

JBD Li-ion APP Operation Manual



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Preface

Lithium Battery IoT Cloud APP (hereinafter referred to as: APP) can connect: smart batteries, home energy storage, battery networking, high-voltage energy storage, LCD007 and other products. The connection methods are: Bluetooth, Bluetooth + WiFi.

Connection (device) module: Bluetooth integrated board, external Bluetooth universal module, WF001, WF002

Wi-FiNetwork: Only supports 2.4GHz WiFi

OTA upgrade: Bluetooth OTA, Wi-Fi OTA

Battery networking: series and parallel

The product types represented by the icons in the APP are as follows:

 Intelligent Battery  Energy Storage  LCD Screen  High Voltage

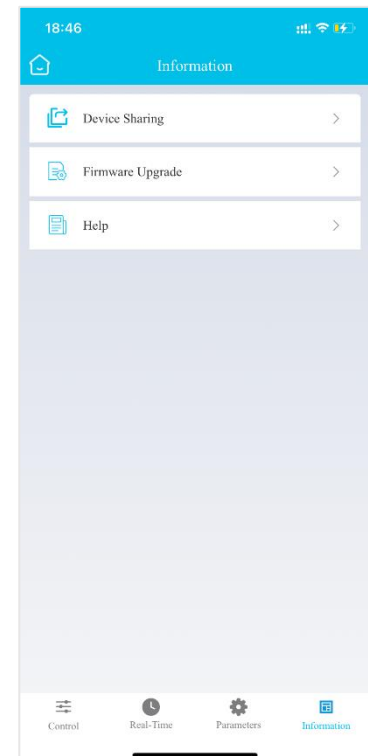
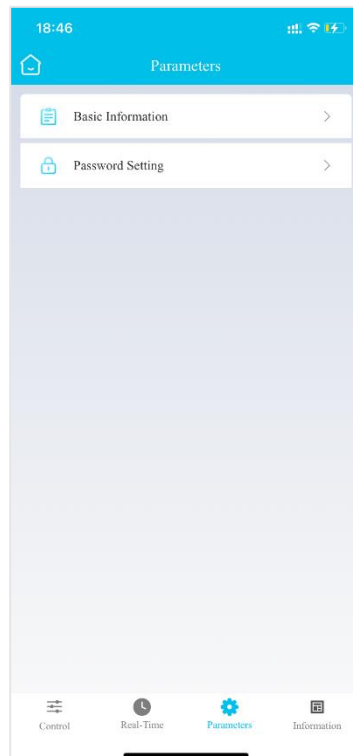
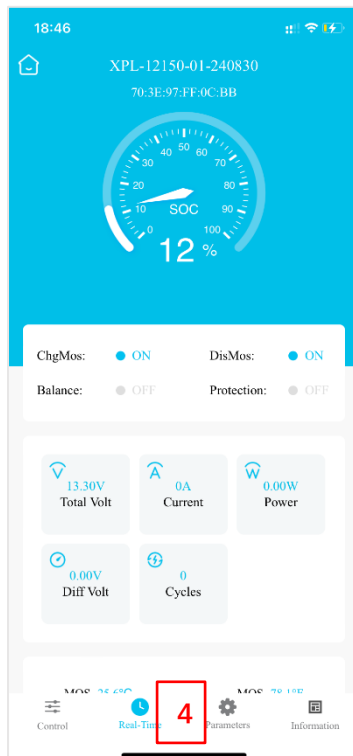
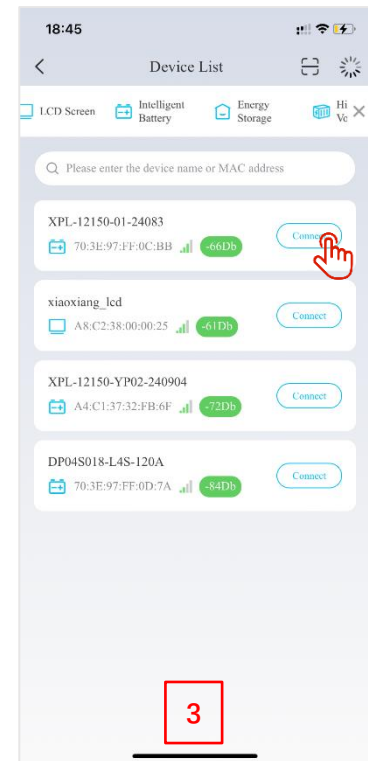
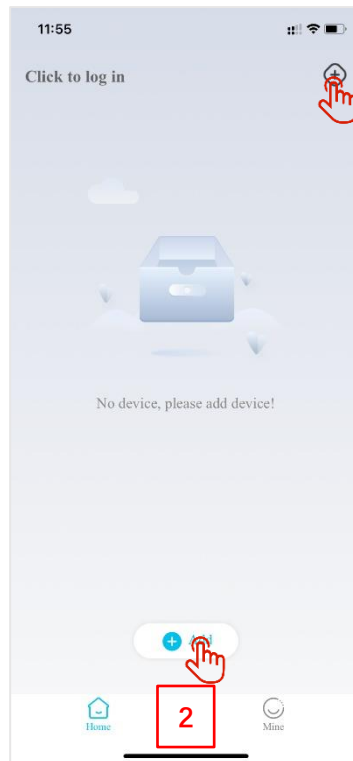
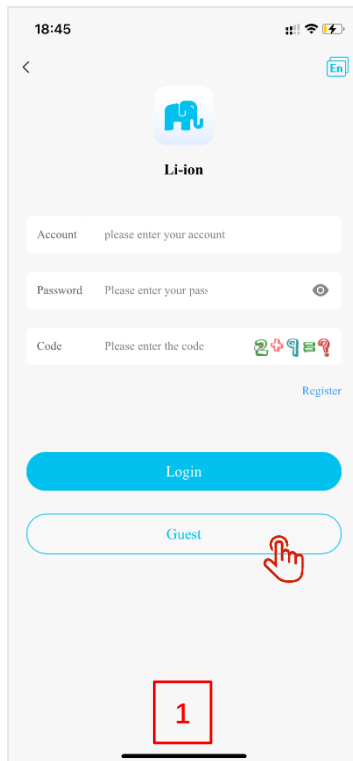
APP Install:

- 1) APP Store or Google Play Search: JBD Li-ion
- 2) Scan QR code to download



1. Tourist Mode

Start the APP and search for connected devices in "Guest Mode"; in Visitor Mode, you can read basic battery information but do not have operation and parameter setting permissions.

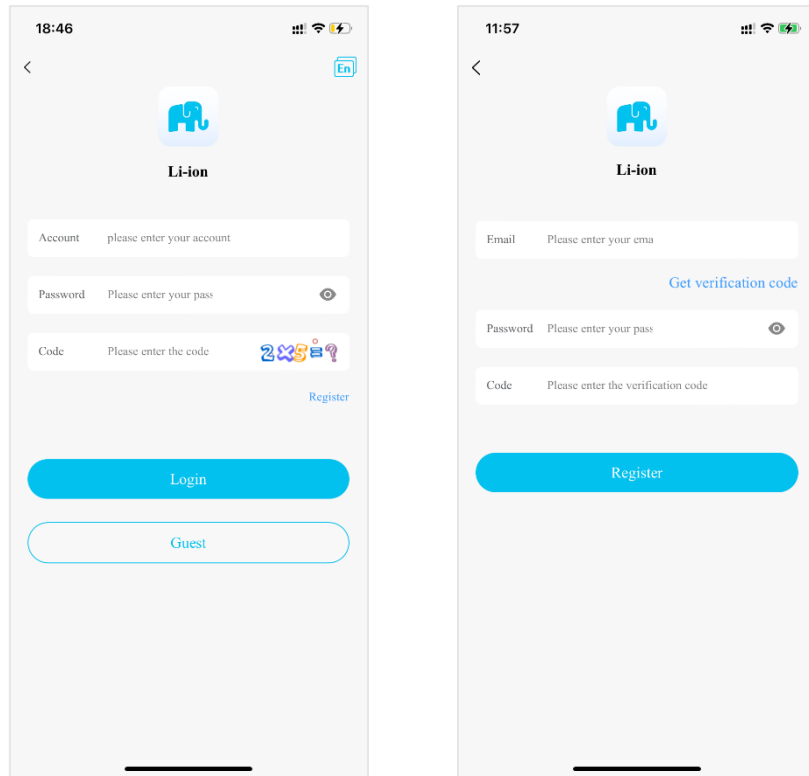


2. Register/Login

register: email, password, code, enter register.

login: email, password, code.

