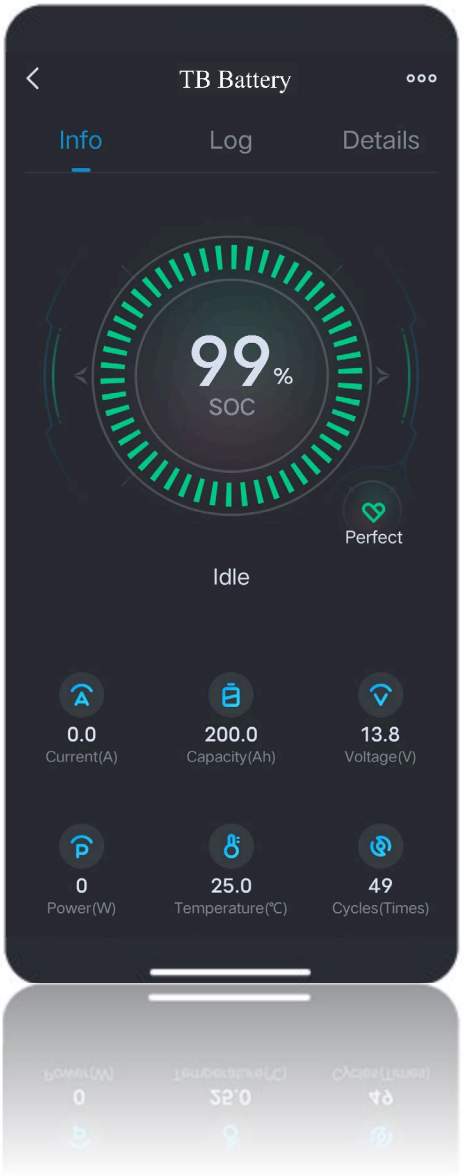
# “TB Battery” APP -User Manual



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# 1. Download

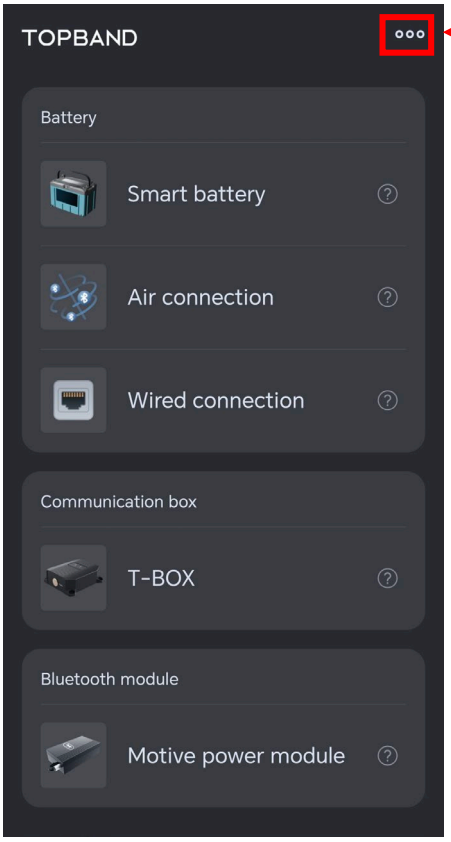
"TB Battery" is a software platform developed by Topband to manage lithium batteries. The platform integrates Bluetooth technology with lithium battery management software and is designed to view, monitor, manage, and control smart lithium batteries.

There are two methods to download the "TB Battery" APP.

1. "TB Battery" can be downloaded to smartphones from the IOS APP Store or Google's App Store.
2. Scan the following QR code to download the "TB Battery" APP directly.

# 2. Home

## 2.1 Device type




| Device type | Specific type |
|---|---|
| Battery | Smart battery |
| | Air connection |
| | Wired connection |
| Communication box | T-BOX |
| Bluetooth module | Motive power module |

### ① Smart battery

**Application scene**: When users need to connect a single battery to obtain information about the battery.

**Function**: Display the relevant information required by the users, such as SOC, voltage, current, temperature, etc.

### ② Air connection

**Application scene**: If multiple batteries are used at the same time, you need

to know the information about all batteries.

**Function**: Through this function, multiple batteries can be connected at the same time to form an air system, and the summary information of the system can be automatically calculated and displayed, such as: SOC, voltage, current, system composition, etc. And it can obtain and display all kinds of information of a single battery in the system.

### ③ Wired connection

**Application scene**: When the users need to compose multiple batteries into a battery system and communicate with the outside or connect the inverter to communicate. (Only for Victron inverter without T-BOX)

**Function**: Multiple batteries are connected through communication wires to form a system for external communication or connected to the inverter. This function connects to the master battery of the system to obtain system summary information, such as SOC, voltage, current, and system composition.

### ④ T-BOX

**Application scene**: When users need to connect multiple inverters to communicate and obtain battery summary information.

**Function**: Connect the T-BOX to obtain the system summary information and set the inverter protocol. Firstly complete the communication

networking of the battery system, and then communicate between the T-BOX and the master battery to achieve intelligent communication between the battery system and multiple inverters.

⑤ **Motive power module**

**Application scene**: Dedicated to GC battery series, you can get system summary information by connecting Motive power module.

**Function**: Display information such as SOC, voltage, current, temperature, etc.

## 2.2 More

The following information will be displayed on this page.

① Company information: including telephone, email, official website and company address.

② Document: The user manual for the APP can be found here.

③ Language: The default option is to automatically recognize the language of the phone, but you can also manually set the language used by the APP, including Chinese, English, German, French, Italian, Spanish and Swedish.

④ Temperature unit: The default value is ℃. It's possible to select ℃ or ℉ on the setting page.

⑤ APP version: Current APP version.

## 2.3 Pop-up window prompt

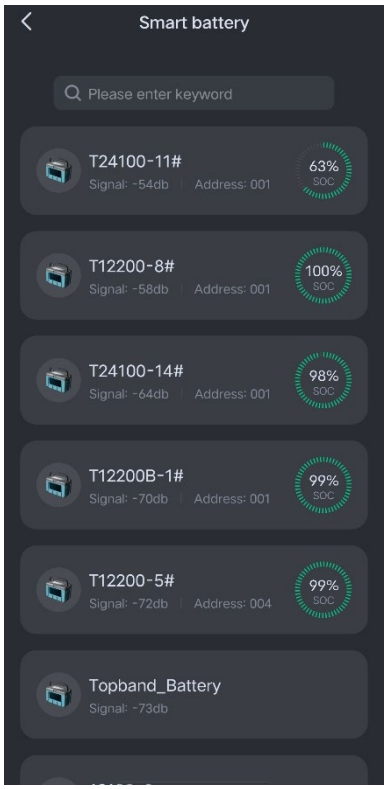
| Possible Pop-up window prompts | Explanation |
|---|---|
| Please connect to right device. | Please connect the Topband's battery. |
| Battery numbers mismatch. | The number of batteries in the network does not match the number set by the APP. Please check whether the number of batteries setting matches the actual number of batteries. |
| Error, please connect the Master battery. | Try pressing the config button on the display panel of the first battery for more than 10 seconds again. |
| The system configuration does not match the current one. | The network has already existed. You need to find the existent network and release it, or press the config button for more than 3 seconds to release it. And then try re-networking. |
| Network has been released, Delete it or not? | Network has been released, determine whether to delete it. |
| System changed, data has been updated. | System changed, the latest system data has been summarized. |

# 3. Battery

Battery section includes smart battery, air connection and wired connection.

