

User Manual

WatchPower App

Management Software for Inverter

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1. Introduction

WatchPower is an android monitoring application which can monitor off-grid inverters via Bluetooth interface.

The major functions of this APP:

- Delivers device status during normal operation.
- Allows to configure device setting after installation.
- Notify users when a warning or alarm occurs.
- Allows users to record device data and event to log.

2. WatchPower App Install and Uninstall

2.1. System Requirement

- Mobile phone with Android 4.0 above.
- Mobile phone with Bluetooth standard.

2.2. Software Install

You can search "WATCHPOWER" in Google play, and then install it step by step.

2.3. Software Uninstall

It's easy to uninstall like any other App.

3. Initial Operation

3.1. Startup

The Installer will leave a shortcut icon called "WatchPower" on your mobile phone. Refer to Diagram 3-1. Simply click the shortcut icon. Then, it will start the software. If the bluetooth is disabled, a dialog box will pop up to remind you to enable the bluetooth. Refer to below diagram 3-2.



Diagram 3-1

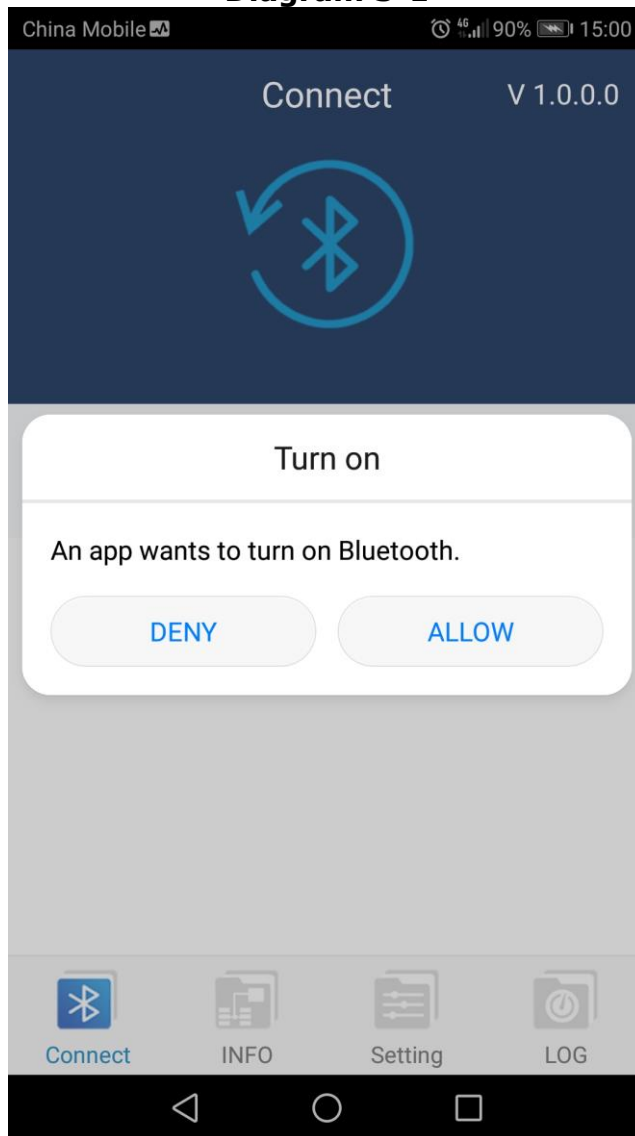


Diagram 3-2

3.2. Connection

Step 1: Search the inverter

Search the inverter by clicking Bluetooth icon (A) as shown in Diagram 3-3. Then, it will list down all devices with Bluetooth in area B.

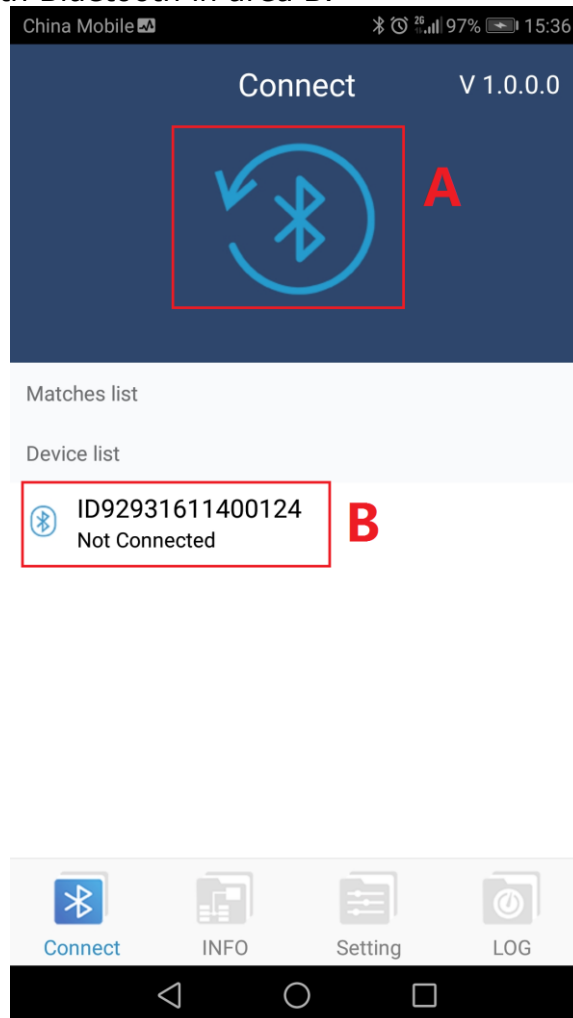


Diagram 3-3

Step 2: Pair mobile phone to the inverter via Bluetooth

Click the inverter you'd like to connect with in device list (area B) as shown in Diagram 3-3. Then, it will pop up pairing request as shown in diagram 3-4.

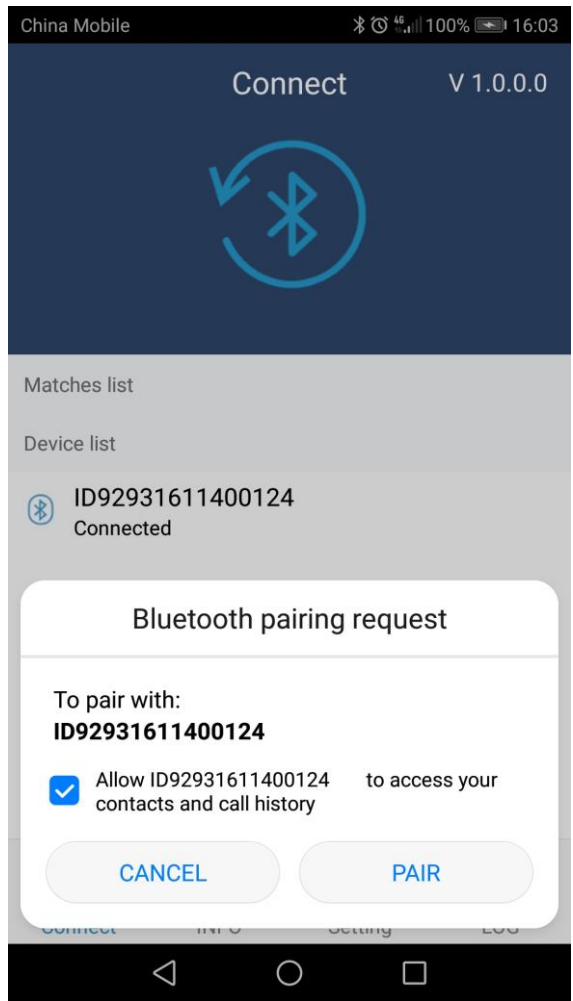


Diagram 3-4

Please click checkbox if it's applicable and "PAIR" icon to allow paring. Then, it's request to enter the password to access. Refer to diagram 3-5. The default password is "123456".

