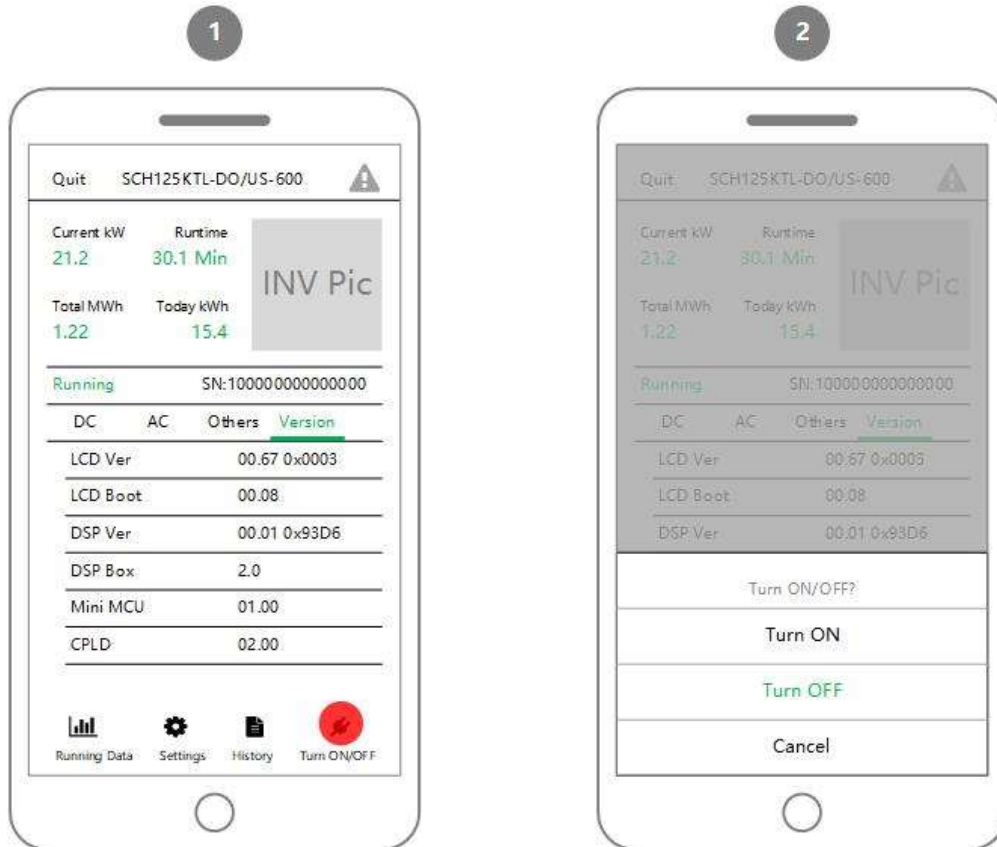


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5.9) Turn ON/OFF

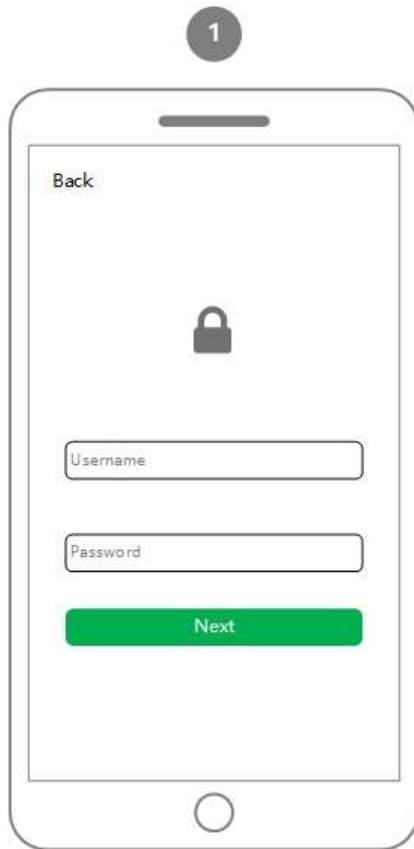
- Turn ON: Click **Turn ON** to start the inverter. It will start up and operate normally if the start-up condition is met. Otherwise, the inverter will go to Stand-by mode.
- Turn OFF: If regulation settings or maintenance is required, it can be shut down manually.