## 3.1 Smart battery

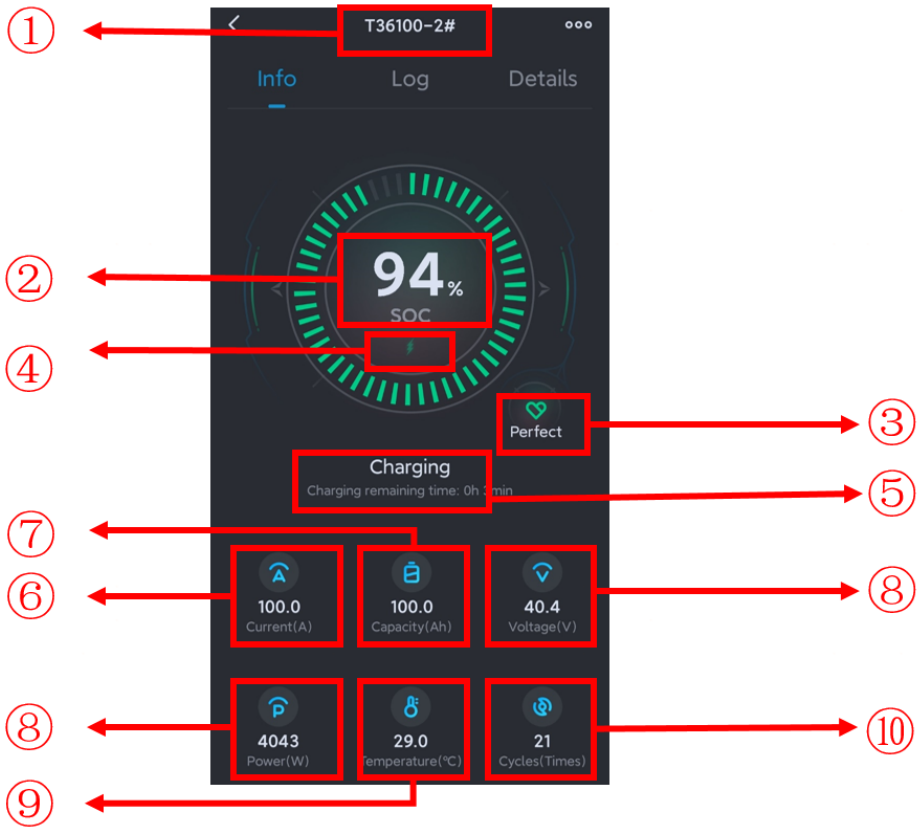
### 3.1.1 Search interface




Turn the battery switch on. After entering the smart battery interface, the name and signal strength of a single battery will be displayed (Batteries with SOC and address can be displayed and modified BMS parameters in “more” interface, and it can display the battery software version here.).You can also find the battery to be connected directly in the battery list. Once you have found the battery you want to connect, click to connect.

### 3.1.2 Basic information

**（1）Info**




① The name of the currently connected battery.

② SOC(State of Charge) of battery:

SOC≤20%: icon in red;

SOC>20%: icon is green.

③ The health status of the battery: Perfect or Good.

④ Battery status indicator:

Standby: No indicator;

Charging: Lightning symbol flashing;

During discharge: The lightning sign remains on;

Heating: Heating icon.

⑤ Current status of the battery:

Standby: In standby state; Show Idle;

Charging: Charge, and show the charging remaining time;

Discharge: Discharge, and show the discharging remaining time;

Heating: Heating icon.

⑥ Current: The charging current or discharge current of the battery, in unit A, is positive for charging and negative for discharging.

⑦ Capacity: Battery design capacity. The unit is Ah.

⑧ Voltage: Current voltage of the battery. The unit is V.

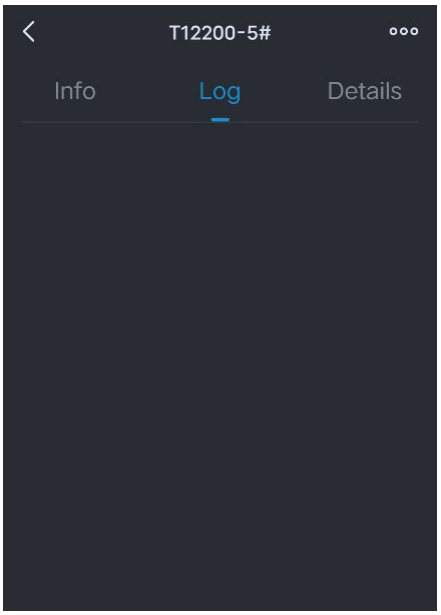
Power: Power=Voltage * Current. The unit is W.

⑨ Temperature: Battery average temperature. The unit is ℃ or ℉.

⑩ Number of cycles: The number of times the battery has been used.

**（2）Log**

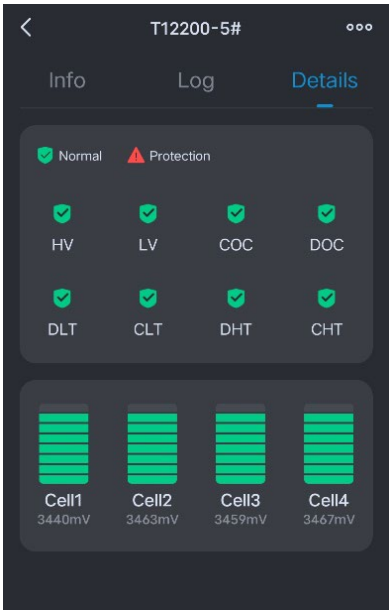
Slide right or click Log to access the page:



Only the current and connected battery alarm/protection and recovery records are displayed. Historical fault records are not saved, and no records are saved after exiting the APP.

**（3）Details**

Slide right or click Log to access the page:



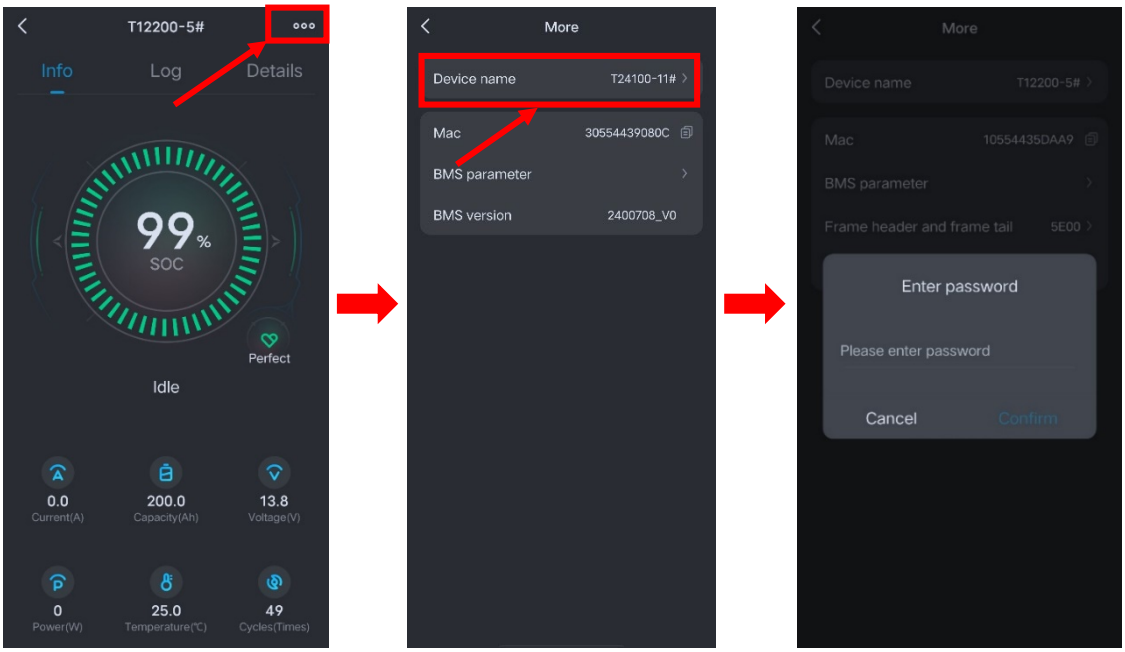

Display the voltage of a single cell. The unit is mV.

Display whether the following eight battery protections are triggered:

| Protection | Explanation |
|---|---|
| HV | High voltage |
| LV | Low voltage |
| COC | Charge over current |
| DOC | Discharge over current |
| DLT | Discharge low temperature |
| CLT | Charging low temperature |
| DHT | Discharge high temperature |
| CHT | Charge high temperature |

### 3.1.3 More

Click "。。。" in the upper right corner. The following information are displayed:




① Device name: Indicates the name of the connected battery. To facilitate battery identification, enter password "1234" to change the device name.

② Mac: Displays the MAC address of the current battery.

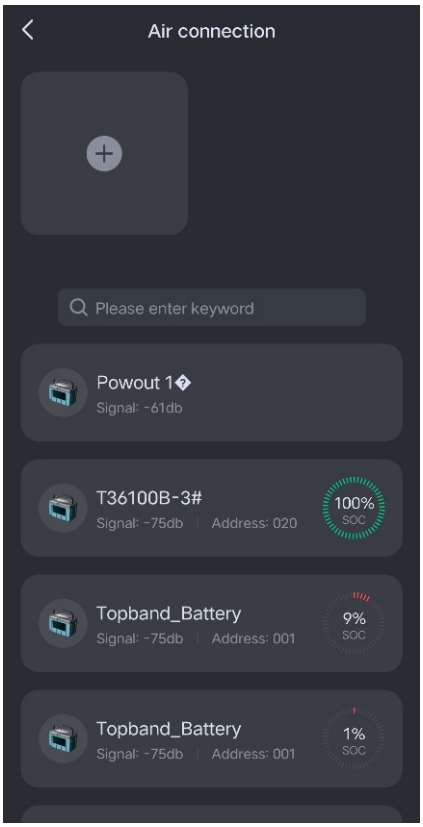
**The following section shows only some batteries:**

① BMS parameters: When the battery is connected, you can set the BMS parameters here, display the version of the parameter file and update the latest parameter file here. The password is "A1234". BMS parameters include: discharge cut-off voltage (2.5~3.0V), charge cut-off voltage (3.65~3.85V), charge MOS switch, discharge MOS switch and sleep mode.

② Battery software version: Display the battery software version of the current device. When a new software version is detected on the device, a Pop-up window prompt will appear to prompt the update, and a red dot will also appear here to prompt the users to update the software.

## 3.2 Air connection

### 3.2.1 Search interface




（1）Support for fuzzy search battery.

（2）System List:

① Display saved system: system name, system voltage, system current.

② Click "+" to configure the system and save up to 2 systems.

③ The switch can connect and disconnect the system.

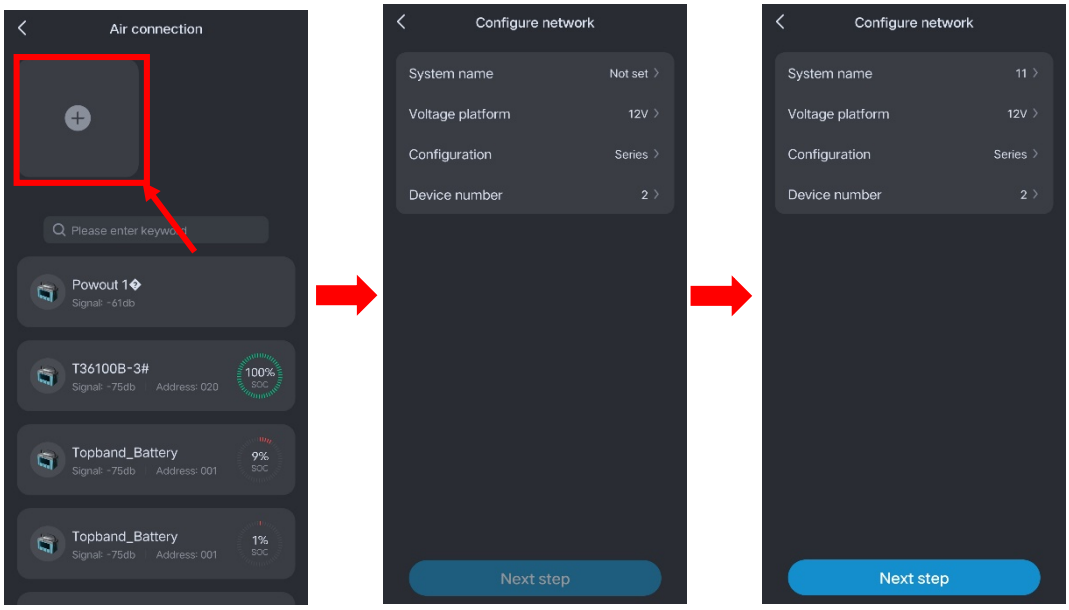
（3）Battery List

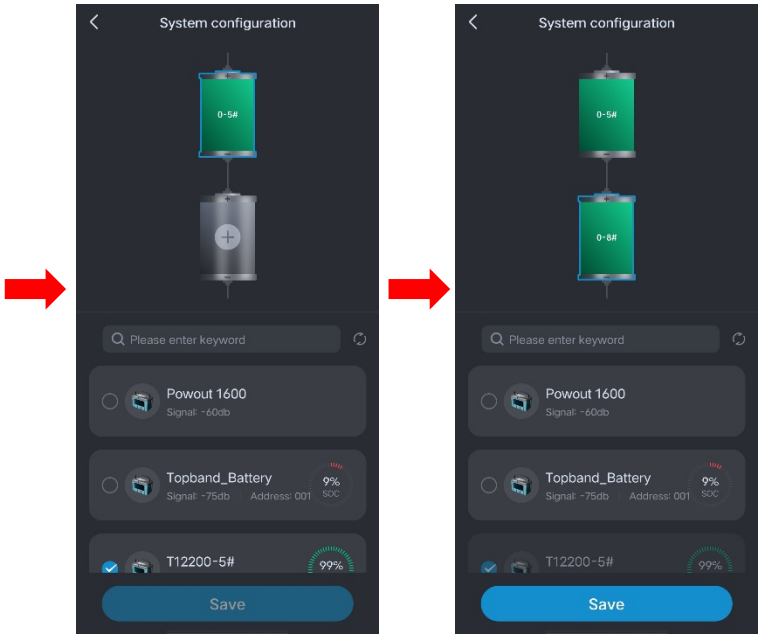
① Display the battery Bluetooth name, signal strength, battery address, and battery SOC that can be searched for.