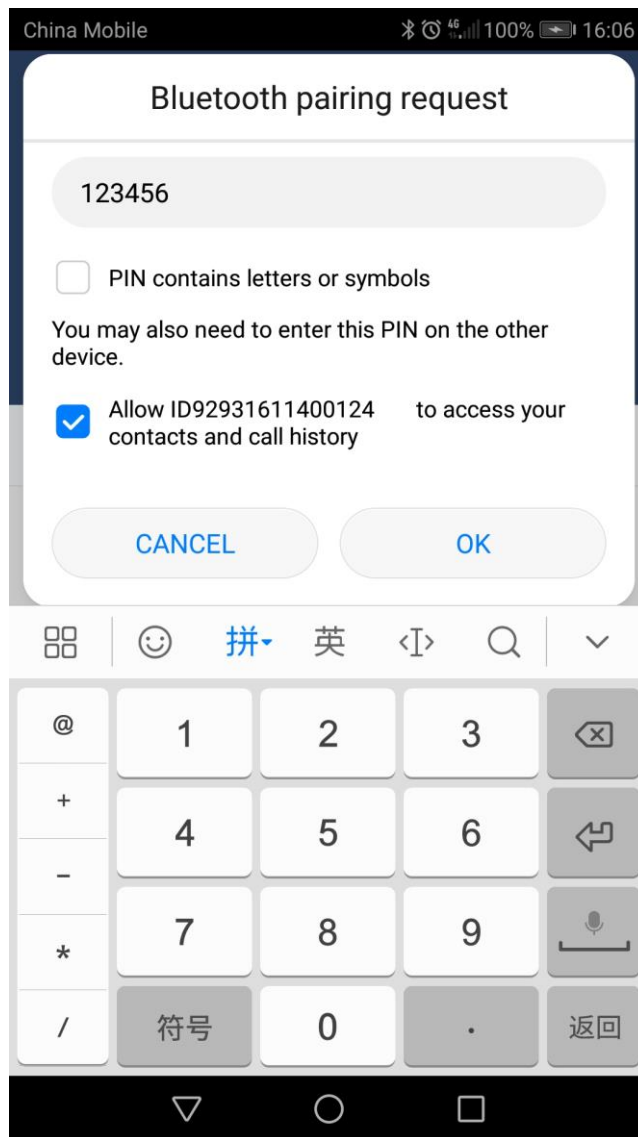


Diagram 3-5

4. Main Screen & INFO

In main screen, it is divided into two sections: power flow chart and information data area. You also can click "INFO" on the bottom function icon to access main screen.

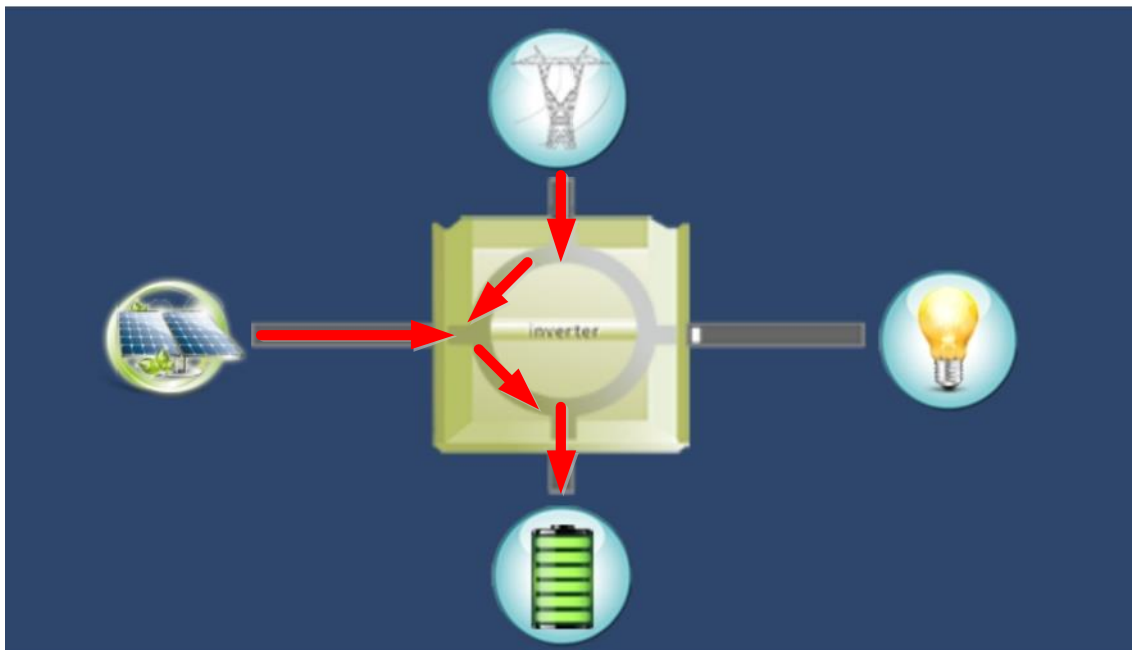
4.1. Power Flow

On the top of screen, there is a dynamic power flow chart to show live operation. It contains five icons to present PV power, inverter, load and the utility.

- Power on and Standby mode: Inverter won't power the load until "ON" switch is pressed. Qualified utility or PV source can charge battery in standby mode.



