JUNCTEK®

User Manual

Model: KM-F Series



Hangzhou Junce Instruments Co.,Ltd

BTS04 Series Battery Tester

User manual

Rev1.0 July 2025

(Images in this manual are for reference only)

Warranty and Statement

Copyright
Hangzhou Junce Instruments Co., Ltd.

Trademark Information
JUNCTEK is a trademark of Hangzhou Junce Instruments Co., Ltd.

Statement
This product is protected by national patents.
This document replaces all previously published manuals.

Contact Us
If you have any questions or requirements while using this product or manual, please contact JUNCTEK:
Email: JUNCE@JUNTEKS.COM
Website: WWW.JUNTEKS.COM

Safety Requirements
Safety Regulations and Safe Usage

General Safety Overview
Read the following safety precautions to avoid injury and prevent damage to this product or any connected products. To avoid potential hazards, always use this product as specified.

Check All Terminal Ratings
To avoid fire or excessive current surges, check all ratings and markings on the product. Refer to the manual for detailed ratings before connecting.

Use Appropriate Overvoltage Protection
Ensure that overvoltage (e.g., lightning surges) does not reach this product. Otherwise, the operator may be at risk of electric shock.

Do Not Operate with the Cover Open
Do not operate the product while its enclosure is open.

Do Not Insert Foreign Objects into Ventilation Slots
Inserting foreign objects may damage the instrument.

Avoid Exposed Circuits
Do not touch exposed connectors or components while power is applied.

Do Not Operate if Suspected Fault
If you suspect a fault in the product, contact authorized JUNCTEK service personnel for inspection. Any maintenance, adjustment, or parts replacement must be carried out by JUNCTEK-authorized personnel.

Maintain Proper Ventilation
Poor ventilation may cause overheating and damage. Ensure adequate ventilation and check vents regularly.

Do Not Operate in Humid Environments
To prevent short circuits or electric shock, avoid operating in humid conditions.

Do Not Operate in Flammable or Explosive Environments
To avoid damage or injury, do not use the instrument in hazardous environments.

Keep Surface Clean and Dry
Dust and moisture may affect performance. Keep the instrument clean and dry.

Electrostatic Discharge (ESD) Protection
Static electricity can damage the instrument. Perform tests in ESD-protected areas whenever possible. Ground cables before connecting to the instrument.

Handle with Care
To avoid dropping the instrument and damaging buttons, knobs, or connectors,

handle with care during transportation.

Notes and Maintenance

1、Do not exceed the rated voltage and current range; otherwise, the instrument may be damaged.
2、Polarity must not be reversed; reversed connection cannot be handled properly.
3、The enclosure is fragile and corrosion-prone; avoid strong impacts and chemical exposure.
4、Storage temperature: –10℃ to 50℃, keep in a dry environment.
5、
6、Do not attempt to disassemble the instrument; tampering with the seal will void the warranty. No user-serviceable parts inside. Repairs must be carried out at authorized service centers or returned to the factory.
7、Avoid placing candles, cups of water, corrosive chemicals, or unsafe objects on the instrument to prevent damage.
8、The display screen is delicate and easily contaminated. Do not touch or strike the surface. Keep out of children's reach. If dirty, gently wipe with a soft cloth.
9、Do not move the instrument violently during normal operation to avoid permanent circuit damage.
10、If the instrument still fails after eliminating the above issues and repowering, please contact your supplier.

Warranty and After-Sales Service

To maximize your understanding and use of the new product, we recommend the following steps:
1\Read the safety and proper usage guidelines.
12Read the warranty terms and conditions.

Warranty Conditions

The instrument is covered by a one-year warranty from the date of shipment. During the warranty period, the company will choose to repair or replace faulty instruments. For repairs, please contact after-sales service first and ship the product to our company.

Exclusions (Not Covered by Warranty)

Improper operation or maintenance by the user.
Use of user-supplied software or power interfaces.
Unauthorized disassembly or repair of the instrument.。

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Unpacking Inspection

When you receive a new 18650 Battery Tester (Four Channels), it is recommended to perform the following inspections:

Check the Shipping Package

If the shipping package is damaged, please retain the damaged packaging or cushioning materials until the goods have been fully inspected and the instrument has passed both electrical and mechanical tests.

If the instrument is damaged due to transportation, please contact the shipper and carrier for compensation.。

Check the Accessories

The accessories are listed as follows. If the contents do not match, or if the instrument is damaged, please contact the distributor or our company.

Main Unit: 18650 Battery Tester (Four Channels) ×1
Accessory: 12V 3A Power Adapter ×1
Accessory: Quick Start Guide ×1
Accessory: 2-pin Green Terminal Block ×4
Accessory: Type-C Data Cable ×1

Check the Instrument

If you find any damage to the appearance, abnormal operation, or failure in performance testing, please contact the distributor or our company.

Developer / Manufacturer: Hangzhou Junce Instruments Co., Ltd.

Website: www.junteks.com

Chapter 1 Overview

1. Introduction to the Instrument

The BTS04 Series Battery Tester is a four-channel testing device specifically designed for 18650 batteries, featuring high-precision and multifunctional testing capabilities. This series supports both lithium-ion batteries (Li-ion) and lithium iron phosphate batteries ($LiFePO_4$), and is available in two versions: standard and Bluetooth, to meet the needs of different users.

Main Functions:

Accurate measurement of battery voltage, current, capacity, charge/discharge quantity, and internal resistance.。

Technical Features:

- **High-resolution measurement:** Voltage, current, capacity, and charge/discharge quantity with a resolution of 0.001 units; internal resistance resolution up to 1 mΩ, ensuring precise results.
- **Multiple testing modes:** Supports cycle mode, single-charge mode, and single-discharge mode, meeting various testing scenarios.
- **Flexible current ranges:** Provides low current (0.6A) and high current (1A) options, adaptable to different test conditions.
- **Data recording and review:** Supports recording of test data, with access to historical data and curves for analysis and traceability.
- **Bluetooth connectivity (Bluetooth version):** Supports connection with Android and iOS apps for remote control and real-time monitoring, improving convenience.
- **PC software support:** Offers PC software for advanced data analysis and processing, tailored to professional needs.

Applicable Battery Types:

- **BTS04AL/BTS04BL/BTS04CL** ： For 3.7V lithium-ion batteries, designed for Li-ion testing.
- **BTS04AF/BTS04BF/BTS04CF** ： For 3.2V lithium iron phosphate ($LiFePO_4$) batteries, designed for $LiFePO_4$ testing.

With its compact design and easy operation, the BTS04 series is an ideal testing tool for battery R&D, production, and quality inspection. Its high precision, multifunctional testing capabilities, and flexible data handling provide users with an efficient and convenient testing experience.

2. Dimensions



3. Technical Specifications

Model	BTS04AL	BTS04BL	BTS04CL	BTS04AF	BTS04BF	BTS04CF
Version	Without Bluetooth + Low-capacity storage (12 waveforms per channel × 4 channels)	With Bluetooth + Low-capacity storage (12 waveforms per channel × 4 channels)	With Bluetooth + High-capacity storage (60 waveforms per channel × 4 channels)	Without Bluetooth + Low-capacity storage (12 waveforms per channel × 4 channels)	With Bluetooth + Low-capacity storage (12 waveforms per channel × 4 channels)	With Bluetooth + High-capacity storage (60 waveforms per channel × 4 channels)
Compatible Battery	3.7V Li-ion	3.7V Li-ion	3.7V Li-ion	3.2V $LiFePO_4$	3.2V $LiFePO_4$	3.2V $LiFePO_4$
Voltage Resolution	0.001 V					
Current Resolution	0.001 A					
Capacity Range	0000 – 9000 Ah					
Capacity Resolution	0.001 Ah					
Energy Range	0000 – 9000 Wh					
Energy Resolution	0.001 Wh					
Internal	0000 – 9999 mΩ					

Resistance Range	
Internal Resistance Resolution	1 mΩ
Operating Time	00:00:00 – 99:59:59
Operating Modes	Single Charge / Single Discharge / Cycle Mode
Current Ranges	Low: 0.6 A / High: 1 A
Cycle Test	1 – 9 cycles
Cycle Switching Time	1 – 60 s
Standby Power Consumption	0.65 W
Screen Brightness	1 – 100%
Screen Timeout	OFF, 10 – 120 s
Power Supply Input	12V 2A

Chapter 2 Instrument Description

1. Panel Introduction

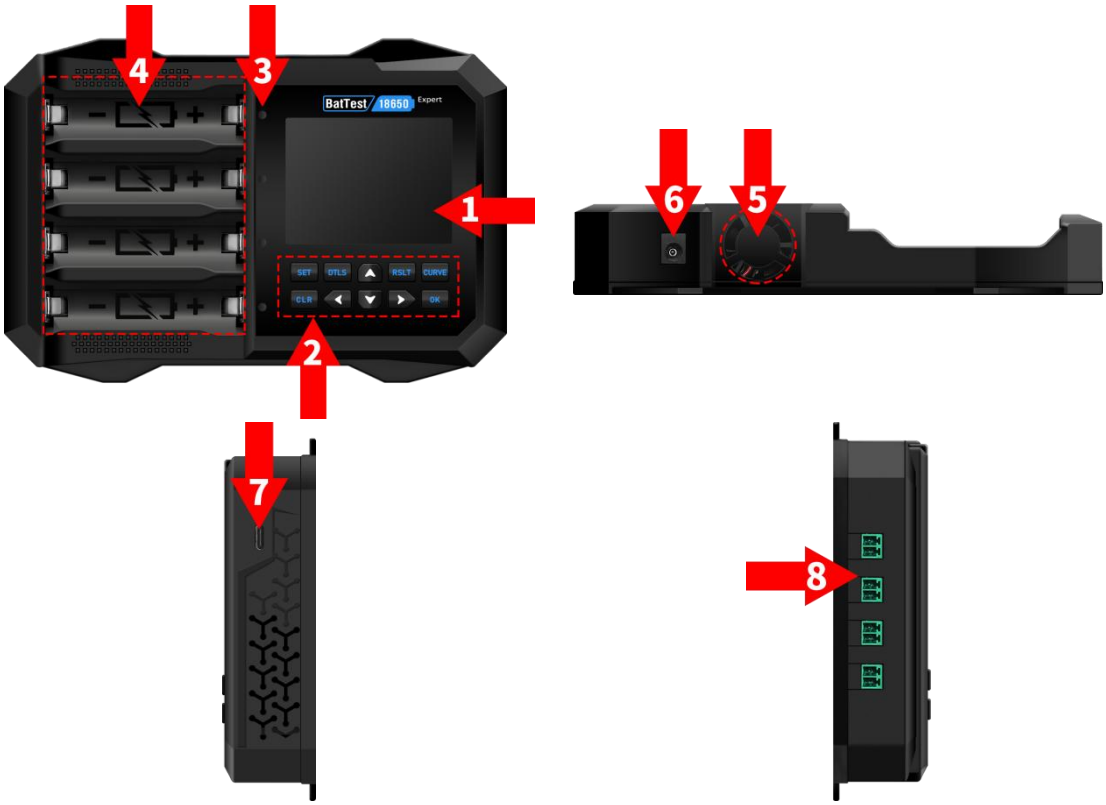


Figure 2-1-1 BLS04 Series Product Diagram

Table 2-1-1 BLS04 Series Display Panel Indicator Description

No.	Description	No.	Description
1	LCD Display Screen	5	Cooling Fan
2	Silicone Keypad	6	12V 3A Power Input
3	Channel Indicator Lights	7	Type-C Communication Port
4	Battery Slots	8	Expansion Interface

1. LCD Display Screen

Equipped with a 2.8-inch color LCD screen, providing a clear display of menus, current functions, and parameter settings.

2. Silicone Keypad

- [SET]: Short press to quickly enter the settings interface.
- [DTLS]: Primarily used for single-channel interface operations.
- [▲]: Used for channel switching, function switching, and value adjustment.
- [RSLT]: Press to enter the results list interface.
- [CURVE]: Opens the voltage–mAh curve interface.
- [CLR]: Clears data when pressed.
- [◂]: Used for mode selection and digit position switching.
- [▼]: Used for channel switching, function switching, and value adjustment.
- [▸]: Used for mode selection and digit position switching.

- [OK]: Functions as both a confirmation button and an output switch.

3. Channel Indicator Lights

Four indicator lights are provided:
Green light ON → The corresponding channel is charging.
Blue light ON → The corresponding channel is discharging.

4. Battery Slots

Insert the battery correctly according to the positive (+) and negative (–) polarity markings inside the slots.

5. Cooling Fan

Ensures proper heat dissipation, maintaining stable device operation.

6. 12V 3A Power Input

Provides power supply to the device.

7. Type-C Communication Port

Serves as the communication interface for connecting to a PC, enabling data transfer between the tester and host computer.

8. Expansion Interface

Allows connection of other types of batteries, extending the range of supported applications.

2. Display Interface Introduction

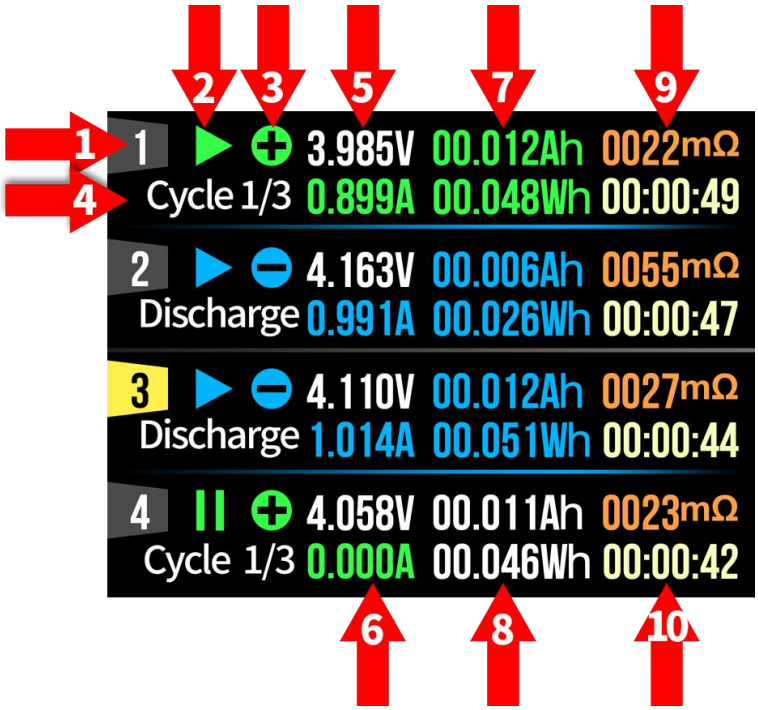


Figure 2-2-1 List Interface Diagram

Table 2-2-1 Indicator Descriptions for List Interface

No.	Description	No.	Description
1	Channel	6	Current
2	Output Switch	7	Battery Capacity
3	Charge/Discharge Status	8	Battery Energy
4	Mode	9	Internal Resistance
5	Battery Voltage	10	Operating Time

1. Channel

The device provides four independent channels, numbered 1, 2, 3, and 4, which can be individually operated and managed for different batteries.

2. Output Switch

Indicates whether the charge/discharge function is enabled or disabled, allowing the operator to easily determine if the device is currently charging or discharging.