② Connecting any battery will automatically redirect to the single battery information interface.

### 3.2.2 Distribution network steps

On the air connection page, click "+"sign, set the system name, voltage platform (set to the voltage of a single battery), connection mode, and number of devices, and click Next. Select the corresponding battery in the battery list to the corresponding position in the APP, and click save to complete the networking. Save up to 2 systems.






### 3.2.3 System information

#### （1）System Info

① The name of the currently connected battery.

② SOC of battery:

SOC≤20%: icon in red;

SOC>20%: icon is green.

③ Battery status indicator:

Standby: No indicator;

Charging: Lightning symbol flashing;

During discharge: The lightning sign remains on;

Heating: Heating icon.

④ Current status of the battery:

Standby: In standby state. Show Idle;

Charging: Charge, and show the charging remaining time;

Discharge: Discharge, and show the discharging remaining time;

Heating: Heating icon.

⑤ Current: The charging current or discharge current of the battery, in unit A, is positive for charging and negative for discharging.

⑥ Capacity: battery design capacity. The unit is Ah.

⑦ Voltage: Current voltage of the battery. The unit is V.

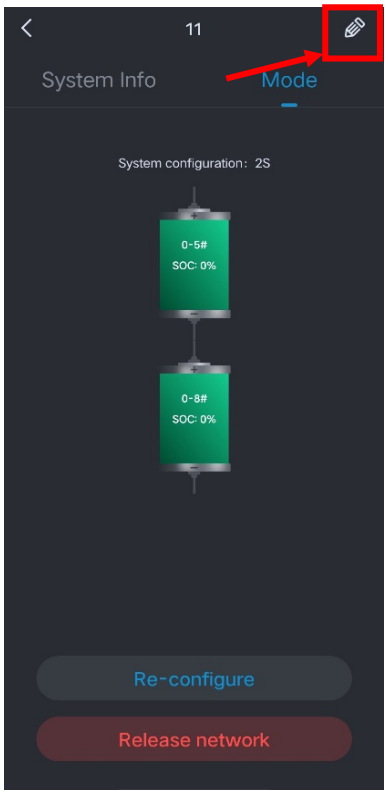
⑧ Temperature: The maximum and minimum temperature of battery in the system. The unit is ℃ or ℉.

⑨ Configuration: Series parallel relationship and quantity of battery.

**（2）Mode**

Right stroke or click on "Mode" to enter the page:

Click the icon ✎ to change the system name and password "1234".




① Display the system configuration : Serial parallel relationship and quantity;

② Display the name and SOC of each battery in the system;

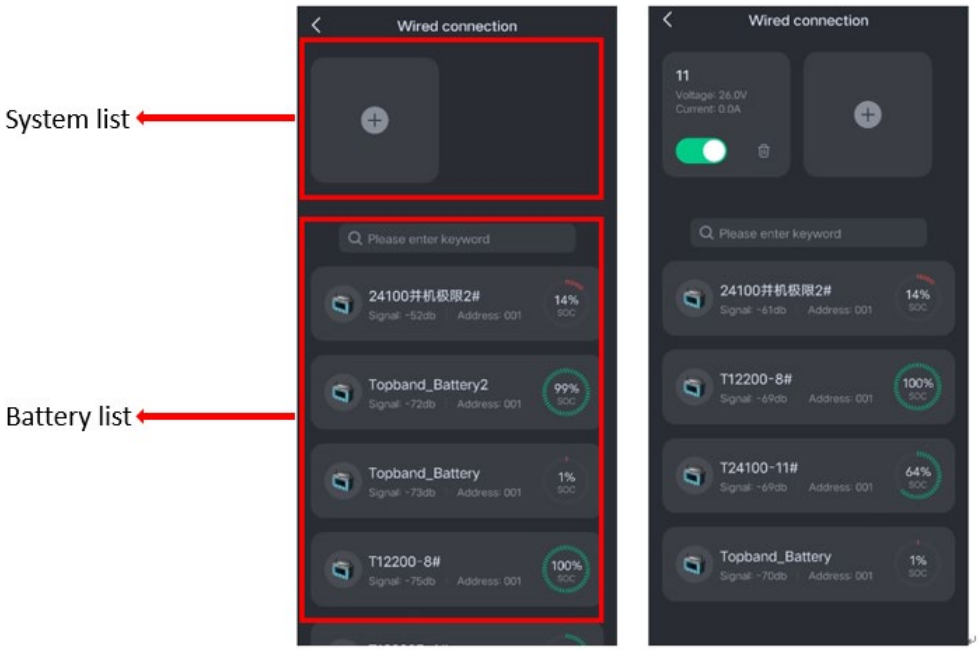
③ Re-configure: Reconnect battery to save the new system;

④ Release network: Release network system;

⑤ Click the single battery icon to enter the single battery information page to view the detailed information of the battery;

## 3.3 Wired connection

### 3.3.1 Search interface




**（1）System List**

① Display connected systems: system name, system voltage, system current.

② Click "+" to configure the system and save up to 6 systems.

③ The switch can connect and disconnect the system.

④ Up to 6 systems can be grouped.

⑤ Delete key deletes the system.

It should be noted that when you click the Delete key to delete the system, only the battery system on the APP will be deleted, and the actual battery system will not be deleted. You need to click Release network on

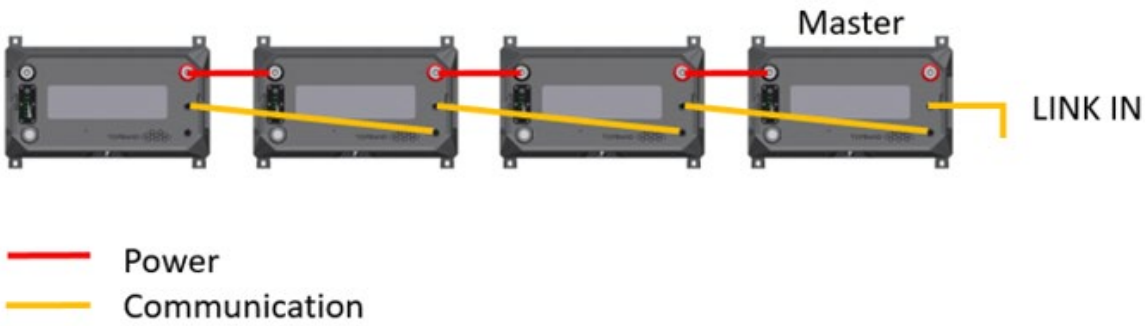
the mode page to actually delete the system.