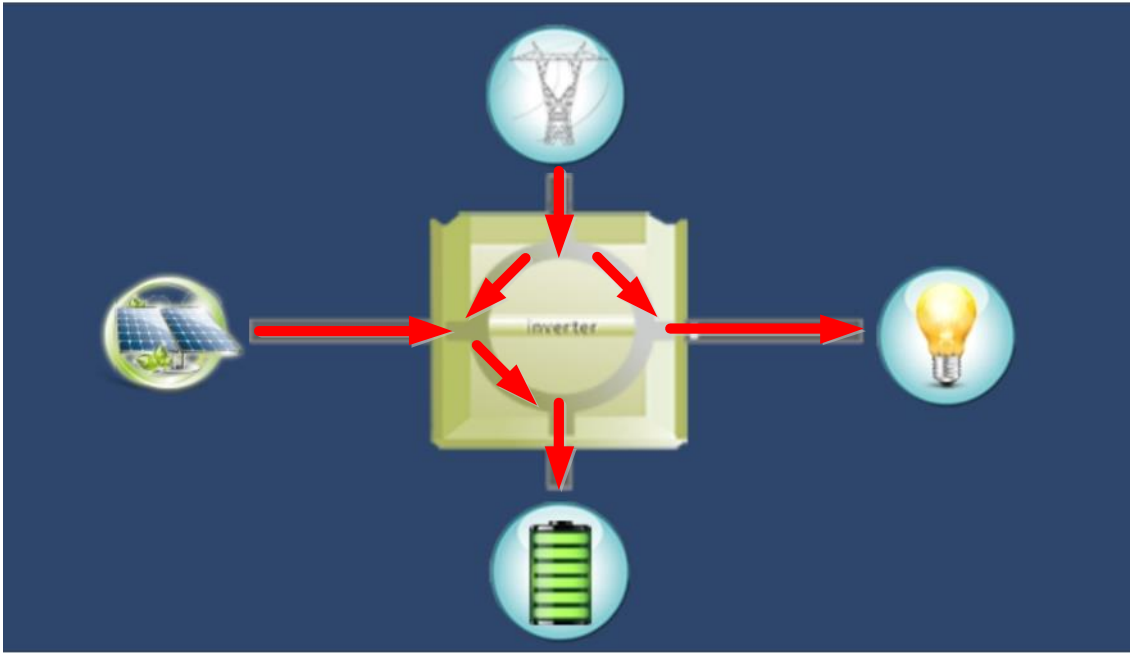
Power on Mode



Standby Mode

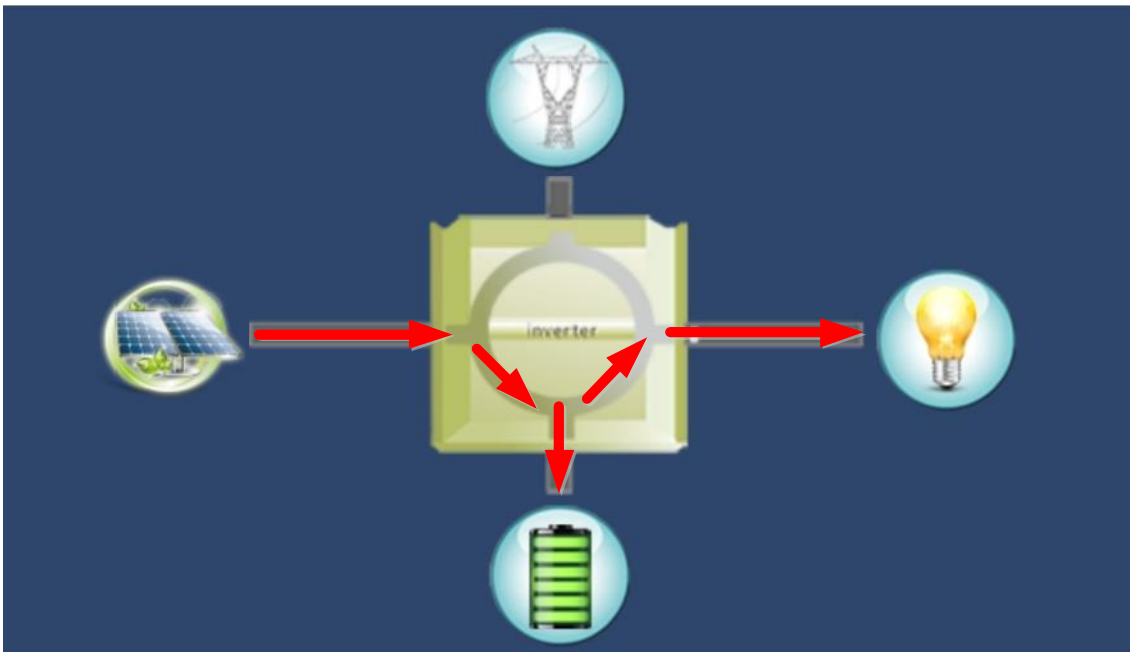
- Line mode: Inverter will power the load from the utility. Qualified utility or PV

source can charge battery.



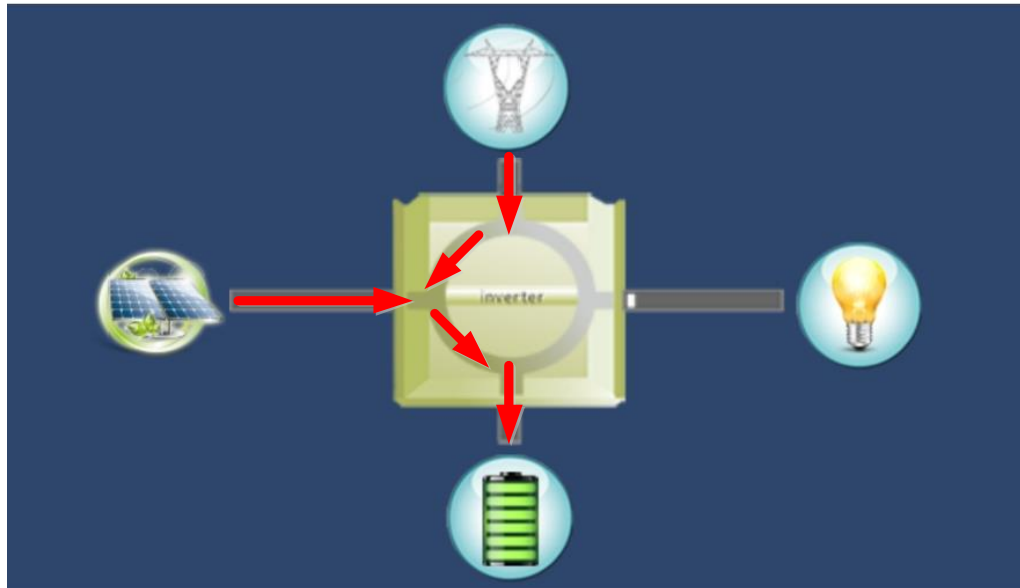
Line Mode

- Battery mode: Inverter will power the load from battery or PV panel. Only PV source can charge battery.



Battery Mode

- Fault mode: Some faults occurred in inverter and no power output is generated from inverter. Qualified utility or PV source still can charge battery.



Fault Mode

4.2. Information Data Area

There are three information data listed here: Basic information, Product information and Rated information.

