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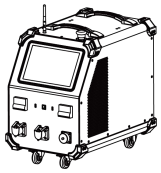
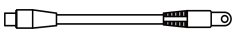
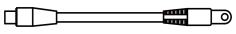
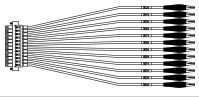
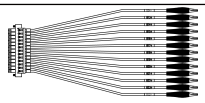
# 1. Product Overview

EVP711 is an EV battery pack module charging and discharging device developed by Launch. It adopts the most advanced charging and discharging technology, according to the charging and discharging characteristics of lithium and Ni-MH batteries, has built-in various test and maintenance modes, which are suitable for the discharge, charging, cycle charging and discharging tests of various lithium and Ni-MH batteries on the market. The device adopts an intelligent operating system, so that users and managers can easily and scientifically maintain and manage the battery pack, thus extending the service life of the battery pack.

# 2. Product composition and accessories

The device is mainly composed of main unit, temperature and voltage acquisition box, discharge cables, etc. The following accessories are for reference only. For product configuration details, please consult from the local agency or check the package list supplied with this device together.

| No. | Name | Q'TY | Reference Picture |
|---|---|---|---|
| 1 | Main Unit | 1 |  |
| 2 | Temperature and voltage acquisition box | 1 | |
| 3 | AC power cord (Include UK/US/EU/AU) | 1 | |
| 4 | AC power cord (Single-phase three wire) | 1 | |
| 5 | Red DC test cable Positive | 1 |  |
| 6 | Black DC test cable Negative | 1 |  |
| 7 | Network cable | 1 | |
| 8 | Voltage acquisition cable (12P) | 1 |  |
| 9 | Voltage acquisition cable (13P) | 1 |  |
| 10 | User manual | 1 | |
| 11 | Packing list | 1 | |

## 3. Precautions for Safe Use

(1) Follow the relevant requirements in the user manual to operate the device.
(2) When operating the device, please take insulation protection measures and wear dry and clean insulating gloves.
(3) In case of abnormality, please disconnect the device's working power supply and test cable.

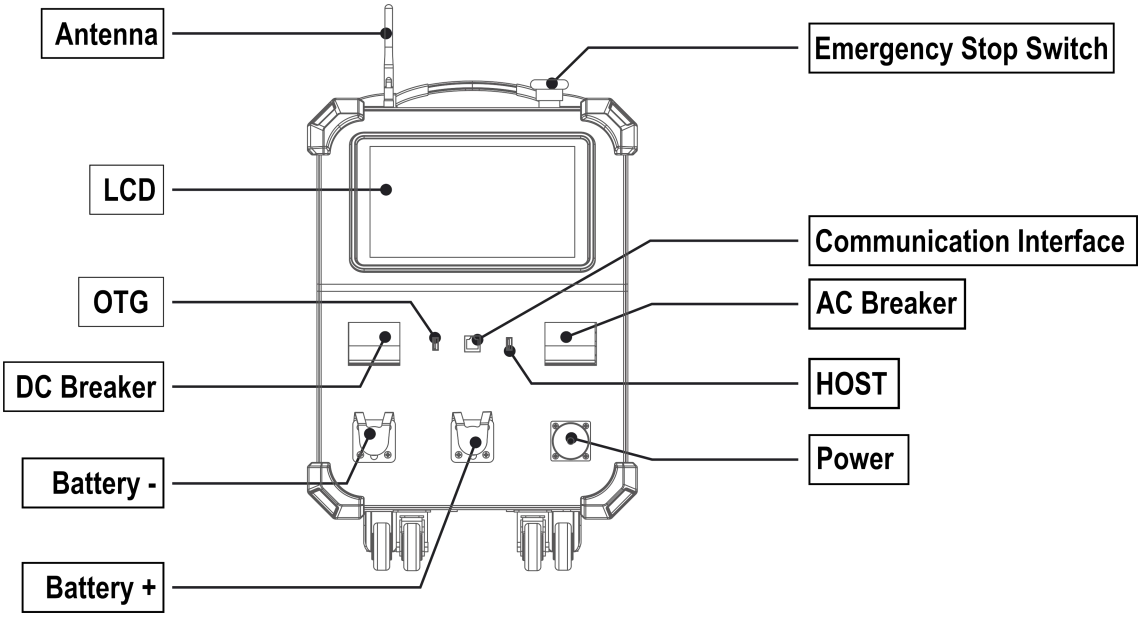
## 4. Technical Features

| Parameter | Description |
|---|---|
| **Model** | EVP711 |
| **Power input** | AC 90-264V |
| **Display** | 10-inch LCD screen |
| **Data communication** | RS485 |
| **Data dump** | U disk |
| **Data storage** | 32G |
| **Module data acquisition communication** | Harness sampling |
| **Group voltage accuracy** | ≤±(0.5%FS+0.3V)，resolution：0.001V<br>*Note: The voltage displayed during the testing process may deviate from the actual voltage. Please refer to the static voltage when the test is stopped.* |
| **Cell voltage accuracy** | ≤±(0.1%FS+5mV)，resolution：0.001V<br>*Note: The voltage displayed during the testing process may deviate from the actual voltage. Please refer to the static voltage when the test is stopped.* |
| **Current measurement accuracy** | ≤±(1%FS+0.2A)，resolution：0.1A |
| **Charging voltage range** | DC 2~400V |
| **Discharge voltage range** | DC 2~400V |
| **Charge current range** | 0~100A，maximum power 4.4kw |
| **Discharge current range** | 0~100A，maximum power 7.2kw |
| **Charge control** | Constant current charging + constant voltage charging |
| **Discharge mode** | Constant current discharge |
| **Protection mechanism** | Overcharge and over discharge protection |

