

# **Solar Guardian APP**

# **User Manual**



# About this manual

This manual aims to provide end-users with the EPEVER cloud APP operations and management.

# Symbols Explanation

It means emphasizing and supplementing the descriptions or providing tips to help you solve a problem or save time.

#### Download

Phone system	System version
Android	Applicable to Android 8.0 or above versions
iOS	Applicable to iOS 11.0 or above versions

 The display interfaces involved in this manual are for reference only. Please refer to the real displays.

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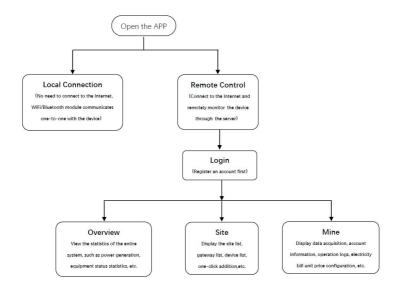
# 1 Overview

Solar Guardian (after this referred to as "APP") provides end-users with a mobile off-grid power station management system. After adding the field device to the cloud platform through APP or WEB, end-users can remotely monitor and configure parameters through the cloud APP. It is convenient for end-users to monitor the devices working status and improve their work efficiency.

#### **Features**

- Overview of system operation, a quick analysis of huge data
- Convenient parameters setting and real-time monitoring
- Modify the device's parameters online
- Support online mode and offline mode, remote monitoring of the device conveniently

# 1.1 Operation Process



### Online mode

**Login**: For details, refer to chapter 2.1.2, log in.

**Overview**: For details, refer to chapter 2.3 Overview.

Site: For details, refer to chapter 2.2 Site.

Me: For details, refer to chapter 2.4 Me.

Local Connection: For details, refer to chapter 3 Local Connection.

# 1.2 Download APP

**iOS version:** Scan the QR code below or search for "Solar Guardian" in the Apple Store to download.



Android version: Scan the QR code below to download.



# 1.3 Initial interface

After successfully downloading and installing the cloud APP, click it, and the following interface is displayed.



Symbol	Instruction	
	1. When connecting to the Internet, if you do not have an account, register a new account on the APP. For APP account registration, please refer to Chapter 2.1.1 Register.	
Login	2. When connected to the Internet, log in to the account, enter the APP main interface, and view real-time device data. For specific operations, please refer to Chapter 2.1.2 Log in.	
	3. When connected to the Internet, if you forget the password corresponding to your account, you can retrieve it through email or mobile phone. For specific operations, please refer to Chapter 2.1.3 Reset Password.	
Local Connection	When not connected to the Internet, the WiFi module and Bluetooth module can communicate point-to-point with the connected device through the "local connection" function. Monitor	
	the real-time status of the device and modify device-related	

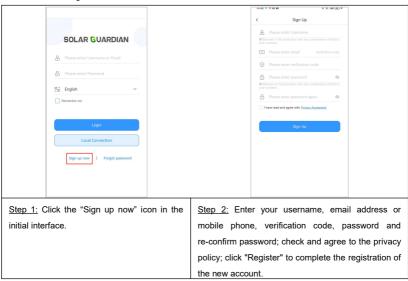
parameters. For specific operations in local connection mode,			
please refer to chapter 3 Local Connection.			

# 2 Online mode

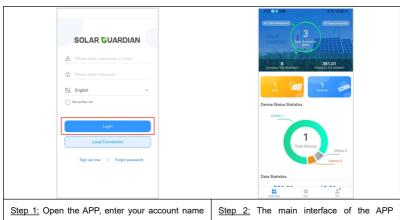
# 2.1 Register& Login

# 2.1.1 Register

End-user can register a new account for free on the cloud APP.



# 2.1.2 Log in



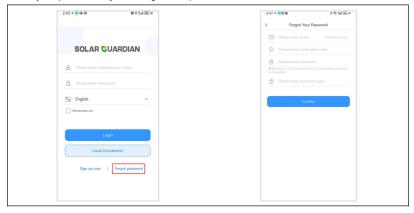
and password; select the language, check "Remember username and password" (so that you can log in quickly next time), and click "Login" to enter the APP main interface.