Login Register

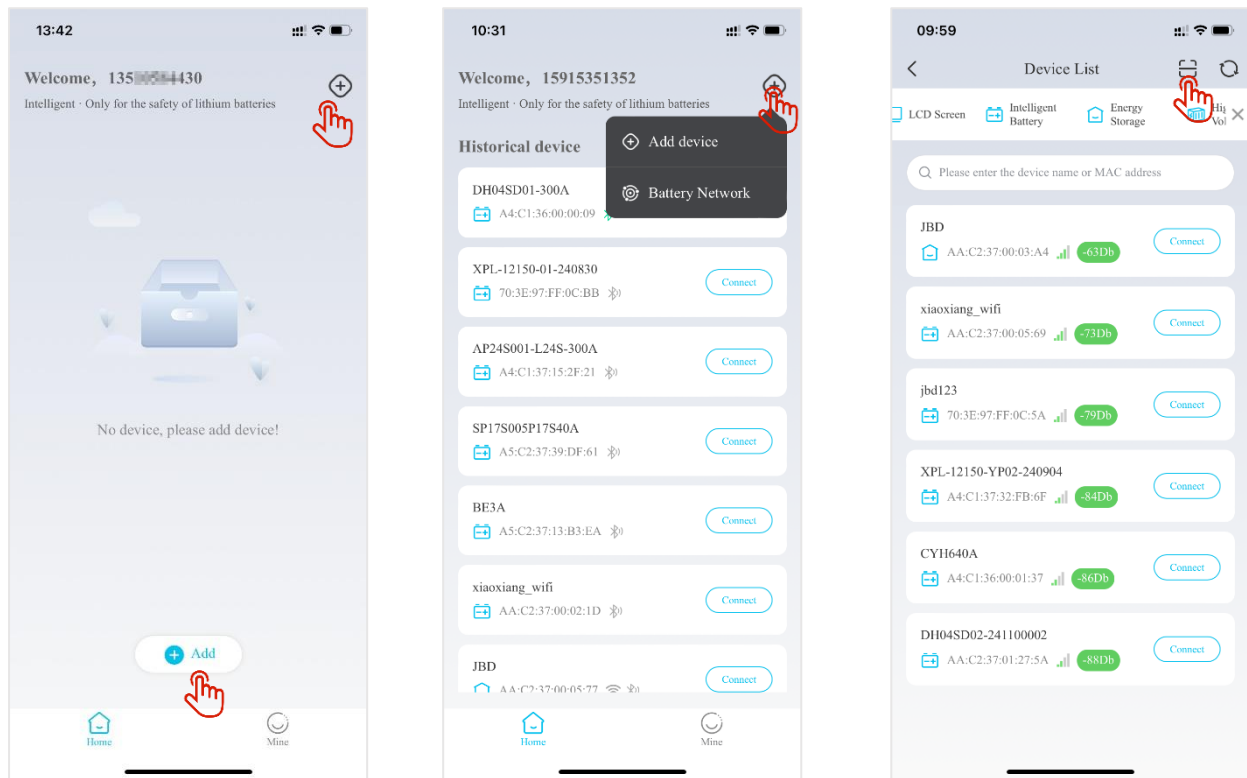


3. Home Page

3.1 Adding a device

When you log in for the first time, the entrance for adding devices is located in the upper right corner and the center of the bottom (if there is a connection record, the entrance will be hidden); if you add devices later, only the entrance in the upper right corner will be retained.

Add device entry in the upper right corner: Add device (Bluetooth broadcast), battery network.



3.2 Equipment List

List data display: device name, device type icon, device MAC address, device current connection mode and status (bright color indicates connected status, gray color indicates disconnected status)

Scan: Scan the code to connect the device

Refresh: Rebroadcast Bluetooth devices

Search: Enter the Bluetooth name or MAC address to quickly search for devices

Connection: Bluetooth connection device, jump to the real-time page if the connection is successful; if the connection fails, it will prompt the connection timeout

3.2.1 My Devices

My device shows: bound devices, and devices that complete battery networking through "series and parallel connection".

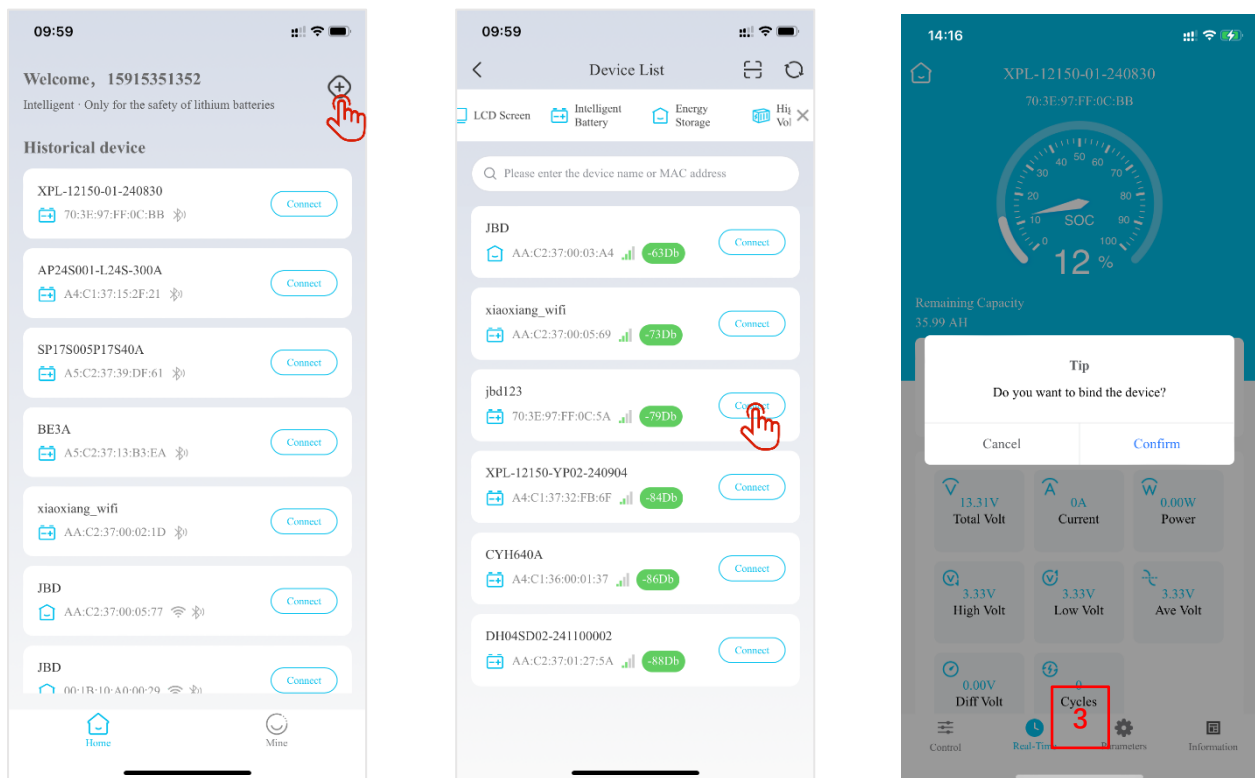
User-friendly operations: connect, disconnect, delete (battery networking, release networking configuration, disconnect device Bluetooth connection)

3.2.2 Historical equipment

Historical devices: displays the devices that the user has connected but not bound to, up to 10 devices can be displayed.

User operations: connect, disconnect

4. Connect the Smart Battery



4.1 Connecting devices

Click the + sign to enter the device list page, which will broadcast surrounding devices.

Device information includes: device name, device type icon, MAC address, Bluetooth signal strength icon, and Bluetooth signal RSSI value.

The following operations can be performed on the device list page:

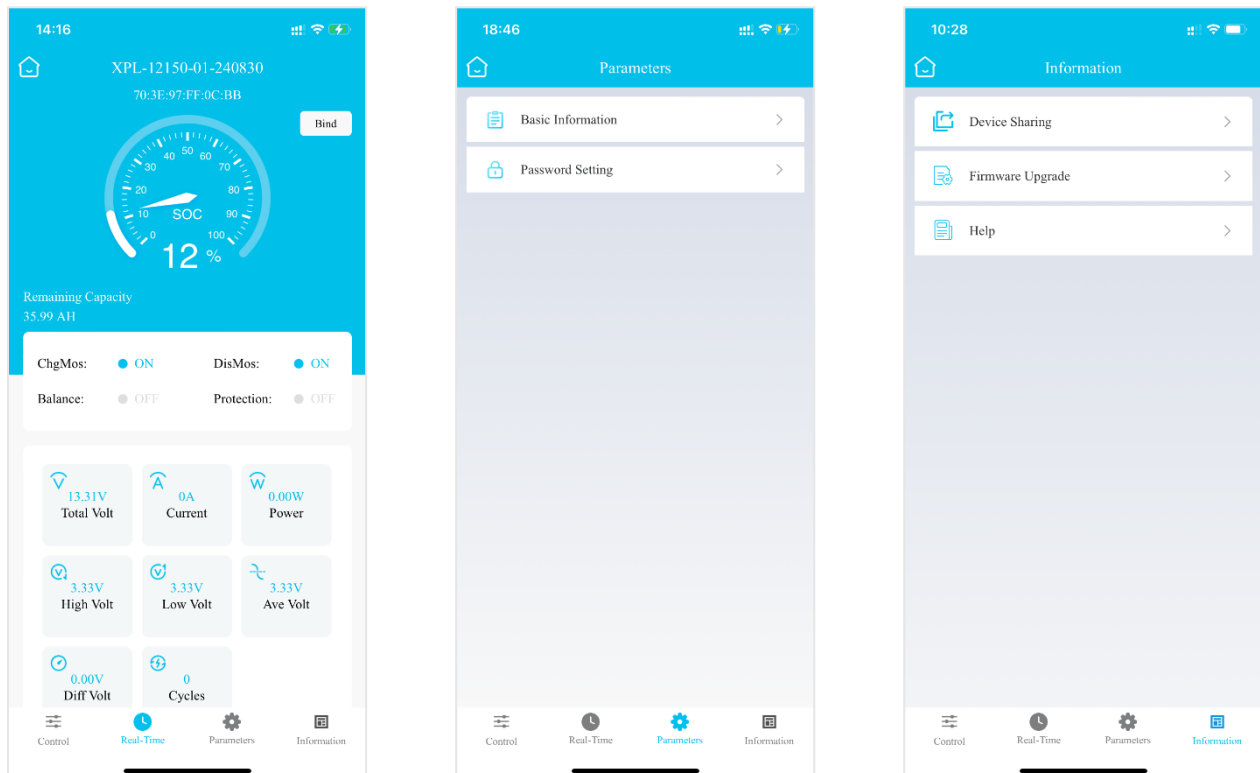
- 1) Scan: Click "Scan" to scan the QR code on the device to quickly add the device;
- 2) Refresh: Click "Refresh" to broadcast again;
- 3) Search: Enter the device name in the search box to quickly retrieve the corresponding device from the device list;

4.2 Whether to bind the device

Connect the device and enter the device real-time page. A "binding" prompt will pop up (if the device has been bound by other users, no prompt will appear).