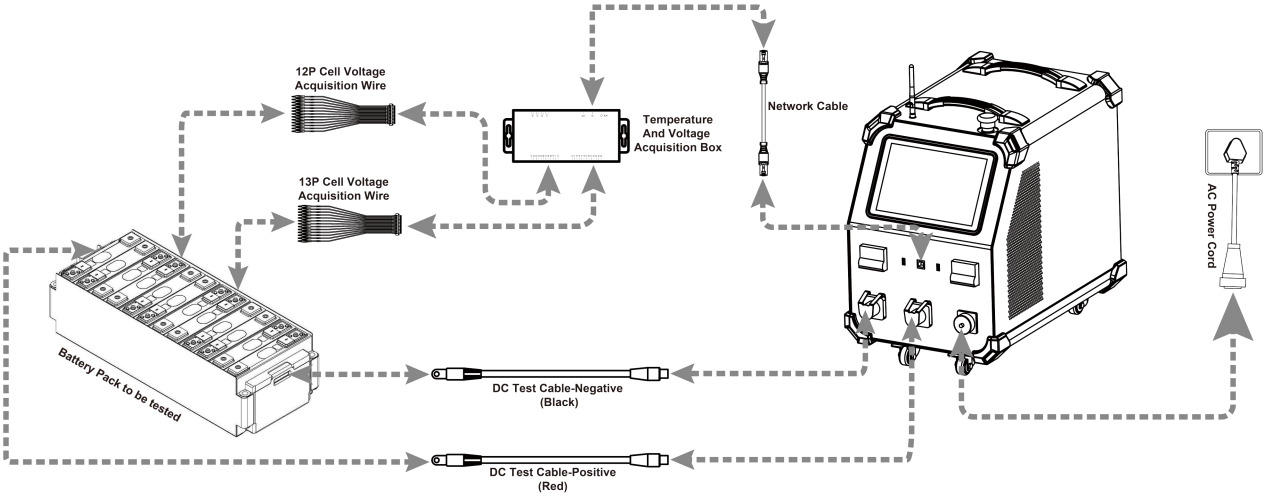
| | |
|---|---|
| | Over voltage, over current, over temperature protection<br>Battery short connection, reverse connection protection<br>Abnormal protection against power cord and main cable failure<br>Fan abnormal protection |
| **Shutdown actuator** | DC breaker + release |
| **Alarm prompt** | Screen prompt + buzzer |
| **Working Environment** | |
| **Cooling** | Forced air cooling |
| **Temperature** | Operating temperature range: -5~40 ℃ ; storage temperature:-20~70℃ |
| **Humidity** | Below 90% RH |
| **Dimension** | 349.0*551.1*598.5 mm |

# 5. Operating Instructions

## 5.1 Panel Description



## 5.2 Main Unit Connection



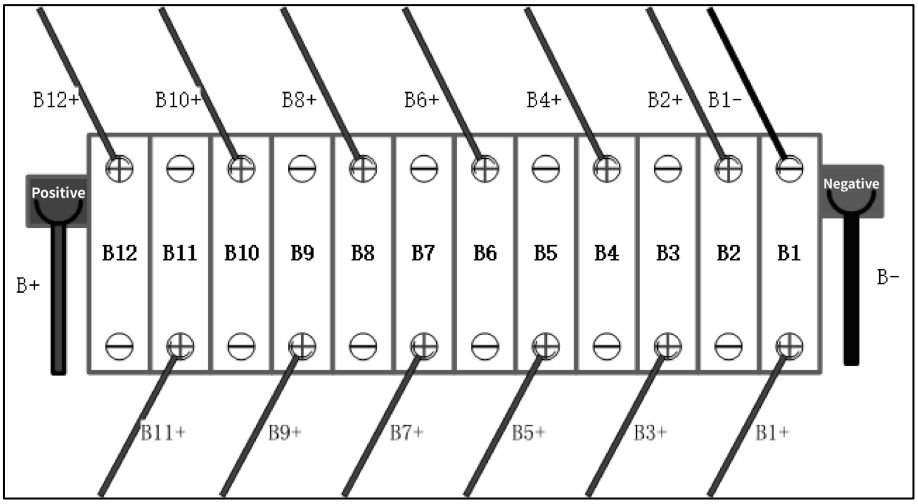

**Test Cable Connection :** DC test cable connection: Insert the black DC test cable into the Battery - interface (Black) of the device, and connect the other end to the negative pole of the battery module; insert the red DC test cable into the Battery + interface (Red) of the device, and connect the other end to the positive pole of the battery module.

**Voltage Sampling - Module Sampling**

(1) Use communication network cable to connect the communication interface of the device and the IN interface of the temperature and voltage acquisition box.

(2) If the number of test cells does not exceed 12: use a 13P voltage acquisition cable (connected to the 13P acquisition interface of the voltage and temperature acquisition box);
If the number of test cells exceeds 12: an additional 12P voltage acquisition cable needs to be used (connected to the 12P acquisition interface of the voltage and temperature acquisition box);
If the number of test cells exceeds 24: need to add more voltage and temperature acquisition boxes (up to 3 voltage and temperature acquisition boxes can be connected).

(3) According to the wire label on the cell voltage acquisition wire, B1 - is connected to the negative electrode of No. 1 single cell (B1), B1 + is connected to the positive electrode of No. 1 single cell (B1), B2 + is connected to the positive electrode of No. 2 single cell (B2), and connected in sequence.



**Temperature Sampling - Module Sampling**

Connect one end of the temperature acquisition wire (optional) to the temperature acquisition interface of the temperature and voltage acquisition box, and connect the other end (probes or clips) to the battery cells.

**Working Power Supply Connecting:** Connect the AC power cord provided with the device to the corresponding access interface, pay attention to the load output of the power outlet (AC 90~264V input) or the load of the distribution box, and set the maximum charging current according to the size of the AC input load. (See the parameter table for details) to prevent overcurrent.