Basic Information

It displays basic information of the inverter, including AC voltage, AC frequency, PV input voltage, Battery voltage, Battery capacity, Charging current, Output voltage, Output frequency, Output apparent power, Output active power and Load percent. Please slide to see more basic information.

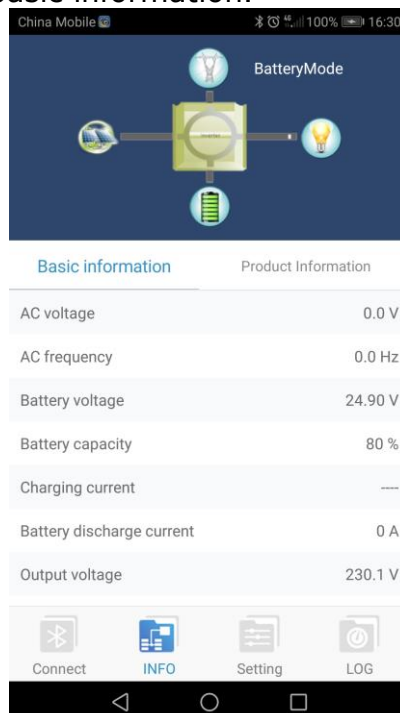


Diagram 4-1

Product information

Product information displays Model type (Inverter type), Main CPU version, Bluetooth CPU version and secondary CPU version.

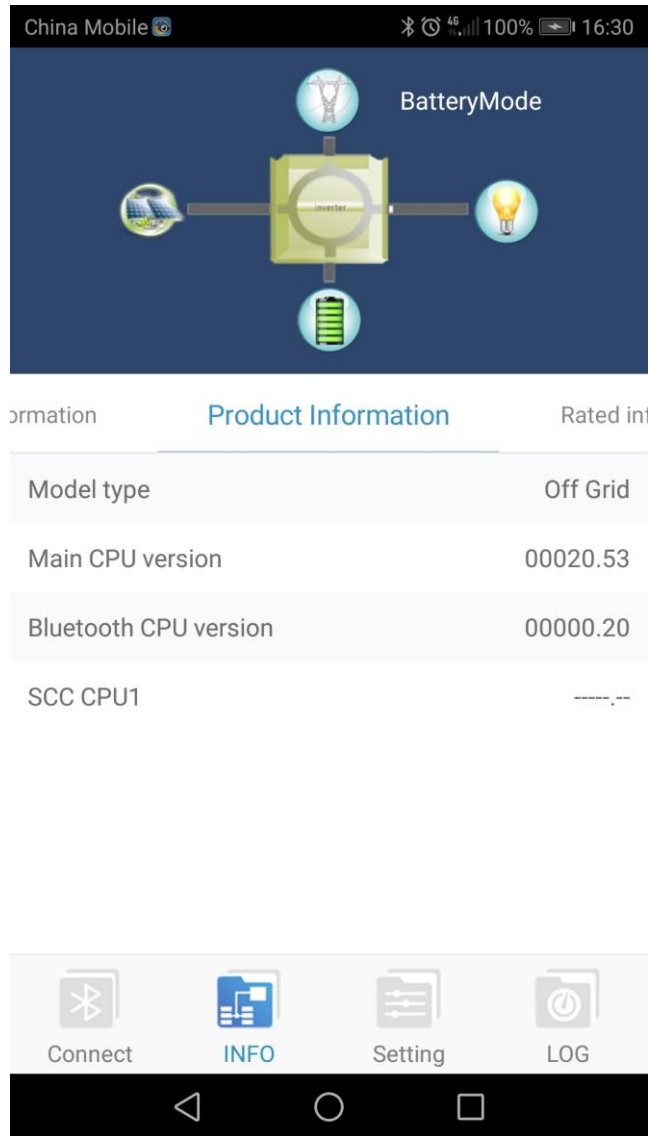


Diagram 4-2

Rated information

Slide left to see "Rated information" tape. Rated information displays information of Nominal AC voltage, Nominal AC current, Rated battery voltage, Nominal output voltage, Nominal output frequency, Nominal output current, Nominal output apparent power and Nominal output active power. Please slide up to see more rated information.

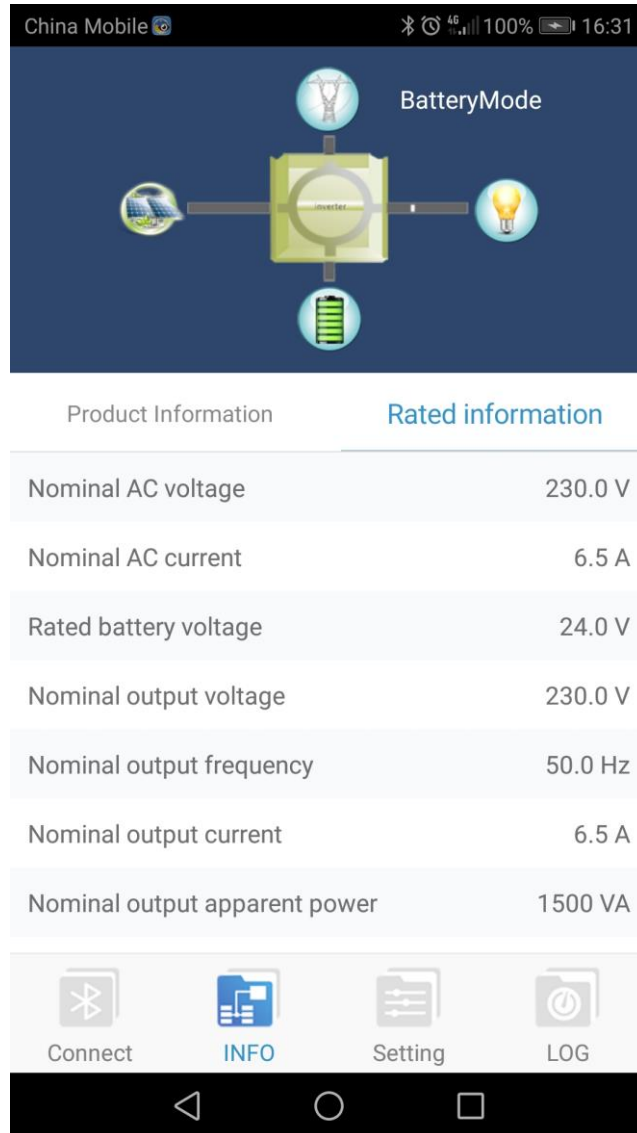
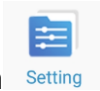


Diagram 4-3

4.3. Setting

This page is to activate some features and set up parameters for inverters.

Simply click shortcut icon  on the bottom screen. Refer to Diagram 4-12.