**（2）Battery List**

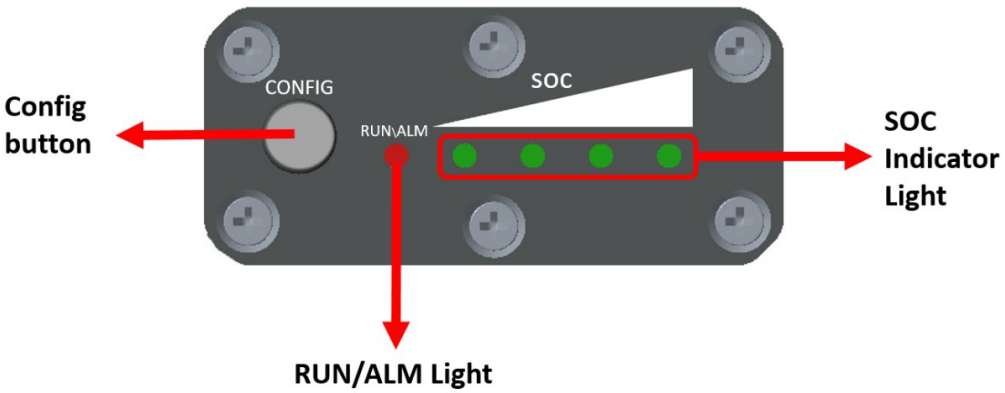
a) Display the device Bluetooth name, signal strength, device address, and device SOC that can be searched.

b) Connecting any device will automatically determine whether the settings are in the system.

### 3.3.2 Distribution network steps




a) Connect the communication wires between batteries correctly: connect the LINK OUT of the first battery to the LINK IN of the second battery, then connect the LINK OUT of the second battery to the LINK IN of the third battery, and so on.



b) Turn on the power switch of all batteries, press the config button on the display panel of the first T-premium for more than 3 seconds, and put the batteries into the disconnected state. At this time, the SOC indicator light of the battery will flash simultaneously. If the SOC indicator light does not flash simultaneously, it indicates a failure to enter the disconnected state. Please try again.

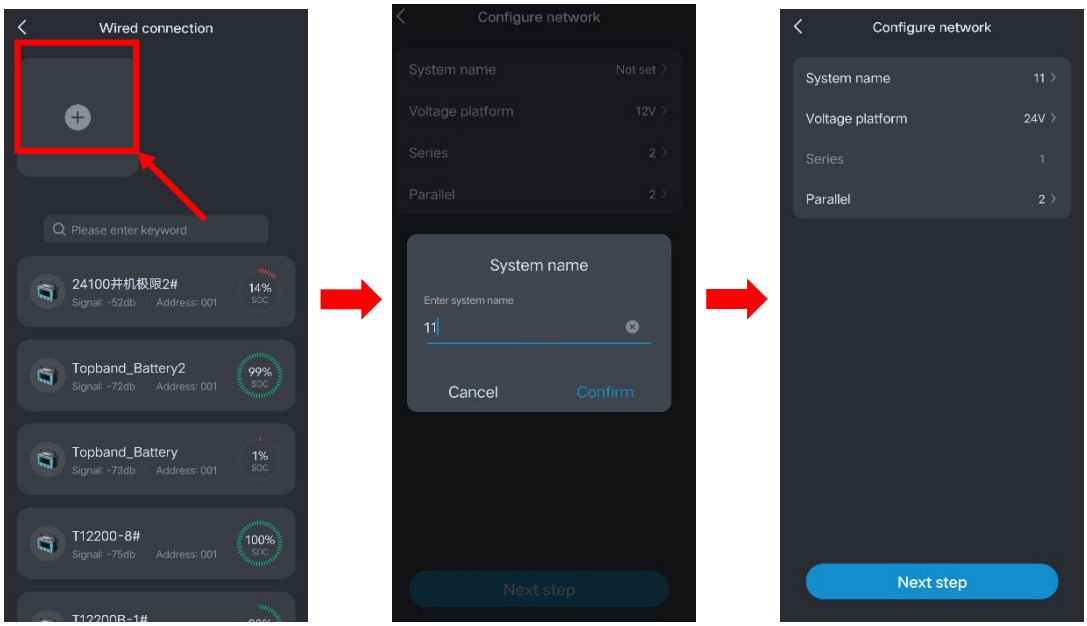
c) Press the config button on the display panel of the first battery for more than 10 seconds, and the battery will enter the communication network state. At this point, the SOC indicator lights of all batteries will flash alternately, and the networking process may take 2-3 minutes. After completing the communication network, the SOC indicator light of the battery will stop flash alternately and display the battery SOC. If the SOC indicator light does not stop flash alternately and display the battery SOC, it indicates a failure to enter the communication network state. Please try again.

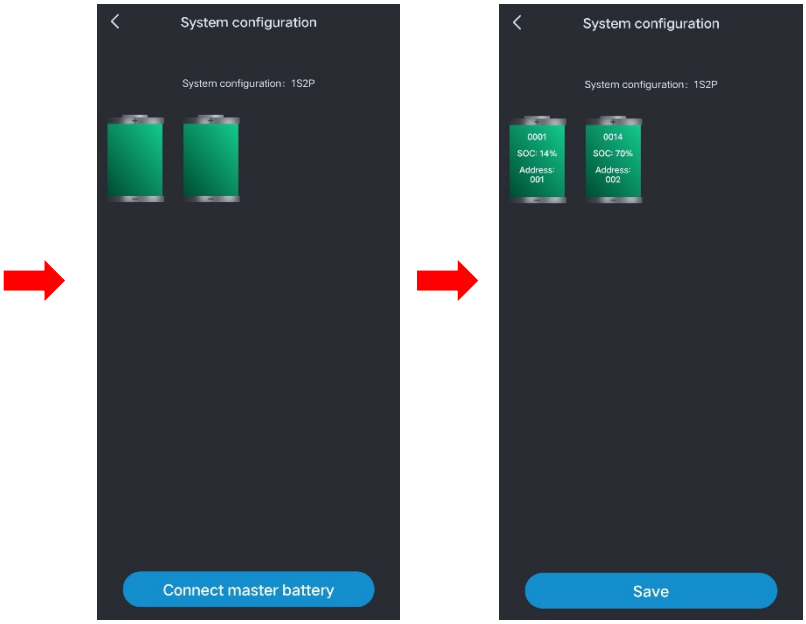
d) In the wired connection page of the APP, click "+"sign, set the system name, voltage platform (set as the voltage of a single battery), series number, parallel number according to the prompts, click next and connect the master battery to complete the networking. A maximum of 6 systems can be saved. After the connection is completed in the APP of one mobile phone, the APP of the other mobile phone can also enter the previously completed connection system.

12V system: 16P maximum at 1S, 4P maximum at 2/3/4S.

24V system: cannot be connected in series, maximum 16P.