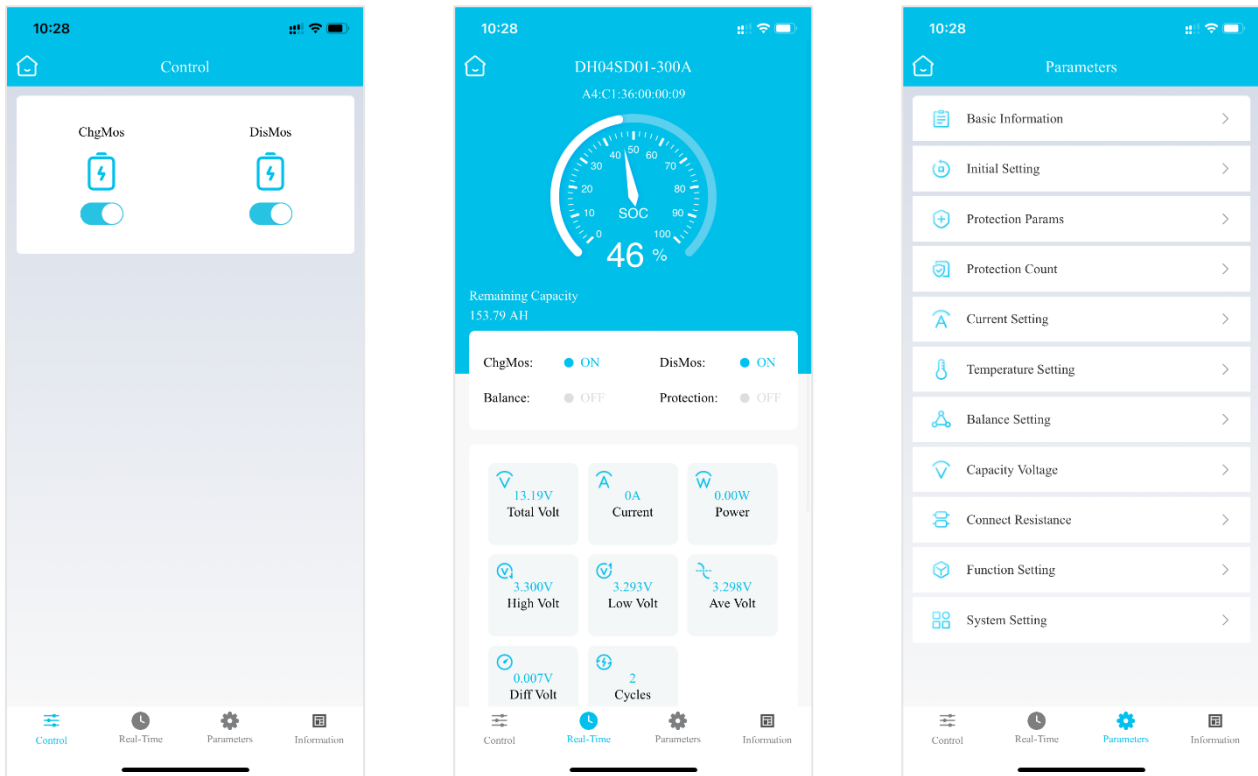
4.2.1 No Binding

Unbound: Users can connect to the device normally and view basic device data, but do not have control or parameter setting permissions.



4.2.2 Binding

Binding: The user connects to the device, reads the device data, and has the authority to switch the charge and discharge, and set parameters.



4.3 Features

4.3.1 One-click ternary/one-click lithium iron

Parameters - Protection parameters, you can set the protection parameters of "one-key ternary" or "one-key iron-lithium". The parameter table and rules are as follows:

Parameter name	Three Yuan	Iron Lithium
Monomer overpressure	4250 mV	3750 mV
Monomer overpressure release	4150 mV	3600 mV
Single cell undervoltage	2800 mV	2500
Single cell undervoltage release	3000 mV	2800
Overvoltage of the whole group	$4.25 * \text{number of strings} * 1000 \text{ mV}$	$3.75 * \text{number of strings} * 1000 \text{ mV}$

Overpressure relief for the whole group	$4.15 * \text{number of strings} * 1000 \text{ mV}$	$3.6 * \text{number of strings} * 1000 \text{ mV}$
The whole group is undervoltage	$2.8 * \text{number of strings} * 1000 \text{ mV}$	$2.5 * \text{number of strings} * 1000 \text{ mV}$
Undervoltage release of the whole group	$3 * \text{number of strings} * 1000 \text{ mV}$	$2.8 * \text{number of strings} * 1000 \text{ mV}$
Average full voltage	4150 mV	3500 mV
Average idle voltage	3000 mV	2800 mV
Hardware overvoltage protection	4350 mV	3900 mV
Hardware undervoltage protection	2500 mV	2000 mV
100%	4100 mV	3350 mV
90%	4050 mV	3330 mV
80%	3950 mV	3329 mV
70%	3850 mV	3325 mV
60%	3750 mV	3322 mV
50%	3680 mV	3301 mV
40%	3580 mV	3291 mV
30%	3500 mV	3280 mV
20%	3400 mV	3266 mV
10%	3300 mV	3220 mV
Balance/turn-on voltage	3900 mV	3400 mV

10:30

<

Protection Params

Switch to NMC

Item

Param

Setting

CellHighVoltProtect	3650mV	Set
CellHighVoltRecover	3550mV	Set
CellHighVoltDelay	2S	Set
CellLowVoltProtect	2500mV	Set
CellLowVoltRecover	2550mV	Set
CellLowVoltDelay	2S	Set
PackVoltHighProtect	14600mV	Set
PackVoltHighRecover	14200mV	Set
PackVoltHighDelay	2S	Set
PackVoltLowProtect	10000mV	Set
PackVoltLowRecover	10200mV	Set
PackVoltLowDelay	2S	Set
HwCellHighVoltProject	3800mV	Set

10:30

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Protection Params

Switch to LFP

Item

Param

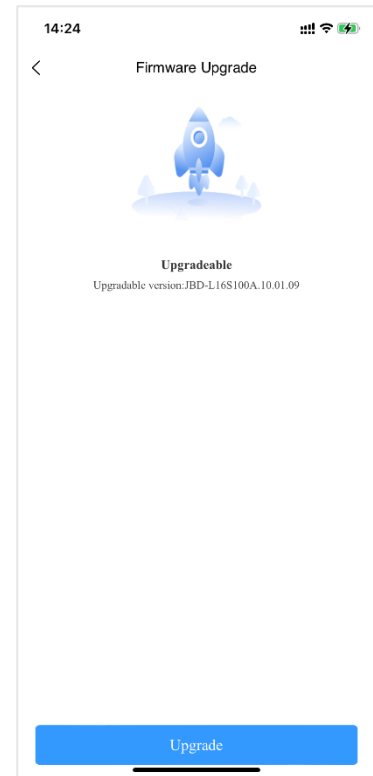
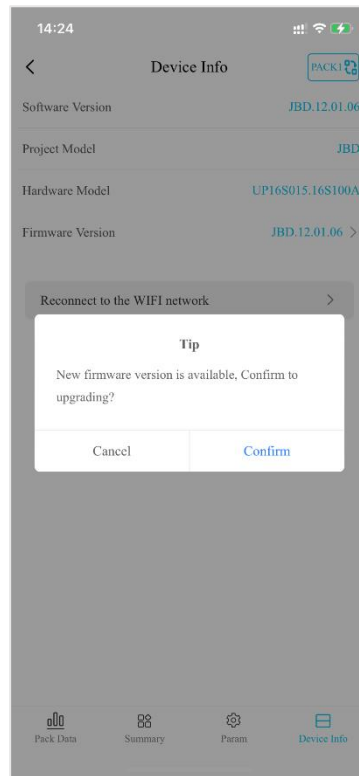
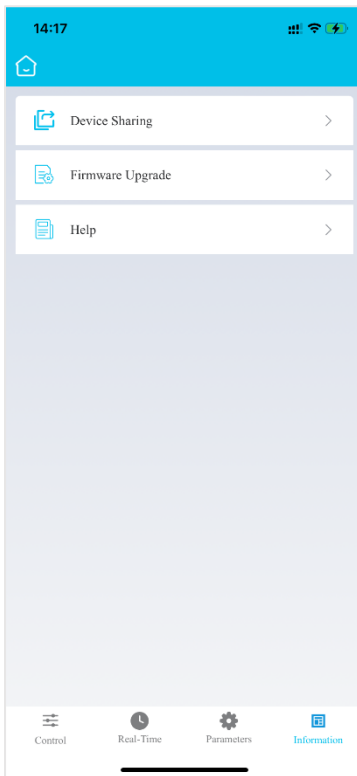
Setting

CellHighVoltProtect	4250mV	Set
CellHighVoltRecover	4150mV	Set
CellHighVoltDelay	2S	Set
CellLowVoltProtect	2800mV	Set
CellLowVoltRecover	3000mV	Set
CellLowVoltDelay	2S	Set
PackVoltHighProtect	17000mV	Set
PackVoltHighRecover	16600mV	Set
PackVoltHighDelay	2S	Set
PackVoltLowProtect	11200mV	Set
PackVoltLowRecover	12000mV	Set
PackVoltLowDelay	2S	Set
HwCellHighVoltProject	4350mV	Set

4.3.2 OTA Upgrade

When upgradeable firmware is detected, a prompt message indicating that new firmware has been detected will pop up on the real-time page and information page.