6. How to Manage my Sites

6.1) Site Brief

- Select the role **Site Owner** on the **Home** page and go to the **Login** area.
- Enter the e-mail address of the Master Account or Sub-Account and password.
 - The page **Functions Selection** opens

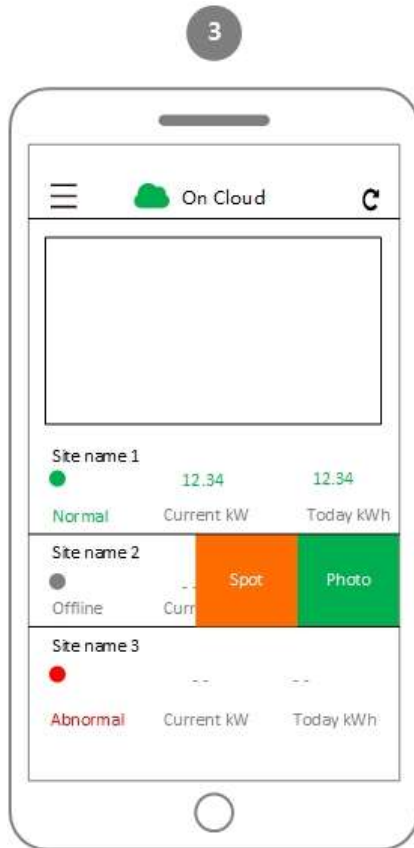


- Click **My Site**

- It displays the status, the current Pac and the today's power generation

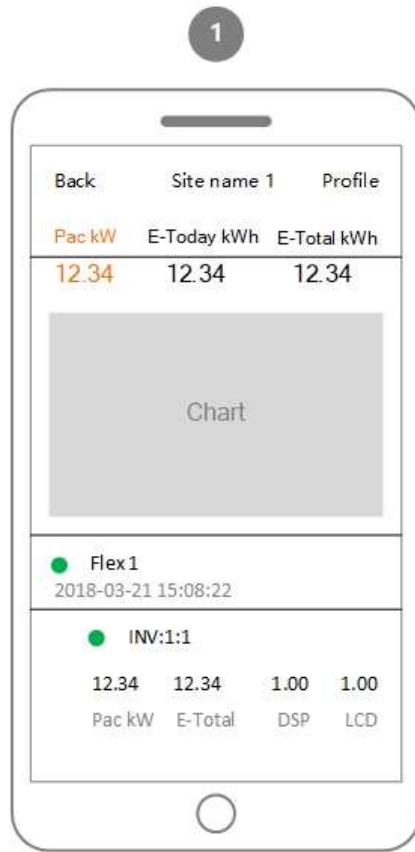
- Spot**: to determine your approximate location

- Photo**: to update the picture of the site



6.2) Site Details

- It displays the status of the inverters and the power generation of the site.
 Pac kW, **E-Today kWh** and **E-Total kWh** are three different designations. The diagram visualizes the related data when clicking each of them.

