



User Manual **Flex Gateway G2**

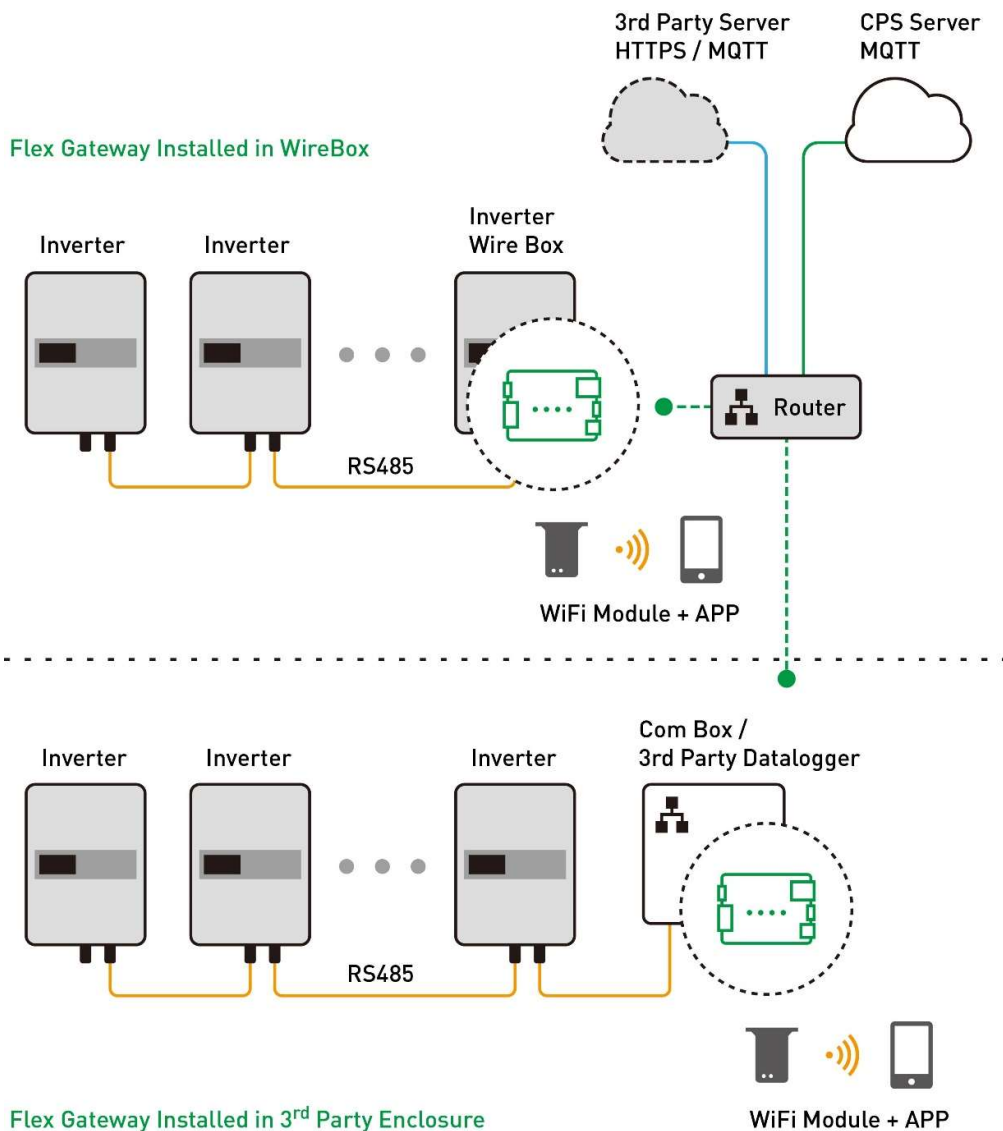
04 / 25 / 2018
Revision 2

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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*