Users can also click "Firmware Upgrade" and the APP will actively detect whether there is new firmware that can be upgraded; if there is new firmware, click "Upgrade".

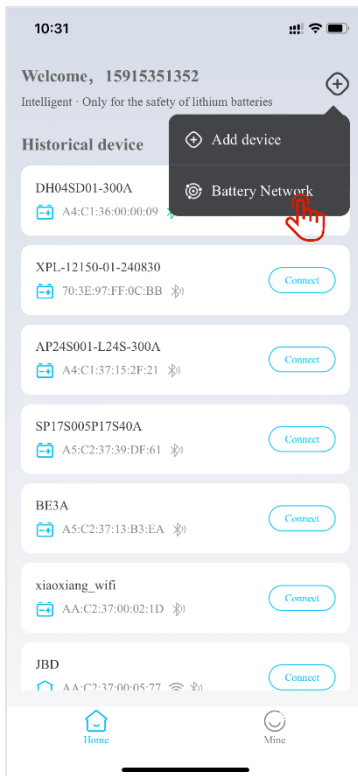


5. Battery Network

The battery networking function can connect multiple (2~4) batteries in series or parallel to form a power grid system, through which comprehensive data can be viewed.

5.1 Operation steps

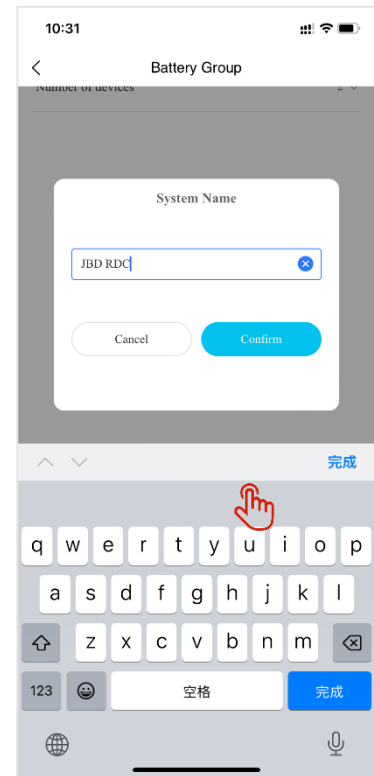
STEP1 Battery network



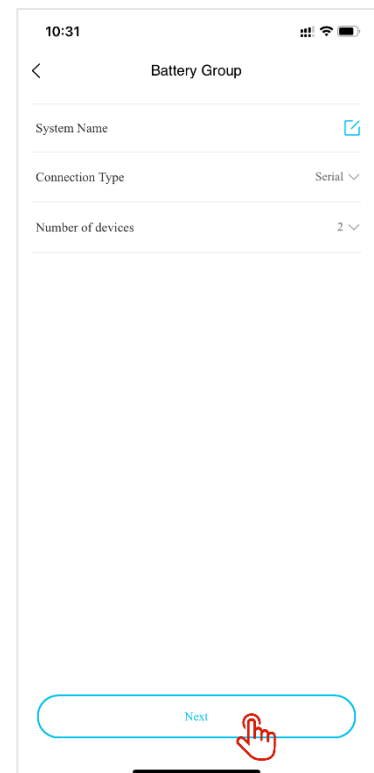
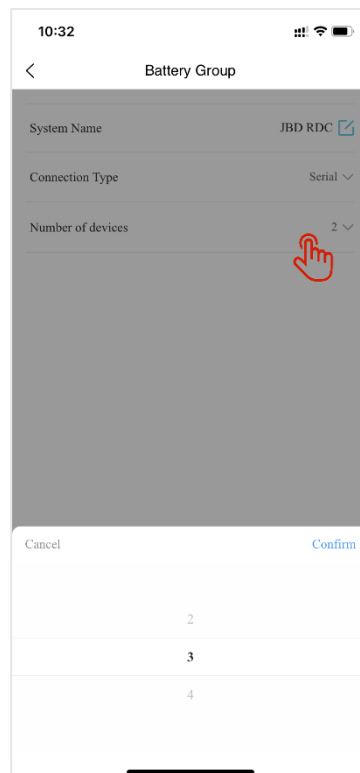
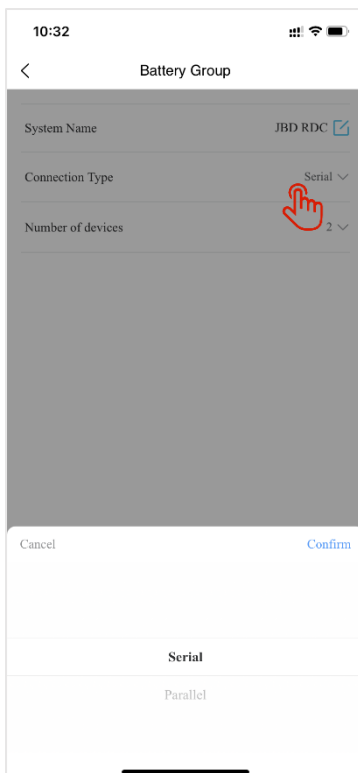
STEP2 Enter battery network settings



STEP3 Set system name



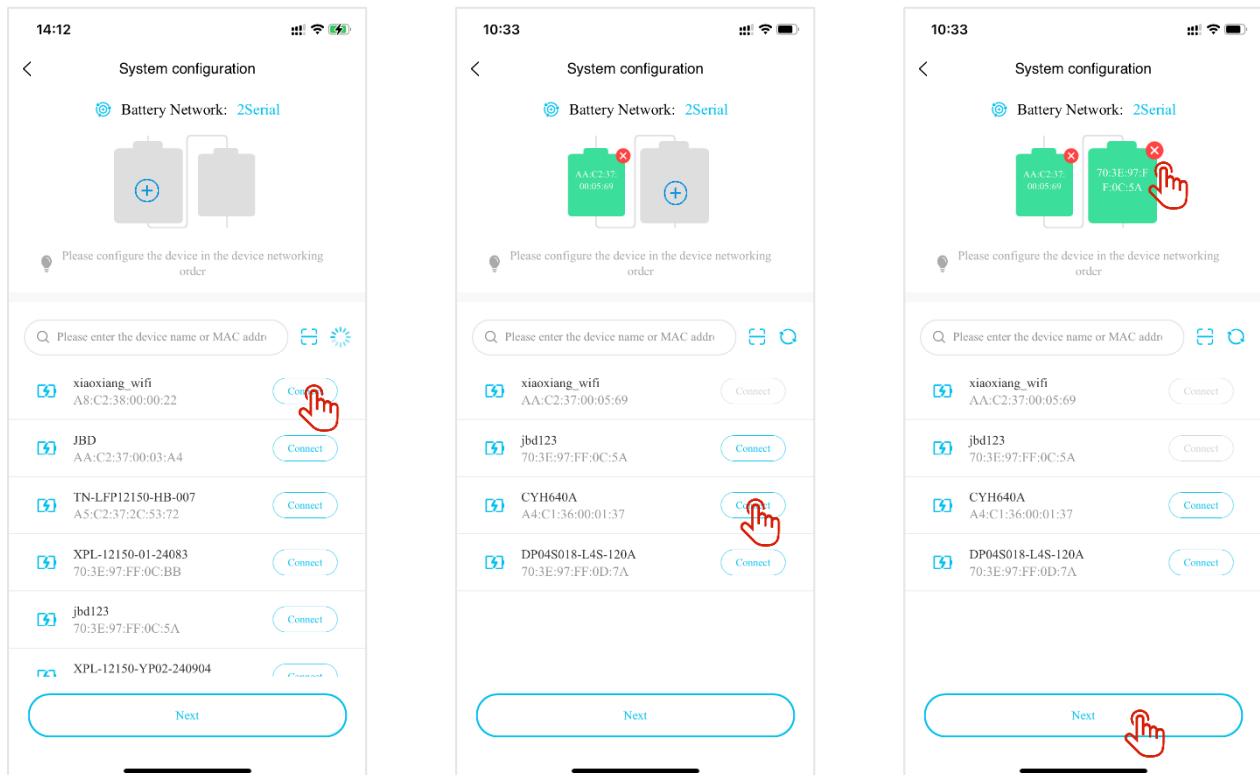
STEP4 Select the networking mode, series or parallel. STEP5 Number of networking devices. STEP6 Next step