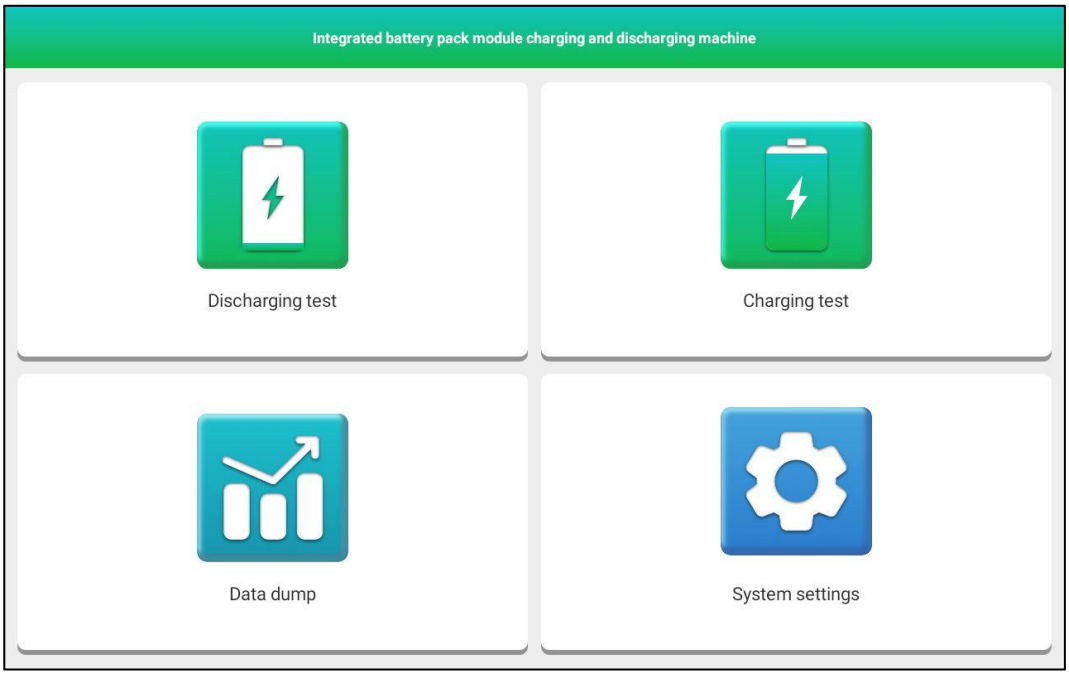
Use the single-phase three wire AC power cord provided with the device to connect the device's power interface, and connect the other end of the power cord to the distribution box to supply power to the equipment. At this time, the equipment can operate charging and discharging functions, please set the maximum charging current according to the size of the AC input load. (See the parameter table for details) to prevent overcurrent

## 5.3 Main Unit Operation

After the device is connected, close the AC breaker to turn on the device, then set the charging and discharging parameters and protection conditions, and close the DC breaker before starting the test.

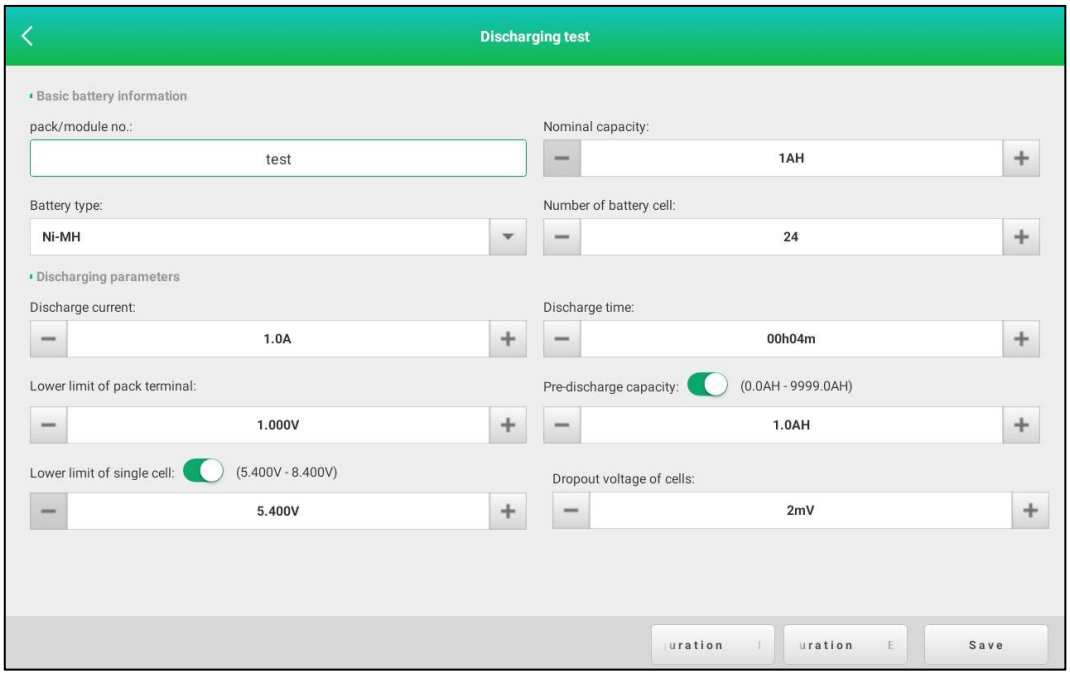
### 5.3.1 Main Menu

Click the function module on the main menu to enter the corresponding function operation interface.




### 5.3.2 Discharging Test

(1) Click "Discharging Test" to enter the following interface, set the battery information and corresponding discharging parameters.