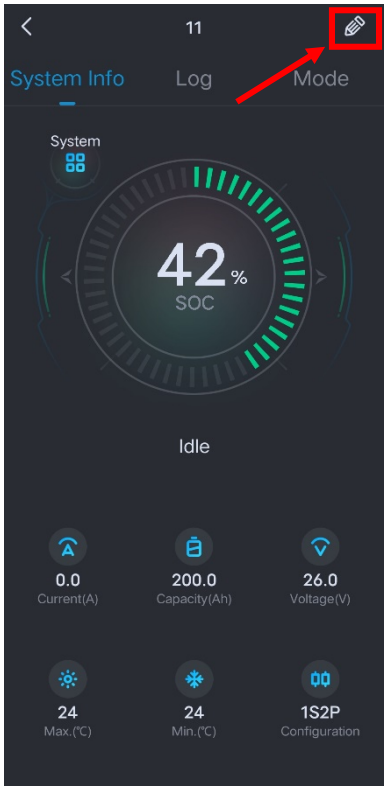
36V system: cannot be connected in series, maximum 16P.



### 3.3.3 System Information

#### （1）System Info




On this page, all information is based on the battery system. You can click the icon ✎ in the upper right corner to change the system name and password "1234".

① The name of the currently connected system.

② SOC of battery:

SOC≤20%: icon in red;

SOC>20%: icon is green.

③ Battery status indicator:

Standby: No indicator;

Charging: Lightning symbol flashing;

During discharge: The lightning sign remains on;

Heating: Heating icon.

④ Current status of the battery:

Standby: In standby state; Show Idle;

Charging: Charge, and show the remaining time of charging;

During discharge: Discharge, and show the remaining time of discharging;

Heating: Heating icon.

⑤ Current: The charging current or discharge current of the battery.

system, in A as a unit, positive for charging, negative for discharge.

⑥ Capacity: Battery design capacity. The unit is Ah.

⑦ Voltage: Current voltage of the battery. The unit is V.

⑧ Temperature: The maximum and minimum temperature of battery

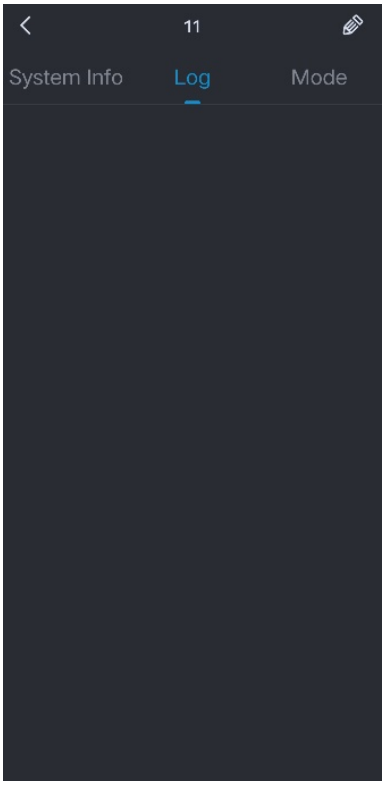
In the system. The unit is ℃ or ℉.

⑨ Configuration: Series parallel relationship and quantity of battery.

### （2）Log

Right slide or click on "Log" to enter the page:

Displays alarm/protection and recovery records for a single battery/system.




### （3）Mode

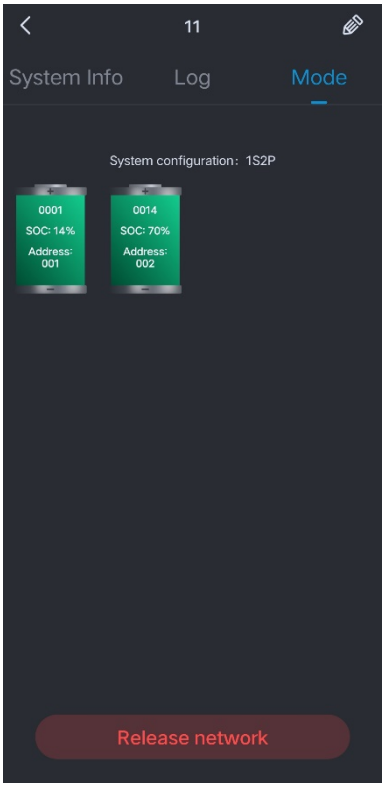
Right slide or click on "Mode" to enter the page:

① Display the system configuration: serial parallel relationship and quantity.

② Display the system name, SOC and address in the system.

③ Reconfigure: You can reselect the master to save the new system.

④ Click the single battery icon to enter the single battery information page to view the detailed parameters of the battery.

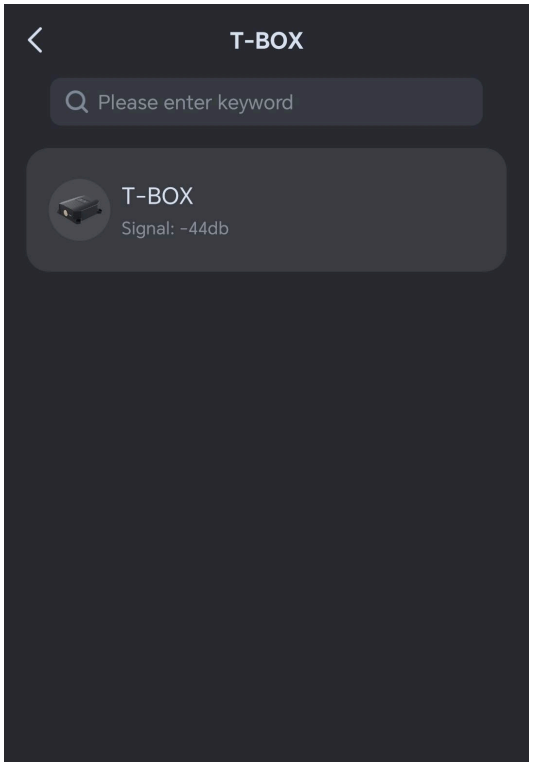


# 4. Communication box

## 4.1 T-BOX

### 4.1.1 Connection steps

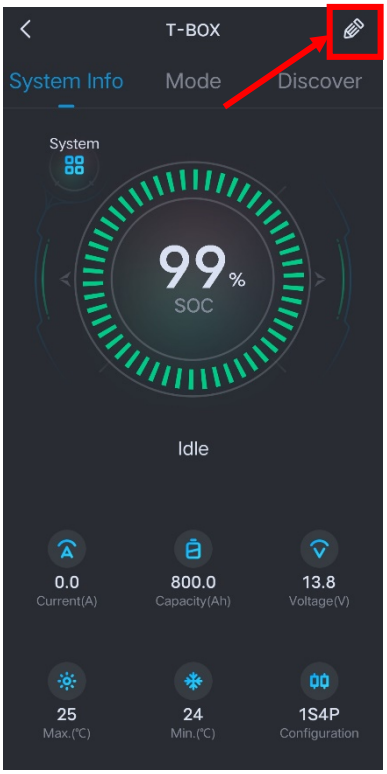
Turn on the T-BOX switch. After entering the T-BOX interface, the Bluetooth name and signal strength of the T-BOX will be displayed. You can also find the T-BOX to be connected directly in the up list. After finding the T-BOX that needs to be connected, click to connect.




### 4.1.2 System information

On this page, all the information is based on the battery system as a whole. You can click the icon in the upper right corner to change the name of the T-BOX and password "1234".