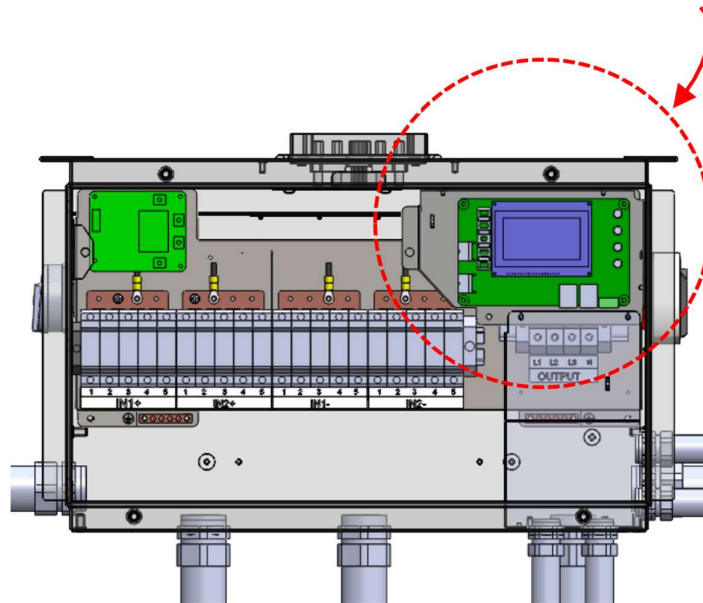
The system comprises of four key components:

- *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.

Standard built-in communications
in every inverter wirebox



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.

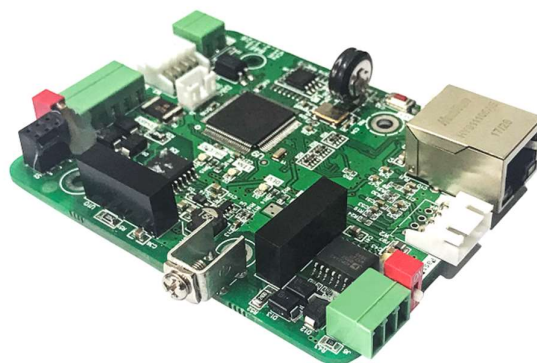
1.2) Optional Flex Gateway Communications Card

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.

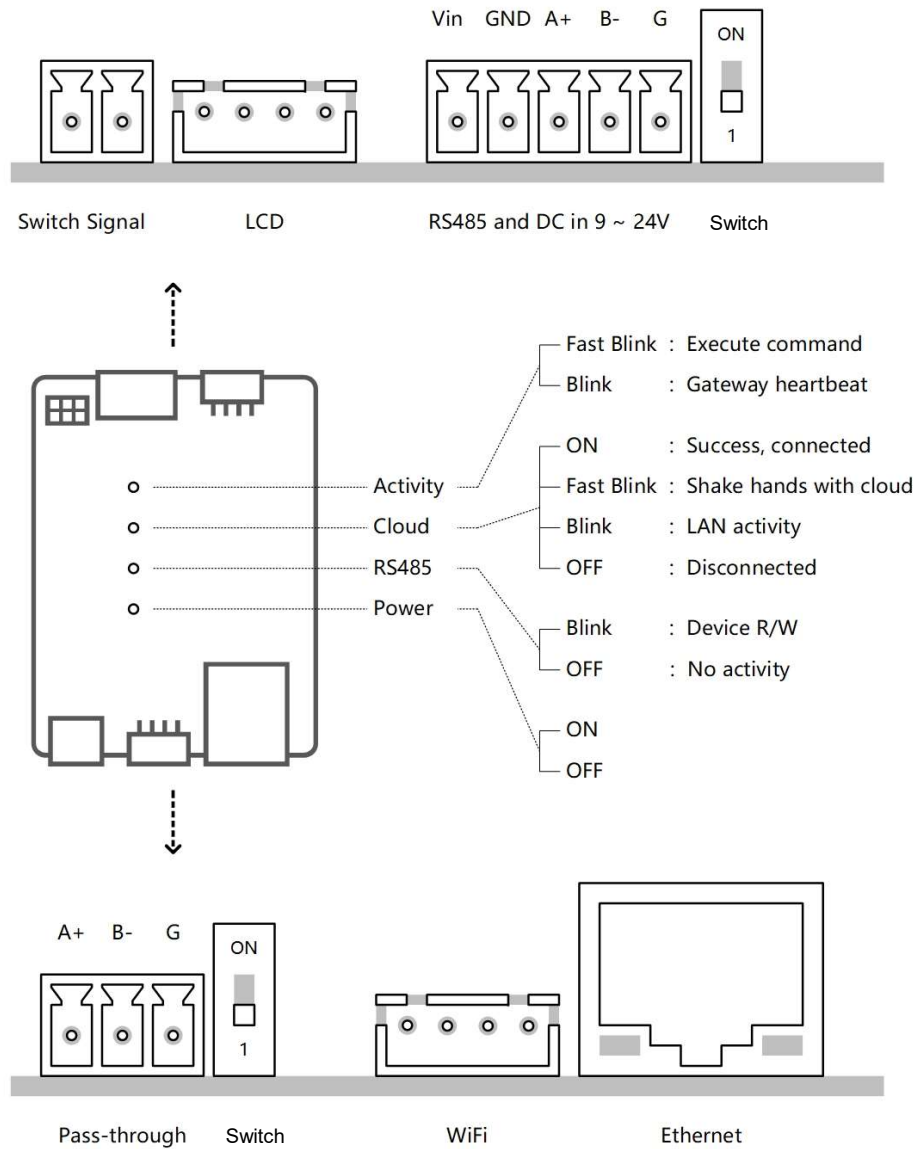
Each Flex Gateway ships with a Wi-Fi Module that connects to the Flex Gateway to create a local Wi-Fi network. Once connected to the Flex Gateway, all inverters on the Modbus daisy chain network can be programmed.



