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Official statement: The mentioning of the names of other products in this manual is to illustrate how to use the device, with the ownership of the registered trademarks belonging to the owners.

The device is intended for the use of professional technicians or maintenance and repair personnel.

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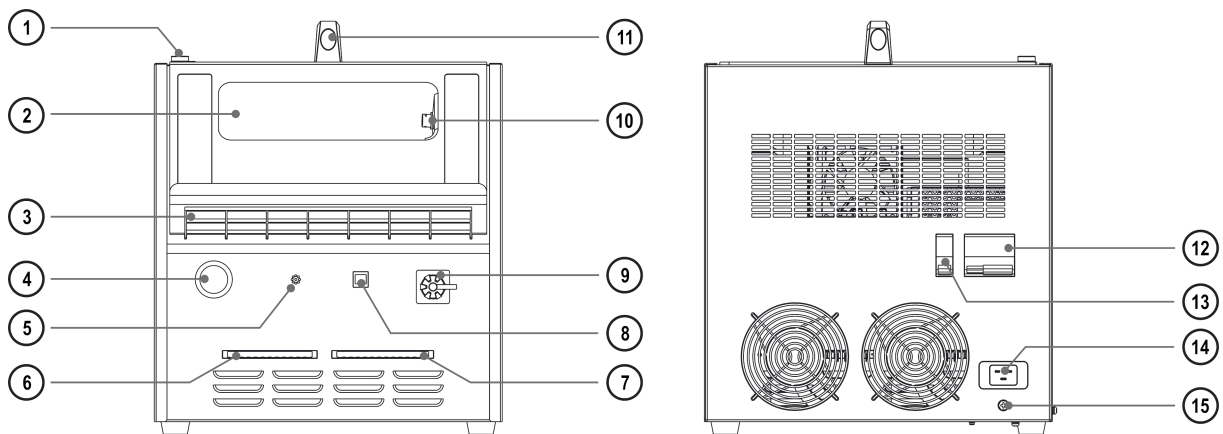
1. Safety Precautions

- (1) Observe the relevant requirements of the user manual to operate the device.
- (2) When operating the device, make sure to take proper insulation measures and wear dry, clean insulated gloves.
- (3) In the event of device malfunction, please disconnect the power supply and the test cables.

2. Product Overview

The EVM324, developed by Launch, is a new energy maintenance device that combines battery module balancing, charging and discharging. This device is suitable for testing and maintaining various types of battery packs, including power and energy storage batteries. The device supports independent balancing control for each connected cell, enabling precise adjustment of each cell to a uniform voltage level based on the user's specified voltage target. Additionally, it offers the capability for rapid high-current charging and discharging at the terminal, efficiently adjusting the overall voltage of the battery pack to the desired state. EVM324 should be used with an optional diagnostic device. With the accompanying app on this diagnostic device, users can remotely monitor, check battery status, and export diagnostic reports, effectively enhancing operational convenience and maintenance efficiency.

2.1 Device Interfaces and Controls



S/N	Name	Description
1	Power indicator	The green light is ON when the device is switched on.
2	Dedicated slot for charging cable	For storing charging cable.
3	Diagnostic device holder	For the placement of the diagnostic device.
4	Emergency stop switch	For cut-off of the device power supply and immediate stopping of its operation in case of emergencies. After pressing the emergency stop button, it must be turned to the right to reset before the AC switch can be turned off again.
5	Buzzer hole	Buzzer sounding hole.
6	Channel 2	For connecting a 12-pin voltage acquisition cable.

7	Channel 1	For connecting a 13-pin voltage acquisition cable.
8	CAN/RS485	For communication and other expandable functions.
9	DC output port	For inserting the DC high-voltage interface plug and connecting the positive and negative terminals of the battery module.
10	Charging port	For inserting the aviation plug-in charging plug to charge diagnostic device.
11	Handle	For handling the device.
12	AC switch	Switch on/off the device AC input.
13	DC switch	Switch on/off the device DC output. When switched on: the device can output according to the set parameters; When switched off: the output port is shut down and cannot produce output.
14	Power outlet	Power supply input.
15	Grounding terminal	For connecting the device to the grounding wire.

2.2 Accessories

The following accessories are for reference only. For details of product configuration, please consult your local distributor or check the packing list supplied with the product.