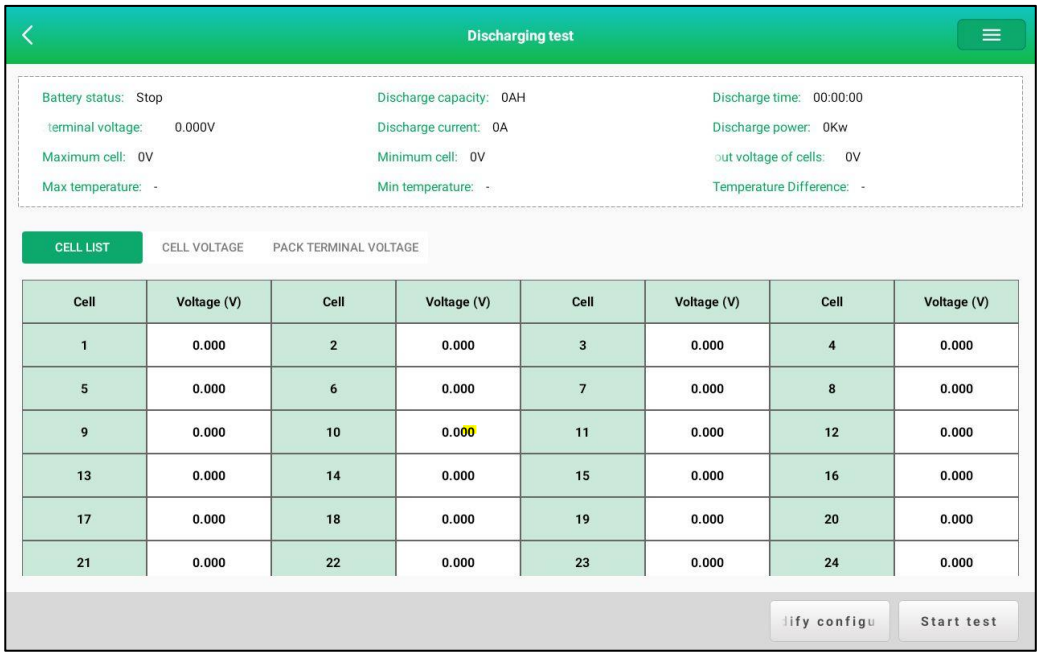

**Parameter Description：**

| Battery Information | |
|---|---|
| **Pack/module no.** | The number of the battery pack or module. |
| **Nominal capacity** | The nominal capacity of the battery pack, according to the actual input, can be identified from the rating plate. |
| **Battery type** | Select battery type. |
| **Number of battery cell** | Fill in according to the actual number of strings. |
| **Discharge Parameters** | |
| **Discharge current** | Discharge test current value. |
| **Discharge Time** | The discharge will stop when the set discharge time is reached. |
| **Lower limit of pack terminal** | The discharge will stop when the set lower limit voltage value of the group terminal is reached. |
| **Pre-discharge capacity** | The discharge will stop when the set pre-discharge capacity is reached. |
| **Lower limit of single cell** | The discharge will stop when the set lower limit voltage value of the single string is reached. |
| **Dropout voltage of cells** | The difference between the highest and lowest cell voltages, the system will stop discharging when it reaches the set value. |

(2) Click **Save** to save configuration and enter the discharging interface. Close the DC switch, tap **Start test** to start the test.

The current battery status, the discharge current, the discharge time, the current voltage of the battery pack and the cell voltage information can be viewed on the discharging interface.

*Note: Before starting test, the previously set parameters can be modified using the "Modify Configuration" button. After starting test, the set parameters cannot be modified during the discharging process.*

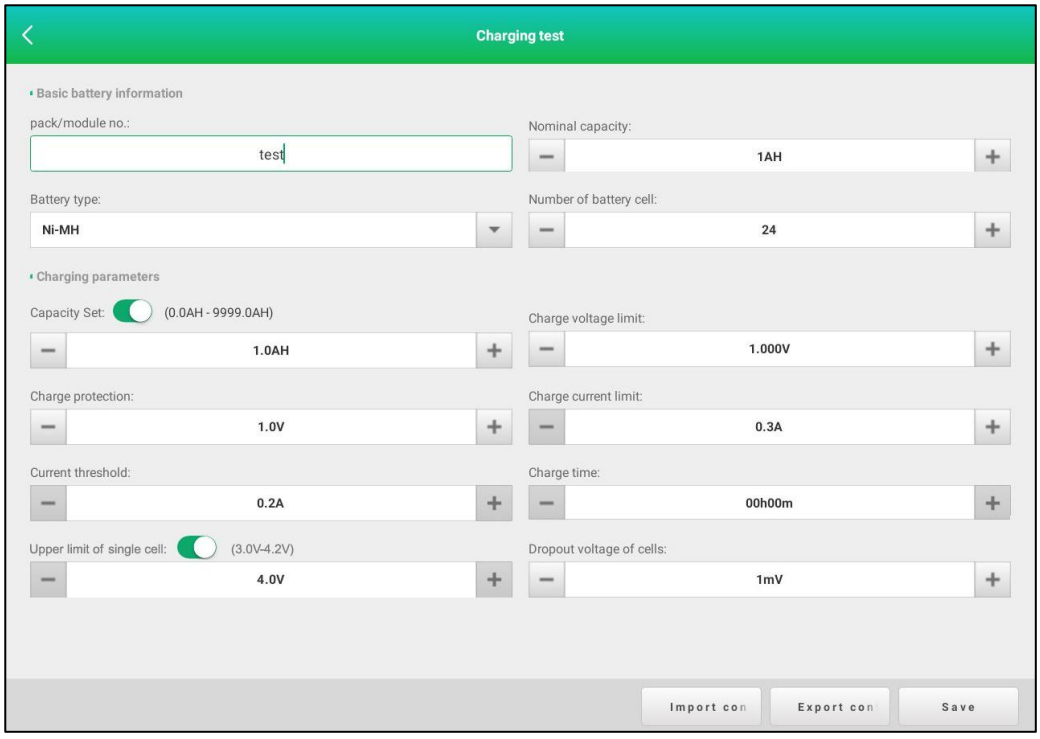



(3) In the process of discharging, the discharging will automatically stop when any set threshold is reached. Type of stop discharge conditions: discharge time, lower limit of pack terminal, pre-discharge capacity (when there is a limit on discharge capacity), lower limit of single cell (when there is a limit on discharge capacity), and dropout voltage of cells.