3. Charge/Discharge Status

Displayed with symbols for clarity:

"+" → Battery is charging.

"–" → Battery is discharging.

4. Mode

Multiple operation modes are available to meet various testing requirements:

Cycle Mode → Performs repeated charge/discharge cycles.

Single Charge Mode → Executes a one-time charging operation.

Single Discharge Mode → Executes a one-time discharging operation.

5. Battery Voltage

Accurately measures and displays the real-time voltage of the battery under test, providing critical data for performance evaluation.

6. Current

Charge and discharge currents are color-coded:

Green → Charging current.

Blue → Discharging current.

This allows quick identification of current type.

7. Battery Capacity

Capacity values are color-coded:

Green → Capacity during charging.

Blue → Capacity during discharging.

This makes it easy to track capacity changes under different states.

8. Battery Energy

Battery energy (Wh) is also displayed using color coding:

Green → Energy status during charging.

Blue → Energy status during discharging.

This provides a clear real-time overview of energy levels.

9. Internal Resistance

Measures internal resistance precisely, offering valuable reference data for assessing battery health and performance.

10. Operating Time

Accurately records the device's runtime from the moment operation begins, enabling users to evaluate both device usage duration and battery performance over time.

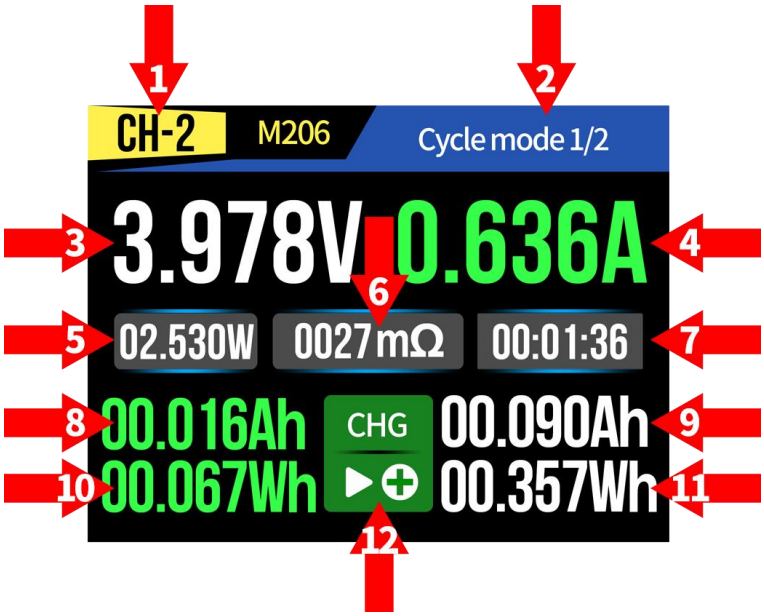


Figure 2-2-2 Single-Channel Interface Diagram

Table 2-2-2 Indicator Descriptions for Single-Channel Interface

No.	Description	No.	Description
1	Channel	7	Operating Time

2	Mode	8	Discharge Capacity (Ah)
3	Voltage	9	Charge Capacity (Ah)
4	Current	10	Discharge Energy (Wh)
5	Power	11	Charge Energy (Wh)
6	Internal Resistance	12	Output Status

1. Channel
   Provides four independent channels (1, 2, 3, 4) that can test multiple batteries in parallel.
2. Mode
   Supports three operation modes:
   Cycle Mode → Repeated charge/discharge testing.
   Single Charge Mode → One-time charging.
   Single Discharge Mode → One-time discharging.
3. Voltage
   Accurately measures the real-time battery voltage.
4. Current
   Charging and discharging currents are color-coded:
   Green → Charging current.
   Blue → Discharging current.
5. Power
   Displays the charging or discharging power of the battery.
6. Internal Resistance
   Measures the internal resistance of the battery.
7. Operating Time
   Records the device's total operating duration.
8. Discharge Capacity (Ah)
   Indicates the discharged capacity of the battery in ampere-hours.
9. Charge Capacity (Ah)
   Indicates the charged capacity of the battery in ampere-hours.
10. Discharge Energy (Wh)
    Represents the discharged energy of the battery in watt-hours.
11. Charge Energy (Wh)
    Represents the charged energy of the battery in watt-hours.
12. Output Status
    Indicates the charge/discharge state:
    "+" → Charging.
    "–" → Discharging.

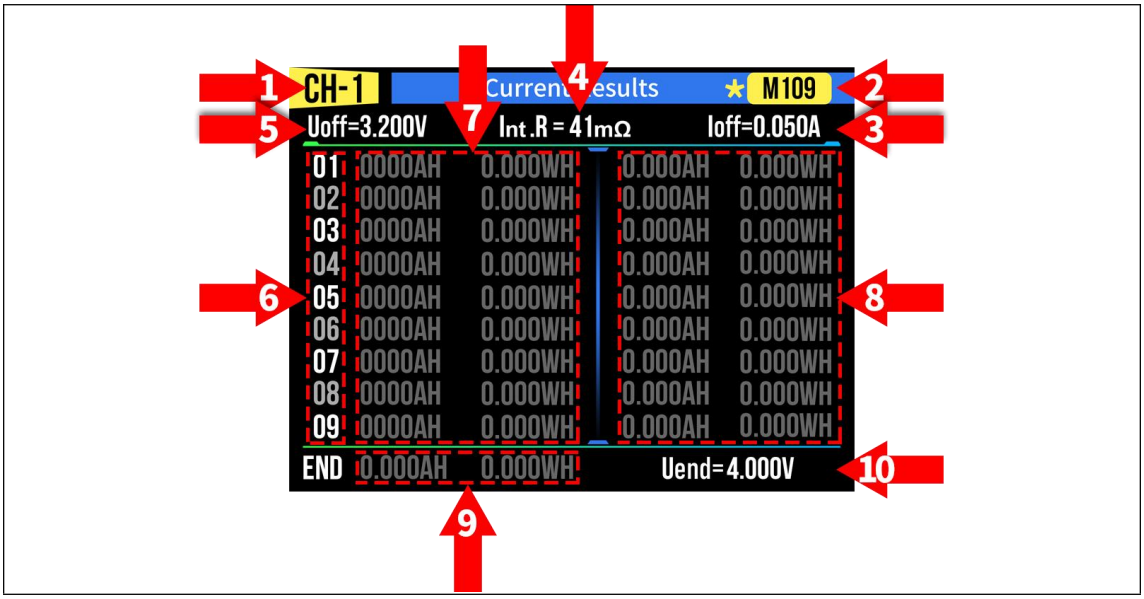


Figure 2-2-3 Result Interface Diagram

Table 2-2-3 Indicator Descriptions for Result Interface

No.	Description	No.	Description
1	Channel	6	Cycle Count
2	Storage Location	7	Charge Capacity (Ah) & Energy (Wh)
3	Charge Cutoff Current	8	Discharge Capacity (Ah) & Energy (Wh)
4	Internal Resistance	9	Final Charge Capacity (Ah) & Energy (Wh)
5	Discharge Cutoff Voltage	10	Final Charge Cutoff Voltage

1. Channel

Provides four independent channels (1, 2, 3, 4) supporting simultaneous testing of multiple batteries.

2. Storage Location

Displays the current data storage location, facilitating data management and traceability.

3. Charge Cutoff Current

Specifies the minimum current at which the battery is considered fully charged, ensuring precise charge termination.

4. Internal Resistance

Accurately measures the battery's internal resistance, providing an important reference for assessing battery health.

5. Discharge Cutoff Voltage

Specifies the minimum voltage at which the battery stops discharging, preventing over-discharge and potential battery damage.

6. Cycle Count

Records the number of charge/discharge cycles performed, useful for analyzing battery cycle life.

7. Charge Capacity (Ah) & Energy (Wh)

Records the ampere-hour (capacity) and watt-hour (energy) data during the charging process.

8. Discharge Capacity (Ah) & Energy (Wh)

Records the ampere-hour (capacity) and watt-hour (energy) data during the discharging process.

9. Final Charge Capacity (Ah) & Energy (Wh)

Records the capacity (Ah) and energy (Wh) at the end of the last charging cycle.

10. Final Charge Cutoff Voltage

Displays the voltage at which the battery stopped charging during the last charge cycle.

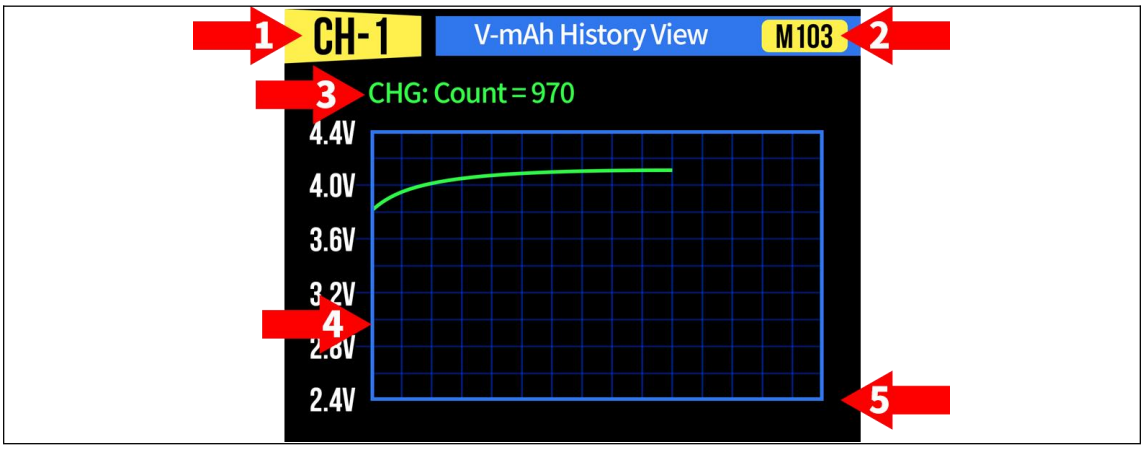


Figure 2-2-4 Curve Interface Diagram

Table 2-2-4 Indicator Descriptions for Curve Interface

No.	Description	No.	Description
1	Channel	4	Voltage (X-Axis)
2	Storage Location	5	Capacity (Ah, Y-Axis)
3	Capacity (Ah) Data		

1. Channel

The device provides four independent channels (1, 2, 3, 4) that can test different batteries simultaneously without interference.

2. Storage Location

Clearly displays the storage location of the current test data, facilitating subsequent data retrieval, analysis, and management.

3. Capacity (Ah) Data

Real-time recording and display of the battery's total ampere-hour (Ah) value during charging or discharging, intuitively reflecting capacity changes.

4. Voltage (X-Axis)

In relevant data charts, voltage is used as the horizontal coordinate to show the trend of voltage changes relative to other parameters, enabling visual analysis of battery performance.

5. Capacity (Ah, Y-Axis)

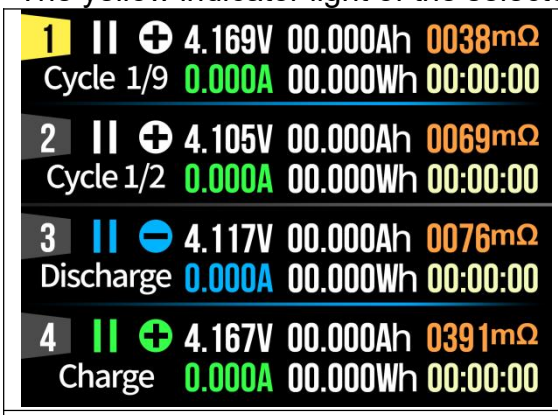
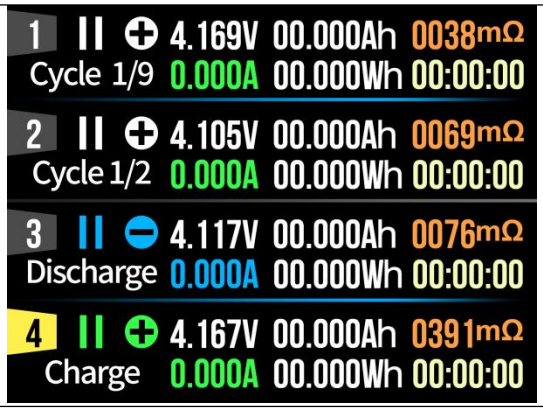
In data charts, capacity (Ah) is plotted on the vertical axis. Combined with the voltage X-axis, it clearly presents the relationship between capacity and voltage during charge/discharge, assisting in in-depth evaluation of battery condition.。

Chapter 3: Basic Operation of the Instrument

1. List Interface Operation

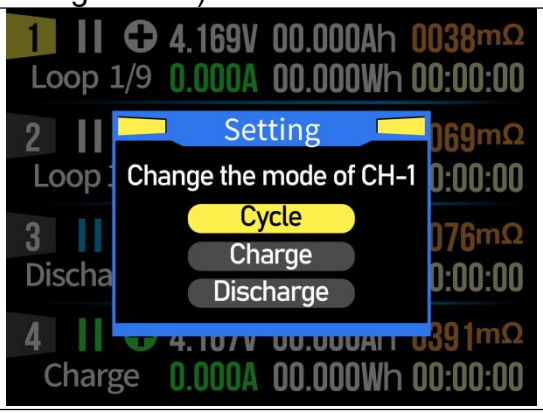
1. Channel Selection

Use the [▲] and [▼] buttons to switch between channels 1, 2, 3, and 4. The yellow indicator light of the selected channel will turn on.

	
选择通道 1	选择通道 4

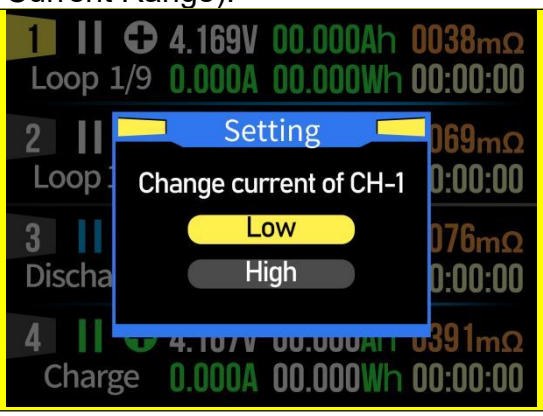
2.Mode Switching

Press the [◂] button to toggle between Loop (Cycle Mode), CHG (Charge Mode), and DIS (Discharge Mode).



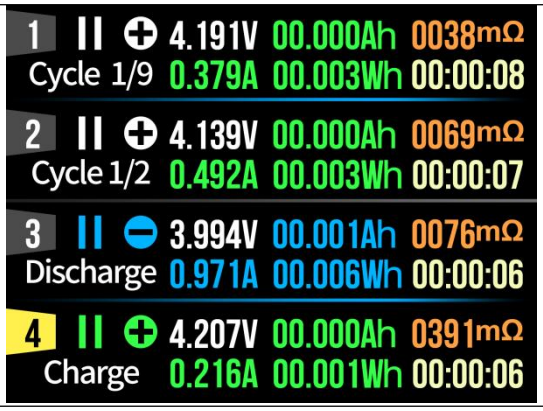
3. Charge/Discharge Current Range Switching

Use the [▸] button to switch between High Curr. (High Current Range) and Low Curr. (Low Current Range).