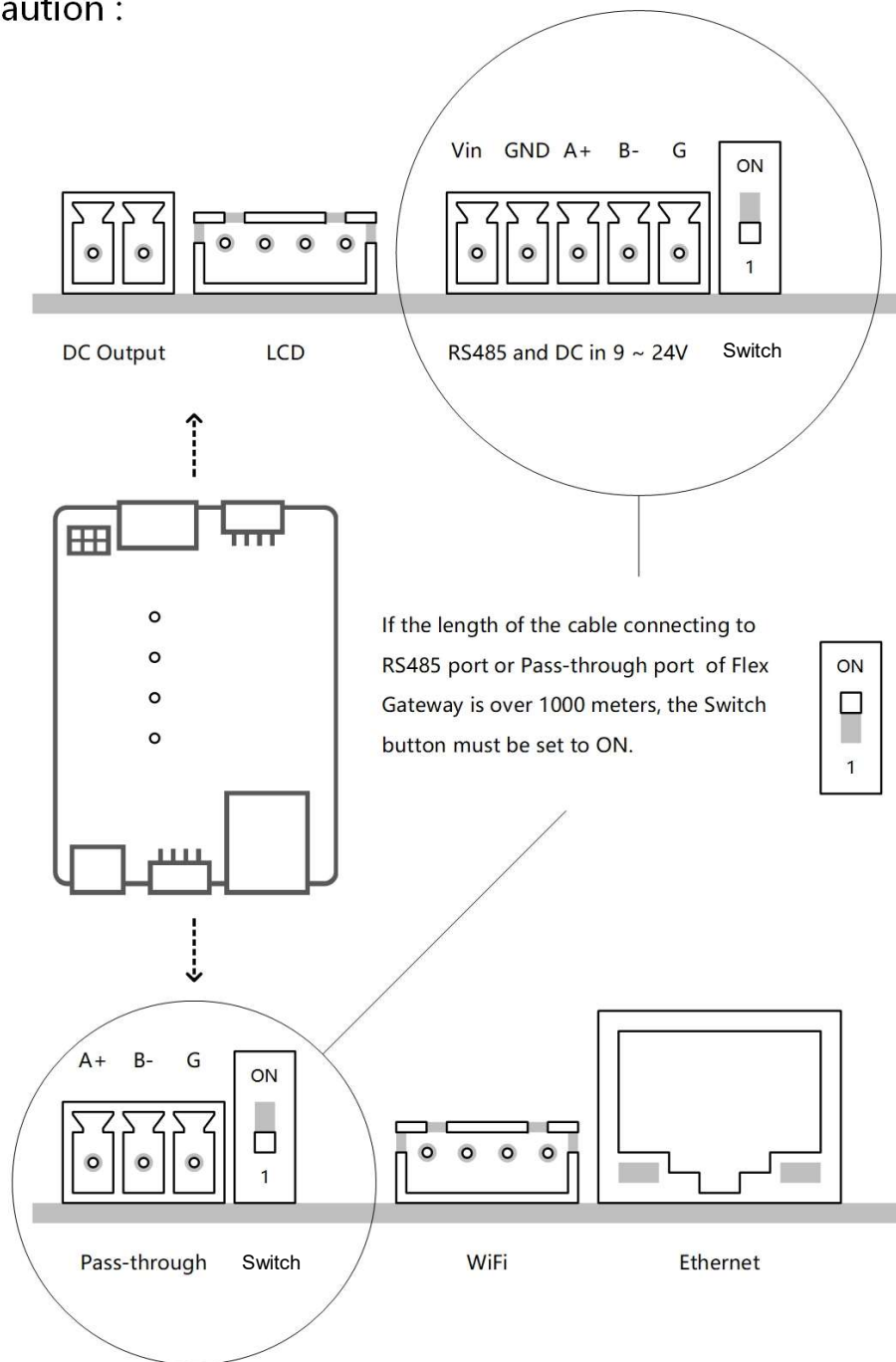
1.4) CPS Service Portal

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