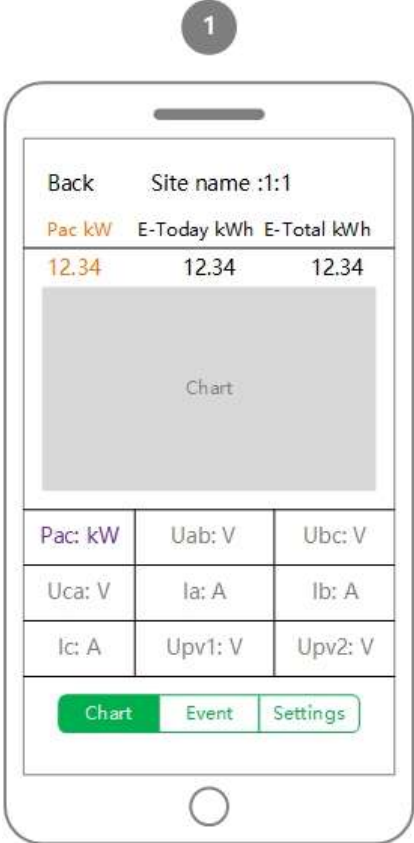


- Double click the diagram and it will go to the extended chart.
 - ☑ On the right side, it lists all the inverters under the site. The diagram will visualize the data of the inverter you select.
 - ☑ In the list below the diagram, you can select the field for the desired register parameter.

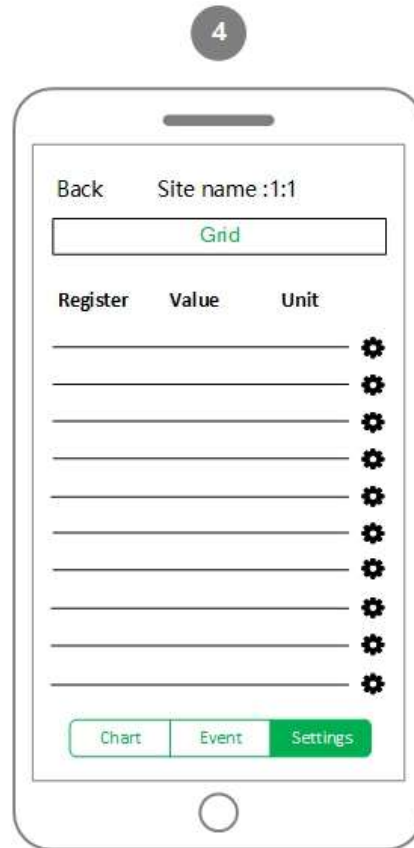
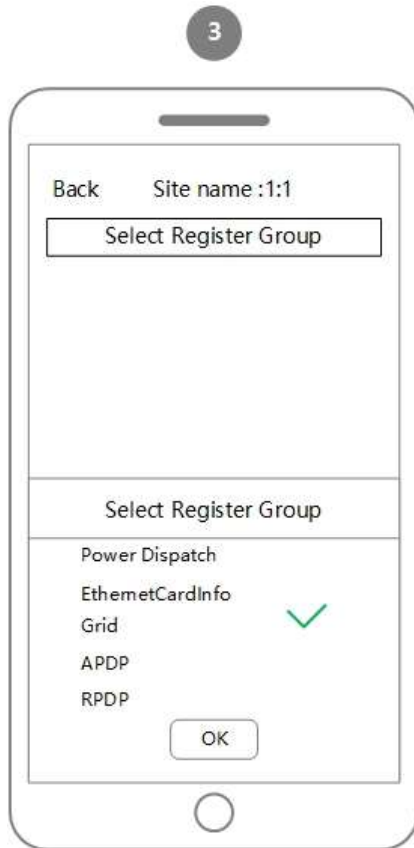


6.3) Inverter Data and Settings

- It displays the data of the inverters
 - ☑ In the list below the diagram, you can select the field for the desired register parameter.
- Click **Event** and you can view messages regarding events of the inverters.