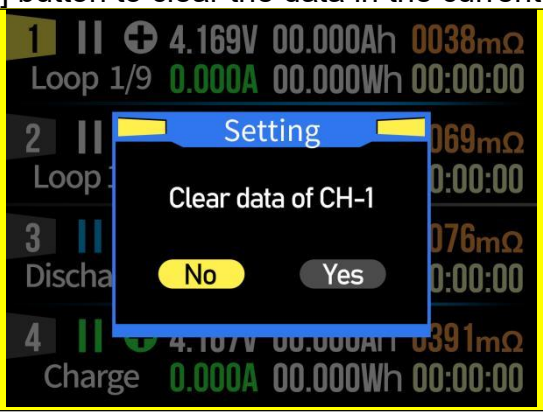
4. Start Charging or Discharging

Press the [OK] button to start charging or discharging the battery.



5. Clear Data

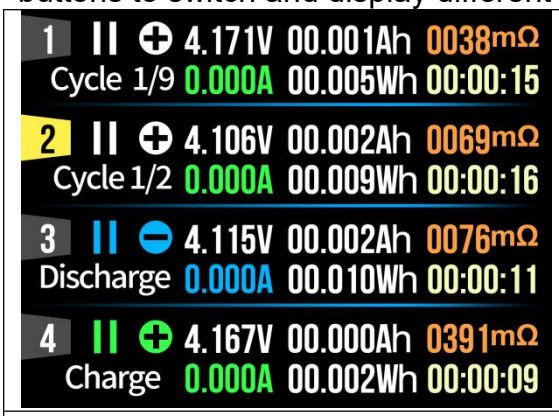
Press the [CLR] button to clear the data in the current storage space.



2. Single-Channel Interface Operation

1. Single-Channel Selection

In the list interface, select the channel you want to view (the selected channel's indicator turns yellow). Short press the [DTLS] button to enter the single-channel interface. In the single-channel interface, use [▲] and [▼] buttons to switch and display different channels.



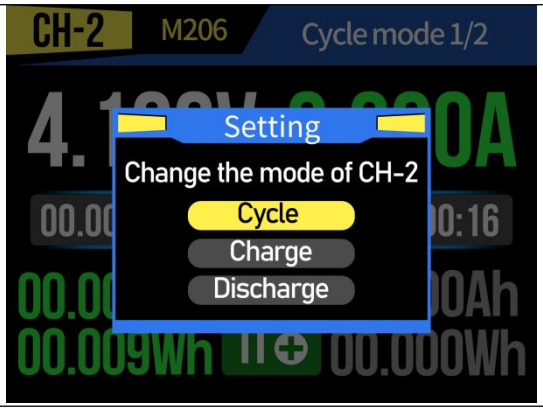
Select channel 2



Interface of Channel 2

2. Mode Switching

Press the [◂] button to toggle between Loop (Cycle Mode), CHG (Charge Mode), and DIS (Discharge Mode).



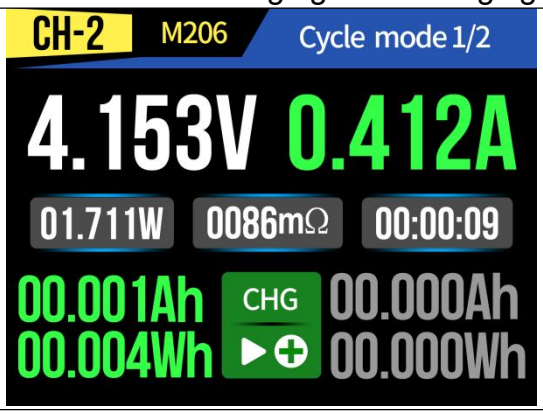
3. Charge/Discharge Current Range Switching

Press the [▸] button to switch between High Curr. (High Current Range) and Low Curr. (Low Current Range).



4. Start Charging or Discharging

Press the [OK] button to start charging or discharging the battery.。



5. Clear Data

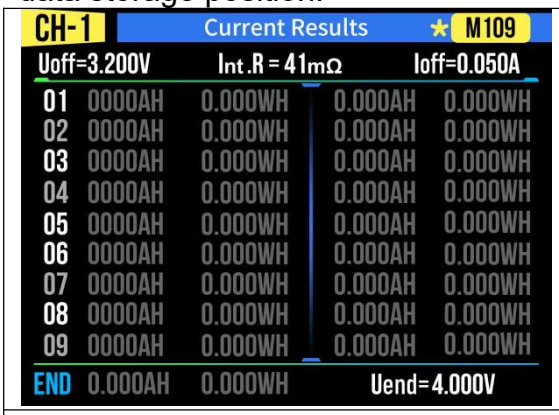
Press the [CLR] button to clear the data in the current storage space.



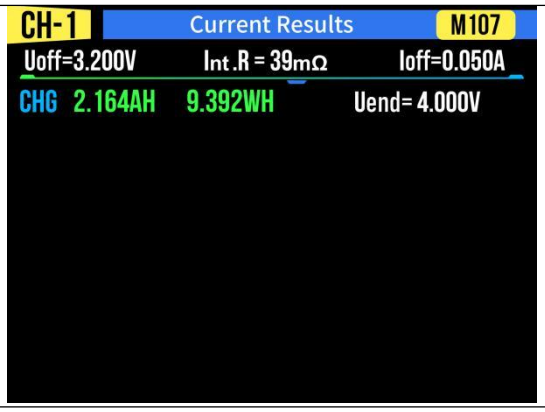
3.Result Interface Operation

1. View Stored Data

Use the [◂] and [▸] buttons to switch among M101 – M111, a total of 10 storage locations, to view data at each location. The "*" indicates the current data storage position.



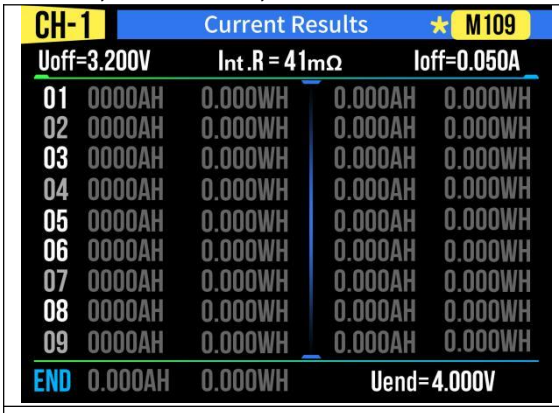
*M109



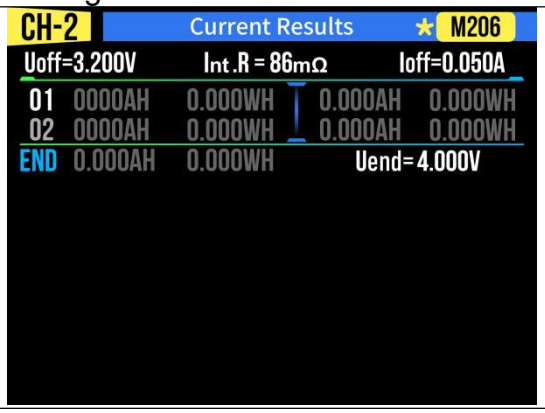
M107

2. Channel Selection

Use the [▲] and [▼] buttons to switch between channels M100, M200, M300, and M400, and view data corresponding to each channel.



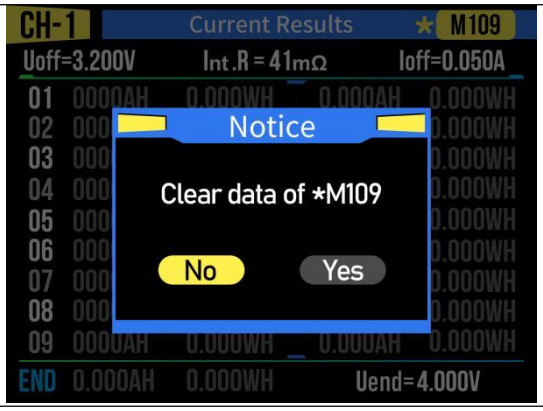
*M109



*M206

3. Clear Data

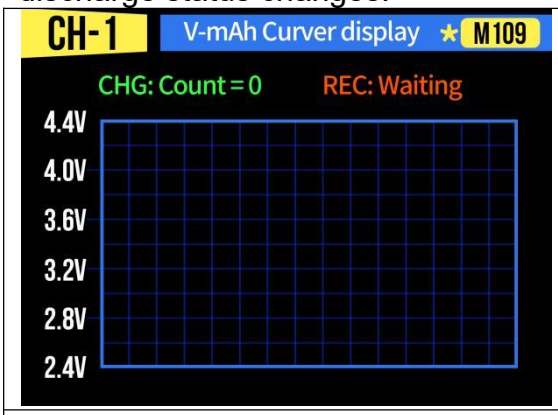
Press the [CLR] button to clear all data in the current storage space.



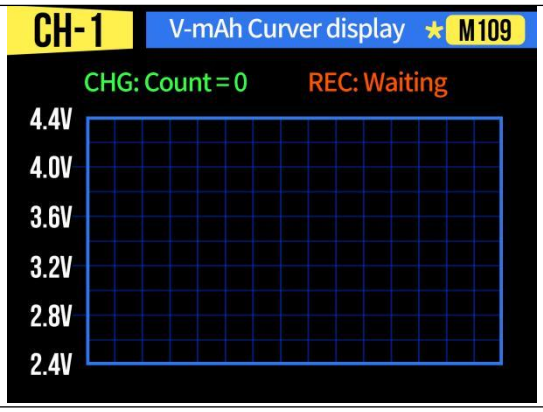
4.Curve Interface Operation

1. View Stored Data

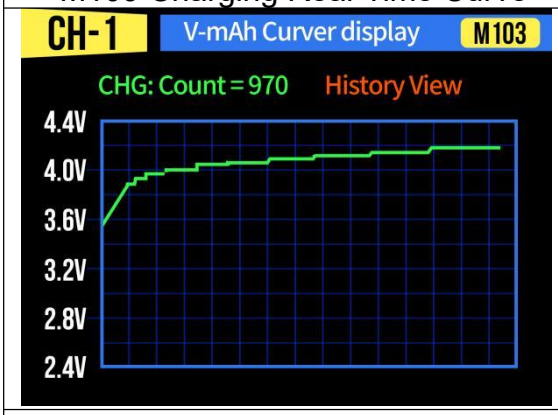
Use the [◂] and [▸] buttons to flexibly switch among M101 – M111, a total of 10 storage locations. You can view both the charge and discharge waveform data for each storage location, clearly understanding the battery's charge and discharge status changes.



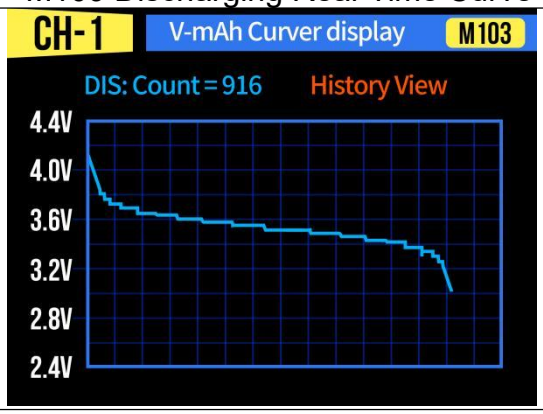
*M109 Charging Real-Time Curve



*M109 Discharging Real-Time Curve



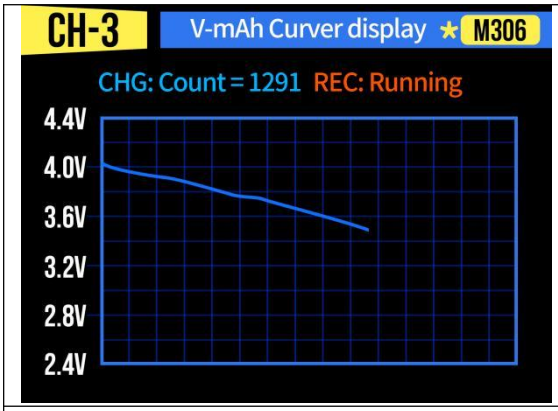
M103 Charging Historical Curve



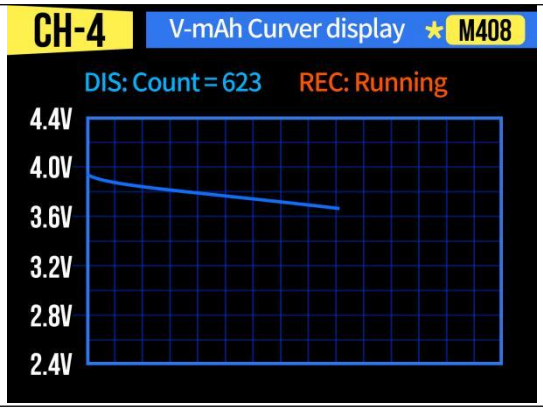
M103 Discharging Historical Curve

2. Channel Selection

Use the [▲] and [▼] buttons to switch between channels M100, M200, M300, and M400, allowing you to view the waveform data of each channel. This helps compare and analyze the performance of batteries across different channels.。



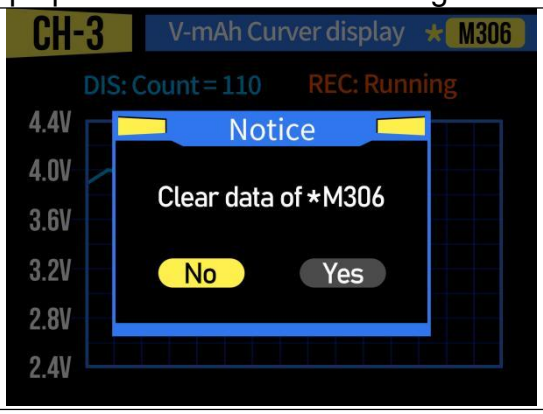
*M306 Discharging Real-Time Waveform



*M408 Discharging Real-Time Waveform

3. Clear Data

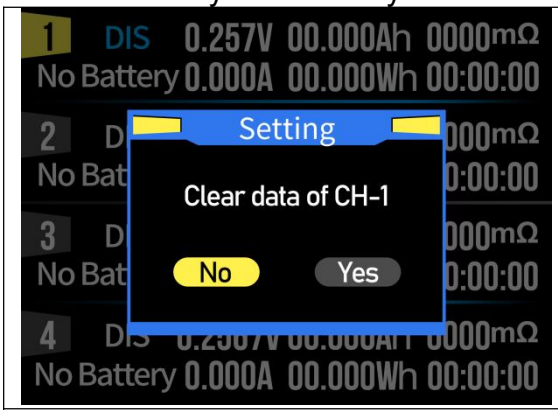
Press the [CLR] button to clear all data in the current storage space with one action, freeing up space for new data recordings.



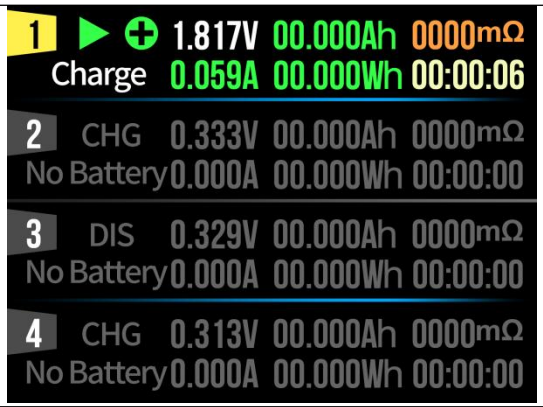
5. Repair Mode Operation

When the 18650 Battery Tester is powered on and no battery is inserted, pressing the [CLR] button will pop up a prompt window displaying “Enter Repair Mode.”