(4) In addition to the above threshold protection, abnormal shutdown protection also has multiple protections: discharge overvoltage and overcurrent protection; battery short circuit and reverse connection protection; fan abnormality protection, etc.

### 5.3.3 Charging Test

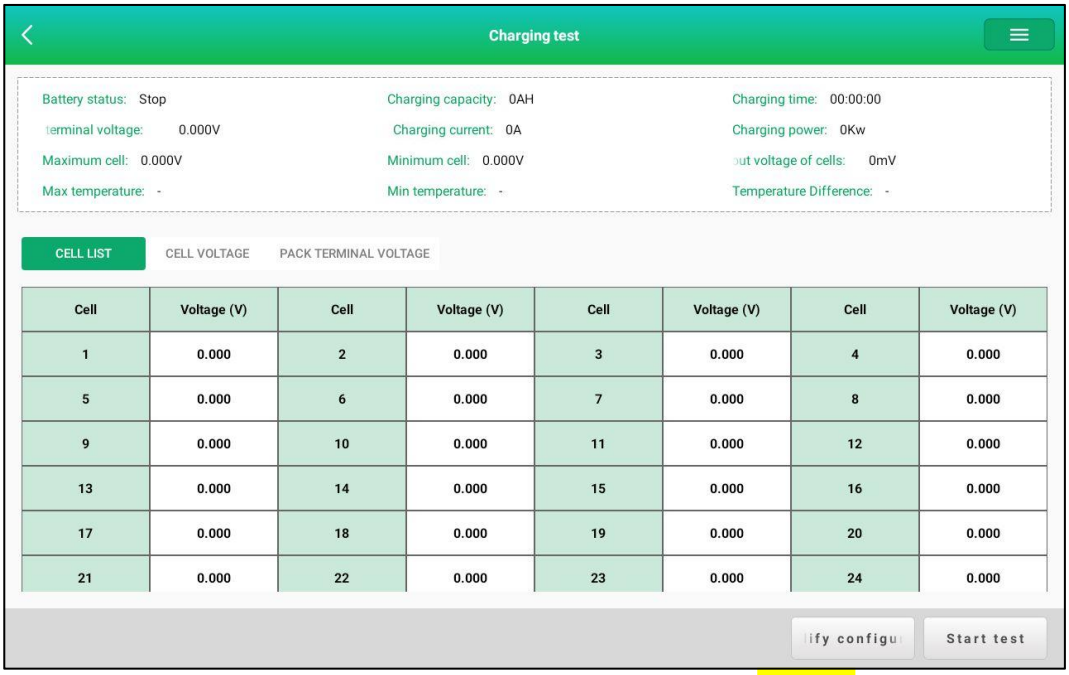
(1) Click "Charging Test" to enter the following interface, set the battery information and corresponding discharging parameters.



**Parameter Description：**

| Battery Information | |
|---|---|
| **Pack/module no.** | The number of the battery pack or module. |
| **Nominal capacity** | The nominal capacity of the battery pack, according to the actual input, can be identified from the rating plate. |
| **Battery type** | Select battery type. |
| **Number of battery cell** | Fill in according to the actual number of strings. |
| **Charge Parameters** | |
| **Capacity set** | The charge will stop when the set charging capacity is reached. |
| **Charge voltage limit** | The target value of the charging voltage. |
| **Charge protection** | The charge will stop when the set upper limit voltage value of the pack terminal is reached. |
| **Charge current limit** | Limit the charging current to not exceed this set value. |
| **Current threshold** | The charge will stop when when the voltage reaches and the current is less than the set threshold. |
| **Charge time** | The charge will stop when the set charging time is reached. |
| **Upper limit of single cell** | The charge will stop when the set upper limit value for a single cell voltage is reached |
| **Dropout voltage of cells** | The difference between the highest and lowest cell voltages, the system will stop charging when it reaches the set value. |

(2) Click **Save** to save configuration and enter the charging interface. Close the DC switch, tap **Start test** to start the test.