S/N	Name	Qty.	Picture
1	Power Cord (250V 16A)	4	
2	DC High Voltage Interface Plug	1	
3	12-pin Voltage Acquisition Cable	1	
4	13-pin Voltage Acquisition Cable	1	
5	Aviation Plug-in Charging Plug	1	
6	User Manual	1	-
7	Quick Reference Guide	1	-
8	Packing List	1	-

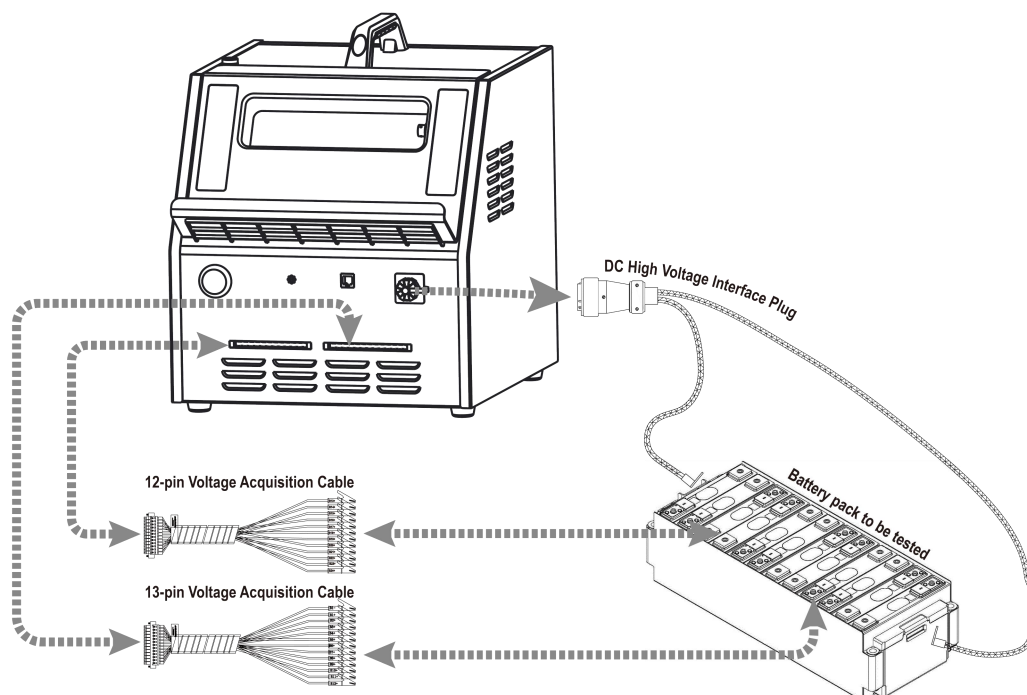
2.3 Technical Characteristics

Parameter	Description
Model	EVM324
Operating Power Supply	AC100~240V, 50/60Hz

Operating Voltage	Discharge voltage: DC 0-5V, Charge voltage: DC 0-110V
Voltage Detection Accuracy	$\pm 0.1\%FS + 5mV$ (maximum range: 5V)
Operating Current	Discharge current: 0.1 ~ 20A, Charge current: 0.5 ~ 40A
Current Detection Accuracy	$\pm 0.5\%FS \pm 0.05A$ (maximum range: 20A)
Operating Power	Maximum discharge power: 2.4kW, Maximum charge power: 3.2 kW
Number of Balancing Channels	2×12
Battery Interface	The charge side contains positive and negative interfaces, and the discharge side contains 24-channel voltage sampling interface
Display	10.1", with 1280*800 resolution
Wireless Communication	Wi-Fi, Bluetooth
Operating Mode	Constant current charge + constant voltage charge
	Constant current discharge + constant voltage discharge
Protection Mechanism	Input over-current protection, over-voltage protection; output over-current protection, over-temperature protection; support for reverse and cross-connection protection
Heat Dissipation	Forced wind cooling
Operating Temperature	-5°C~45°C
Storage Temperature	-20°C~70°C
Operating Humidity	5%~93%
Storage Humidity	5%~93%
Dimensions	385.6 x 447.0 x 473.9mm

3. Product Use

3.1 Device Connection



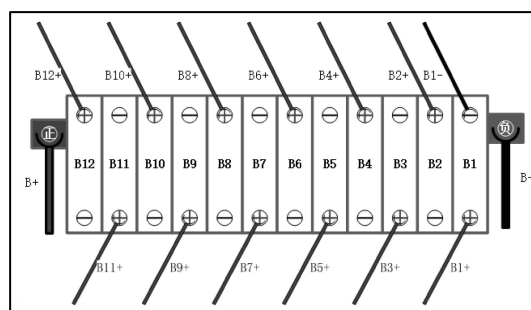
Connect the high voltage plugs to the positive and negative battery terminals

Plug the DC high voltage interface plug into the **"DC output port"** of the device, and connect the other end to the positive and negative terminals of the battery module.

Connect the voltage acquisition cable to the battery cell

Plug the male connector of the voltage acquisition cable into the front interface of the device, and connect the other end to the corresponding battery cells one by one according to the numbers on the voltage acquisition cable.