In normal mode, if the battery voltage is below 0.6V, the system will consider it as no battery, preventing charging operations. Therefore, for such low-voltage batteries, slow charging must be performed in Repair Mode to restore battery functionality.



Enter Repair Mode

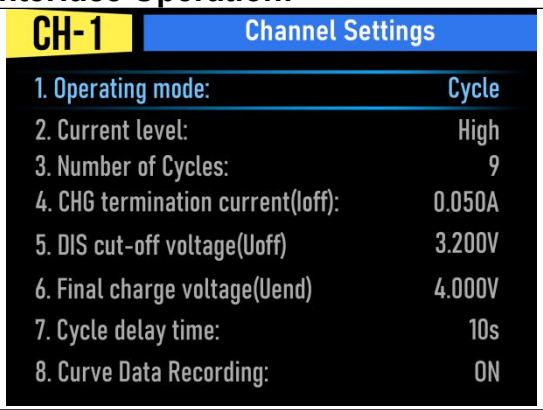


Battery Repair

6. System Settings

Users can short press the [SET] button to enter the System Settings. The first screen is the Channel Settings Interface, meaning that the system settings correspond to the currently selected channel in the list interface or single-channel interface. Pressing [SET] again enters the Basic Settings Interface for the entire device.

Channel Settings Interface Operation:



1. Mode

Use [◂] and [▸] buttons to switch between Loop (Cycle Mode), CHG (Charge Mode), and DIS (Discharge Mode).

2. Current Range

Use [◂] and [▸] buttons to switch the current range between High (High Current) and Low (Low Current).

3. Number of Cycles

Use [◂] and [▸] buttons to set the number of cycles, ranging from 1–9 cycles.

4. Charge Cutoff Current

Use [◂] and [▸] buttons to set the charge cutoff current. For example, if set to 0.050A, the device will stop charging when the current drops below 0.05A.

5. Discharge Cutoff Voltage

Use [◂] and [▸] buttons to set the discharge cutoff voltage. For example, if set to 2.500V, the device will stop discharging when the battery voltage falls below 2.500V.

6. End-of-Charge Voltage

Use [◂] and [▸] buttons to set the end-of-charge voltage. For example, if set to 3.450V, when multiple batteries finish their last charge, charging stops if the voltage exceeds 3.450V.

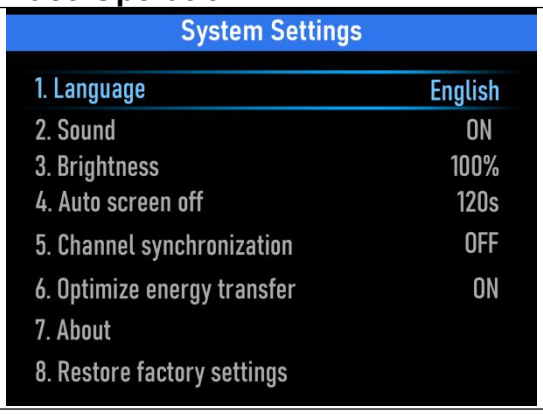
7. Cycle Switching Time

Use [◂] and [▸] buttons to set the cycle switching time. For example, if set to 10s, after a battery finishes charging and enters the discharge cycle, the device switches according to this time.

8. Data Recording

Use [◂] and [▸] buttons to enable data recording. When enabled, all data will be automatically recorded.

Basic Settings Interface Operation:



1. Language

Use [◂] and [▸] buttons to switch the display language between Chinese and English.

2. Sound

Use [◂] and [▸] buttons to turn device sound prompts on or off.

3. Brightness

Use [◂] and [▸] buttons to adjust the screen brightness to the desired level.

4. Auto Screen-Off

Use [◂] and [▸] buttons to set the screen-off time. Selecting “OFF” keeps the screen always on.

5. Channel Synchronization

Use [◂] and [▸] buttons to enable channel synchronization. When enabled, channels 2, 3, and 4 parameters will match channel 1.

6. Charge and Discharge Balancing

Use [◂] and [▸] buttons to enable the charge and discharge balancing function. When enabled, the device will cycle battery power. For example, if all four channels are in cycle mode and channel 1 battery is charging while a battery is inserted into channel 2 and cycle mode is started, the device will automatically prioritize discharging the channel 2 battery, and the discharged energy will be used to charge the channel 1 battery.

7. About

Short press [OK] to view the device model, serial number, and version information.

8. Restore Factory Settings

Short press [OK] to open the restore factory settings prompt, then short press [OK] again to restore the device to factory settings.

7.Mobile App Control

1. Instructions for using the Android mobile app

(1) App Download

Server download link:
http://68.168.132.244/JunceHome/JunceHome.apk

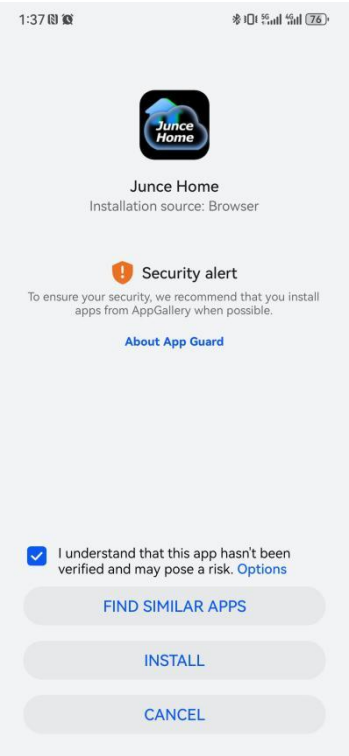
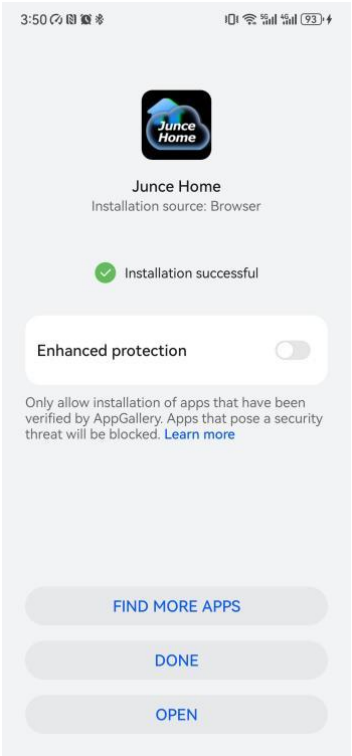
If you cannot download it, please contact customer service to obtain the software.

(2) App Installation and Device Connection

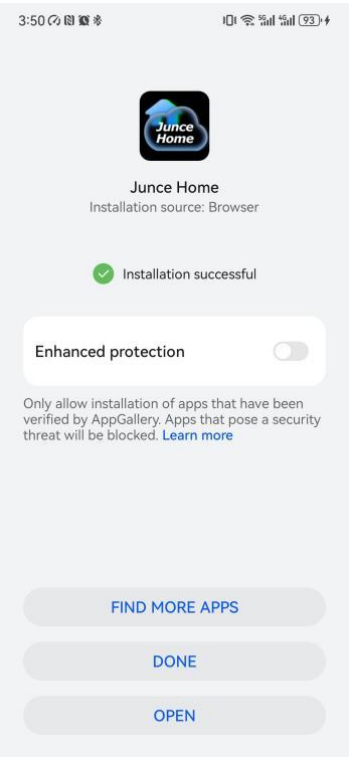
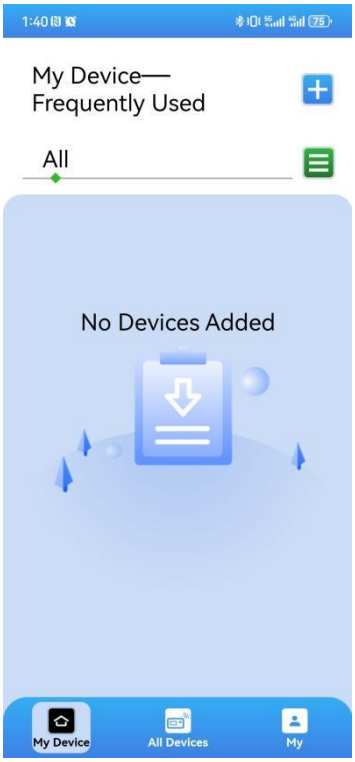
This software only supports Android 9.0 or above. To use the app, you must allow “Junce Home” to access location information and to search for and connect to nearby devices. (Due to Android system limitations, please enable the phone’s GPS before searching for Bluetooth devices. Note: this app does not collect location information.)

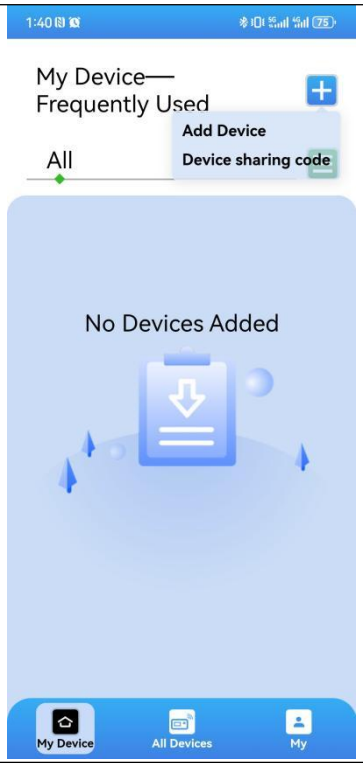
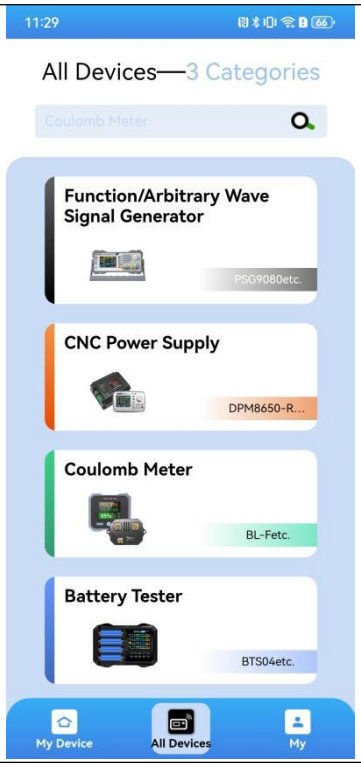
◆ App Installation Steps:

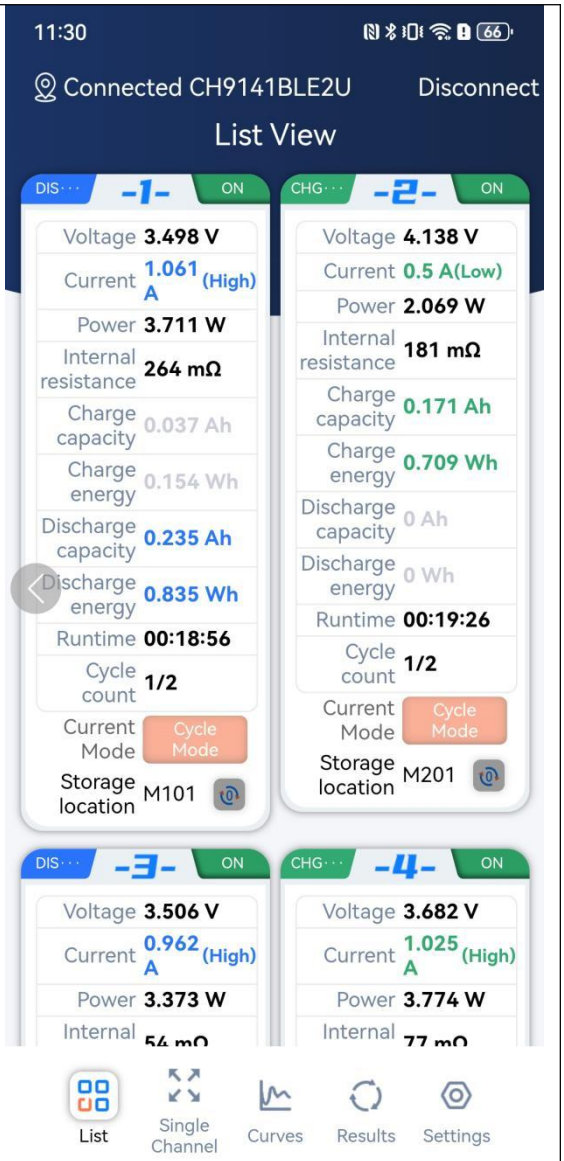
<table>
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<tr>
<td>1. Scan the download QR code with the phone’s browser or copy the download link to the browser, then click “Continue to Visit.”</td>
<td>2. Download the JunceHome.apk file.</td>
</tr>
</table>

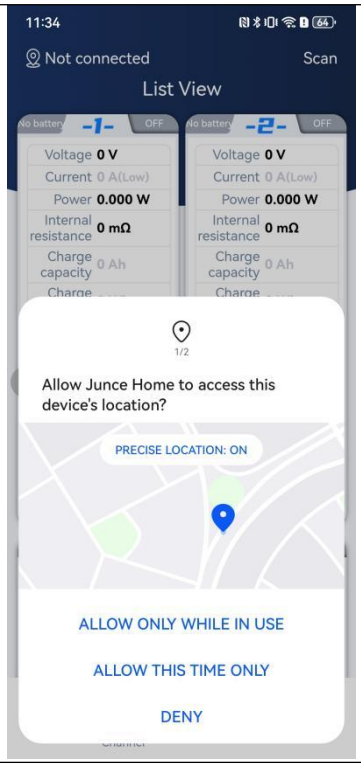
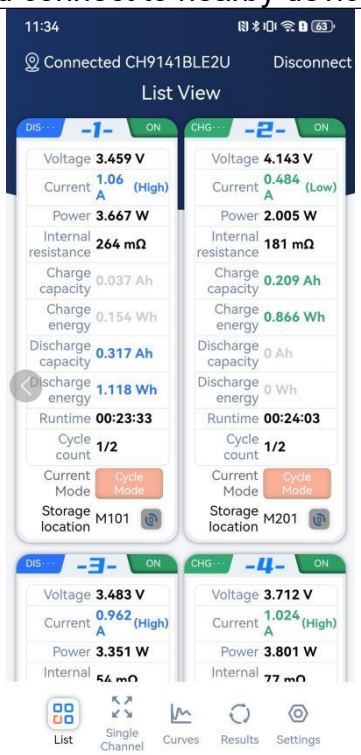
	
3. Install the downloaded JunceHome.apk.	4. Complete the installation.

◆ Bluetooth Connection:

	
1.Successfully installed the "Junce Home" APP.	2. Open the installed “Junce Home” app.

	
3. Click the “+” icon at the top right to open the dropdown menu.	4. Select “Add Device” to enter the device list.

	
5. Choose the “Battery Tester” category to enter the battery tester interface.	6. Select the battery tester model and click “Search” at the top right.”