. Interface & Indicators

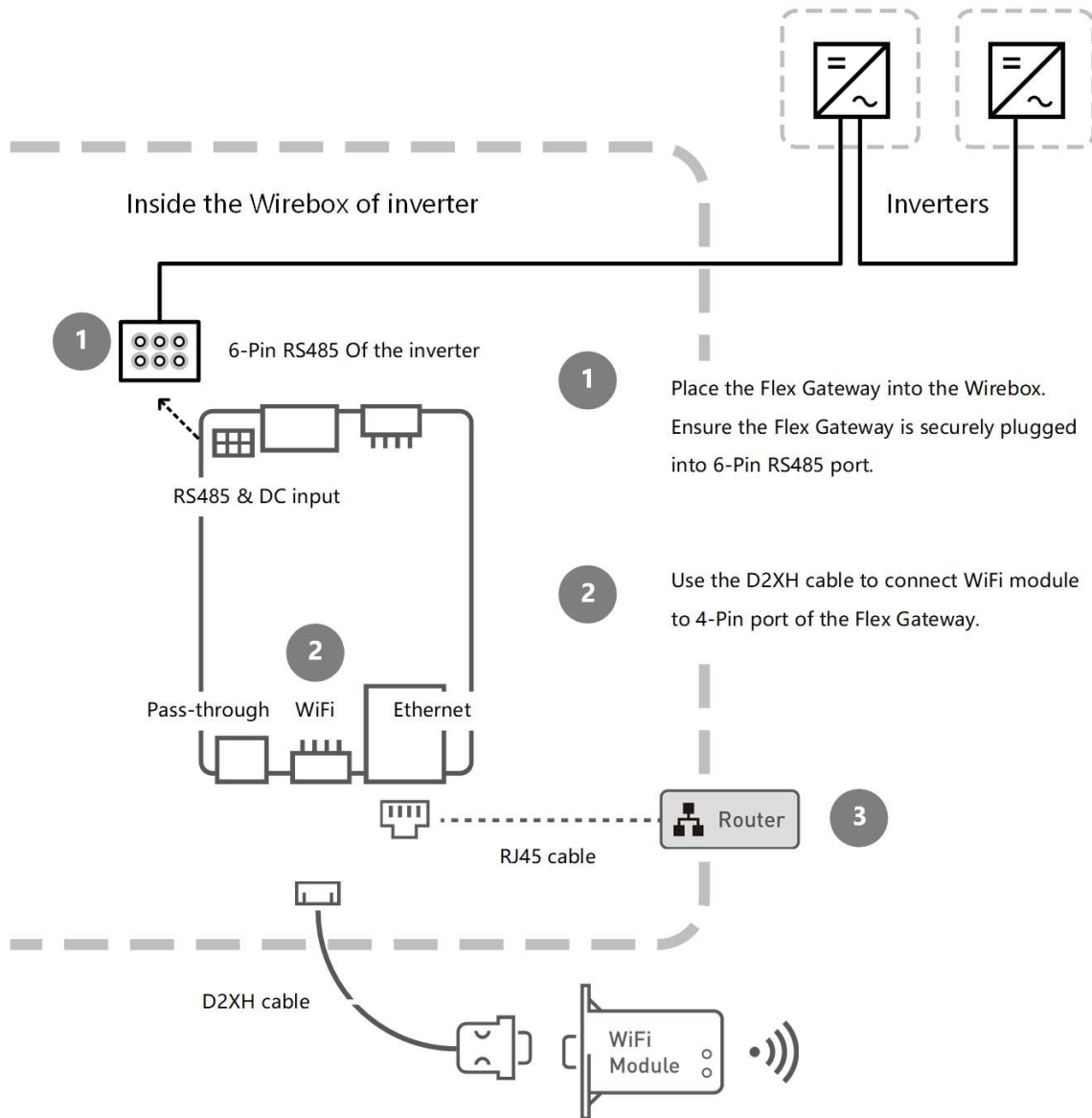


Caution :