<u>Step 2:</u> The main interface of the APP includes "Overview, Power Plant, Mine". For detailed introduction, please refer to the chapter <u>2.2 Site</u>, <u>2.3 Overview</u>, <u>2.4 Me</u>.

Note: The data displayed by the APP and the WEB data are synchronized in real time, and the operations performed through the APP will also be synchronized to the WEB.

### 2.1.3 Reset Password

Reset your password by following the steps.



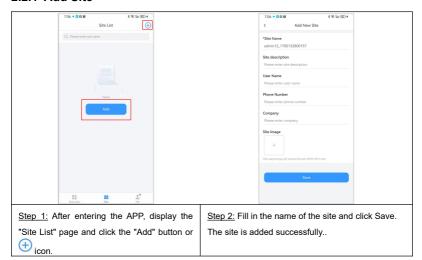
Step 1: Click the	"Forgot passwo	ord" in the initial
interface.		

Step 2: Enter the new password and email, click "Verification Code", then enter the verification code received in the email, click "Confirm ", and the new password is set successfully.

Special tip: If you do not receive the verification code, it is most likely that your email server has rejected the email sending the verification code. Please add solarguardian@epever.com to your email whitelist. If the above doesn't work,please contact solarguardianfeedback@epever.com.

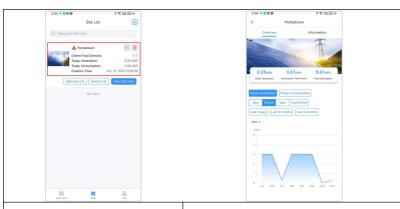
# **2.2 Site**

### 2.2.1 Add Site



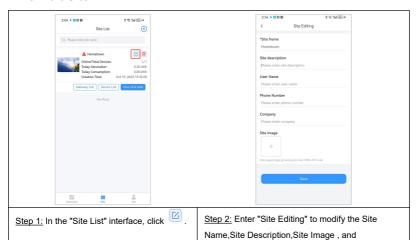
**Note:** The red star mark indicates that it must be filled in. Items not marked with a red star are optional and may not be filled in. If the user does not upload pictures of the power station, the default picture will be displayed. Otherwise, the picture uploaded by the user will be displayed.

### 2.2.2 Site information



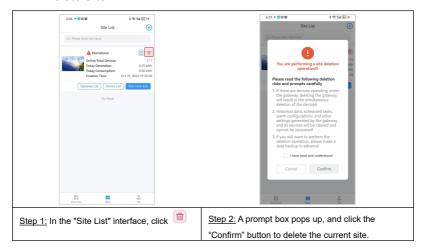
Step 2: Enter the "Overview" of the power station. The "Daily Power Generation" curve is displayed by default. Switch different items to display the power generation or power consumption curves at different times. Switch to "Information". The content displayed on this page comes from the information entered when creating the site.

### 2.2.3 Edit Site



owner-related information. Click Save and the modification is successful.

### 2.2.4 Delete Site

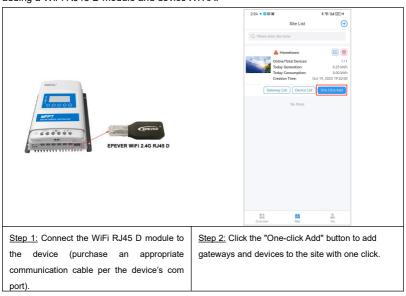


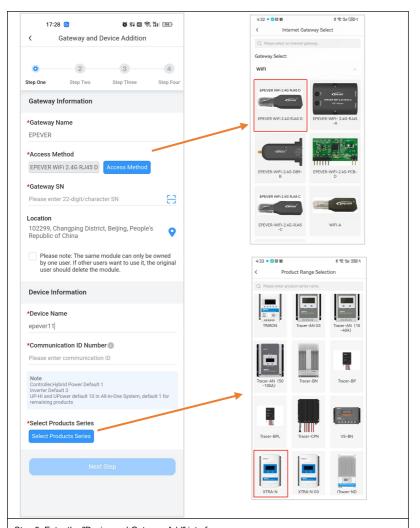
Note: When deleting a site, the data of all gateways and all devices under the power station will be deleted. Please use the deletion operation with caution.