<table>
<tr>
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<td>7. Grant location access permission when prompted.</td>
<td>8. Allow “Junce Home” to search for and connect to nearby devices.</td>
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<tr>
<td>9. Select the Bluetooth model “18650” from the device list.”</td>
<td>10. Tap the “18650” model to complete the connection.</td>
</tr>
</table>

(3)Software Update

When opening the app, it will automatically check for updates in the background. If a new version is available, a popup will prompt for an update.

(4)App Interface Display

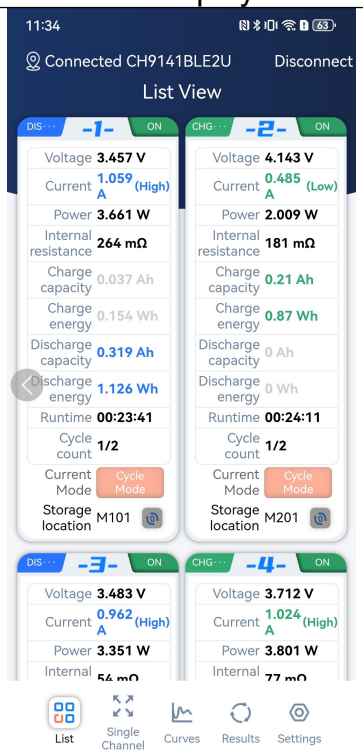


Figure 3-7-1: List Interface

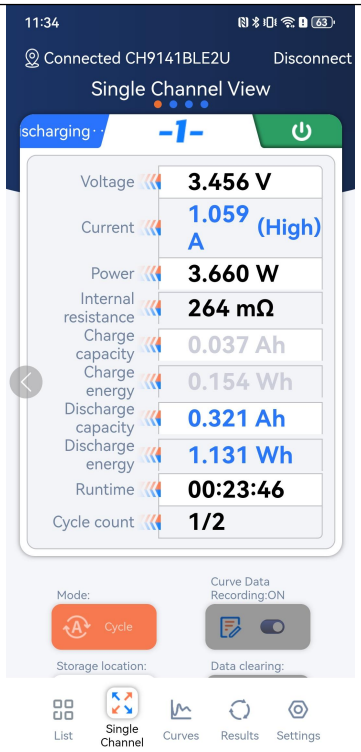


Figure 3-7-2: Single Channel Interface

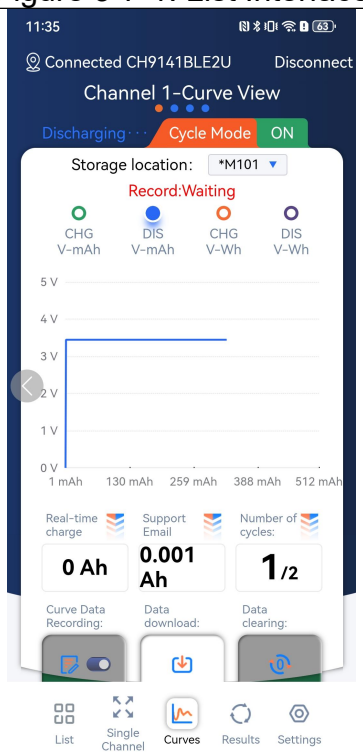


Figure 3-7-3: Curve Interface

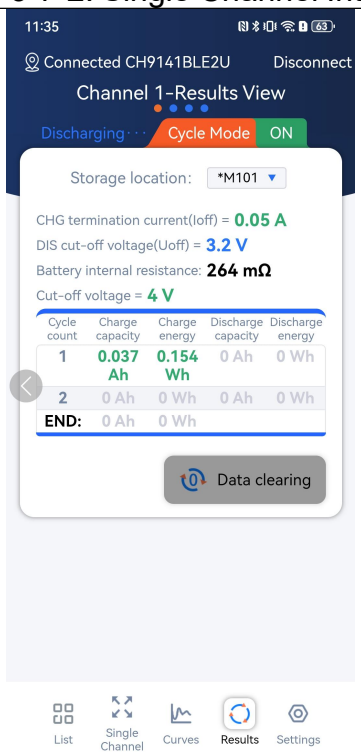


Figure 3-7-4: Loop Result Interface

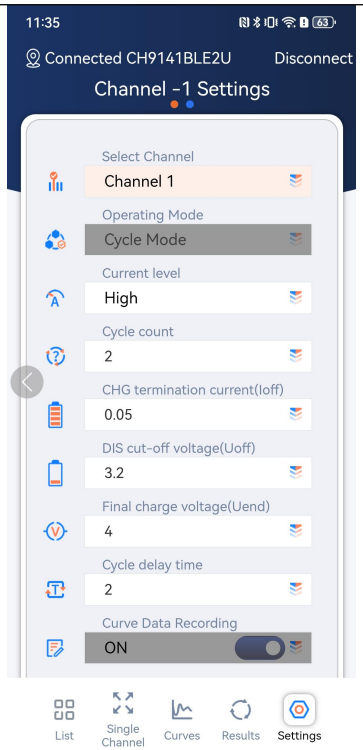


Figure 3-7-5: Channel Settings Interface

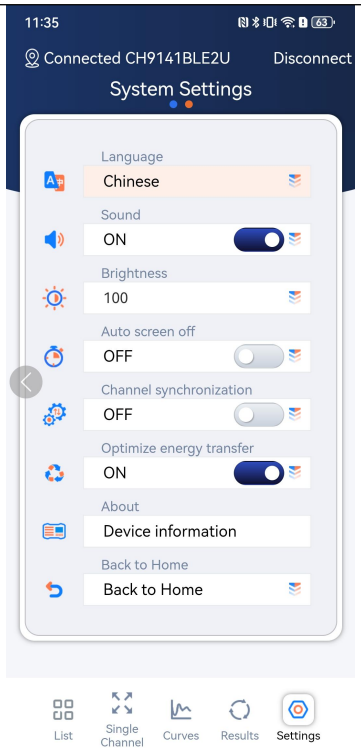
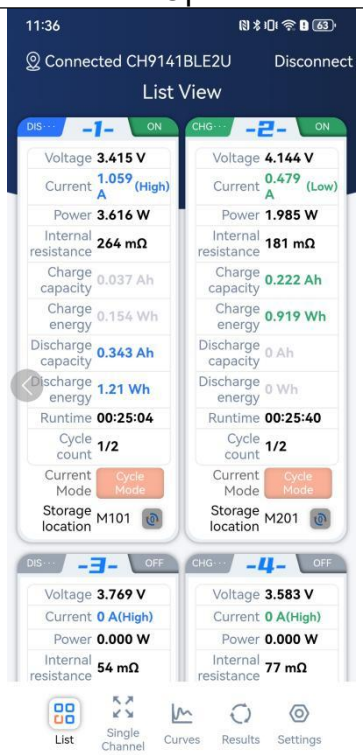


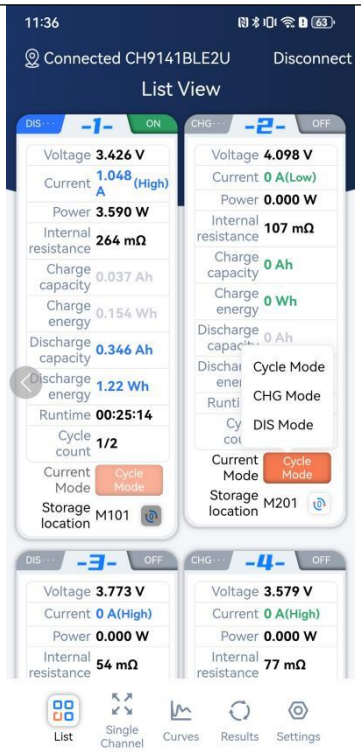
Figure 3-7-6: System Settings Interface

(5)App Operation Instructions

➢ List Interface Operation:

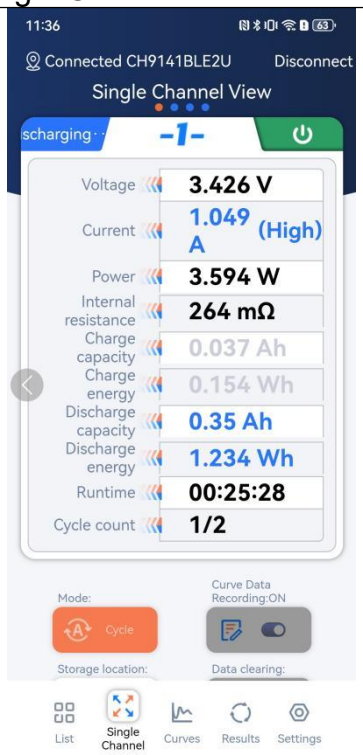
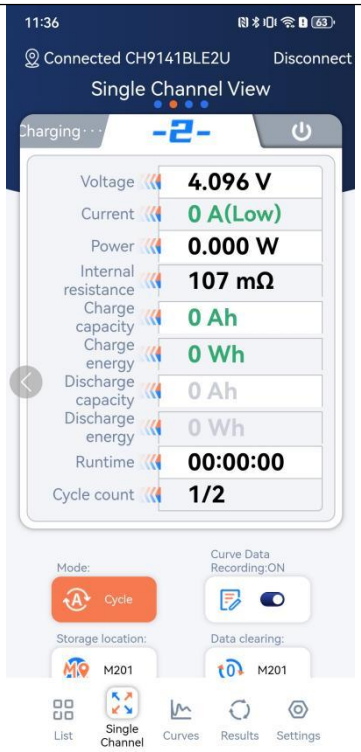
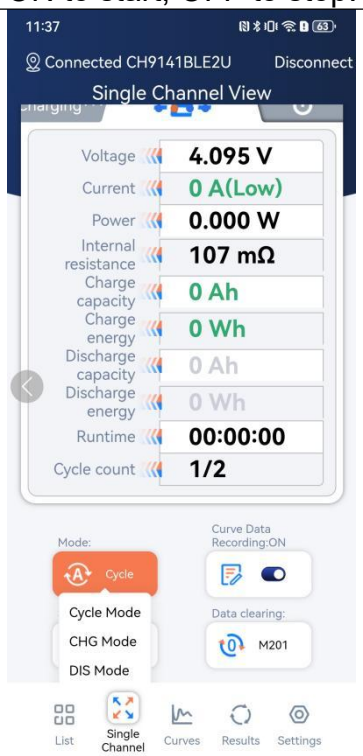
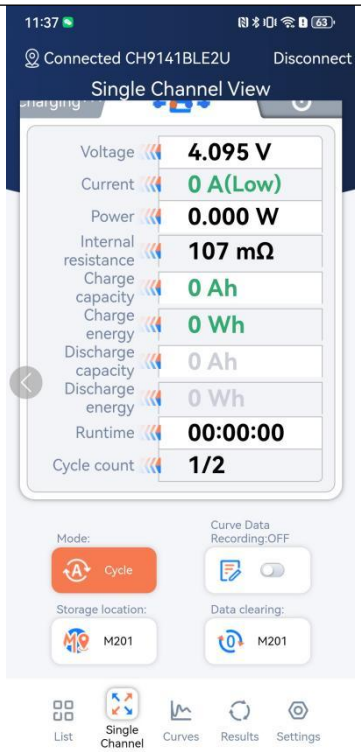


Battery charge/discharge switch: ON to start, OFF to stop.

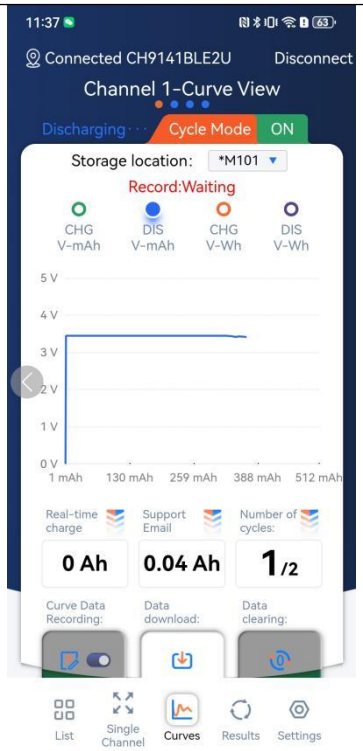
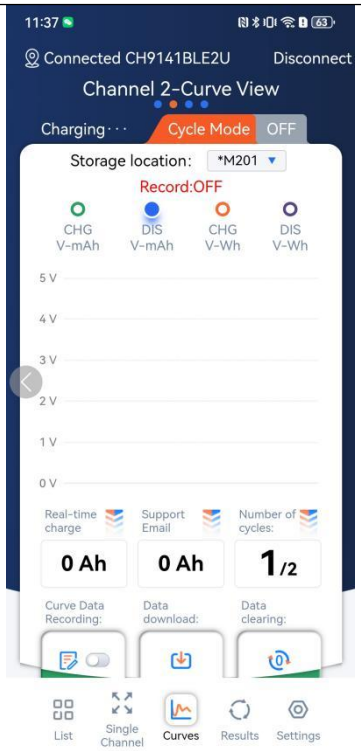
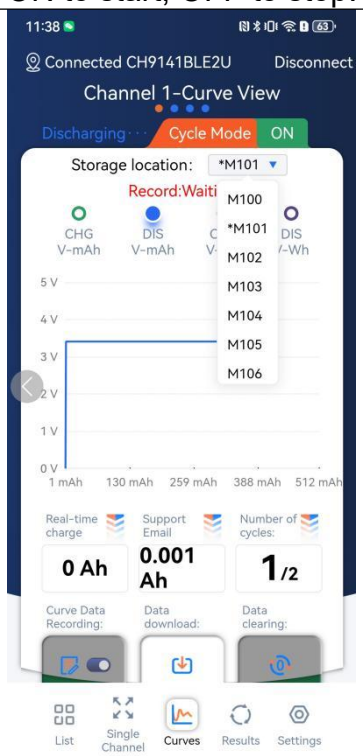
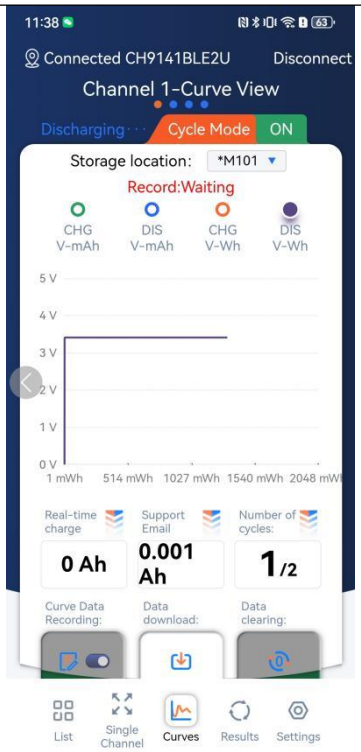