3. Installation Options

3.1) Inverter Wirebox

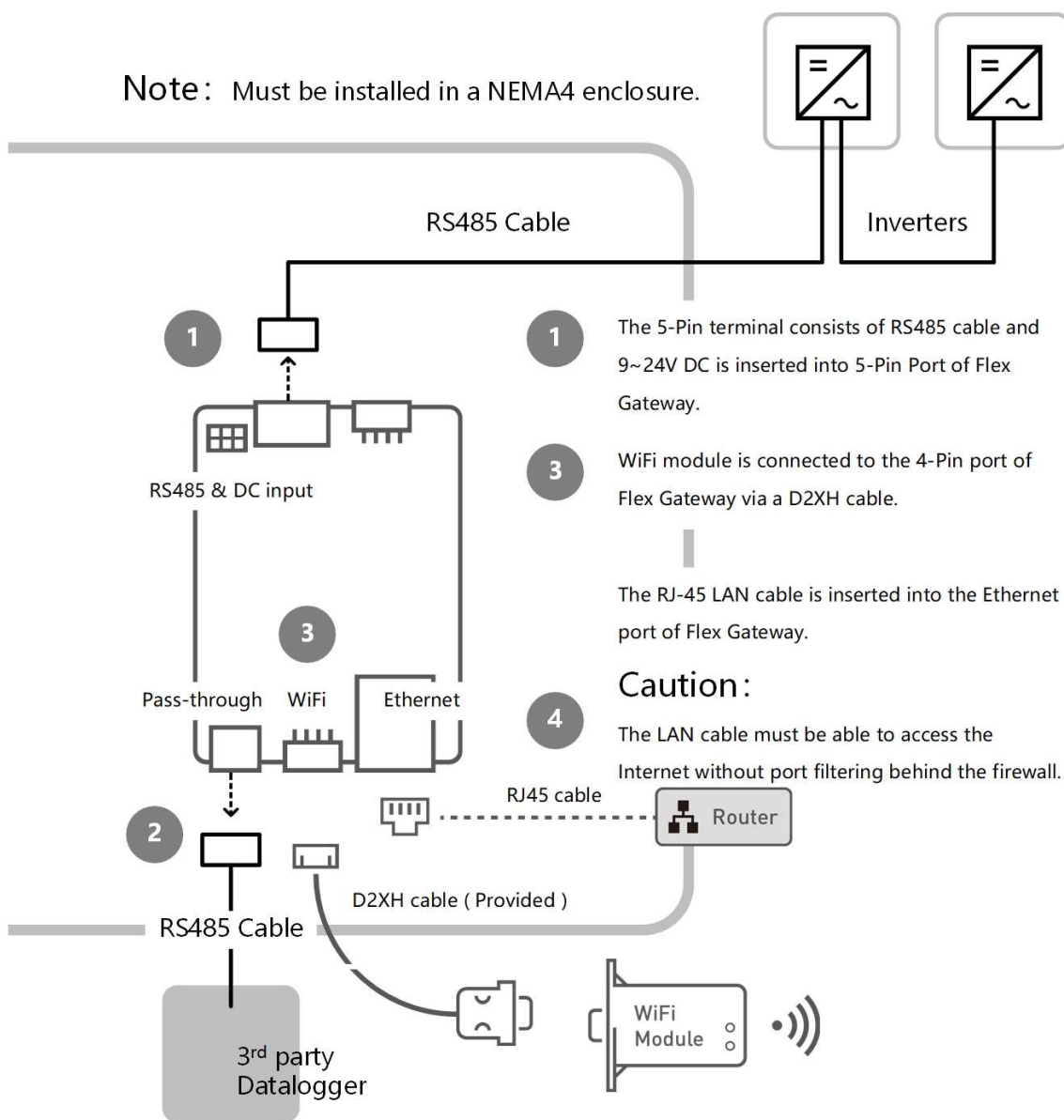


Caution:

The LAN cable must be able to access the Internet without port filtering behind the firewall.

3.2) External Installation

Note: Must be installed in a NEMA4 enclosure.



1 The 5-Pin terminal consists of RS485 cable and 9~24V DC is inserted into 5-Pin Port of Flex Gateway.

3 WiFi module is connected to the 4-Pin port of Flex Gateway via a D2XH cable.

The RJ-45 LAN cable is inserted into the Ethernet port of Flex Gateway.

Caution:

4 The LAN cable must be able to access the Internet without port filtering behind the firewall.