### 2.2.5 One Click Add

#### 2.2.5.1 Add gateways and devices

When connected to the Internet, devices connected to WiFi, RTU or TCP modules can be added to the cloud platform with one click through the APP. The following is an example of adding a WiFi RJ45 D module and device XTRA.





Step 3: Enter the "Device and Gateway Add" interface.

- 1. Fill in the gateway related information.
- (1) Gateway name: The APP generates a default name, which the user can modify to any desired name.
- (2) Access method: The user selects the correct gateway according to the module model. Selecting

an error will cause communication to fail. In the example, choose EPEVER WiFi 2.4G D.

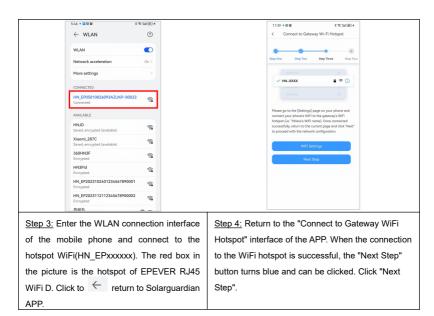
- (3) Gateway SN: Get the 22-character SN by scanning the QR code on the label or manually entering it
- (4) Location: On the map, select the geographical location where the gateway is located. It is not required.
- (5) Information prompt: Check the information prompt, and the same gateway can only be used by one account.
- 2. Fill in the relevant information of the device.
- (1) Device name: The APP generates a default name, which the user can modify to any desired name
- (2) Device communication ID: Fill in the correct communication ID according to the user device, otherwise the device cannot go online. The device is a controller and should be filled in with 1.
- (3) Product series: Select the correct product series according to the user's equipment, otherwise the equipment cannot communicate normally. Select XTRA-N here.
- 3. Next step
- (1) If the "Next" button is grayed out and cannot be clicked. Please check whether the information filled in is correct or whether the required fields are completed.
- (2) If the gateway you added is a WiFi module, click "Next" to enter Network Configuration (refer to 2.2.5.2 Network Configuration). Otherwise, click "Next" to complete the one-click addition of gateways and devices.

- If "Access Method" selects EPEVER WIFI RJ45 A, EPEVER WIFI RJ45 B, EPEVER TCP RJ45 A, scan the QR code or manually obtain the RTU ID, and the system will automatically obtain the IMEI. If "Access Method" selects EPEVER WIFI RJ45 D, EPEVER TCP 306, EPEVER RTU 4G F, scan the QR code or enter the SN manually.
- If you choose "Scan QR code to add", please authorize the camera function and scan the QR code on the gateway device. The system automatically verifies the gateway SN; only the gateway added to the production management system can be successfully added to the cloud platform. If the prompt "Gateway already exists" is displayed, please contact technical support for help.
- About the device communication ID, if the device is an inverter, the default ID is 3; if the
  device is UP HI or UPower, the default ID is 10; for other devices, the default ID is 1. If the user
  has modified the device communication ID, please fill in the actual ID.

#### 2.2.5.2 Network Configuration



- If the user uses an Android phone, click the icon to display the WiFi
  searched by the phone. If the user uses an iPhone, they need to manually enter
  the WiFi name.
- If the user needs to check or verify whether the WiFi password is correct, he or she can click the icon to enter the password in plain text.
- If the WiFi signal in the environment is weak or there is no network, you can click "Skip" to complete the network configuration in the gateway details. For details, refer to 2.2.6.3 Gateway Details. If the WiFi module has not completed network configuration and cannot establish a connection with the cloud platform, the WiFi module will not be able to go online.