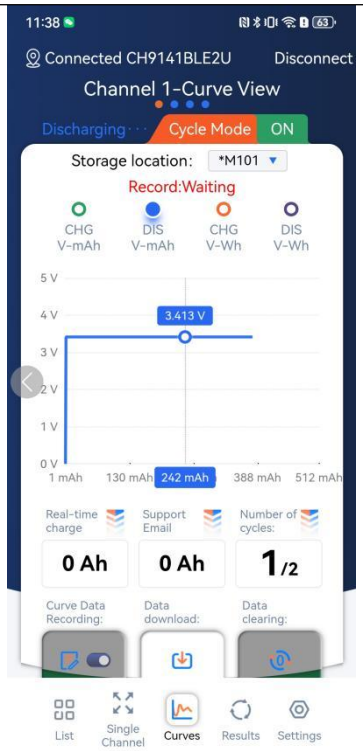
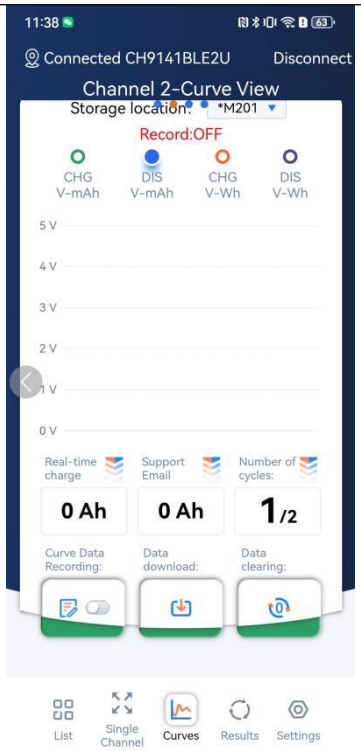
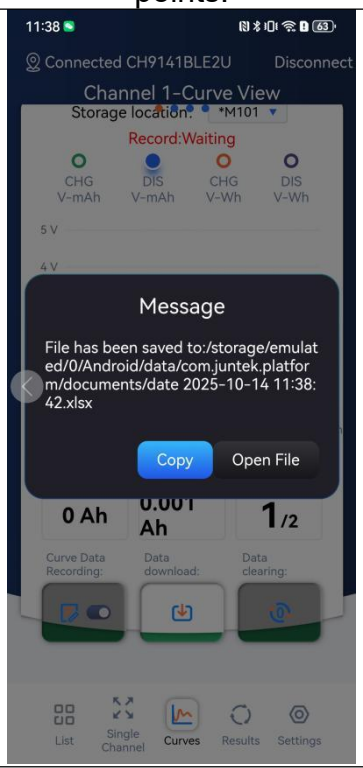
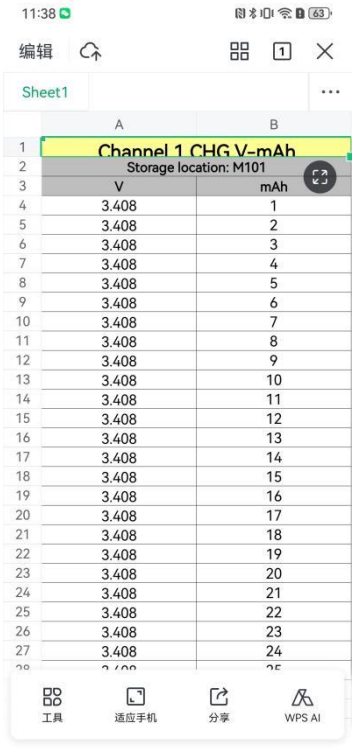
Mode switch: choose Loop, Charge, or Discharge mode.

➢ Single Channel Interface:

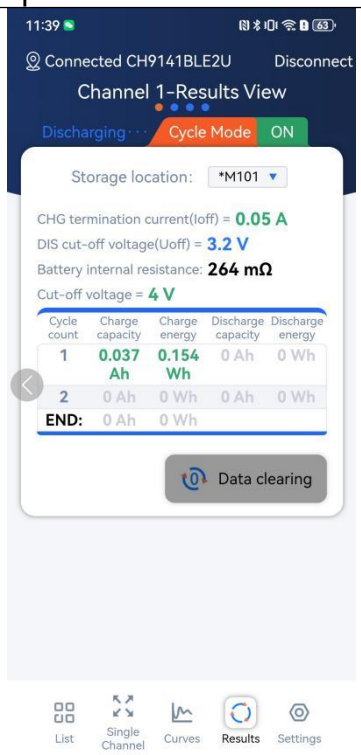
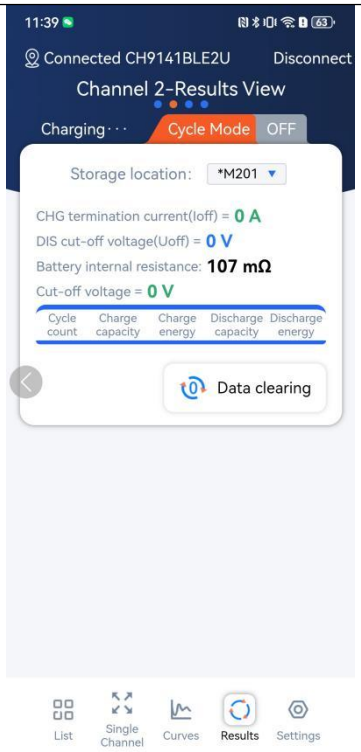
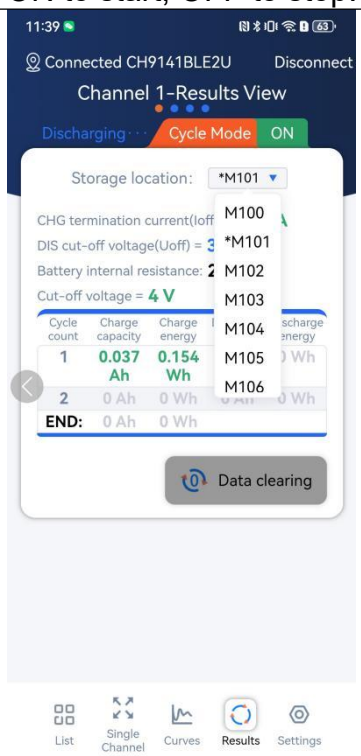
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<tr>
<td>Battery charge/discharge switch: ON to start, OFF to stop.</td>
<td>Channel switch: swipe left/right to switch channels 1–4.</td>
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<tr>
<td>Mode switch: choose Loop, Charge, or Discharge mode.</td>
<td>Data recording switch: turn data recording on/off.</td>
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➢ Curve Interface:

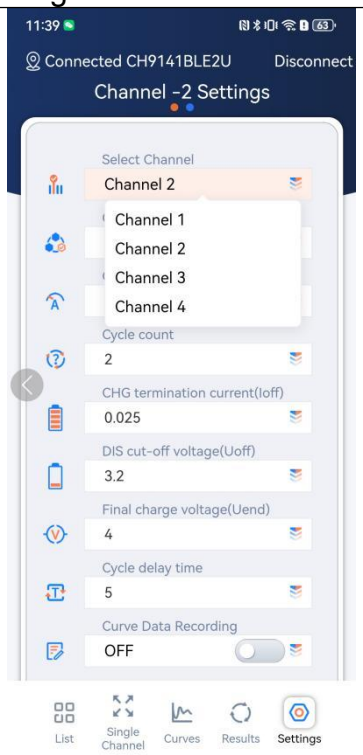
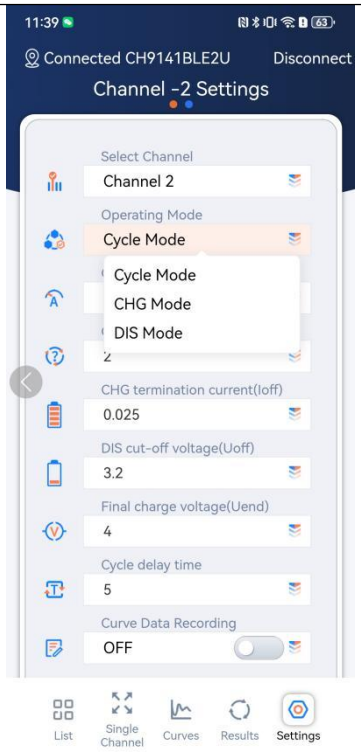
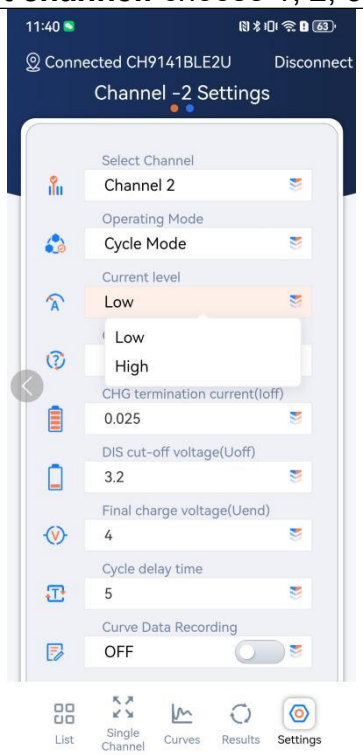
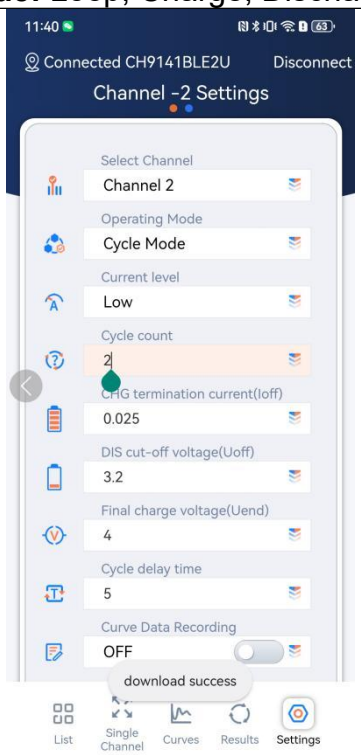
	
Battery charge/discharge switch: ON to start, OFF to stop.	**Channel switch:** swipe left/right to switch channels 1–4.
	
Storage location: view curve data for M100–M111.	**Four types of curves:** Charge V-mAh, Discharge V-mAh, Charge V-Wh, Discharge V-Wh.

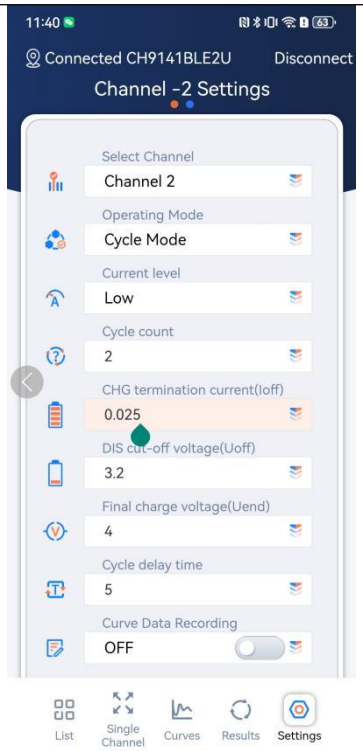
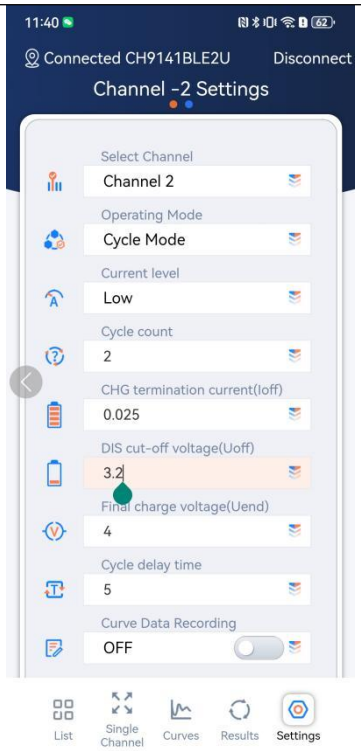
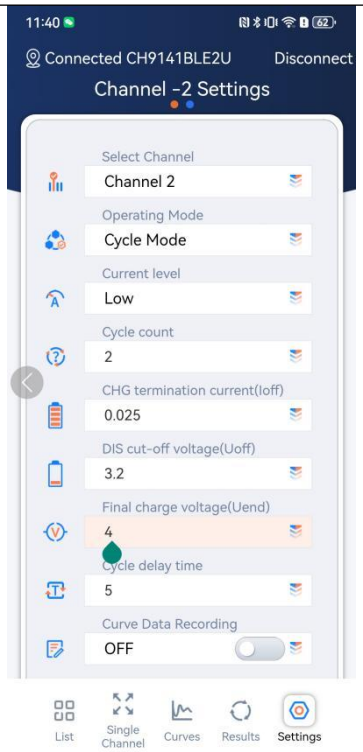
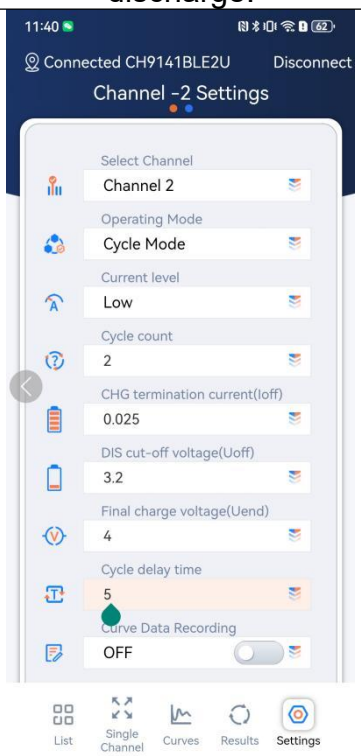
<table>
<tr>
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<tr>
<td>Data view: tap the curve to see voltage and ampere-hour at specific points.</td>
<td>Data recording switch: turn data recording on/off.</td>
</tr>
<tr>
<td>
</td>
<td>
</td>
</tr>
<tr>
<td>Data Download: Click on Data Download to download the current curve data</td>
<td>Data Viewing: View the data using Excel.</td>
</tr>
</table>