2 Connect the Pass-through port of Flex Gateway to the RS485 port of 3rd party Datalogger according to the indicators shown on Chapter 1.

4. Site Activation

4.1) Download the APP: CPS Connect (Chint Power Systems Connect)

Scan the following QR-code to complete APP download and installation by using the mobile phones that can access the Internet.



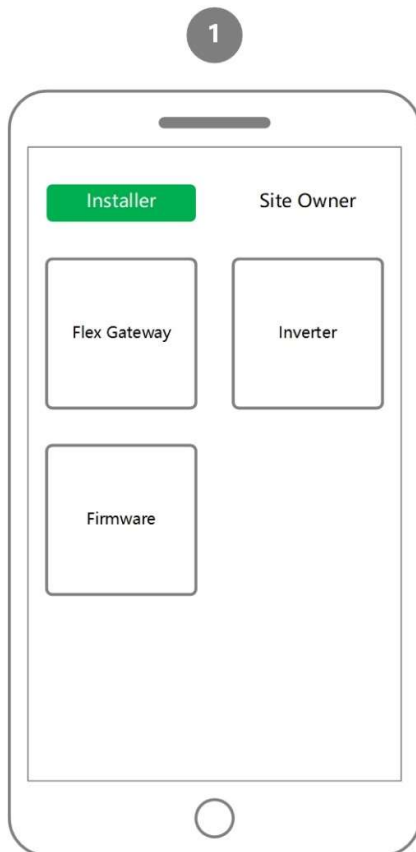
User can also download APP by scanning the QR-code labelled on Inverters, Flex Gateways, and Web Portal.

4.2) Connect the Flex Gateway

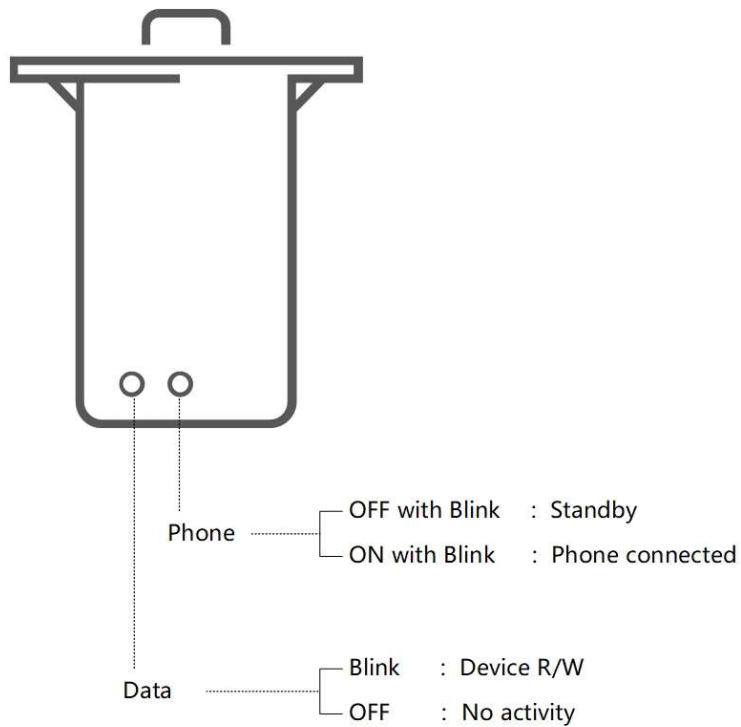
Open the APP – CPS Connect and choose **Flex Gateway**.