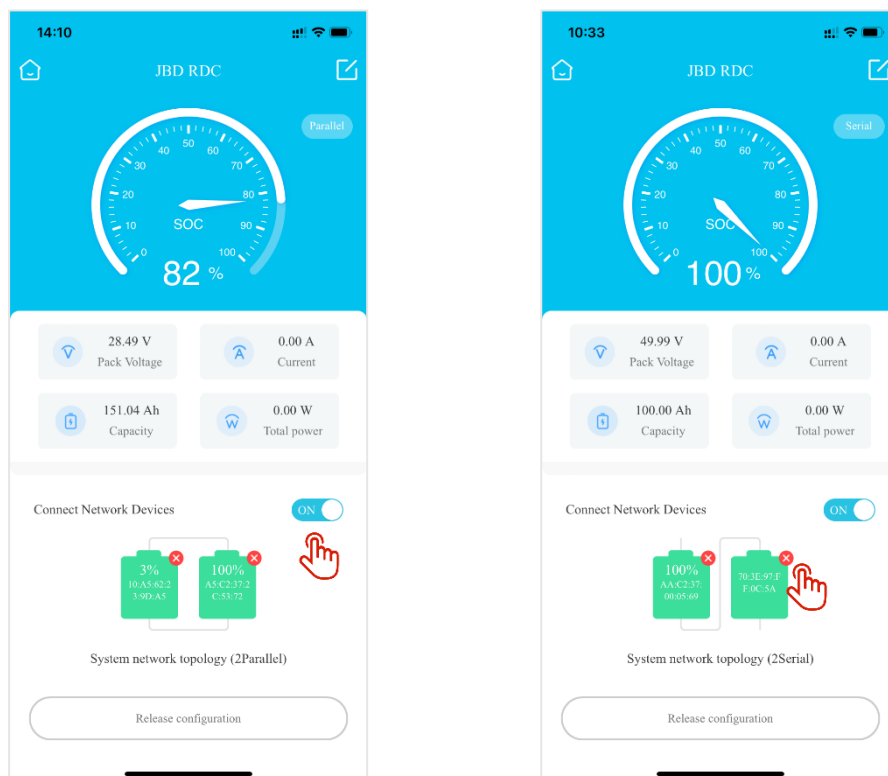
STEP7 connects network devices

As shown in the figure, select the battery in the device list, click the "Connect" button, and complete the network connection configuration in sequence;

If you find a connection error, you can click the "X" in the upper right corner of the icon to disconnect and then reconnect another battery device; or click the current device to directly connect to the correct battery device to complete the replacement;



STEP8 Networking completed



Battery network (parallel connection) Battery network (series connection)

Battery networking, the system page can perform the following operations:

- 1) Comprehensive data: View the comprehensive data after networking, including: SOC, summary voltage, summary current, capacity, total power
- 2) Connect to networking devices: By default, the device is not actively connected. You can turn on the switch to actively connect to the device; you can also click on the device to connect one by one
- 3) Disconnect a single device: Click the "X" icon in the upper right corner of the battery to disconnect the current battery.
- 4) Release configuration: delete the networking system and disconnect all devices

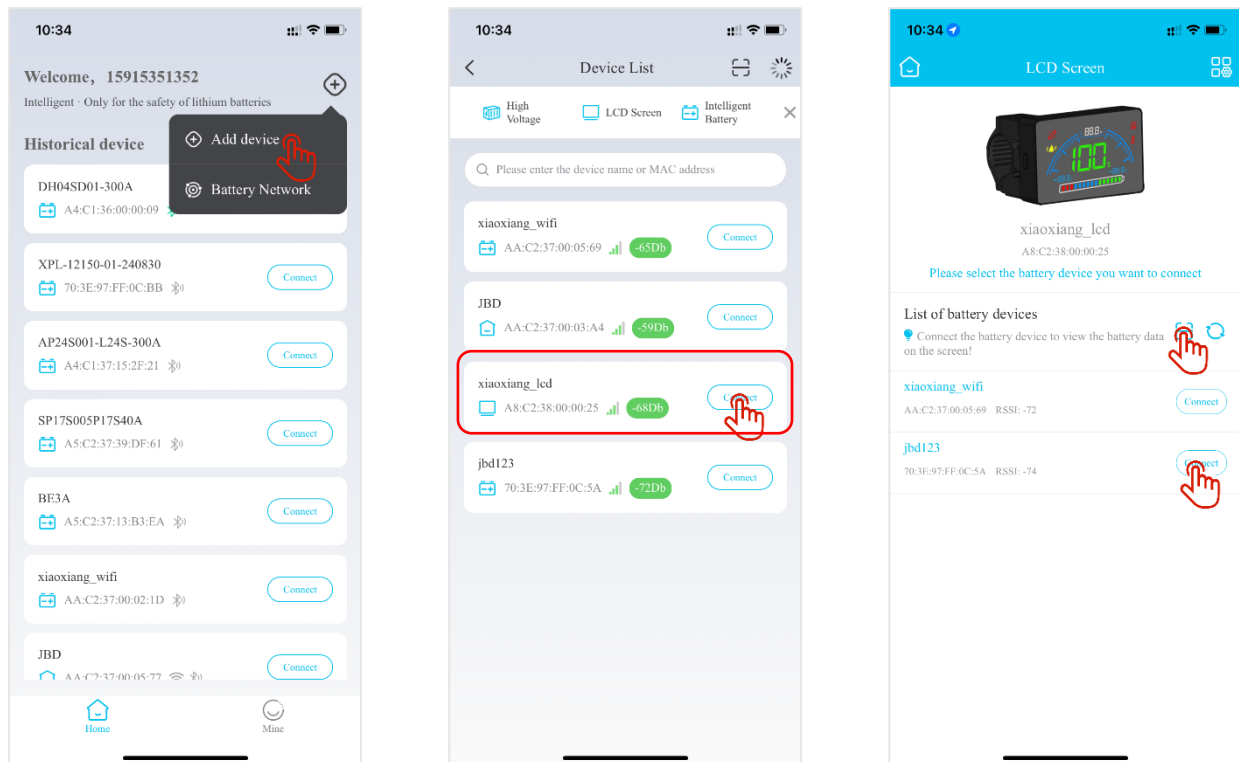
5.2 Data Rules

	Series	in parallel
SOC	The maximum SOC is used for charging, and the minimum SOC is used for discharging and static	Remaining capacity accumulation $\div$ Full charge capacity accumulation
Total Capacity	Get the minimum value of the fully charged capacity of the network battery	Remaining capacity accumulation
Total current	The sum of the currents of the networked batteries, taking the average	Current accumulation
Total voltage	The sum of the voltages of the network batteries	The sum of the voltages of the networked batteries, taking the average
Total Power	Total voltage $\times$ total current	Power accumulation
illustrate: 1) Differentiate between the old and new protocols. The old protocol uses nominal capacity for calculation, while the new protocol uses full charge capacity. 2) When calculating and averaging, only online devices participate in the calculation, and disconnected offline devices do not participate in the calculation.		

6. LCD

The APP establishes a connection with the LCD via Bluetooth, and then helps the LCD to pair with the battery via Bluetooth. Once the connection is successful, you can view basic battery information on the LCD screen, including: SOC, voltage, current, BMS temperature, alarm indicator, fault indicator, and temperature alarm indicator.

6.1 Operation steps:



STEP 1: Add device

STEP2: Select the device from the  Bluetooth broadcast device list and click "Connect";

STEP3: The APP is successfully connected to the LCD, and the LCD display battery pairing page is entered;

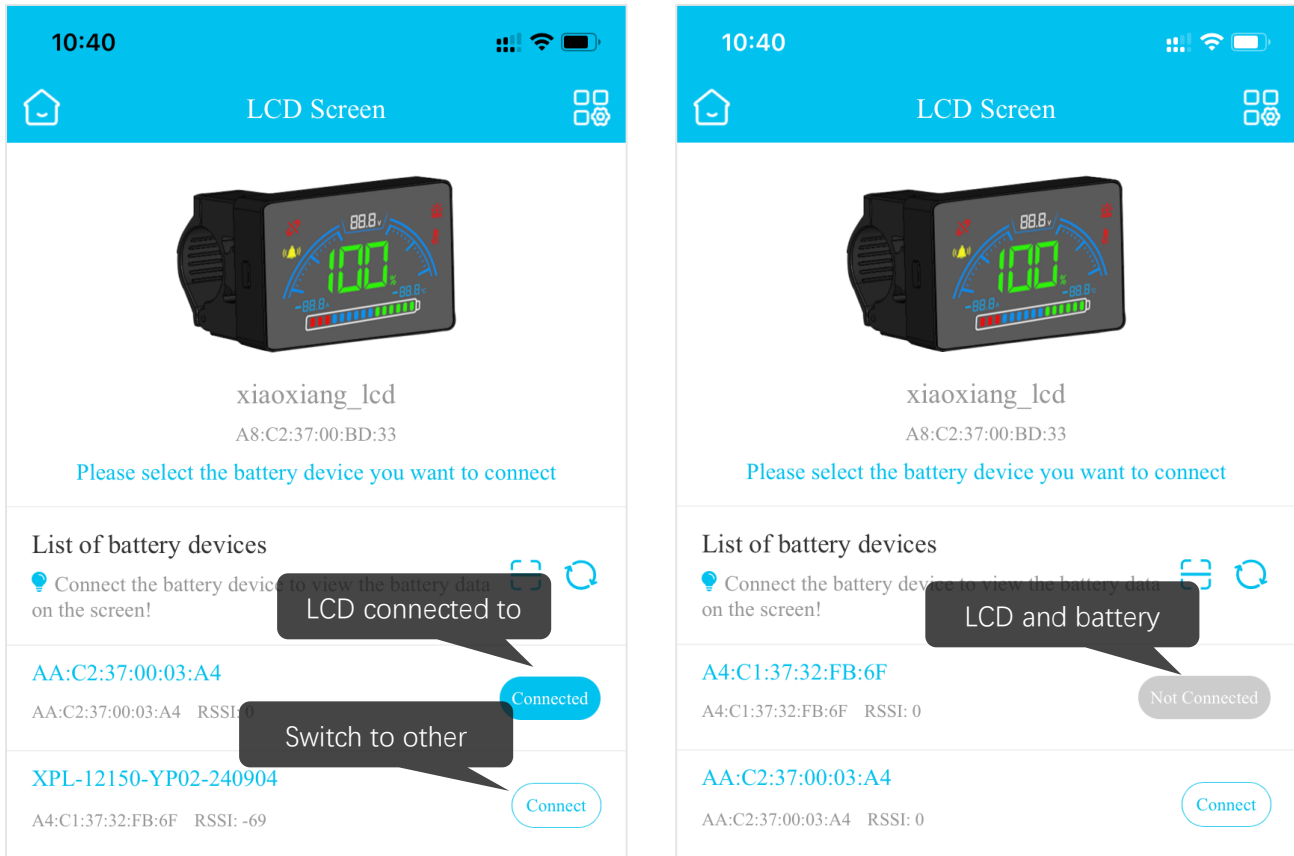
STEP4: Connect the battery.