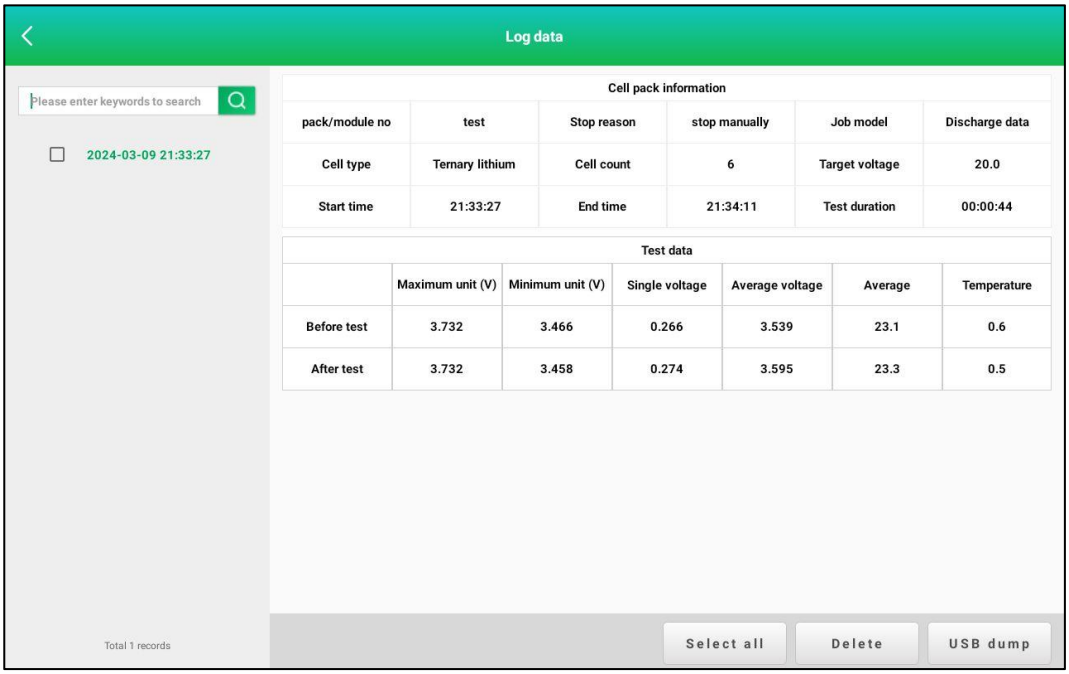

The current battery status, the charging current, the charging time, the current voltage of the battery pack and the cell voltage information can be viewed on the charging interface.

*Note: Before starting test, the previously set parameters can be modified using the "Modify Configuration" button. After starting test, the set parameters cannot be modified during the charging process.*

(3) In the process of threshold protection test, if any shutdown threshold is reached, it will stop automatically. Type of shutdown conditions: charging capacity (when there is a limit on charge capacity), charge protection voltage threshold, current threshold, charge time, upper limit of cell voltage (when there is a limit on charge capacity) and dropout voltage of cells.

(4) In addition to the above threshold protection, abnormal shutdown protection also has multiple protections: charge overvoltage and overcurrent protection; battery short circuit and reverse connection protection; fan abnormality protection, etc.

### 5.3.4 Data Management



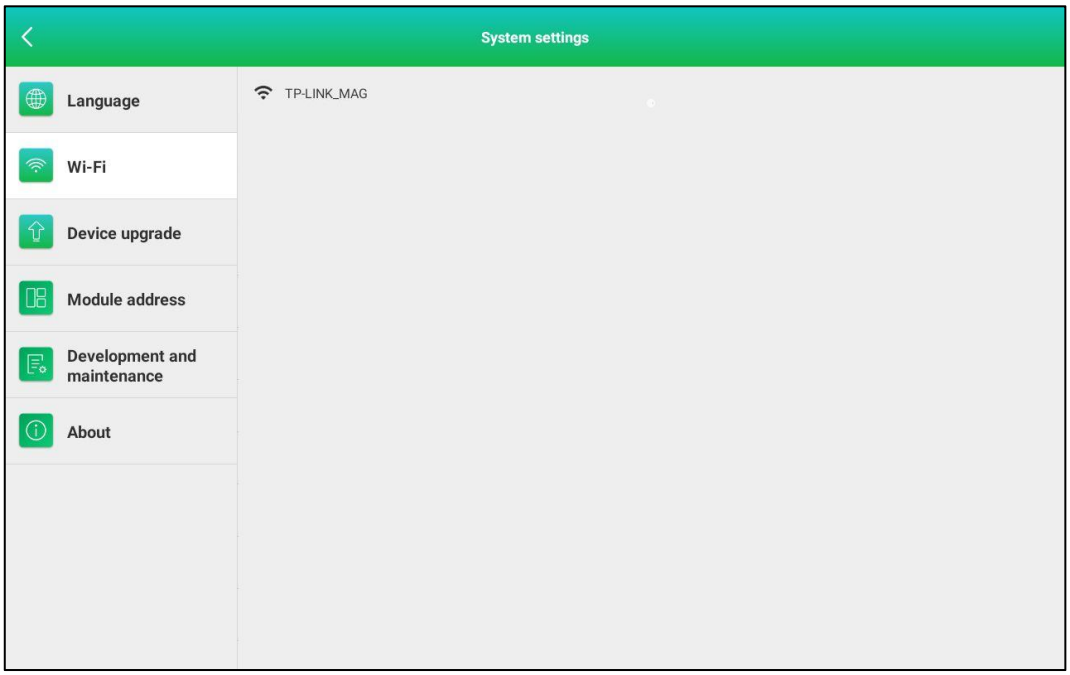

Insert a U-disk into the OTG or HOST port on the panel, select the data to be saved, and tap **USB dump** button to transfer the corresponding discharge data and charge data to the U-disk.

### 5.3.5 System Settings

Tap **System Settings** on the main interface to enter the system settings interface, which includes Language, Wi-Fi, Device upgrades, Module addresses, Development and maintenance, and About.