- If the mobile phone does not turn on GPS positioning and allows the APP to obtain location permission, otherwise the mobile phone cannot search for the hotspot of the WiFi module.
- The hotspot network name of EPEVER WIFI RJ45 A/B/C is such as HN\_xxxxxx, and the hotspot network name of EPEVER WIFI RJ45 D is such as HN\_EPxxxxxx.
   When connecting to the hotspot of the WiFi module for the first time, the default password is: 12345678.
- WiFi hotspot network does not have Internet function. When the phone asks
  whether to allow or trust the network, please allow or trust it. Otherwise, the
  connection to the WiFi hotspot will fail and you will be unable to proceed to the
  next step.



Step 5: Enter the " Switching Mobile Network " interface and click "Network Switch".

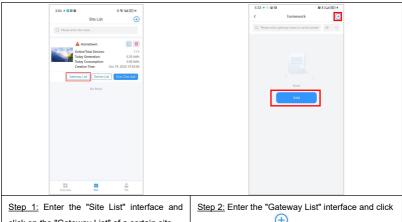
Step 6: Enter the "WLAN" interface of the mobile phone, switch the WiFi hotspot network connected to the mobile phone to HNJD (a network with Internet functions), and then connect to the server to obtain data. Click to return to Solarguardian APP.



<u>Step 7:</u> Return to the "Switching Mobile Network" interface of the APP and click "Finish". Complete the entire process of WiFi module network configuration.

# 2.2.6 Gateway List

### 2.2.6.1 Add Gateway



click on the "Gateway List" of a certain site.

the "Add" button or icon.



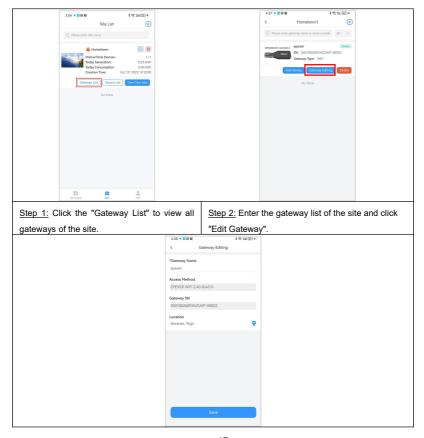
Step 3: Fill in the gateway related information.

- (1) Gateway name: The APP generates a default name, which the user can modify to any desired
- (2) Access method: The user selects the correct gateway according to the module model. Selecting an error will cause communication to fail. In the example, choose EPEVER WiFi 2.4G D.

- (3) Gateway SN: Get the 22-character SN by scanning the QR code on the label or manually entering it.
- (4) Location: On the map, select the geographical location where the gateway is located. It is not required.
- (5) Information prompt: Check the information prompt, and the same gateway can only be used by

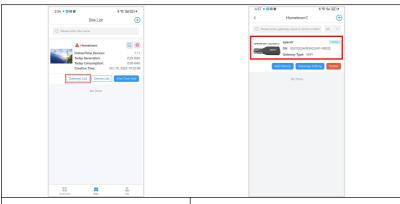
Click "OK" to complete adding the gateway. If the gateway is a WiFi module, it will enter the network configuration process. Please refer to 2.2.5.2 Network Configuration.

### 2.2.6.2 Edit Gateway



Step 3: In the "Gateway Edit" interface, you can modify the gateway name or location information, but the access method and SN cannot be modified. Click "Save" to complete editing the gateway.

### 2.2.6.3 Gateway Details



<u>Step 1:</u> Enter the "Site List" interface and click on the "Gateway List" of a certain power station.

<u>Step 2:</u> Enter the "Gateway List" interface and click on the red box area.



Step 3: Enter the "Gateway Details" interface to display gateway related information. After the WiFi module network configuration is completed, the WiFi name and password of the router are displayed. Click the correction to switch to displaying the password in plain text to verify the correctness. Click "Configure Gateway WiFi" to enter the network configuration process. For details, refer to 2.2.5.2 Network Configuration. This completes the configuration of the WiFi module or the correction of the configuration information.