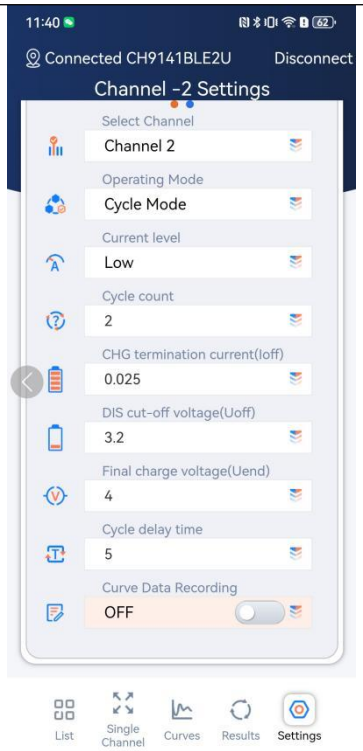
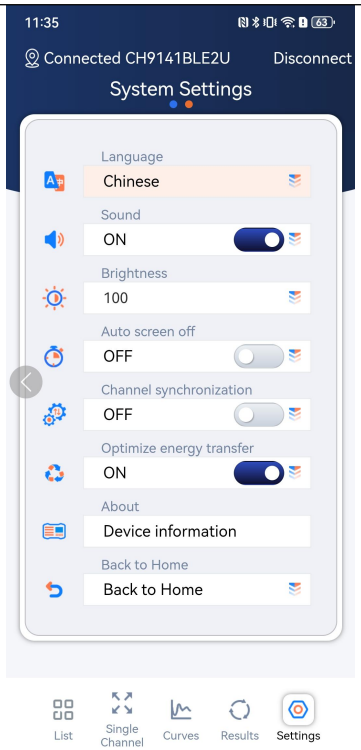
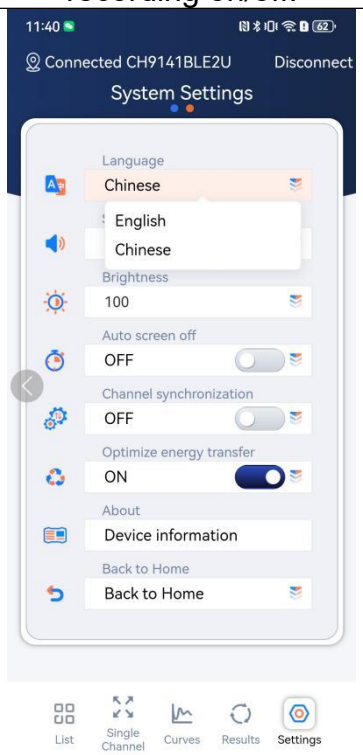
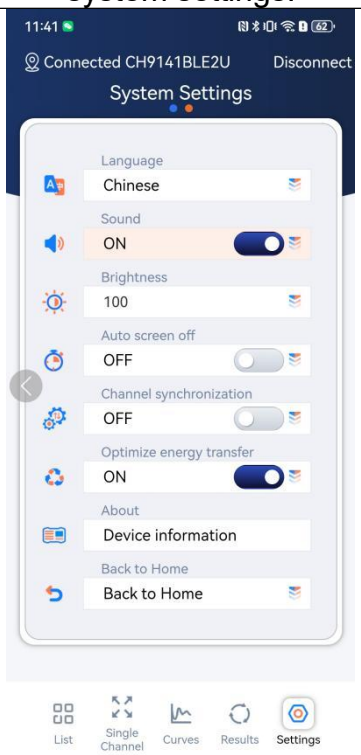
➢ Loop Result Interface:

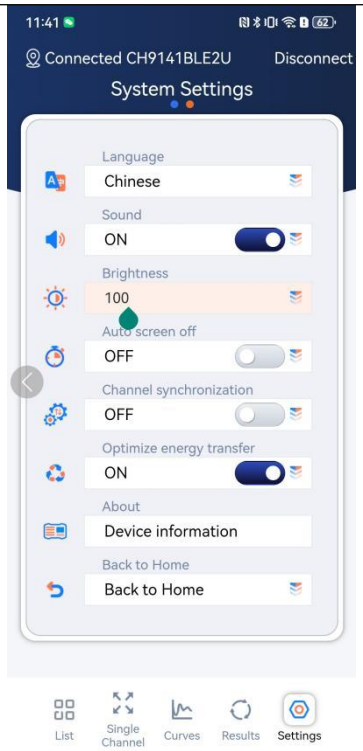
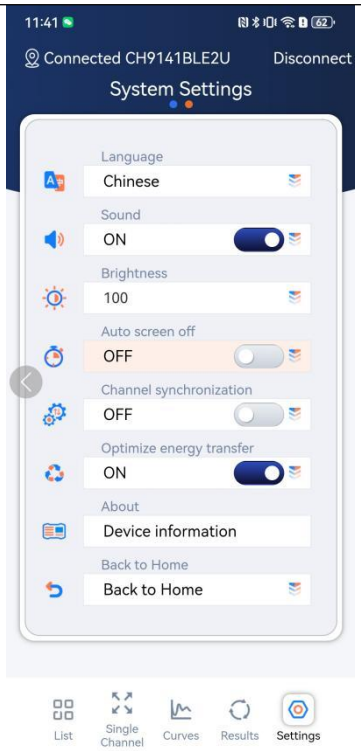
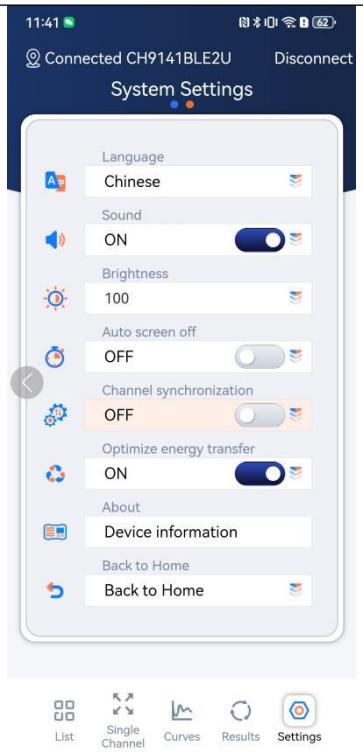
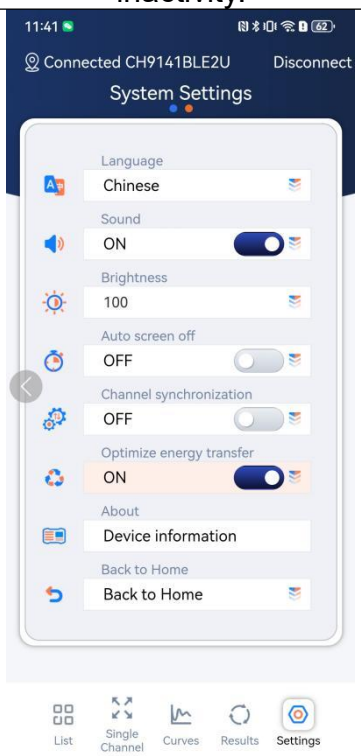
<table>
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<tr>
<td>Battery charge/discharge switch: ON to start, OFF to stop.</td>
<td>Channel switch: swipe left/right to switch channels 1–4.</td>
</tr>
<tr>
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</td>
<td></td>
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<tr>
<td>Storage location: view curve data for M100–M111.</td>
<td></td>
</tr>
</table>

➢ Settings Interface:

<table>
<tr>
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<tr>
<td>Select channel: choose 1, 2, 3, or 4.</td>
<td>Mode: Loop, Charge, Discharge.</td>
</tr>
<tr>
<td>
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<tr>
<td>Current range: choose Low or High current.</td>
<td>Loop count: set 0–9 cycles in Loop mode.</td>
</tr>
</table>

<table>
<tr>
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<tr>
<td>Charge cutoff current: set the current threshold for stopping charge.</td>
<td>Discharge cutoff voltage: set the voltage threshold for stopping discharge.</td>
</tr>
<tr>
<td>
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</td>
</tr>
<tr>
<td>Battery final charge voltage: set the end-of-charge voltage.</td>
<td>Charge/discharge alternating time: set the time for alternating loops.</td>
</tr>
</table>

<table>
<tr>
<td>
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<tr>
<td>Data recording switch: turn data recording on/off.</td>
<td>Settings switch: swipe left to enter system settings.</td>
</tr>
<tr>
<td>
</td>
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</td>
</tr>
<tr>
<td>Language: English/Chinese.</td>
<td>Sound: ON/OFF.</td>
</tr>
</table>

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<tr>
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<tr>
<td>Screen brightness: adjust instrument display brightness.</td>
<td>Auto screen off: OFF keeps screen always on; ON turns off screen after inactivity.</td>
</tr>
<tr>
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</td>
</tr>
<tr>
<td>Synchronized channel settings: enable to sync parameters across all four channels.</td>
<td>Charge/discharge balance: when multiple channels are in loop mode, energy from one channel’s discharge will be used to charge another channel.</td>
</tr>
</table>

2.iOS Mobile App Instructions

(1) App Download

Search “Junce Home” in the Apple App Store.

(2) App Installation

Supports iOS 9.0 and above. On first Bluetooth connection, grant Bluetooth access permission. Device connection is the same as Android.

(3) Software Update

Updates can be obtained via the Apple App Store. It is recommended to keep the app updated for the best experience.

(4) App Interface Display

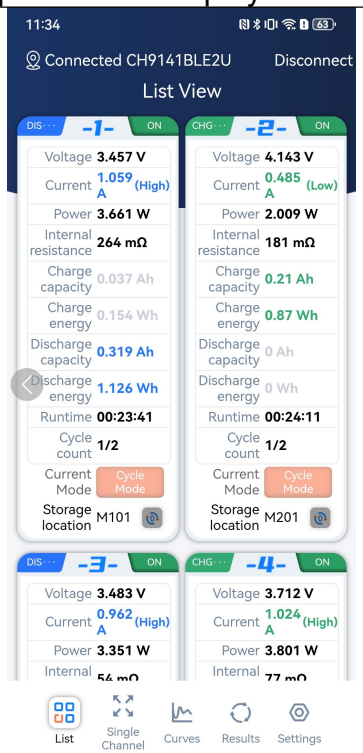


Figure 3-7-7: List Interface

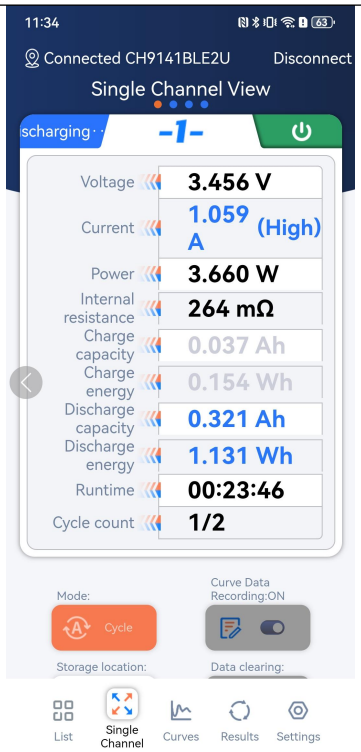


Figure 3-7-8: Settings Interface

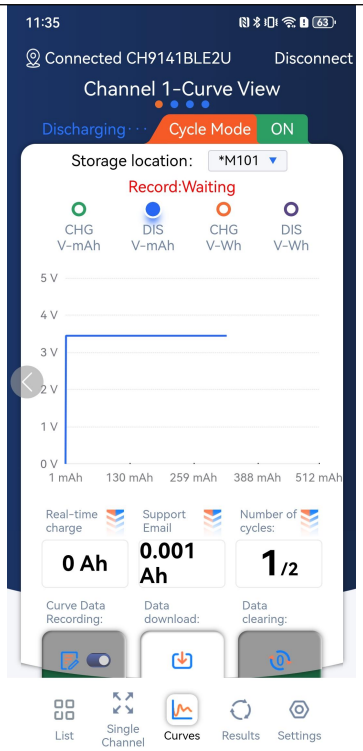


Figure 3-7-9: Curve Interface

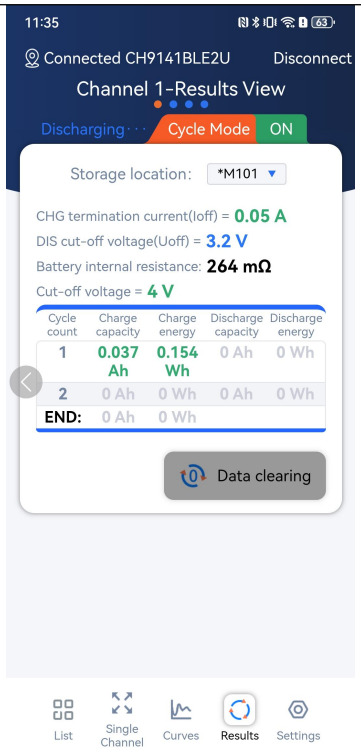


Figure 3-7-10: Loop Result Interface

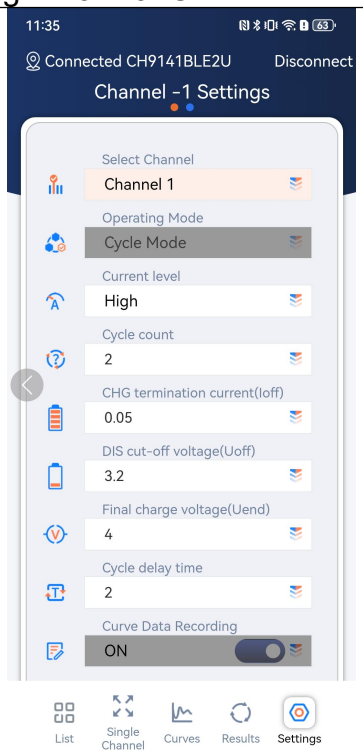


Figure 3-7-11: Channel Settings Interface

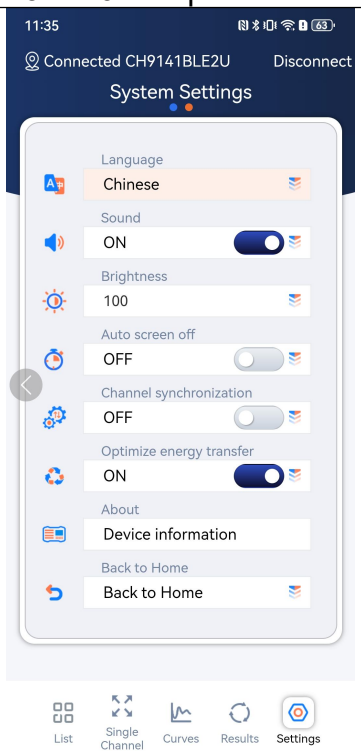


Figure 3-7-12: System Settings Interface

(5) App Operation
Operations on iOS are the same as on Android.

8.PC Software Control

Communication Protocol and Software Link:
http://68.168.132.244/bts04/bts04.exe

1. Download and Install

Copy the link to a browser to download the application [bts04.exe]. Double-click and follow the installation steps.

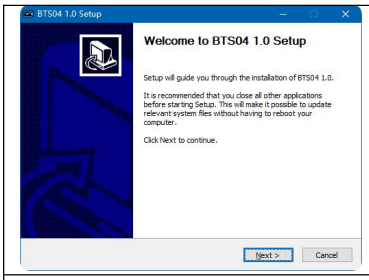


Figure 3-8-1

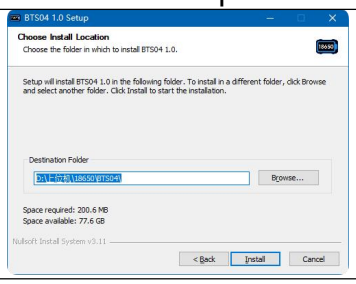


Figure 3-8-2

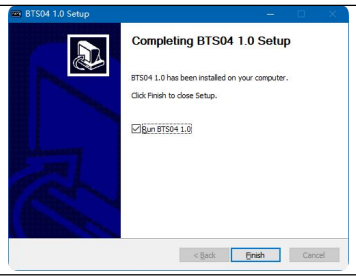
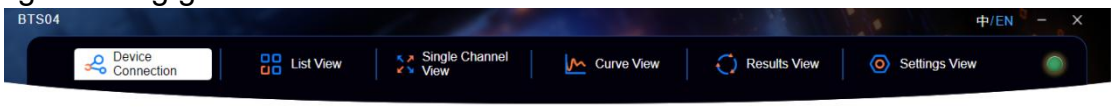
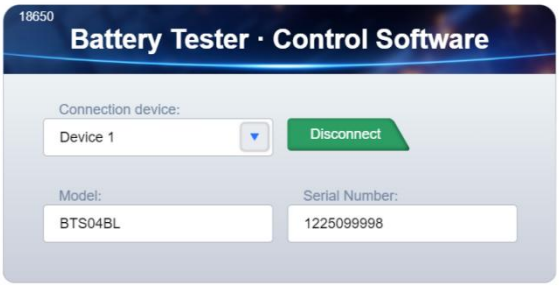


Figure 3-8-3

2. Connection

Connect the device's Type-C port to the PC USB port. In the software, select the device from the dropdown and click "Connect." Successful connection is indicated by the serial number display and the top-right indicator light turning green.