**Language:** Used to change the system language.

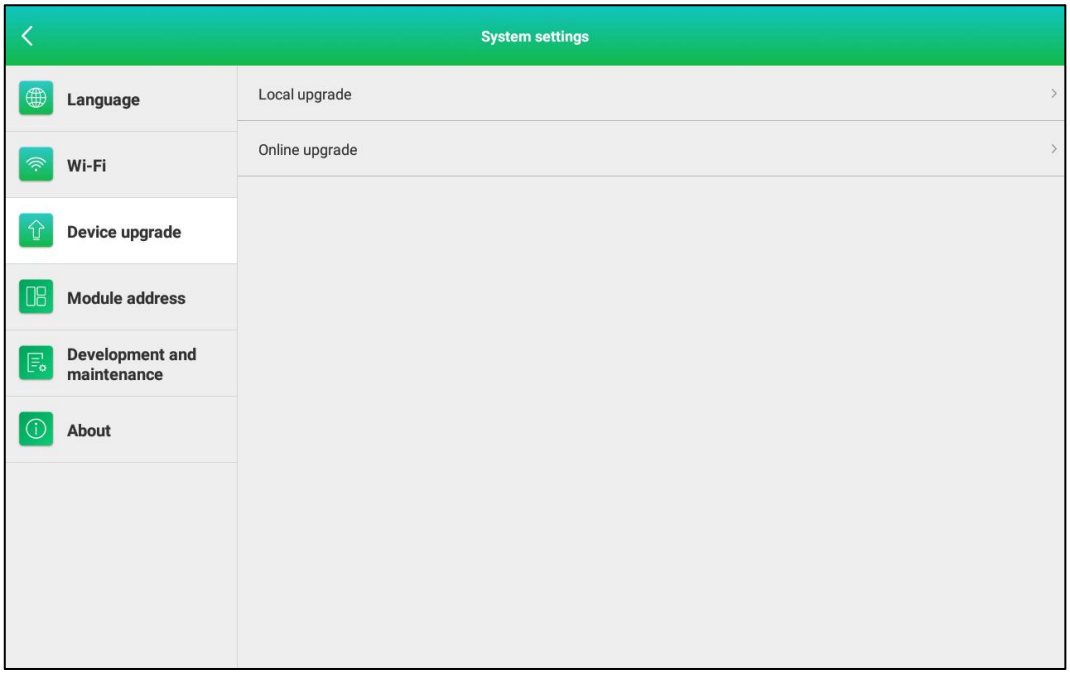
**Wi-Fi：**Used to connect the Wi-Fi networks.



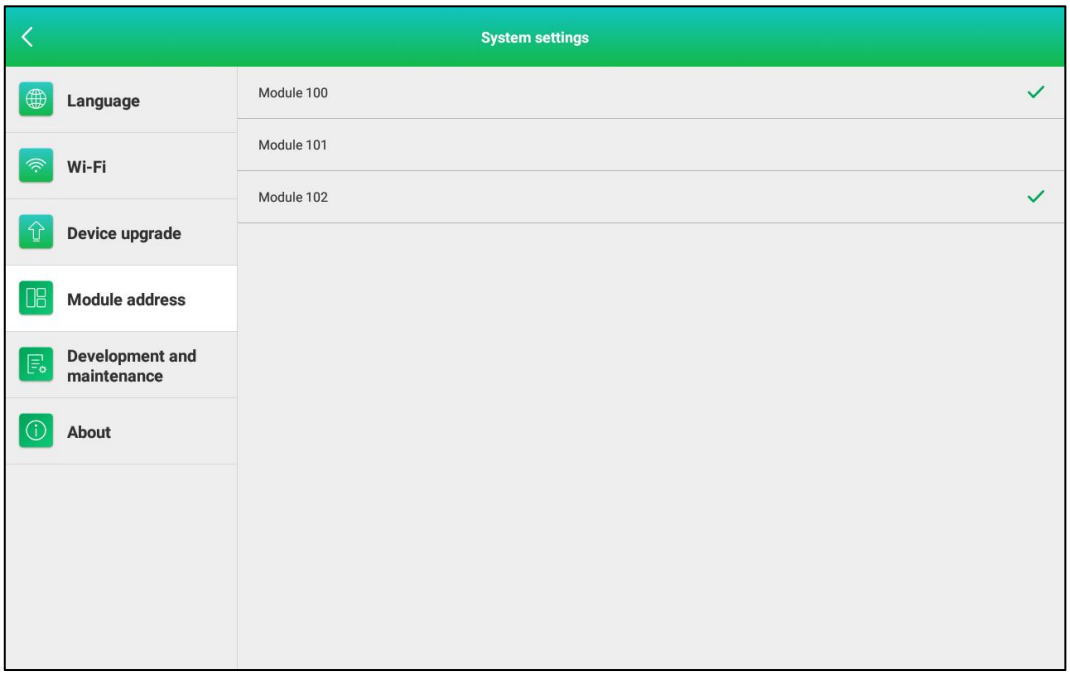

**Device upgrade：**Used for APP upgrade, including local upgrade and online upgrade functions.

APP local upgrade: Copy the upgrade package to the USB. After connecting to the device, select the corresponding upgrade package to upgrade the device.

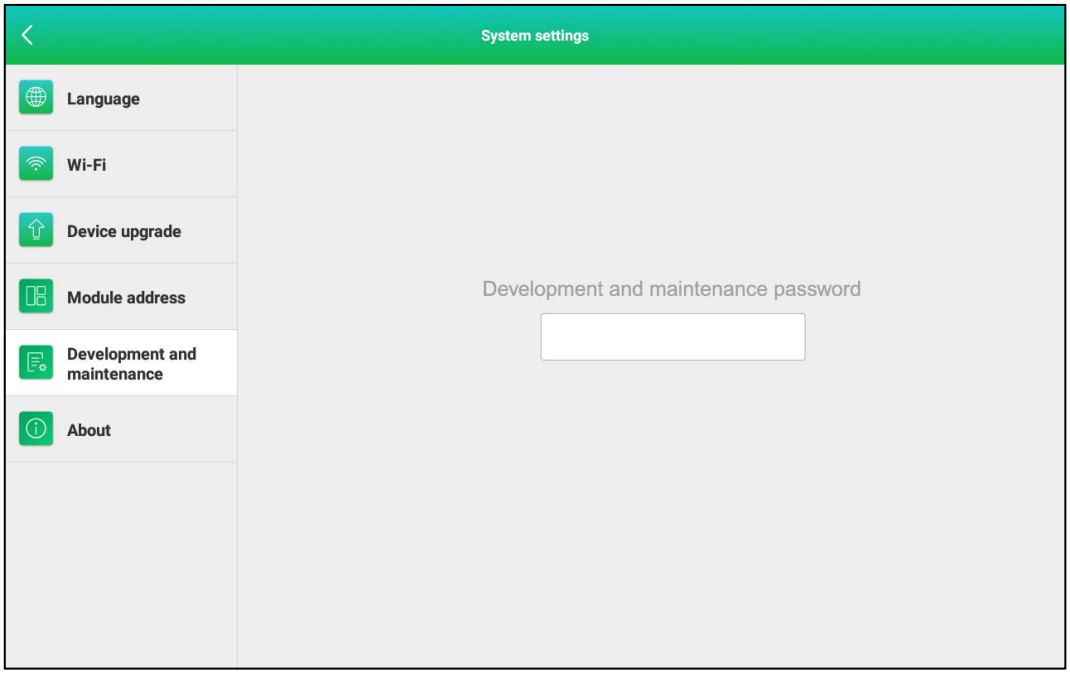
APP online upgrade: After connecting to Wi-Fi, click "Online upgrade" to upgrade the device software to the latest version.