Method 1:  Click to scan the code and connect the battery

Method 2: Select the battery to be connected from the battery list  and click "Connect" or click the icon to refresh and broadcast again.

★ If you need to switch to another battery, just select another battery in the battery list and click "Connect" to complete the switch.

STEP5: If the connection is successful, you can view the basic battery data on the LCD screen



6.2 LCD Interface Description



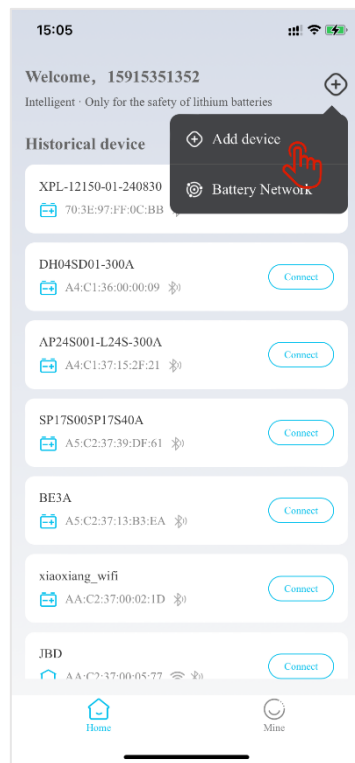
7. Home Energy Storage

7.1 Functional Description

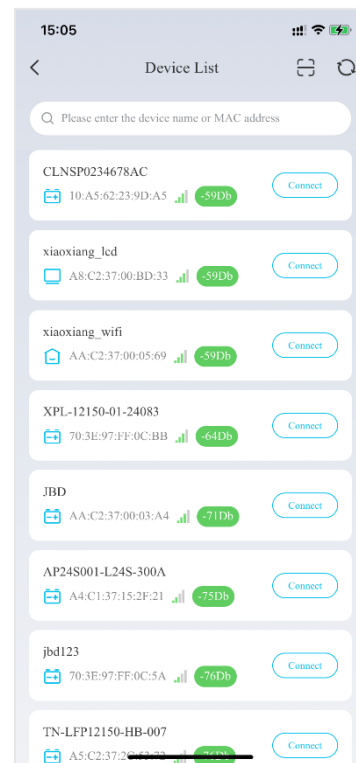
- Home energy storage products support: Bluetooth local connection or WiFi (2.4GHz) network remote control
- Comprehensive data: Automatically calculate and summarize comprehensive information, such as SOC, voltage, current, number of PACK parallel machines, highest and lowest cell voltage, highest and lowest cell temperature, inverter protocol
- PACK data: switch to view each PACK data, such as SOC, SOH, voltage, current, capacity, number of cycles, charge and discharge status, number of cells, cell voltage, cell temperature, MOS temperature, ambient temperature, and balance status
- Parameter setting: Synchronize comprehensive settings to PACK, or switch to each PACK to set parameters individually
- Device information: View the device information of each PACK, perform OTA upgrades on the PACK, and reconfigure the WiFi network

7.2 Adding Devices

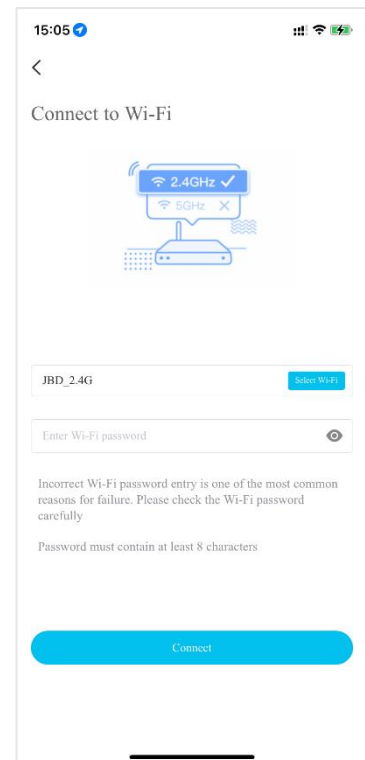
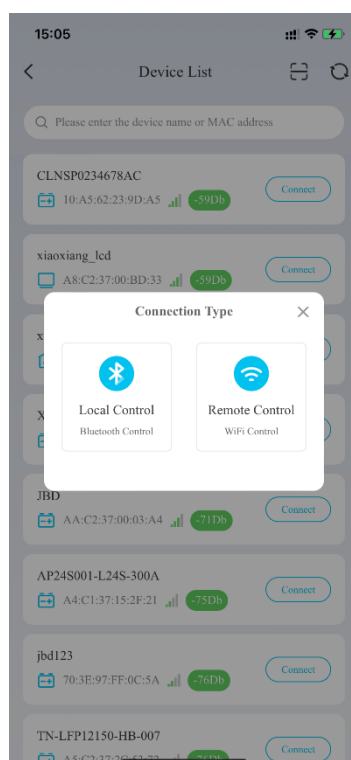
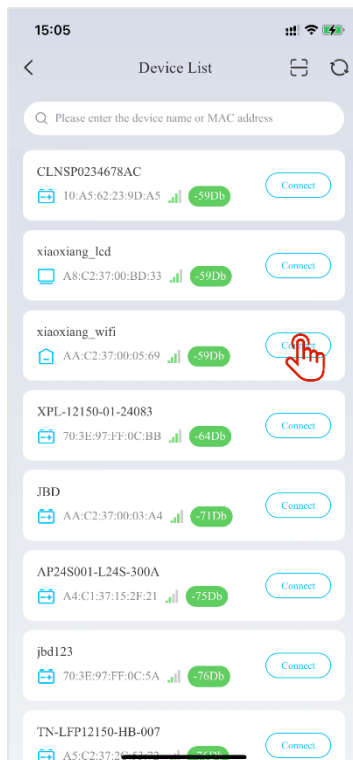
STEP1: Click to add a device



STEP2: Bluetooth broadcast-device list



STEP3: Select home storage device - connection STEP4: Select Bluetooth or Wi-Fi connection STEP5: Wi-Fi network configuration



Local (Bluetooth) control

- Select a Bluetooth connected device and read data and control the device near it.
- Disadvantages: Far away from the device, unable to connect to the device, read data, and control the device