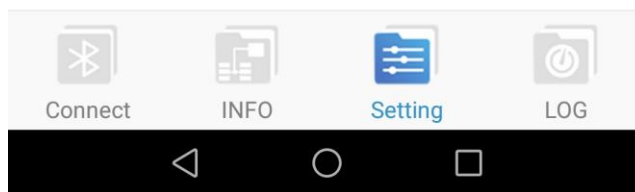
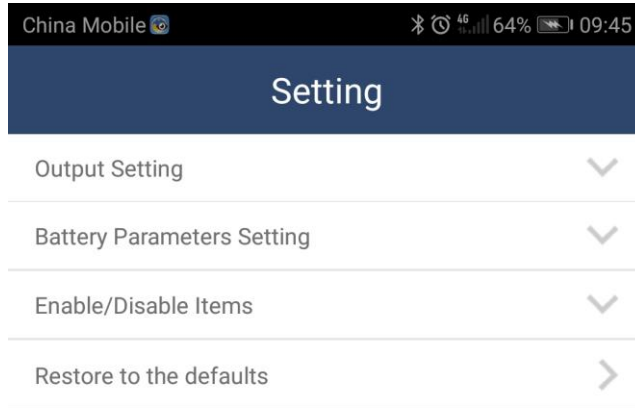


Diagram 4-12

NOTE: This screen may be different for different model type of inverter.

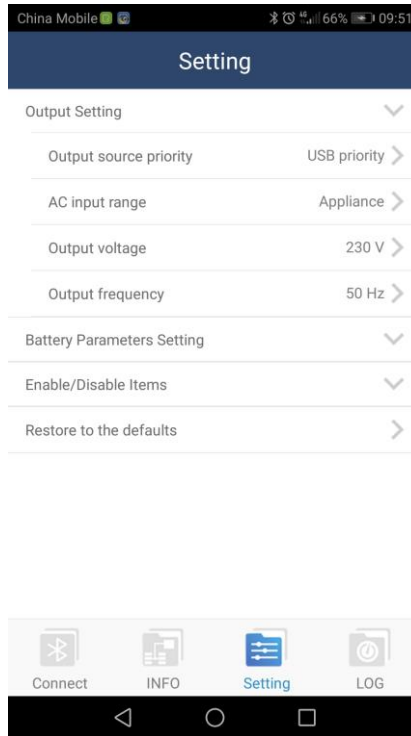
Step 1 Activate/Shut down functions by clicking “Enable” or “Disable” button. Some parameters are allowed to change the numbers by clicking arrows or modify the numbers directly in the number column.

Step 2 Click “Apply” button to save the settings. Each function setting is saved by clicking each “Apply” button.

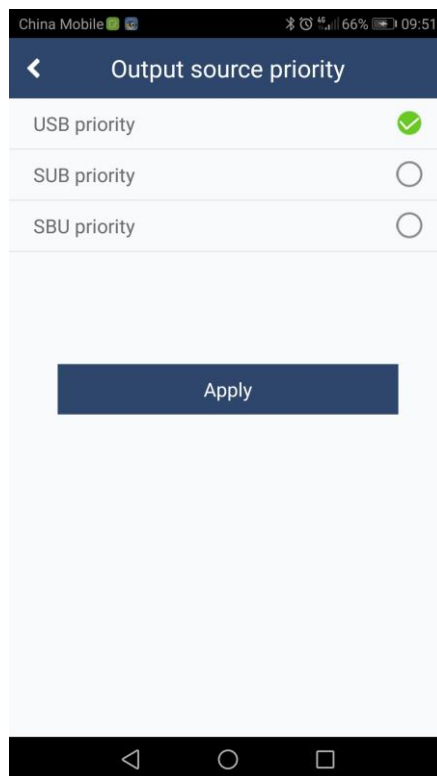
Output setting

The output setting includes 4 items: Output source priority, AC input range, Output

voltage and Output frequency.

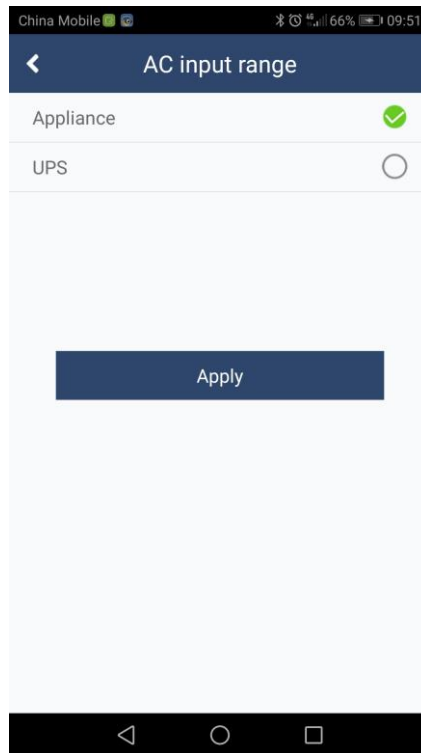


- Output source priority: Click arrow to enter output source priority setting page. There are 3 options: USB, SUB and SBU priority. See product manual for the details of these options.

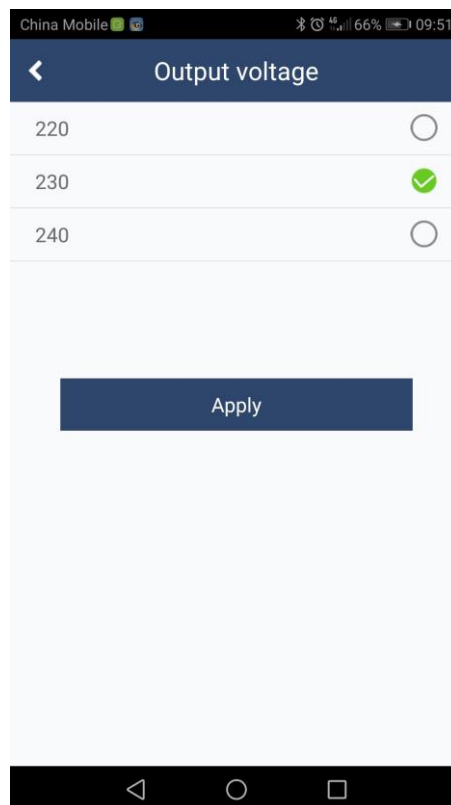


- AC input range: Click arrow to enter AC input range setting page. When selecting

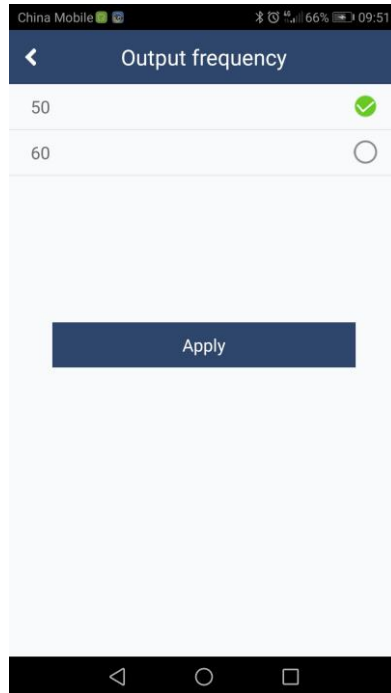
"Appliance", it's allowed to connect home appliances. When selecting "UPS", it's allowed to connect personal computer. For the detailed input range for connected devices, please check product manual.