## （1）System Info




① The name of the currently connected T-BOX.

② SOC of battery:

SOC≤20%: icon in red;

SOC>20%: icon is green.

③ Battery status indicator:

Standby: No indicator;

Charging: Lightning symbol flashing;

During discharge: The lightning sign remains on;

Heating: Heating icon.

④ Current status of the battery:

Standby: In standby state. Show Idle;

Charging: Charge, and show the charging remaining time;

Discharge: Discharge, and show the discharging remaining time;

Heating: Heating icon.

⑤ Current: the charging current or discharge current of the battery. system, in A as a unit, positive for charging, negative for discharge.

⑥ Capacity: battery design capacity. The unit is Ah.

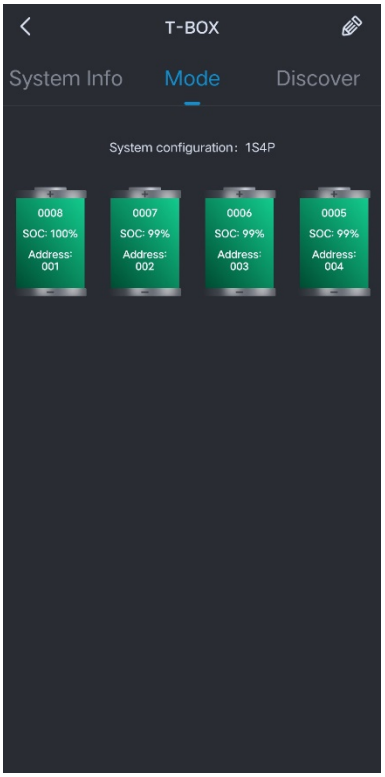
⑦ Voltage: Current voltage of the battery. The unit is V.

⑧ Temperature: The maximum and minimum temperature of battery in the system. The unit is ℃ or ℉.

⑨ Configuration: Series parallel relationship and quantity of battery.

**（2）Mode**

Right slide or click on "Mode" to enter the page:



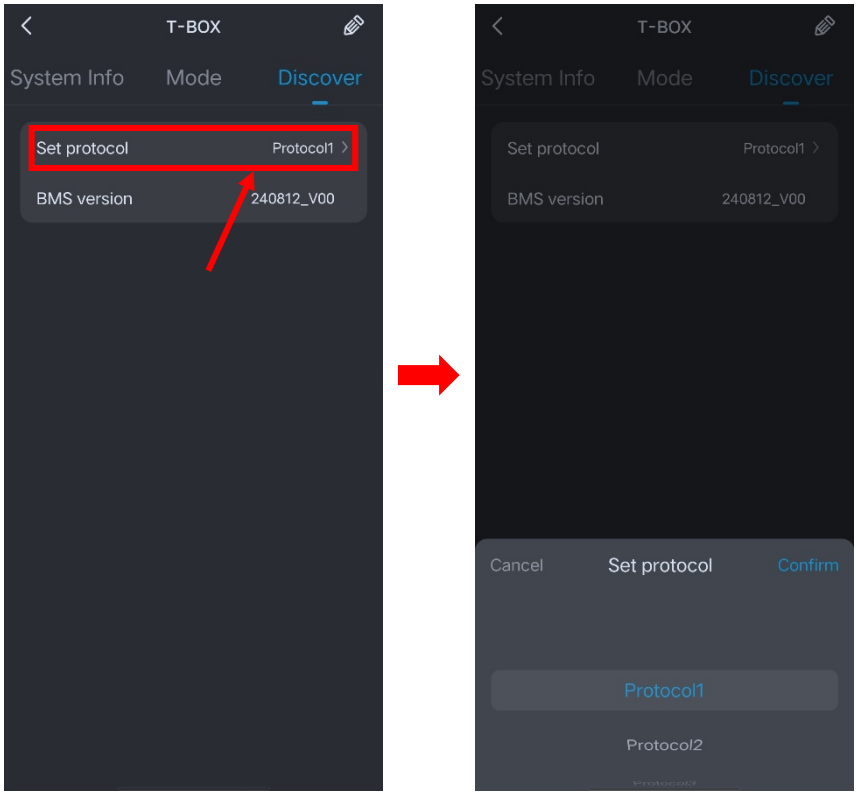

① Display the system configuration: serial parallel relationship.

② Display the name, SOC, and address of each device in the system.

③ Click the single battery icon to enter the single battery information page to view the detailed parameters of the battery.

**（3）Discover**

Right slide or click on “Discover” to enter the page:




① Display and set the protocol of the current system. The inverter protocol corresponding to the Protocol ID is shown in the following figure.

② Display the software version of the T-BOX. When a new software version is detected, a Pop-up window prompt will appear to prompt the update, and a red dot will also appear here to prompt the users to update the software.

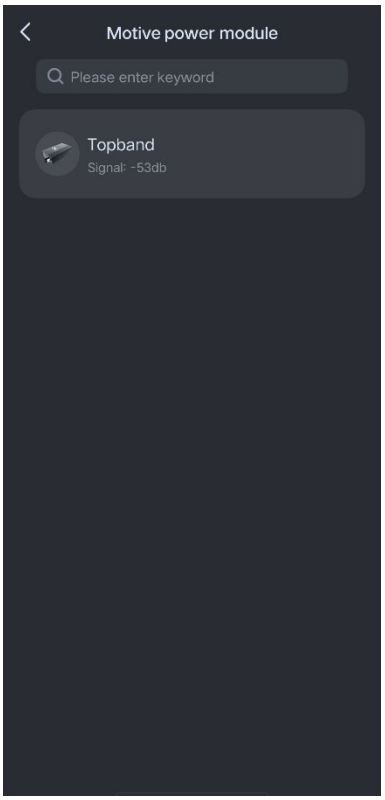
| Protocol ID | Inverter |
|---|---|
| Protocol 1 | Victron/SMA/Studer Innotec/Sofar |
| Protocol 2 | Sol-Ark/Solis/Goodwe/Deye/Growatt/ SAJ/LUXPOWER/Megarevo/INVT/Sermatec/ TBB/MUST/SUNGOLDPOWER SG/Sunsynk |
| Protocol 3 | Schneider |
| Protocol 4 | NMEA-2000 (Pending) |
| Protocol 5 | CIBUS |
| Protocol 6 | RV-C (Pending) |
| Protocol 11 | Voltronic/SUNGOLDPOWER SPH/ RCT/MPP Solar/Alpha outback/Phocos |
| Others | Pending |