Remote (Wi-Fi) control

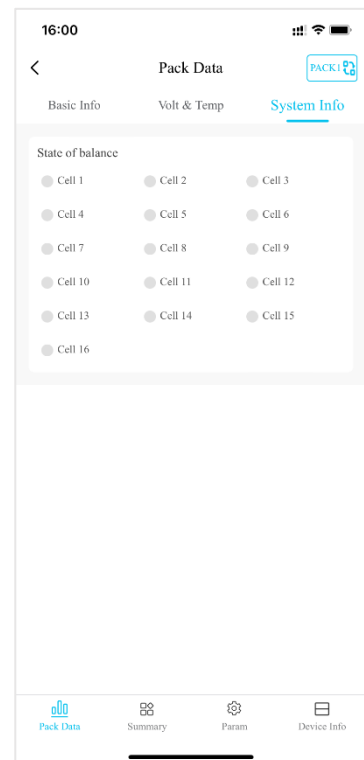
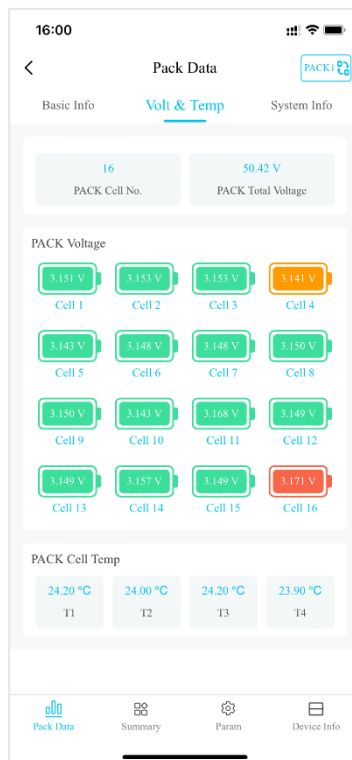
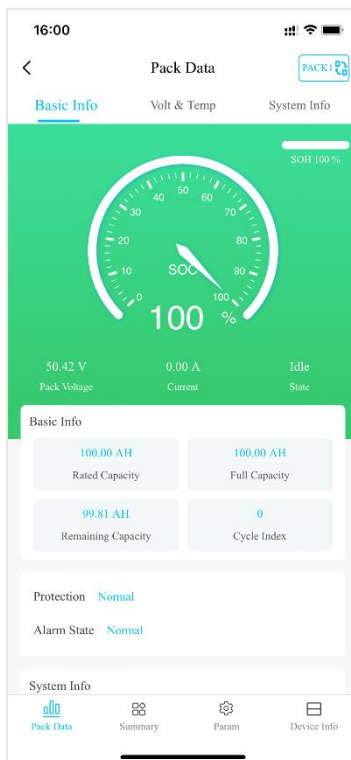
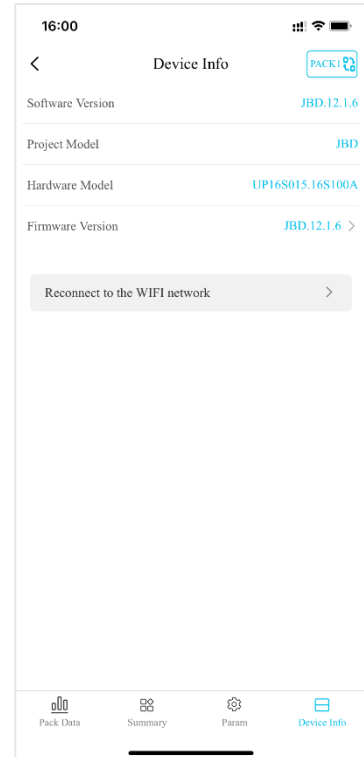
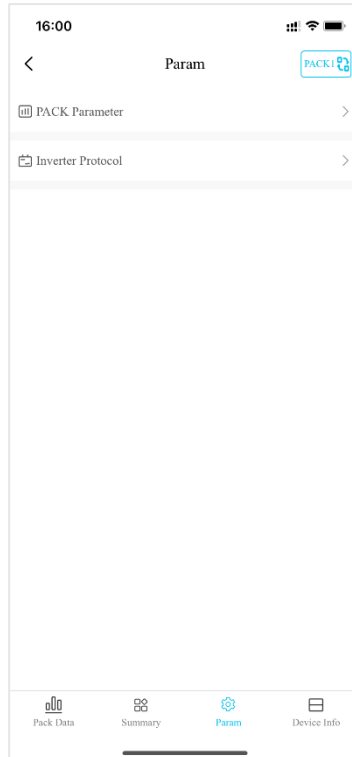
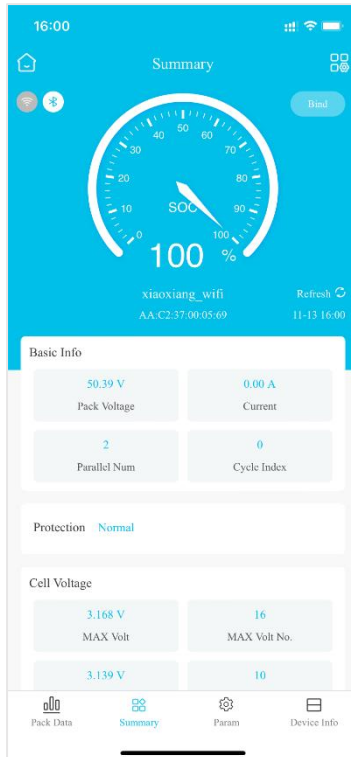
- Select Wi-Fi connection, you need to configure the Wi-Fi (2.4GHz) network for the device
- Network configuration is complete. As long as Wi-Fi is online, data can be read and devices can be controlled in real time.

Wi-Fi network configuration notes:

- Wi-Fi network configuration requires connecting to 2.4GHz Wi-Fi
- Wi-Fi network configuration will return a prompt (success or failure);
- Network configuration is successful - Jump - Enter the device page

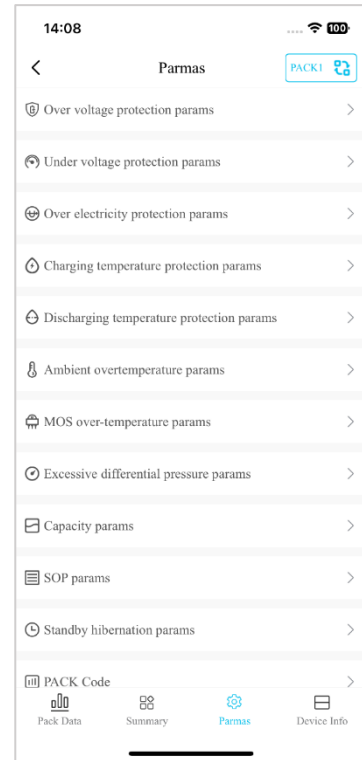
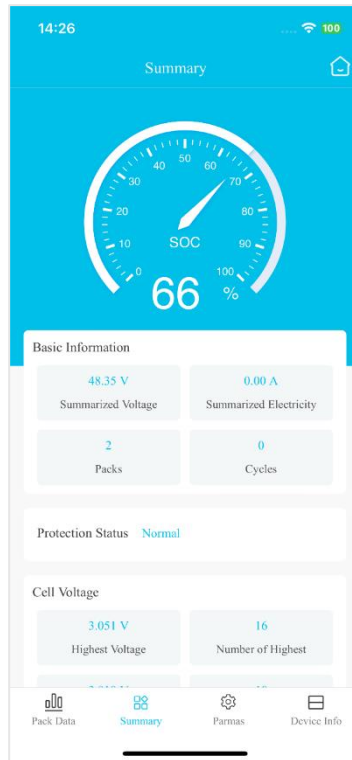
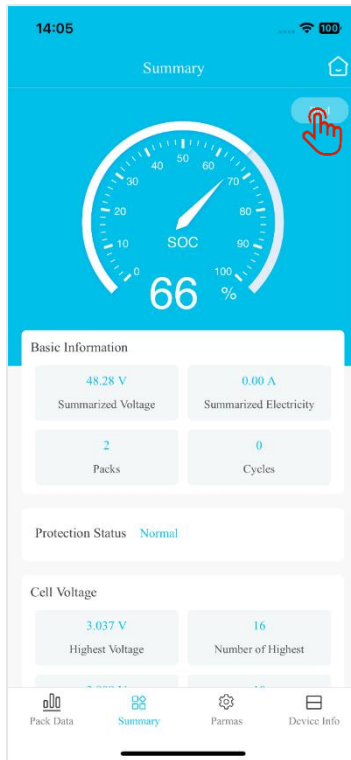
7.3 Managing Devices

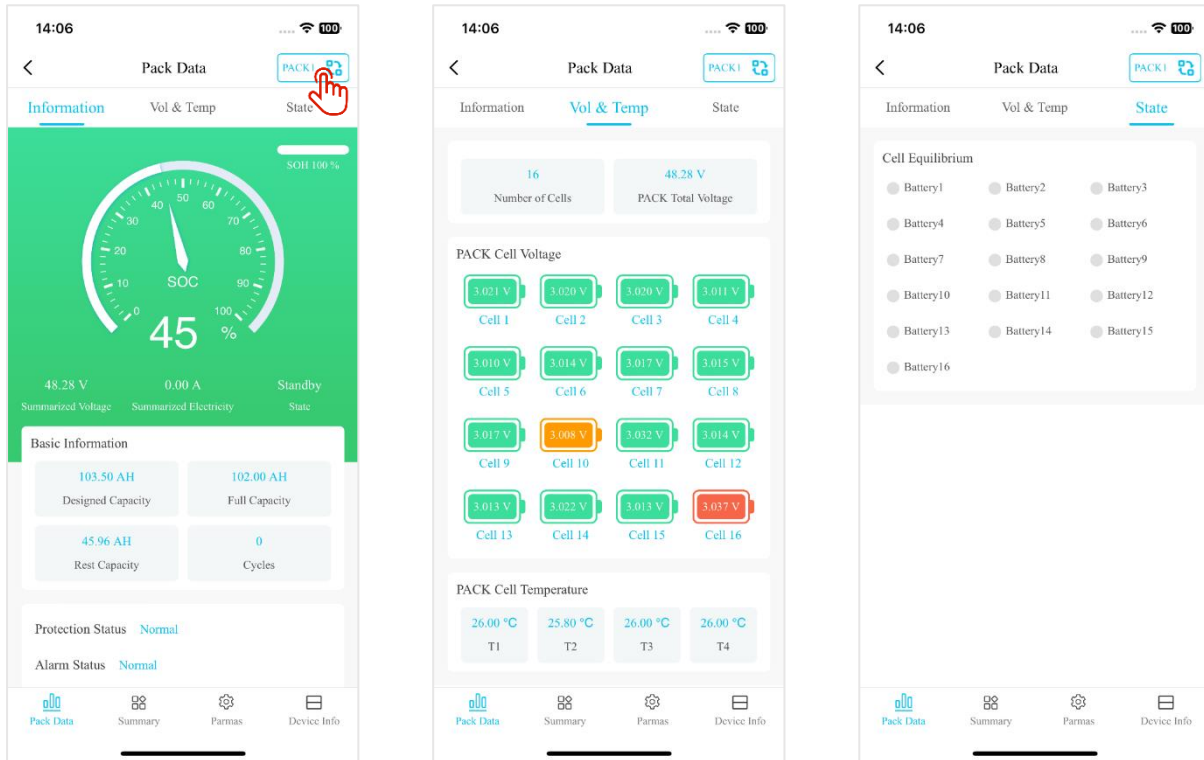
7.3.1 Unbound



Unbound device: Users can only view basic device information through the APP: comprehensive information, PACK information, device information, and can modify parameter settings: PACK parameters, inverter protocol.