- Output voltage: Click arrow to enter output voltage setting page. There are three selections, 220, 230 and 240.

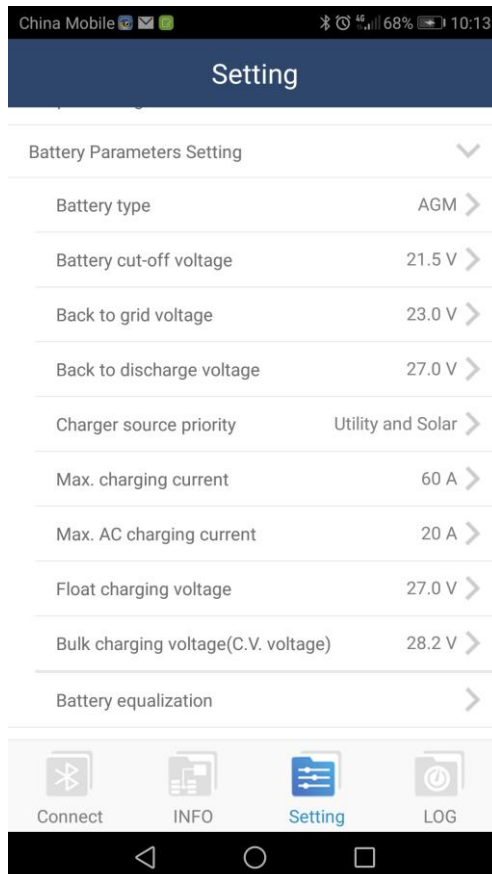


- Output frequency: Click arrow to enter output frequency setting page. There are two selections, 50Hz and 60Hz.

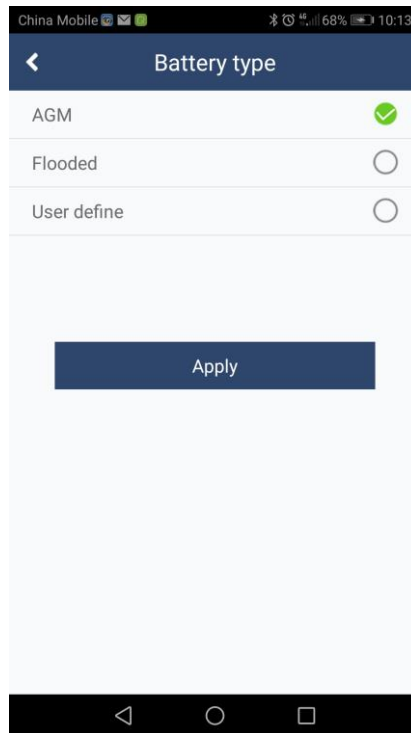


Battery parameters setting

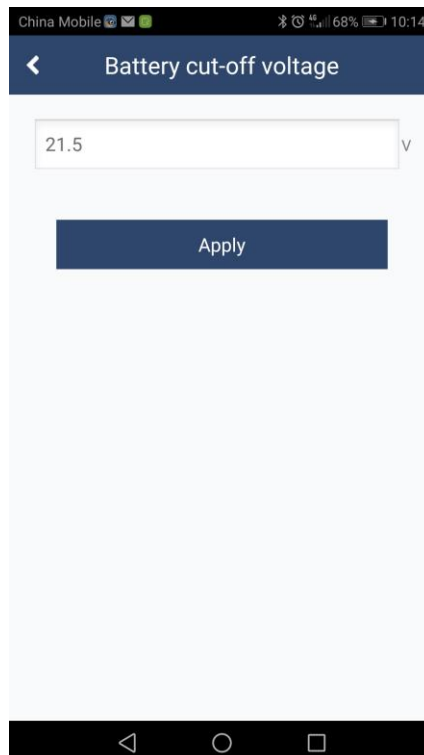
Battery parameters include battery type, battery cut-off voltage, back to grid voltage, back to discharge voltage, charger source priority, max charging current, max AC charging current, float charging voltage, buck charging voltage and battery equalization.



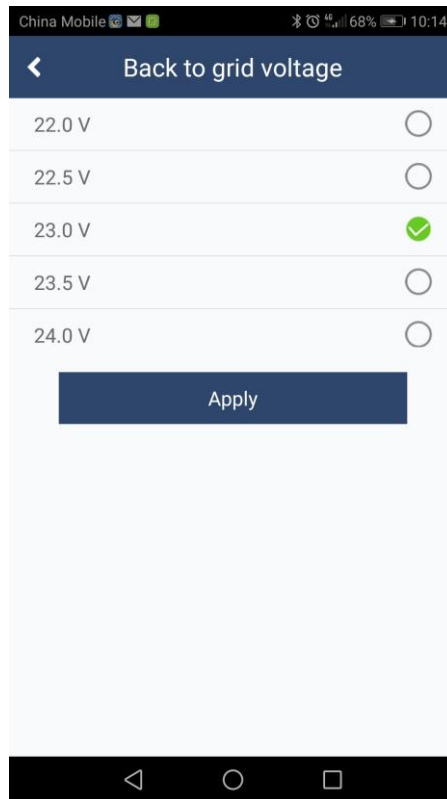
- **Battery type:** Select connected battery type. There are three options: AGM, Flooded and User define. Please refer to product manual for charging parameter for these three battery types.



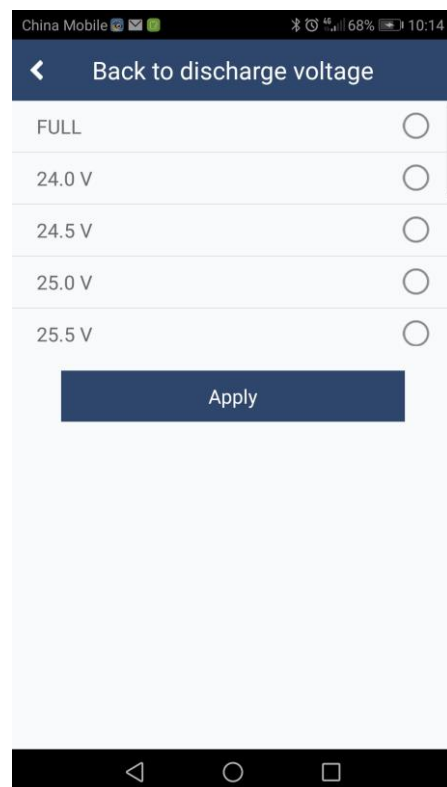
- **Battery cut-off voltage:** In battery mode, when battery voltage is lower than cut-off voltage point, inverter will shut down battery and transfer to fault mode. Please enter battery cut-off voltage.