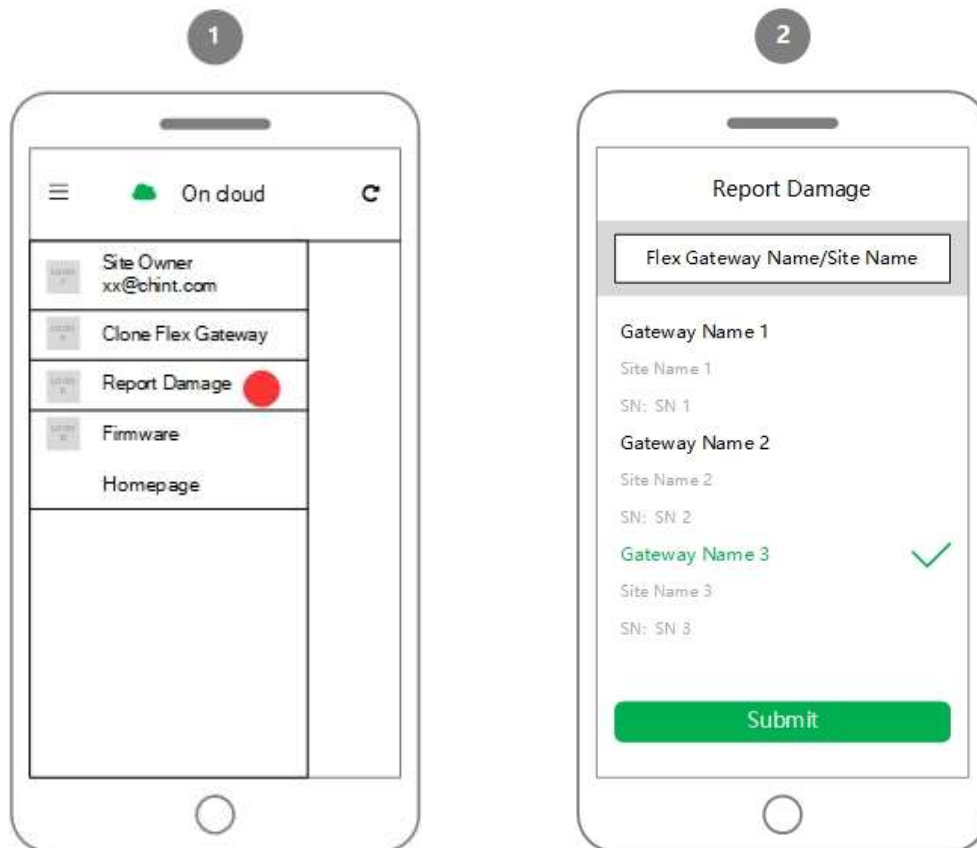


- Click Select Register Group and select the Register designation.
 - ☑ The page Register Parameter Settings opens. You can read off all register data in this register group.
- Click **Green Button** and you can write the register parameter.