- (1) If the number of cells to be measured does not exceed 12: Connect the channel 1 interface of the device with a 13-pin voltage acquisition cable;
- (2) If the number of cells to be measured exceeds 12: Connect more cells to the channel 2 interface of the device with a 12-pin voltage acquisition cable (up to 24 cells supported).



Operating power connection

Use the power cord supplied with the device to connect its power port to the outlet for power supply, ensure that the input voltage matches.

3.2 Device Operation

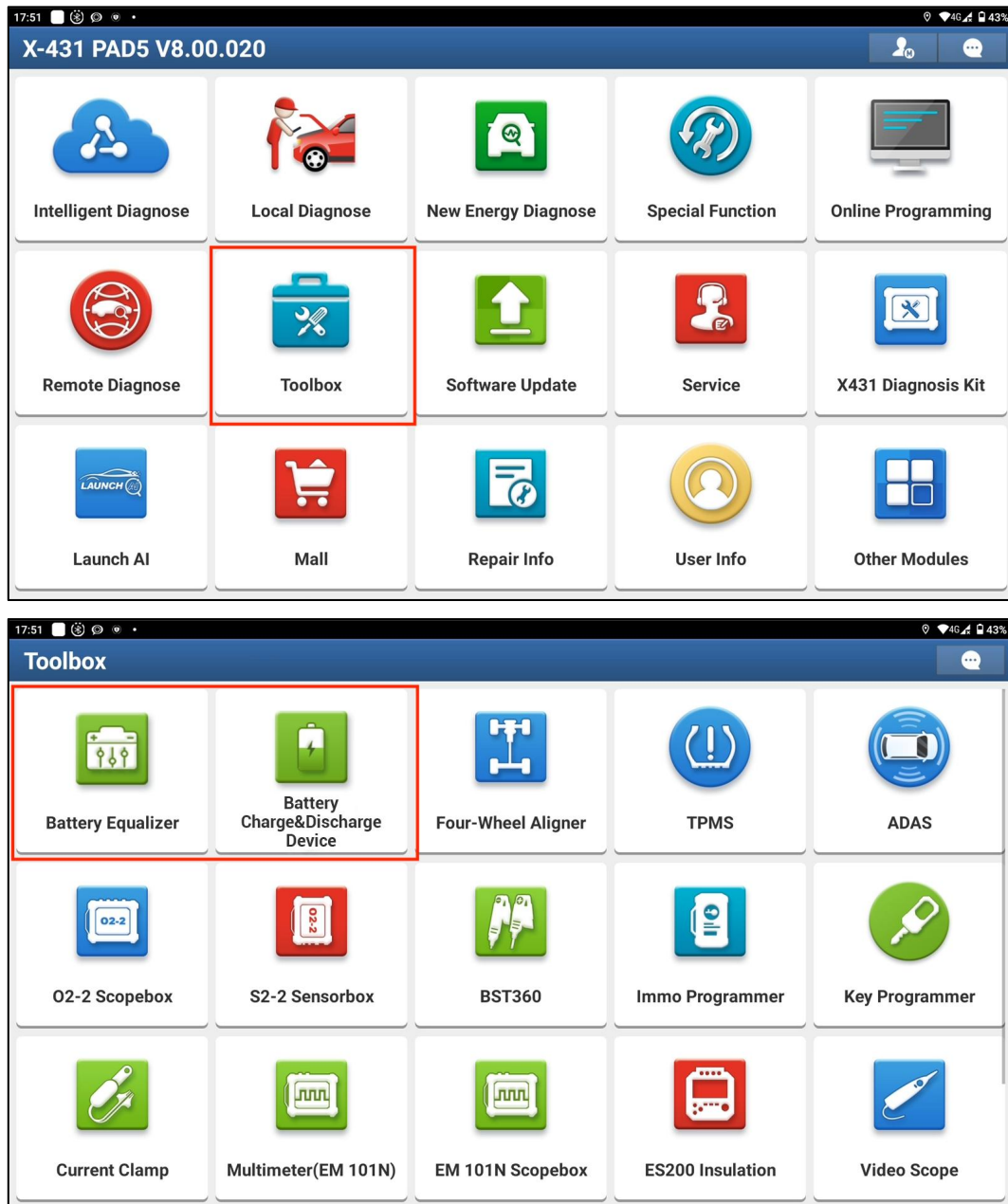
EVM324 is operated with a diagnostic device (optional) loaded with the **"Battery Equalizer"** and

"Battery Charge&Discharge Device" apps.