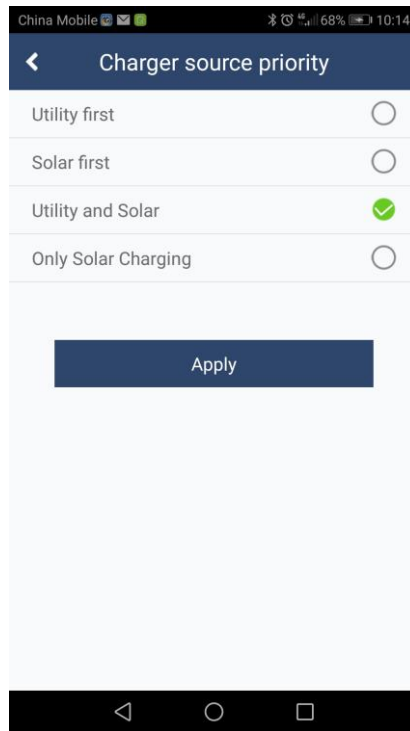
- Back to grid voltage: Click arrow to enter low battery voltage setting. If "SBU" is selected in output source priority, the inverter will transfer output source to grid when battery voltage drops to low battery voltage point. Please select low battery voltage and click "Apply" button.



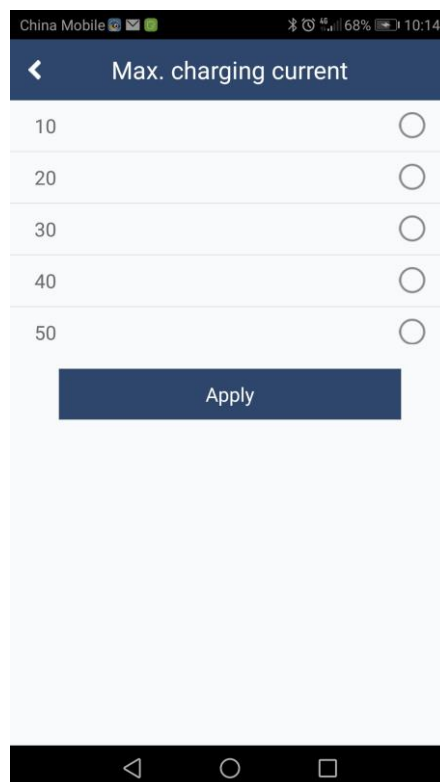
- Back to discharge voltage: When battery voltage is higher than this setting voltage, battery will be allowed to discharge. Please select discharge voltage point by clicking "Apply" button.



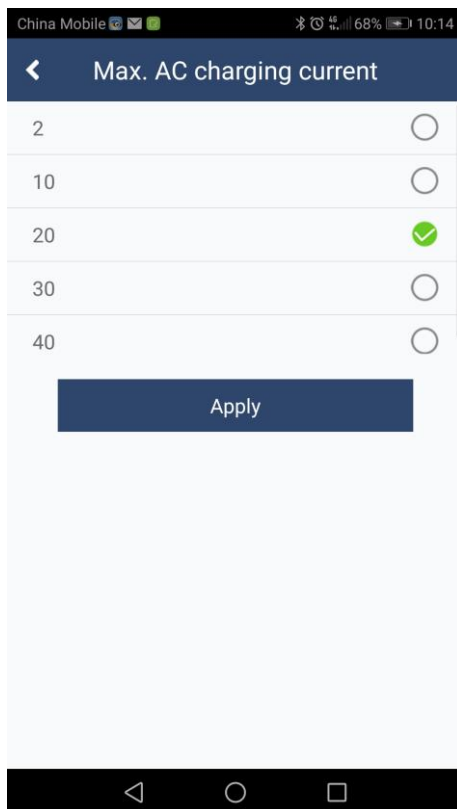
- **Charger source priority:** Click arrow to enter charger source setting page. There are 4 options: utility first, solar first, utility and solar, and only solar charging. See product manual for the details of these options. Select one item and click "Apply" button.



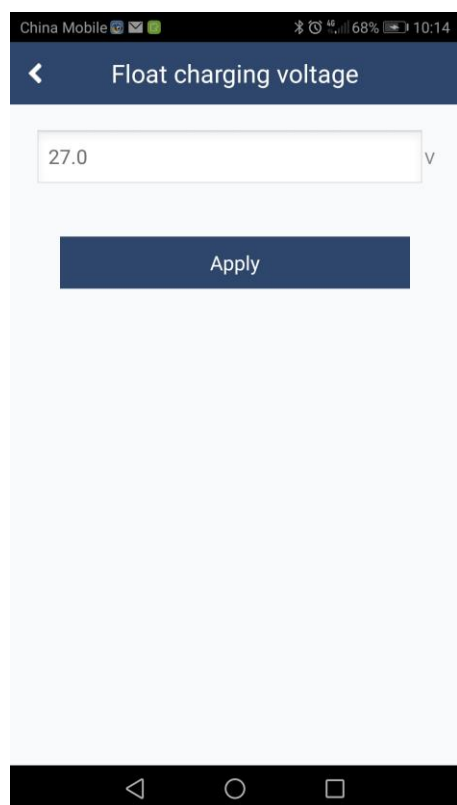
- **Max. charging current:** Click arrow to enter maximum charging current setting page. The selectable charging current values in different inverter model may be different. Please refer to product manual for the details.



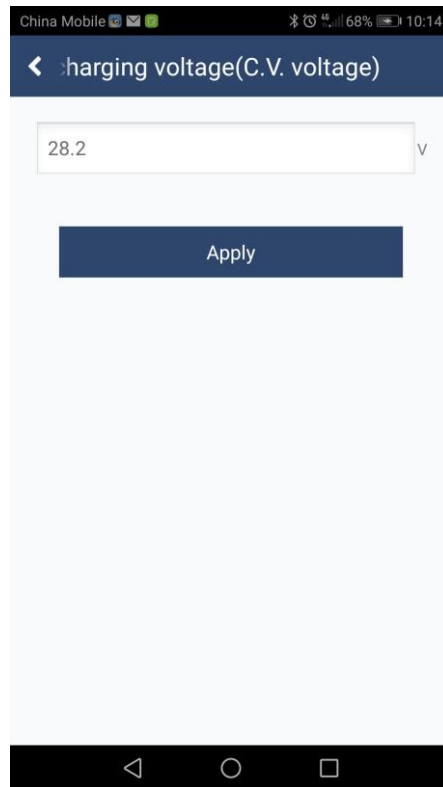
- Max. AC charging current: Click arrow to enter max. AC charging current setting page. The selectable charging current values in different inverter model may be different. For the detailed setting, please check inverter manual.