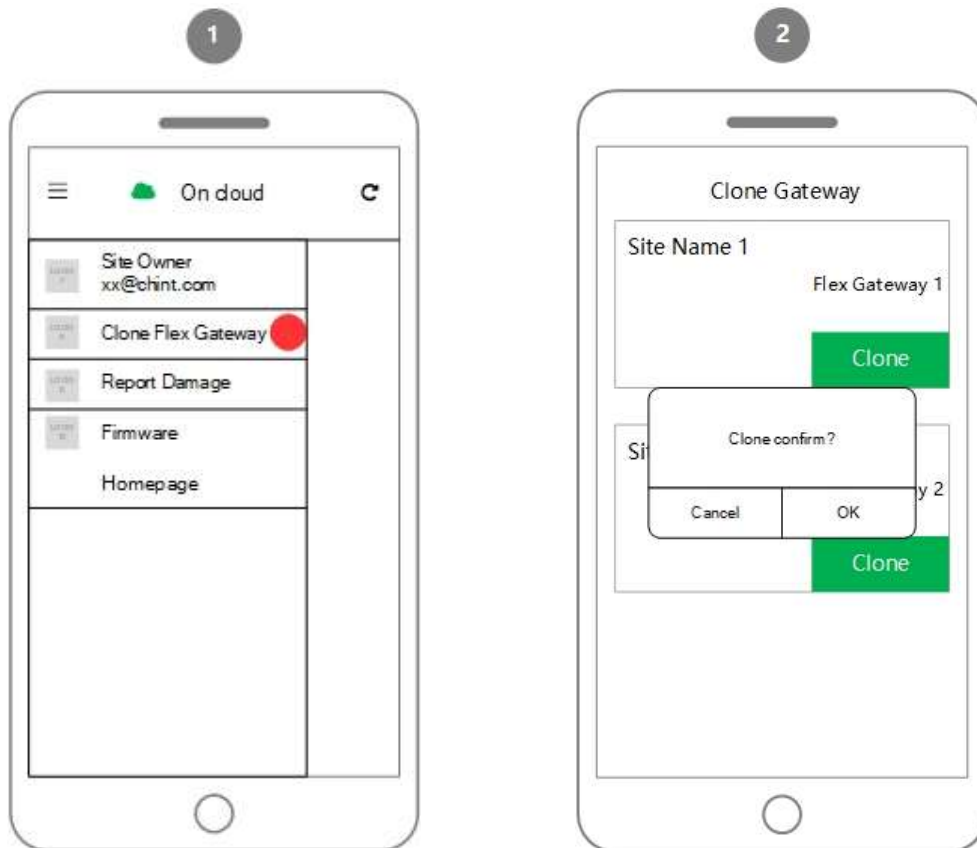
6.4) Report a Damaged Flex Gateway

- Enter the Gateway name or Site name to search for the damaged flex gateway
- Click **Submit**
 - ☑ You can use this function when you want to keep the original data of the damaged Flex Gateway. To copy the data to a new Flex Gateway, you can read off the following function in the section 5.2 **Clone**

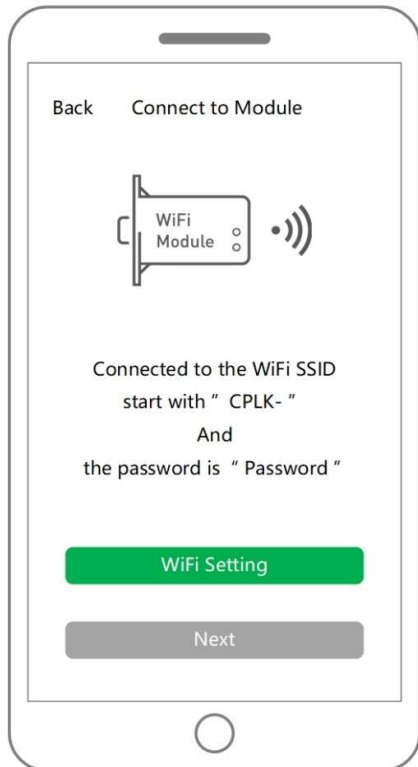


6.5) Replacement of a Flex Gateway

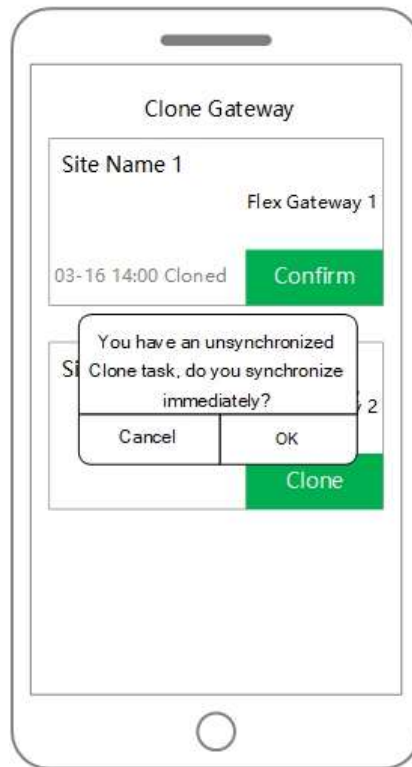
- Use this process to replace a Flex Gateway and transfer all the settings to the new Gateway
- The report-damaged Flex Gateway will be shown in the **Clone** list. Select Flex Gateway and click **Clone**. In order to complete the Clone process successfully, you must perform the following two steps:
 - ☑ Mount a new Flex Gateway in area.
 - ☑ Connect to the CPC Wi-Fi module.