7.3.2 Binding



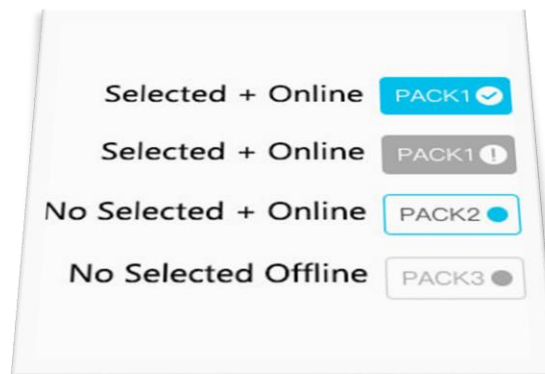
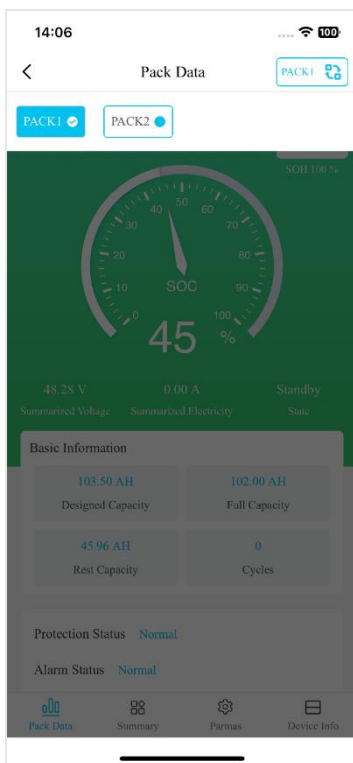
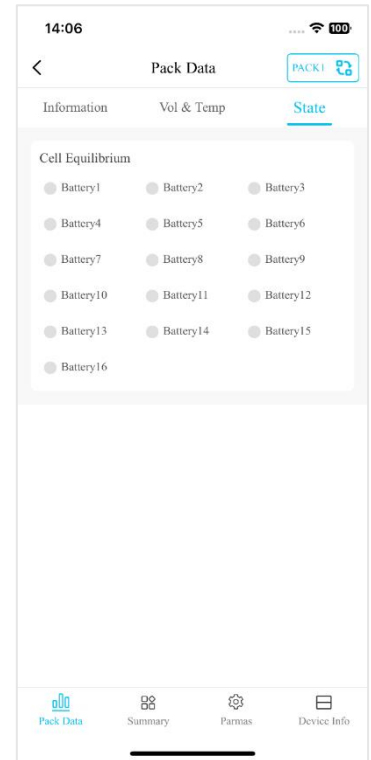
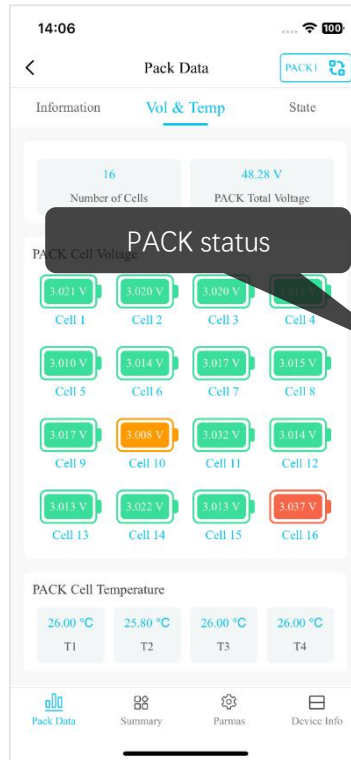
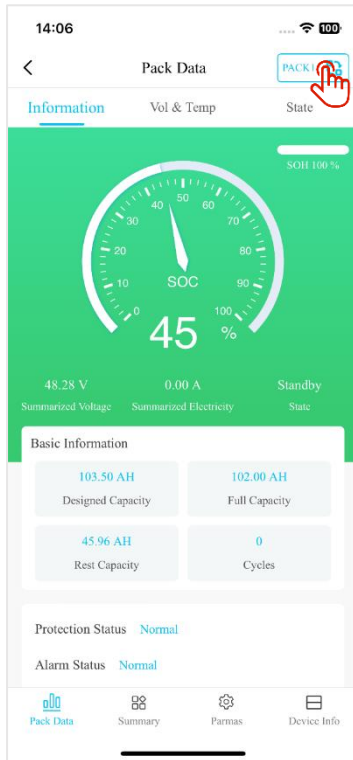


Bind device: View comprehensive and PACK data, and determine whether you have the permission to modify parameters based on the terminal account permissions.

7.3.2.1 PACK data

PACK parameters: view basic PACK information, battery cell voltage, battery cell temperature, and balance status;

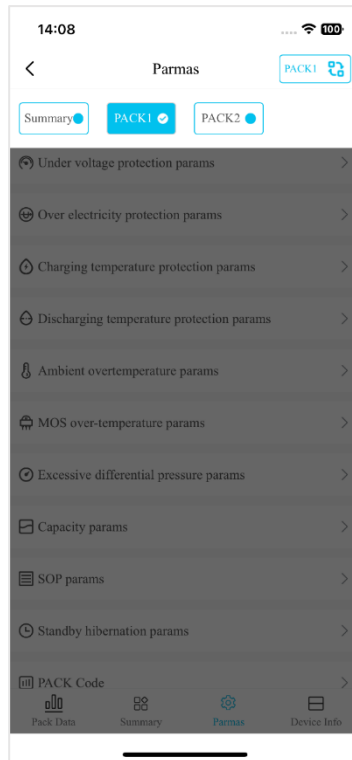
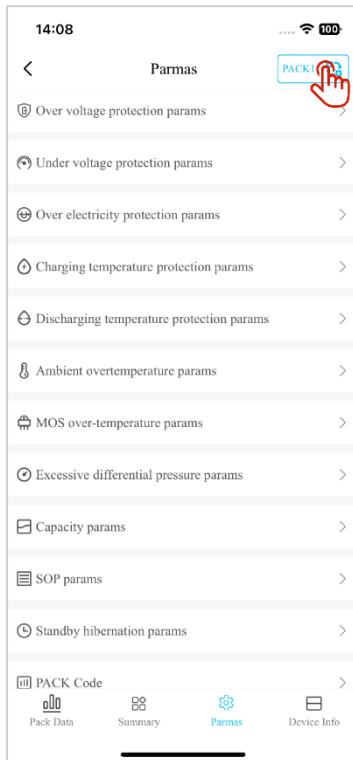
Switch PACK: View other PACK data information.



7.3.2.2 Parameter settings

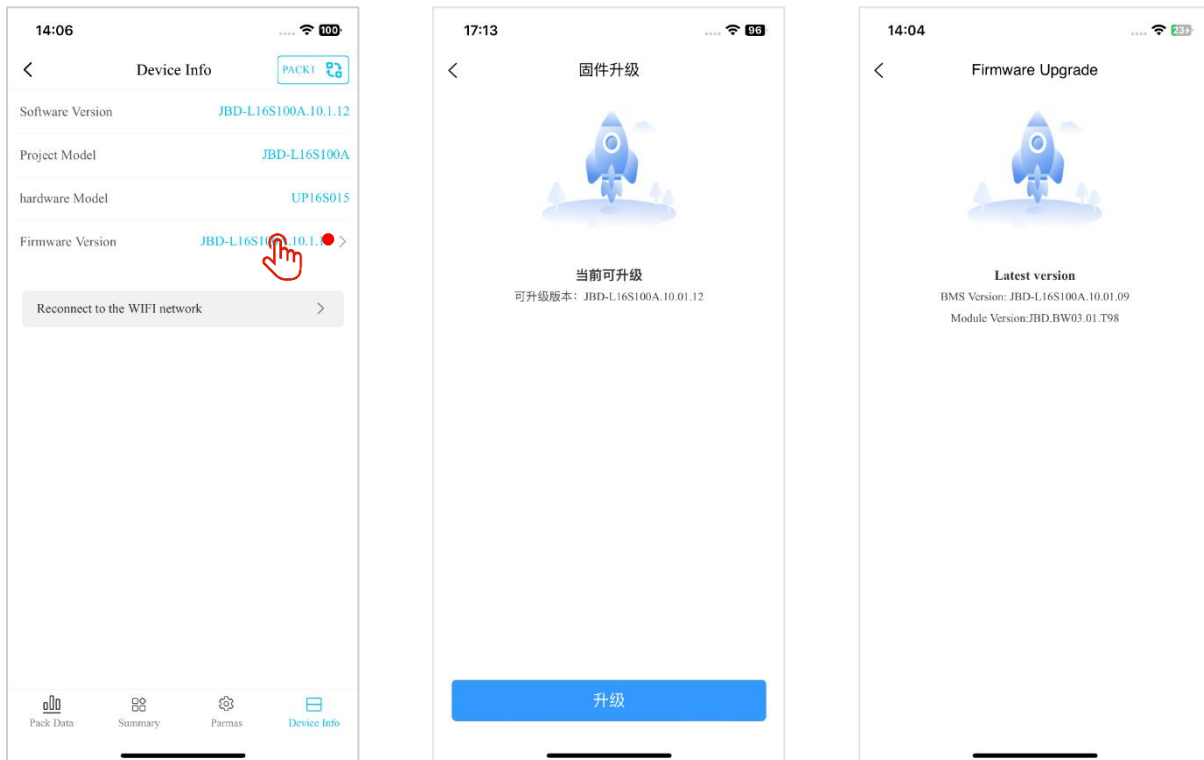
- C-end users can view PACK parameters and modify inverter protocols
- The B-end account or the C-end account with permission can modify the parameters

- General – Modify the parameters and modify the PACK parameters simultaneously
- PACK – Modify parameters, only modify the parameters of PACK itself



7.3.2.3 Device Information

- View the device information of each PACK
- Firmware upgrades available for PACK
- Reconfigurable WIFI network information



7.4 Reconfigure Wi-Fi

- WiFi information (WiFi name, WiFi password) has changed
- When the device is offline and needs to be reconnected