- Float charging voltage: Click arrow to enter float charging voltage setting page. Please refer to product manual for the recommended float charging voltage based on connected battery type.



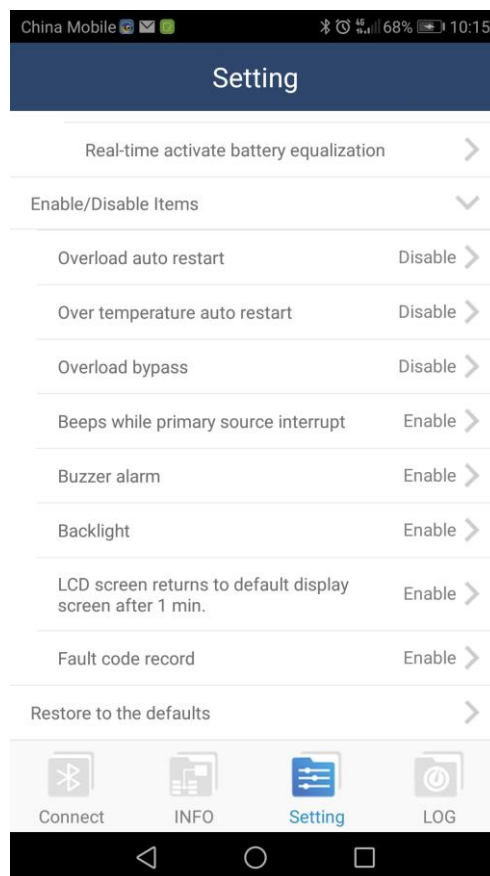
- Bulk charging voltage (C.V. voltage): Click arrow to enter bulk charging voltage setting page. Please refer to product manual for the recommended bulk charging voltage based on connected battery type.



- Battery equalization setting: This section is only active for some inverters with battery equalization function.

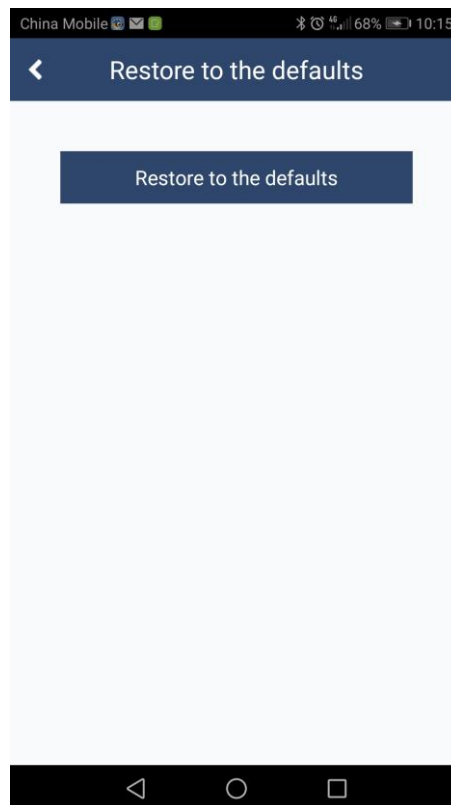


- Battery equalization: Enable or disable battery equalization function. It's necessary to enable this function in software before executing this function in device.
 - Equalized time: Click arrow to set up duration time for battery equalization. The setting range is 5~900 minutes.
 - Equalized timeout: Click arrow to set up the extended time to continue battery equalization. The setting range is 5~900 minutes.
 - Equalization period: Click arrow to set up the frequency for battery equalization. The setting range is 0~90 days. When 0 is selected, it means this function is activated every 24 hours.
 - Real-time activate battery equalization: It's real-time action to activate battery equalization by selecting "Activate". Select "Cancel" to stop equalization immediately.
 - Equalization voltage: Click arrow to set up the battery equalization voltage. The setting range is 48.0V ~ 61.0V for 5KVA device and 25.0V ~ 31.5V for 1.5KVA/3KVA device.
- Enable and Disable items: This section is only to enable or disable function.



- Overload auto restart: If disabled, the unit won't be restarted after overload occurs.

- Over temperature auto restart: If disabled, the unit won't be restarted after over-temperature fault is solved.
 - Overload bypass: If enabled, unit will transfer to line mode when overload happened in battery mode.
 - Beeps while primary source interrupt: If enabled, buzzer will alarm when primary source is abnormal.
 - Buzzer alarm: If disabled, buzzer won't be on when alarm/fault occurred.
 - Backlight: If disabled, LCD backlight will be off when panel button is not operated for 1 minute.
 - LCD screen returns to default display screen after 1 min.: If enable, LCD screen will return to default display screen after no button is pressed in one minute.
 - Fault code record: If enabled, fault code will be recorded in the inverter when any fault happens.
- Restore to the defaults: This function is to allow to restore all settings back to default values.



NOTE: This screen may be different for different model of inverter.

4.4. LOG



This function is to record data log or events. Simply click the icon on the button. It will enter LOG page.

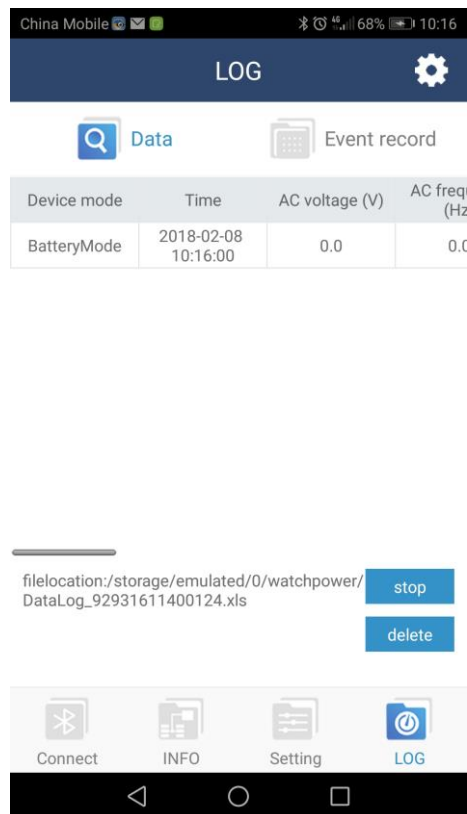
Data



This function is to record the data log. Click icon . Then, it is ready to record the data log.

- **"Start"**: the data log begins.
- **"Stop"**: the data log stops.
- **"Delete"**: delete the data log.

The result will be saved in the mobile phone as shown on the bottom page with file location indicated.



Event



This function is to record events. Click the icon . Then, it's ready to record the event log.

- **"Start"**: the event log begins.
- **"Stop"**: the event log stops.

➤ **"Delete"**: delete the event log.

The result will be stored in the mobile phone as shown on the bottom page with file location indicated.