3

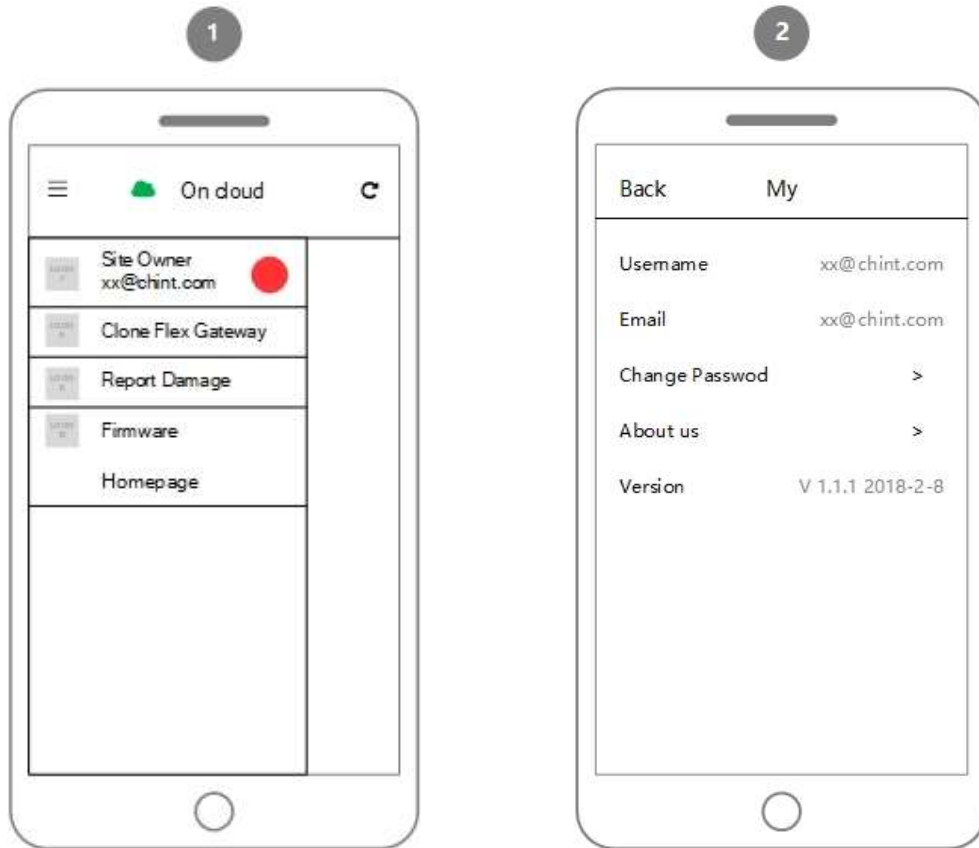


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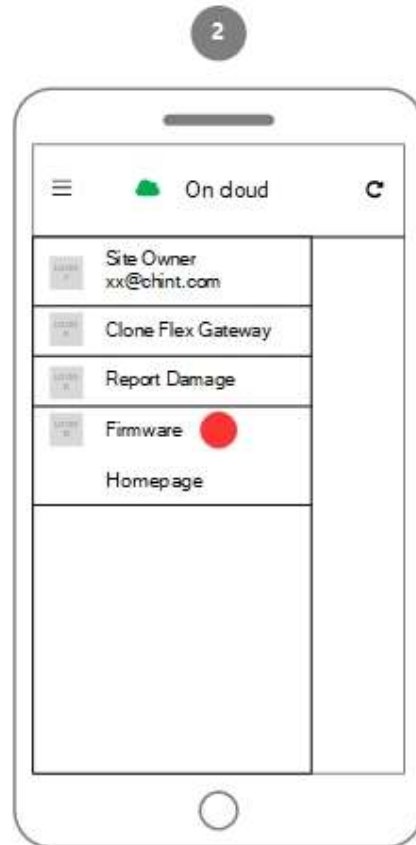
6.6) Account Settings


- Site owner can log into the app to view the account info and change the password.