#### 2.2.6.4 Add Device For Gateway



Step 1: Enter the "Site List" interface and click on the "Gateway List" of a certain power site.

<u>Step 2:</u> Enter the "Gateway List" interface and click "Add Device".



Step 3: Enter the "Add Device" interface and fill in the device related information.

- (1) Device name: The APP generates a default name, which the user can modify to any desired name.
- (2) Device communication ID: Fill in the correct communication ID according to the user device, otherwise the device cannot go online.
- (3) Product series: Select the correct product series according to the user's equipment, otherwise the equipment cannot communicate normally

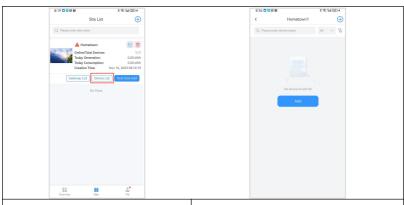
Click "Save" to complete adding the device.

### 2.2.6.5 Delete Gateway



### 2.2.7 Device List

#### 2.2.7.1 Add Device



<u>Step 1:</u> Enter the "Site" interface and click on the "Device List" of a certain site.

Step 2: Enter the "Device List" interface and click the "Add" button or icon.



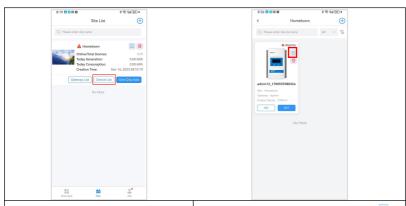
Step 3: Enter the "Device Add" interface and fill in the relevant information.

- (1) Device name: The APP generates a default name, which the user can modify to any desired name.
- (2) Device communication ID: Fill in the correct communication ID according to the user device, otherwise the device cannot go online.
  - (3) Gateway: Select the gateway to which the device is connected.

(4) Product series: Select the correct product series according to the user's equipment, otherwise the equipment cannot communicate normally.

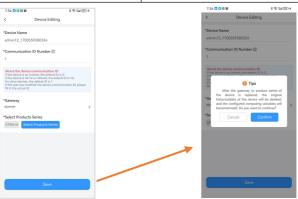
Click "Save" to enter the "Device List" interface, displaying the latest added devices.

#### 2.2.7.2 Edit Device



<u>Step 1:</u> Enter the "Site" interface and click on the "Device List" of a certain site.

Step 2: Enter the "Device List" interface, click on a device.



Step 3: Enter the "Device Editing" interface to edit the device name, communication ID, gateway and product series.

Click "Save". If the user modifies the product series, the data of the original device will be deleted. Users are asked to export device data in advance, back it up or add new a device.

#### 2.2.7.3 Device Details

Take XTRA as an example to show the data and parameter settings of the device. The

actual content displayed by the APP varies depending on the device.



<u>Step 1:</u> Enter the device list interface and click on any device icon.

Step 2: Enter the device data interface to view real-time information such as device configuration, battery, and load voltage, current, power, and status; set battery, load, and other parameters.

### 2.2.7.3.1 Configuration Overview



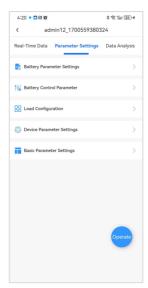
- Refresh: In the configuration, the APP automatically obtains data every ten minutes. Click "Refresh" to obtain the latest data in real time.
- > Switch: In the configuration, click the switch button to switch the load remotely. If the device is a controller, the switch button is only effective when the load mode is manual mode.

#### 2.2.7.3.2 Real-Time Data



- Energy Information: Statistics on power generation and electricity consumption.
- PV Information: Current, voltage, power and other data of photovoltaic modules.
- Battery Information: Battery current, voltage, charging state, SOC and other data.
- Load Information: Load power, current, voltage, operating status and other data.
- Device Information: Equipment temperature, fault information and other data.