Click **Wi-Fi Setting** and switch to Wi-Fi configuration of mobile phone.

Ensure to connect the SSID starts with **CPLK-XXXXXXX**.



4.3) Status of Wi-Fi Module



Caution: During the operation, DO NOT cut off the power or plug the Flex Gateway and WiFi module.

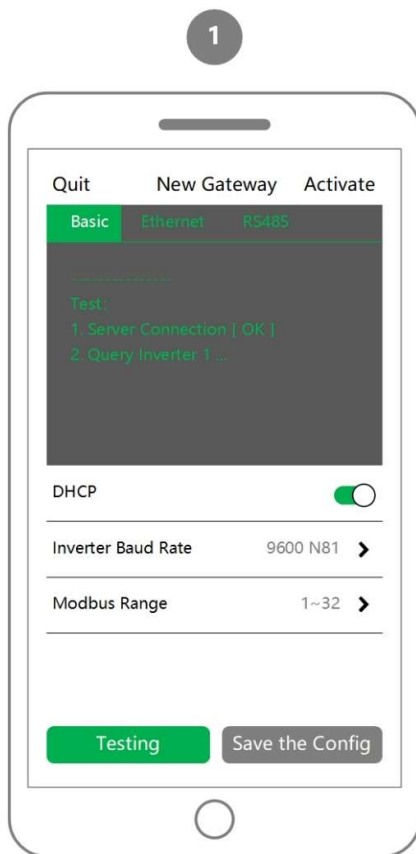
4.4) Test and Save the Configuration

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.

Auto start to scan the address in turn according to Modbus range after the Sever testing.

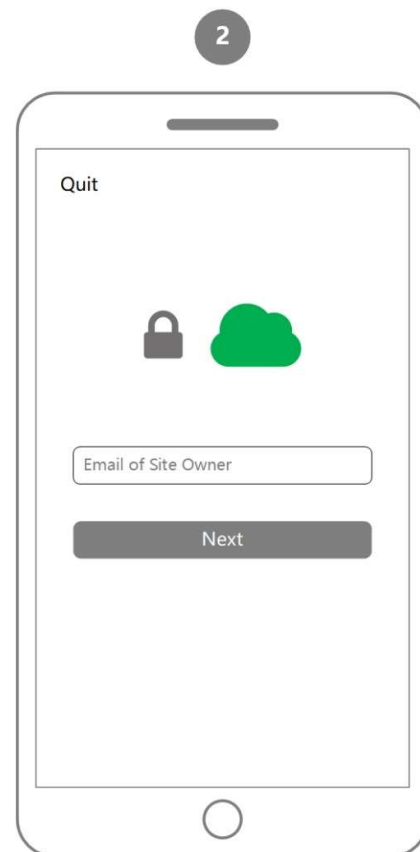
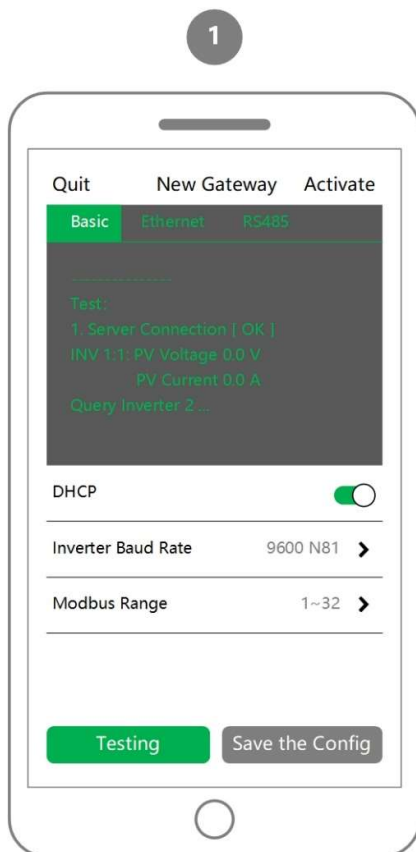


4.5) Activate Flex Gateway

After testing and saving the configuration, the **Activate** button will be enabled.