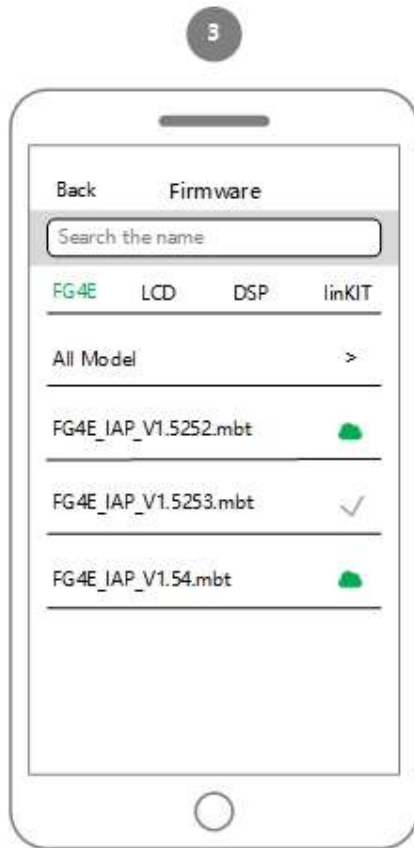
7. How to Upgrade Firmware

- Call CPS Service to ensure you are upgrading to the latest FW version.
- You have two options to open **Firmware** page
 - ☑ Click **Firmware** on the **Home** page or,
 - ☑ Log into My Site and click **Firmware** in the menu selection



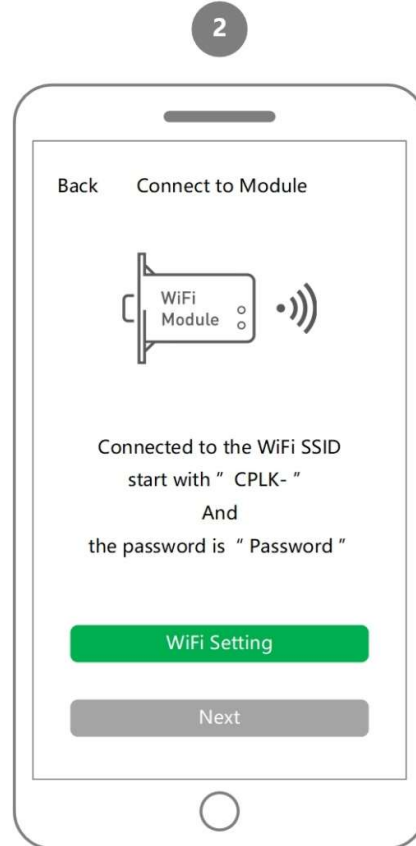
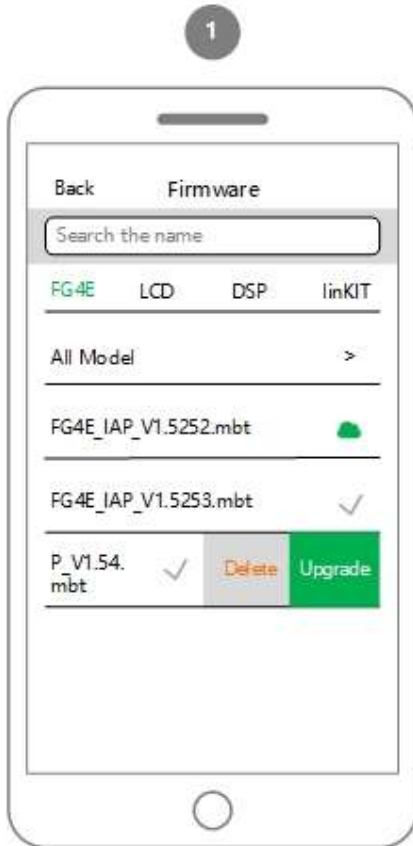
 Firmware that has been released on Cloud