#### 2.2.7.3.3 Parameters Settings



- Batter Parameter Settings: Set battery capacity, battery temperature upper and lower limits, increase charging time, etc.
- Battery Control Parameter: Set the battery voltage point, such as low voltage disconnection voltage, boost recovery voltage, etc.
- Load Configuration: Set load mode: manual mode, light control mode, etc.
- Device Parameter Settings: Equipment over-temperature settings, equipment time settings, etc.
- Basic Parameter Settings: Turn loads on or off, restore, etc.
- Operate: Configuration files can be imported to configure the device,
   configuration files of the device can also be exported to configure other devices,
   and parameter delivery records can also be viewed.
- For parameter interpretation and setting rules, please refer to the device manual.

### 2.2.7.3.4 Data Analysis

The data analysis interface displays real-time data curve graphs and equipment status graphs. Both graphs can display up to 3 parameters at the same time.



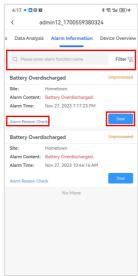
- Set Time: By default, the curve 24 hours before the current time is displayed. Click

  | 2023-11-22 1656418 2023-11-22 1656418 . the time can be customized.
- Select parameters: By default, real-time data is displayed, and the curve of the first parameter of the first group is displayed. Click is to enter the parameter list, select parameters, and select up to 3 parameters at the same time.

View data on the curve: Click a point on the curve to display the value and time corresponding to the changed point.

#### 2.2.7.3.5 Alarm Information

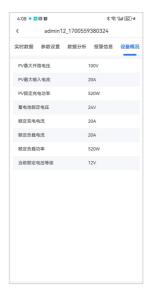
The alarm information interface displays the alarm information of all devices in chronological order.



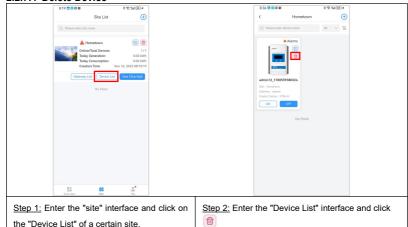
- Filter: The list displays unprocessed alarm information by default. You can enter parameter names to filter alarm information. You can also click the "Filter" icon and select the alarm status to filter the alarm information.
- Deal: Click the "Process" button, in the pop-up "Alarm Processing" prompt box, select the processing status and fill in the processing results; click "Confirm", the alarm information status becomes processed.
- Alarm Reason Check: Check the fault cause prompt of this alarm.

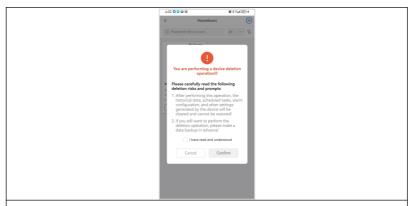
#### 2.2.7.3.6 Device Overview

The device overview interface displays the rated parameters of the device.



#### 2.2.7.4 Delete Device





Step 3: A prompt box will pop up, click "Confirm" to delete the device, the device data will also be deleted, please operate with caution.





Note: If the device is a controller, the load switch is only effective when the load mode is manual control.

### 2.3 Overview

Click the navigation bar at the bottom of the APP to enter the "Overview" interface. The overview summarizes today's power generation, current month's power generation, annual power generation, cumulative power generation/consumption, emission reduction and conversion income of all power stations under the current user; the total number of power stations, the total number of equipment and power station status statistics; the day and month of all power stations Bar graph information of annual power generation/power consumption. It is convenient for users to intuitively understand the important parameters of the current system.