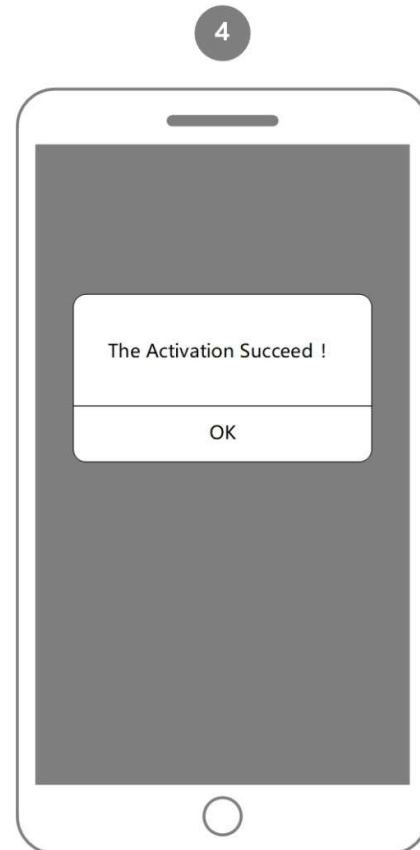
Click **Activate** and move to the next step. Ensure the mobile phone is connected to the Internet during this step.

Input the site owner's email address and click **Next**.



Name a new site or choose an existing site. Name a new Flex Gateway.
Choose the time zone of the site.

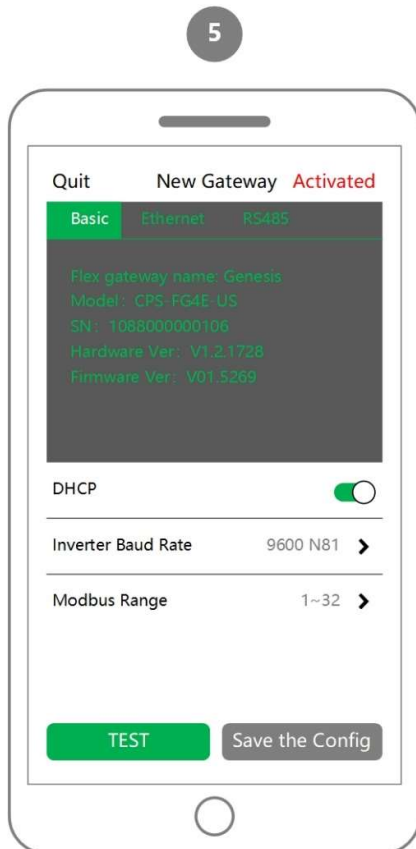
Click **Apply** to proceed with activation.



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 Servers.



5. Hardware Datasheet of Flex Gateway 2.0

Communicate to	
CPS Inverters	Isolated RS485, Max. 70 devices;
3 rd party Data Logger	Isolated RS485;
Cloud Services	Multiple TCP (MQTT);
3 rd party Server	HTTP / HTTPS (Sunspec);
Connections	
RS485 port A	RS485 + DC input, 6 pin;
RS485 port B	RS485 +DC input, 5 pole 3.5 pitch EDG;
	Only one effective at the same time between A and B;
Pass-through	RS485, 3 Pole;
Ethernet	RJ45, 10BaseT / 100BaseT;
WiFi module	4 Pin connector;
Voltage supply	
Input voltage	9 ~ 24 Vdc, Max. 28 Vdc;
Power consumption	< 6 W;
Ambient conditions	
Degree of protection	Installed in inverter wirebox or 3 rd party enclosure;
Ambient temperature	-20 °C to +85°C Natural convection;
Relative humidity	< 85%, Non-condensing;
General data	
Dimensions (W / H / D)	140 mm / 70 mm / 15 mm
Weight	50 g
Status display	LEDs for Activity, Cloud, RS485 and Power;



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