# 5. Bluetooth module

## 5.1 Motive power module

### 5.1.1 Connection steps

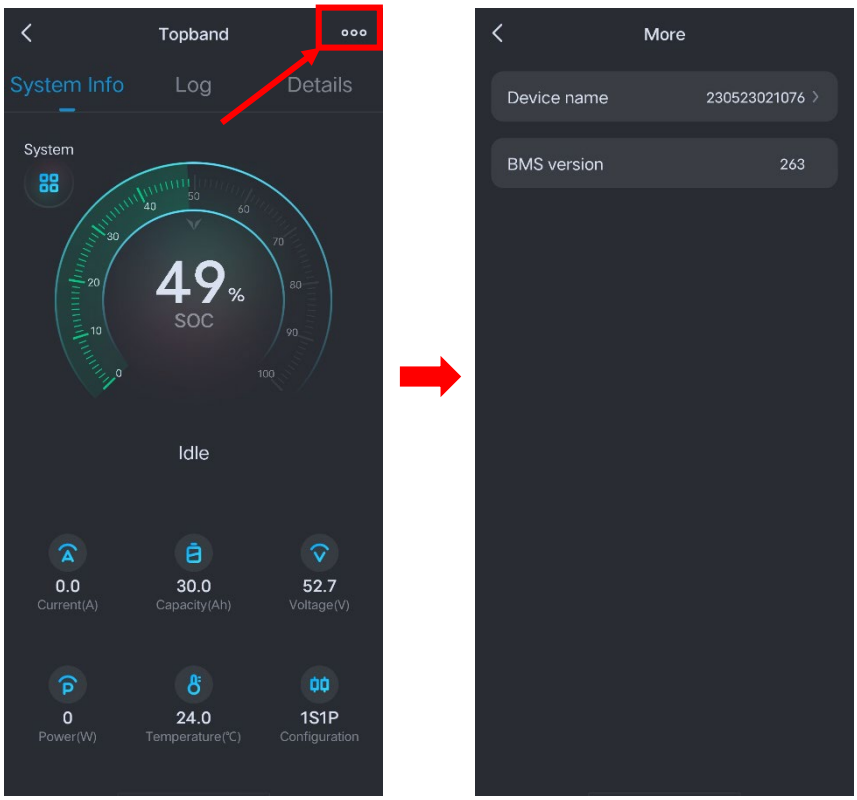
After entering the Motive power module interface, the Bluetooth name and signal strength of the Motive power module will be displayed. Support fuzzy search of Motive power module in the upper query interface, you can also directly find the Motive power module that needs to be connected in the list. After finding the Bluetooth module of the Motive power module that needs to be connected, click to connect.




### 5.1.2 System information

**（1）Summary data interface**

Click "。。。 "in the upper right corner to enter “more” interface, it can modify the device name here: refers to the name of Motive power module connected, enter the password "1234" to modify the name.




① The name of the currently connected T-BOX.

② SOC of battery:

SOC≤20%: icon in red;

SOC>20%: icon is green.

③ Battery status indicator:

Standby: No indicator;

Charging: Lightning symbol flashing;

During discharge: The lightning sign remains on;

Heating: Heating icon.

④ Current status of the battery:

Standby: In standby state. Show Idle;

Charging: Charge, and show the charging remaining time;

Discharge: Discharge, and show the discharging remaining time;

Heating: Heating icon.

⑤ Current: the charging or discharge current of the battery in the system, in A as a unit, positive for charging, negative for discharge.

⑥ Capacity: battery design capacity. The unit is Ah.

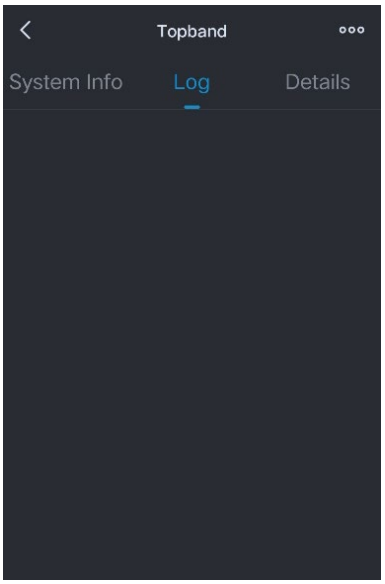
⑦ Voltage: Current voltage of the battery. The unit is V.

⑧ Temperature: The maximum and minimum temperature of battery in the system. The unit is ℃ or ℉.

⑨ Configuration: Series parallel relationship and quantity of battery.

**（2）Log**

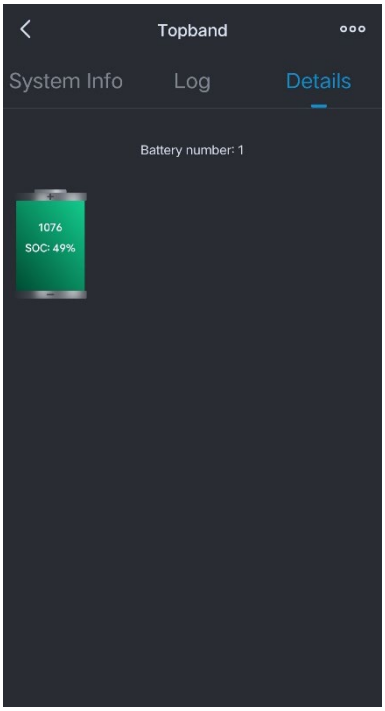
Right slide or click on "Logs" to enter the page:




Display the alarm /protection and recovery records of the system and battery.

## （3）Details

Right slide or click on "Details" to enter the page:



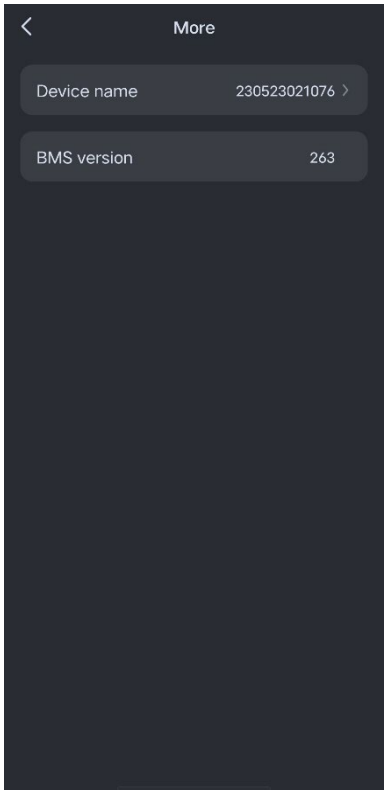
① Display the number of batteries in the system.

② Display the name, SOC of each battery in the system.

③ Click the single battery icon to enter the single battery information interface to view the detailed parameters of the battery.

### 5.1.3 More

Click "。。。"in the upper right corner. The following information are displayed:




① Device name: Indicates the name of the connected Bluetooth module. To facilitate battery identification, enter password "1234" to change the device name.

② BMS version: Current BMS version. Display the software version of BMS. When a new software version is detected on the device, a Pop-up window prompt will appear to prompt the update, and a red dot will also appear here to prompt the users to update the software.

# 6. NOTICE ABOUT UPDATE

Notice:

1. When upgrading the GC battery using the Motive power module, the battery will interrupt the external output, so it is necessary to supply additional power to the Bluetooth module. The power supply is required to be direct current with a voltage range of 24-70V.

2. The interruption, incomplete or direct exit of the upgrade function of other sections of the APP will not affect the normal use of the battery, and the battery will only stay in the version before the update. However, it should be noted that when upgrading the GC battery using the Motive power module, any incomplete upgrade will cause the battery to be unable to use, and the entire upgrade process must be completed before it can be used. If there is an interruption, stuck, or APP exit during the upgrade process, please reconnect and continue the upgrade process until the upgrade is completed.