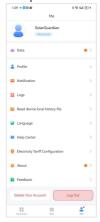
Explanations for the interface parameters are shown as follows:

- Today (KWh): The sum of power generated by all devices today (take the latest historical record).
- This Month (KWh): The sum of power generated by all devices this month (take the latest historical record).
- This Year (KWh): The sum of power generated by all devices this year (take the latest historical record).
- Sites: Total sites under the current account.
- Devices: Total devices under the current account.
- Total Generation (KWh): The total power generated by all devices under the current account (take the latest historical record).
- Total Consumption (KWh): The total power consumed by all devices under the current account (take the latest historical record).
- CO<sup>2</sup> Emissions Saved (Kg): The sum of power generated by all devices today (take the latest historical record)\*0.997.
- Coal Saved (Kg): The sum of power generated by all devices today (take the latest historical record)\*0.4.
- Electricity Statistics-Day: Electricity statistics of Power Generation and Power
  Consumption from 00:00 to 23:59, showing data for the last five days. The current
  day's electricity statistics are the sum of the latest historical record from 00:00 to the
  current time.
- Electricity Statistics-Month: Electricity statistics of Power Generation and Power
  Consumption from 00:00 on the 1st of each month to 23:59 on the last day of the
  month, showing data for the last four months. The current month's electricity statistics
  are the sum of the latest historical record from 00:00 on the 1st of each month to the
  current time.
- Electricity Statistics-Year: Electricity statistics of Power Generation and Power
  Consumption from 00:00 on January 1st to 23:59 on the last day of the year, showing
  data for the last three years. The current year's electricity statistics are the sum of the
  latest historical record from 00:00 on January 1st to the current time.
- Conversion income: The default unit is RMB, the default electricity cost is 1 yuan/kWh, and the income generated by the power generation is calculated.
- Local connection: Click to enter the local connection mode to monitor the device.

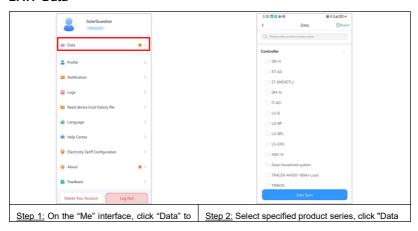
 Lora management: Click to enter the Lora system and manage the Lora project.

## 2.4 Me

Click the "Me" icon on the main interface of the APP to enter the personal center page. Provide users with data acquisition, personal information management, announcements and notifications, log management, language settings, help center, electricity bill and electricity price configuration and other operations.

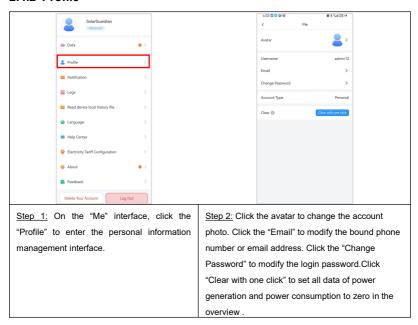


#### 2.4.1 Data



enter the data sync interface.	Sync," Updated communication protocols for
	product families. Click Reportin the upper-right
	corner to check the synchronized records.

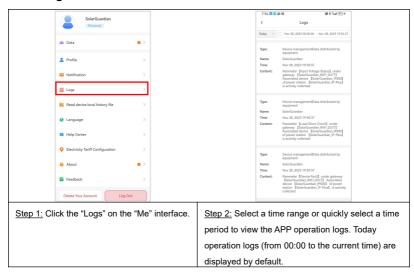
### 2.4.2 Profile



### 2.4.3 Notification

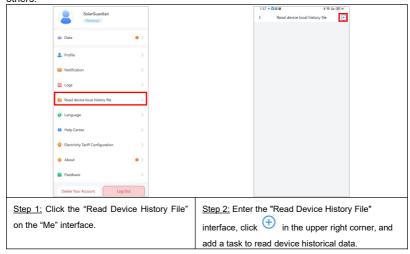
On the "Me" interface, click "Notification" to check the notification details.

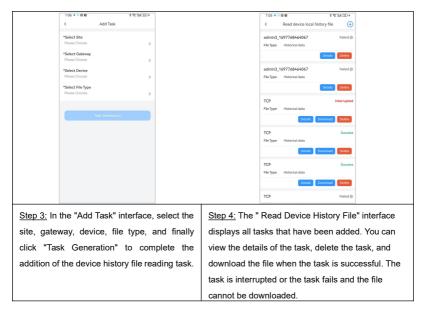
# 2.4.4 Logs



# 2.4.5 Read Device History File

Get the data on the device and download the files to your phone for viewing or sharing with others.