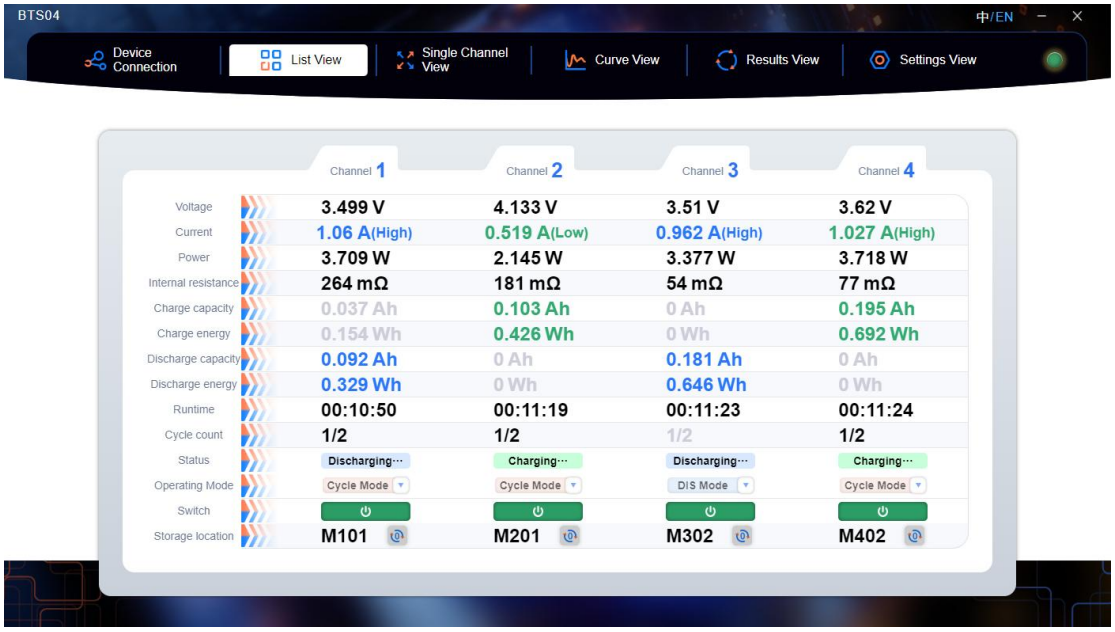






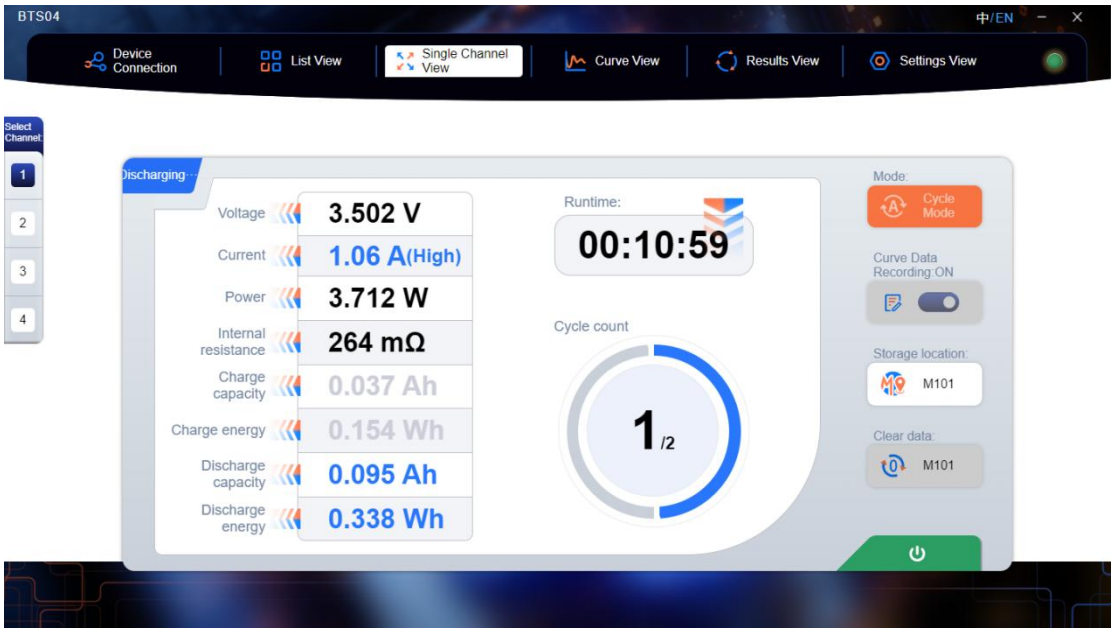
3. List Interface

View parameters of all four channels and select operation modes; control battery charge/discharge.



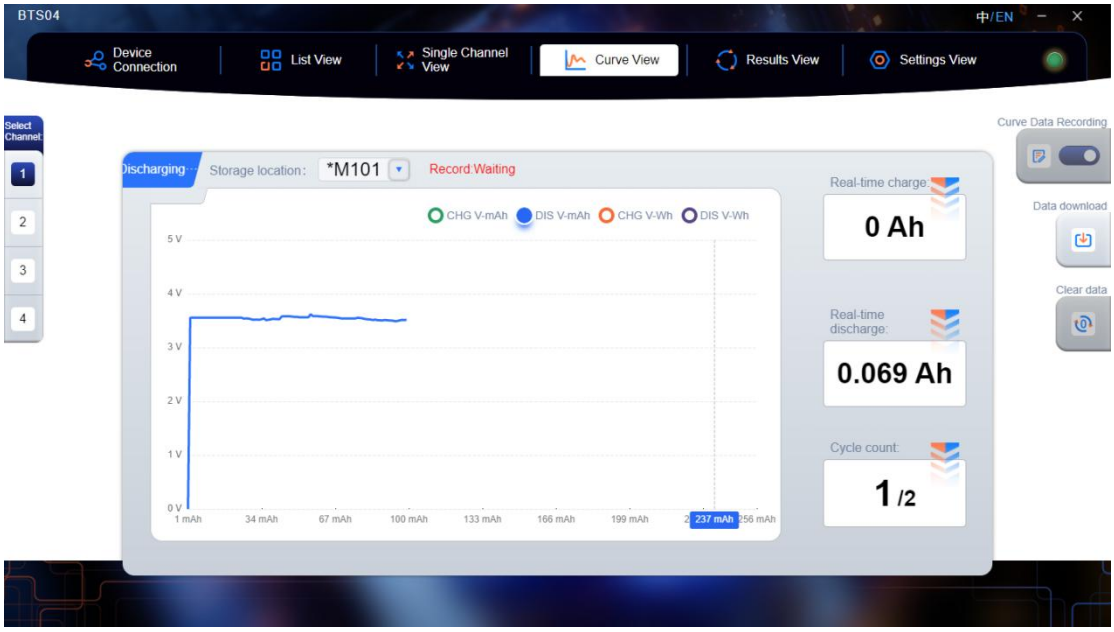
4. Large Screen Interface

Select a channel for full-screen display of all parameters for clearer observation.



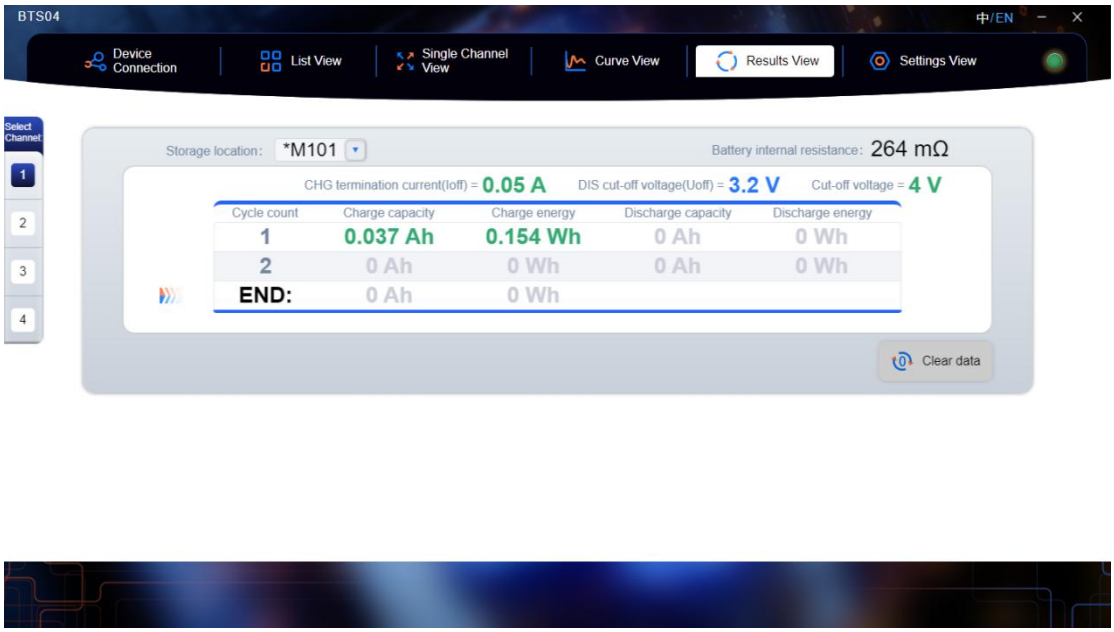
5. Curve Interface

View Charge V-mAh, Discharge V-mAh, Charge V-Wh, Discharge V-Wh curves.



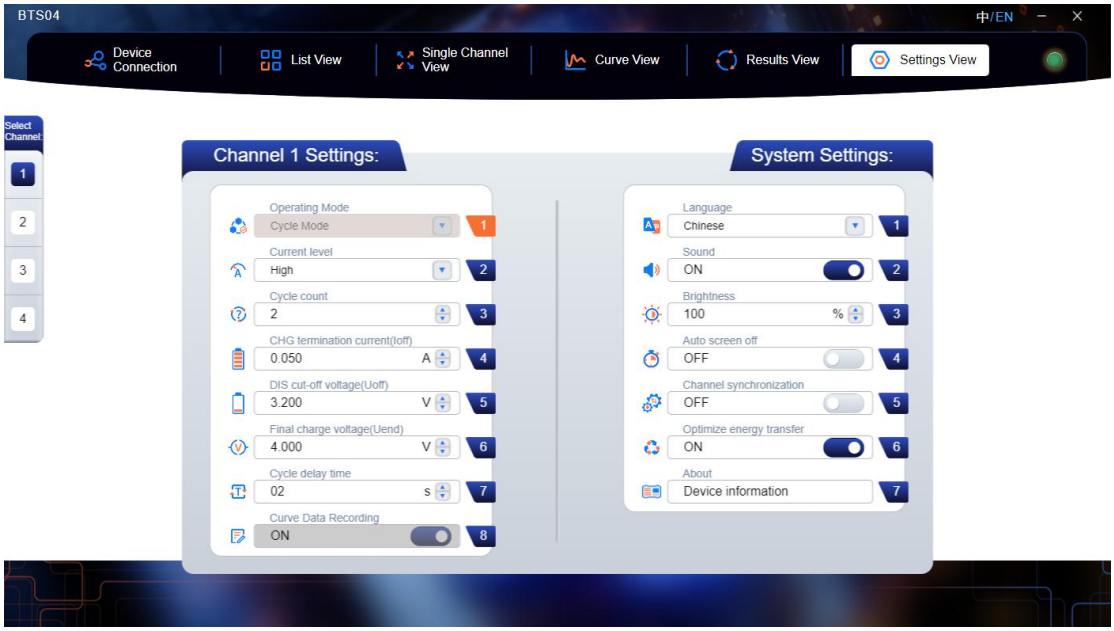
6. Test Summary Interface

View the test results of each channel.



7. Settings Interface

Set channel parameters and system settings.


BTS04
中/EN
Device Connection
List View
Single Channel View
Curve View
Results View
Settings View
Select Channel
1
2
3
4
Channel 1 Settings:
Operating Mode
Cycle Mode
1
Current level
High
2
Cycle count
2
3
CHG termination current(Ioff)
0.050
A
4
DIS cut-off voltage(Uoff)
3.200
V
5
Final charge voltage(Uend)
4.000
V
6
Cycle delay time
02
s
7
Curve Data Recording
ON
8
System Settings:
Language
Chinese
1
Sound
ON
2
Brightness
100
%
3
Auto screen off
OFF
4
Channel synchronization
OFF
5
Optimize energy transfer
ON
6
About
Device information
7

Chapter 4 Troubleshooting

The following lists possible faults with the BLS04 series and their solutions. If issues cannot be resolved, contact JUNCTEK Hangzhou Junce Instrument Co., Ltd. and provide device information.

Q1: How to download and install the mobile app?

1. Scan the QR code in the guide to download the app.
2. Enable Bluetooth on your phone.
3. Enable location services for Android. (No location data is collected.)
4. Search and connect to the device in the app.

Q2: Downloaded file is a ZIP instead of APK on Android?

1. Rename the file from “JunceHome.APK.ZIP” to “JunceHome.APK” and install.

Q3: Cannot find device after opening the app?

1. Enable location permission on Android to allow Bluetooth scanning.

Q4: Device stops charging/discharging?

1. If temperature exceeds 75℃, the system stops operations to protect the device and battery. Allow cooling before reuse.

Q5: Screen shows “BARRERY REVERSED”?

1. Battery is inserted in reverse. Correct the polarity.

Q6: No curve data in Loop mode?

1. Only the last cycle’s data is recorded.

Q7: Charge/discharge alternates in multiple channels?

1. Charge/discharge balance function is active; energy is shared between channels.

Q8: Default start interface change?

1. Long press [SET] on the desired interface until “Saved” appears to make it default.

Q9: How to exit Repair Mode?

1. Press [OK] when the channel is in Repair Mode.

Chapter 5 More Product Information

For more information, refer to related manuals on JUNCTEK website:
BLS04 Series Operation Demo Video
BLS04 Series Chinese User Manual

Chapter 6 Contact Information

For questions or support:
Email: junce@junteks.com
Website: www.junteks.com

Appendix 1: Interface English Translation and Abbreviations

Chinese	English	Abbreviation
循环模式 1/9	Cycle Mode 1/9	Cycle 1/9
放电	Discharge	DIS
充电	Charge	CHG
无电池	No Battery	No Battery
电池反接	BARRERY REVERSED	BARRERY REVERSED
放电截止电压	DIS cut-off voltage	Uoff
内阻	internal resistance	Int.R
充电截止电流	CHG termination current	Ioff
结束充电电压	Final charge voltage	Uend
结果界面	Current Results	RSLT
单通道界面	Single Channel View	DTLS
系统设置	System Settings	SET
电压-毫安时曲线	V-mAh Curve display	CURVE
数据清零	Clear data	CLR
数据记录	Curve Date Recording	REC
放电安时计数	Discharge ampere hour counting	DIS:Count
充电安时计数	Charging ampere hour counting	CHG:Count