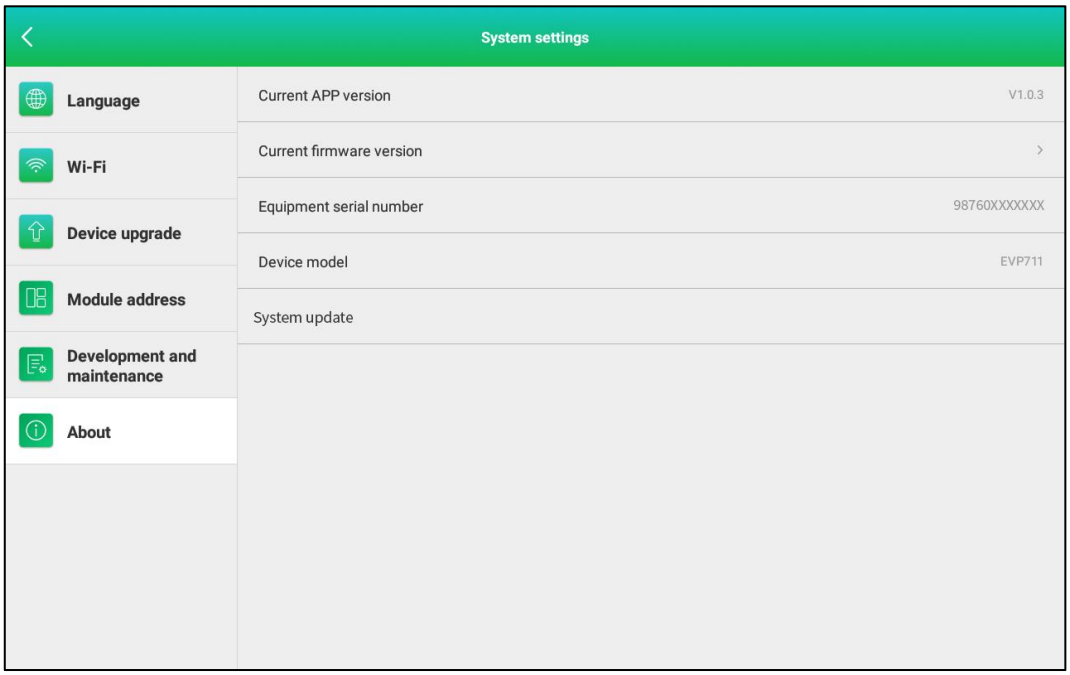
**Module address：**Used to select acquisition modules.




**Develop and maintenance：**Only for development and maintenance.



**About :** Used to view system version information, etc.




## 6. Fault Analysis and Troubleshooting

| No. | Fault Situation | Troubleshooting Methods |
|---|---|---|
| 1 | The bottom left corner of the screen prompts "Single cell voltage acquisition module not connected" | Check the communication connection between the tested battery module and the voltage and temperature acquisition box. |
| 2 | Pop up warning “Discharge cable positive and negative pole alarm” | The positive and negative poles of the discharge cable are reversed |
| 3 | Pop up warning "Abnormal voltage at pack terminal or DC breaker not closed" | 1) The DC breaker is not closed.<br>2) Test input voltage is too high. |
| 4 | Main unit temperature is too high | Confirm the placement of the device, pay attention to ventilation, heat flow, make sure that there are no debris placed within 0.5 meters of the device ventilation opening. |

**Warranty**
This warranty applies only to users and distributors who have purchased Launch's products through regular procedures.

Launch shall provide a warranty against material or craftsmanship defects for 15 months from the date of delivery on its electronic products. Damages to the device or its components caused by abuses, unauthorized modifications, uses for a purpose other than for which it is intended, or operations not following the manner specified in the manual, etc. are not covered by this warranty. Compensation for the damage to instrument of the automobile due to the defect of the device is limited to repair or replacement, Launch is not responsible for any indirect or accidental loss. Launch will judge the attributes of the equipment damage according to its specified test method. None of Launch's dealers, employees and business representatives has the authority to make any confirmations, reminders or promises related to the company's products.

**Disclaimer Statement**
The above warranty can substitute warranties in any other forms.

**Order Notice**
Replaceable and optional parts can be ordered directly from LAUNCH authorized distributors. Your order should include the following information:
Order quantity
Part number
Part name

**Customer Service Center**
Customer Service Center
For any problem met during the operation, please call +86-755-84528888, or send email to overseas.service@cnlaunch.com.
If the device needs to be repaired, please send it back to Launch, and attach the Warranty Card, Product Qualification Certificate, Purchase Invoice and problem description. Launch will maintain and repair the device for free when it is within warranty period. If it is out of warranty, Launch will charge the repair cost and return freight.

**Launch Address:**
Launch Tech Co., Ltd, Launch Industrial Park, North of Wuhe Road,Bantian Street, Longgang District, Shenzhen City, Guangdong Province, P.R.China,
Zip Code: 518129
Launch Website: https://www.cnlaunch.com

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