# 2.4.6 Language

On the "Me" interface, click the "Language" to switch the APP interface display to English or Chinese

# 2.4.7 Help Center

On the "Me" interface, click the "Help Center". You can view relevant operating instructions documents or videos of the Solarguardian platform.

# 2.4.8 Electricity Tariff Configuration

On the "Me" interface, Click "Electricity Tariff Configuration" to set four electricity billing currencies: RMB, US dollars, pounds, and euros. You can modify the default electricity price and customize the electricity price.

### 2.4.9 About

On the "Me" interface, click the "About". You can check the current version of Solarguardian APP and update the APP.

# 2.4.10 Feedback

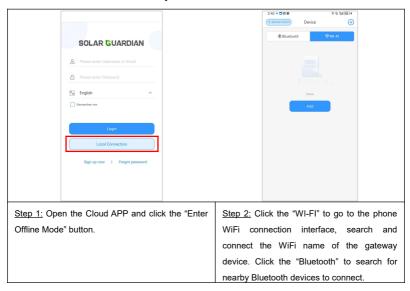
On the "Me" interface, click the "Feedback" to pop up a feedback prompt. Click Confirm to upload the APP's abnormal information to the server to locate the problem.

# 3 Local Connection

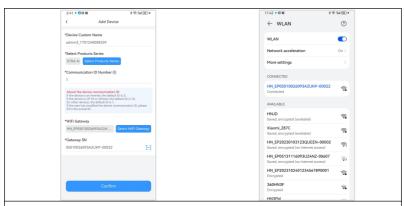
When not connected to the Internet, point-to-point communication between the APP and the WiFi/Bluetooth module can be achieved through "local connection". However, the data collected by the module cannot be uploaded to the cloud, and the real-time status of the device can only be monitored through the mobile phone.

<u>Applicable:</u> EPEVER WiFi module, EPEVER Bluetooth module (Note: The following takes the operation of the WiFi module as an example).

# 3.1 Local Connection Operation Process



- ① In the local connection mode, click the finance control in the upper left corner to jump to the login page and enter the remote control mode.
- ② If you find an error in device data during local connection, please log in to the APP and update the communication protocol of the product series. For detailed operations, see <u>2.4.1</u> Data.



Step 3: Enter the "Add Device" interface.

- 1. Fill in the relevant information of the device.
- (1) Device name: The APP generates a default name, which the user can modify to any desired name.
- (2) Product series: Select the correct product series according to the user's equipment, otherwise the equipment cannot communicate normally.
- (3) Device communication ID: Fill in the correct communication ID according to the user device, otherwise the device cannot go online.
- 2. Connect to the hotspot of the WiFi module

Turn on the WiFi switch of the mobile phone, connect the mobile phone to the gateway WiFi (WIFI name is HN\_EPxxxxxx, password: 12345678) and return to the APP after the connection is successful.

3. Click "Confirm" to complete the connection between the device and the WiFi module.

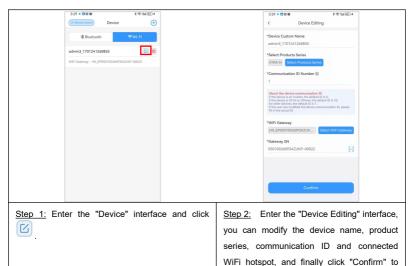
- ① Please turn on the GPS positioning of your phone and allow the APP to obtain location permissions.
- ② The WiFi module hotspot does not have Internet capabilities, please allow your phone to connect to the network.



<u>Step 4:</u> Enter the equipment data interface to display equipment configuration, real-time data, equipment overview, and curve analysis. For parameter settings and device overview, refer to <u>2.2.7.3 Device Details</u>.

# 3.2 Device

## 3.2.1 Edit Device



complete the editing.

#### 3.2.2 View Device Data



#### 3.2.3 Delete Device



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