 Firmware that has been downloaded

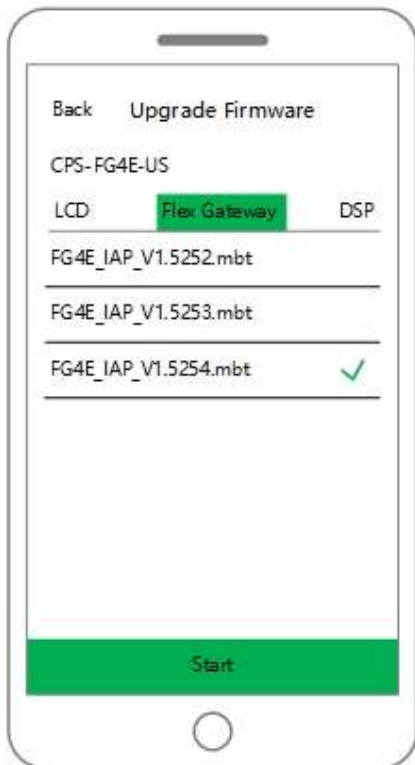


7.1) Upgrade the Flex Gateway Firmware

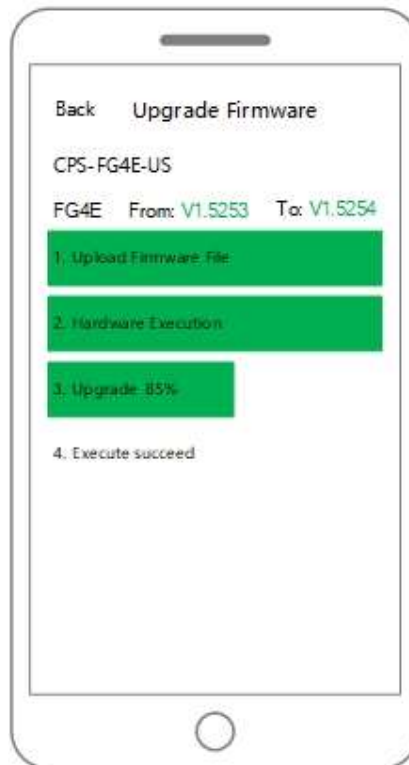
- Call CPS Service to ensure you are upgrading to the latest FW version.
- Click Upgrade.
- Select the firmware file and click **Start** to upgrade the Flex Gateway.



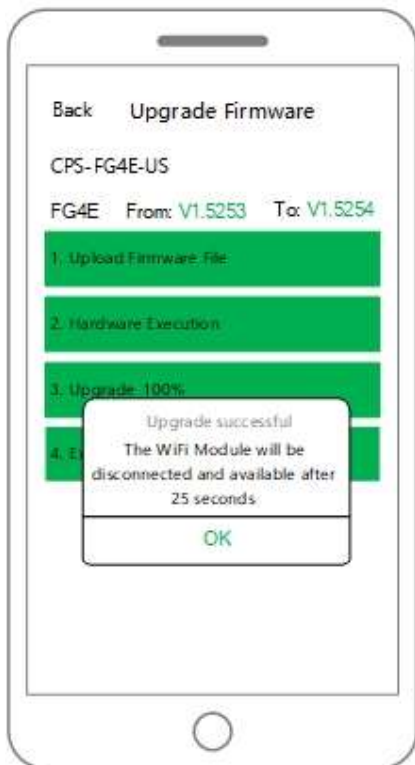
3



4



5



7.2) Upgrade the Wi-Fi Module

- Select WiFi Module
- Click **Upgrade** to upgrade the firmware



3



4





Address 7060 Koll Center Parkway, Suite 318
Pleasanton, CA 94566

Hotline 855 584 7168

Website www.chintpowersystems.com