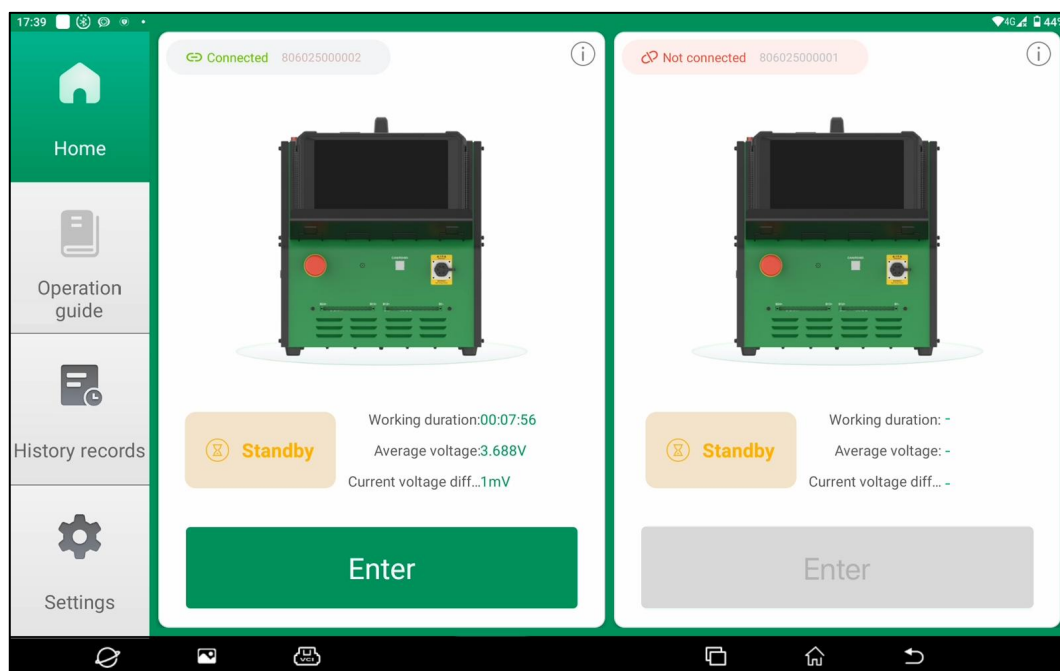
3.2.1 Connect the Diagnostic Device

- (1) On the home page of the diagnostic device, click the **"Toolbox"** button, then click either the **"Battery Equalizer"** or **"Battery Charge&Discharge Device"** button within the expansion module to start the corresponding app.

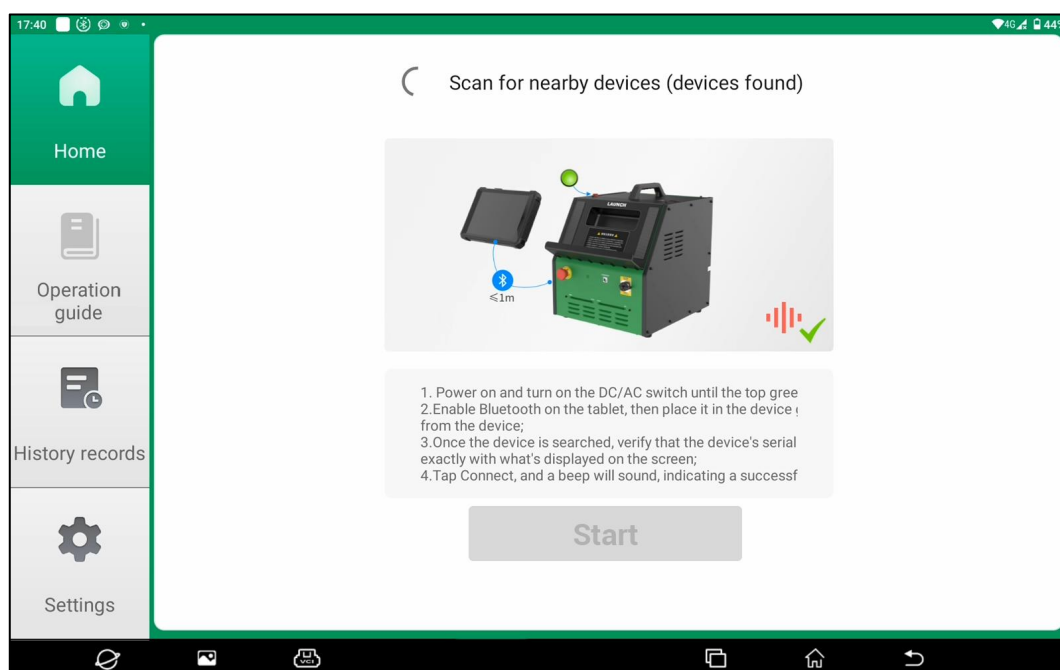
Note: Functional modules may differ across diagnostic devices. The images below are for illustrative purposes only. Please refer to the actual diagnostic device for details on specific functional modules.



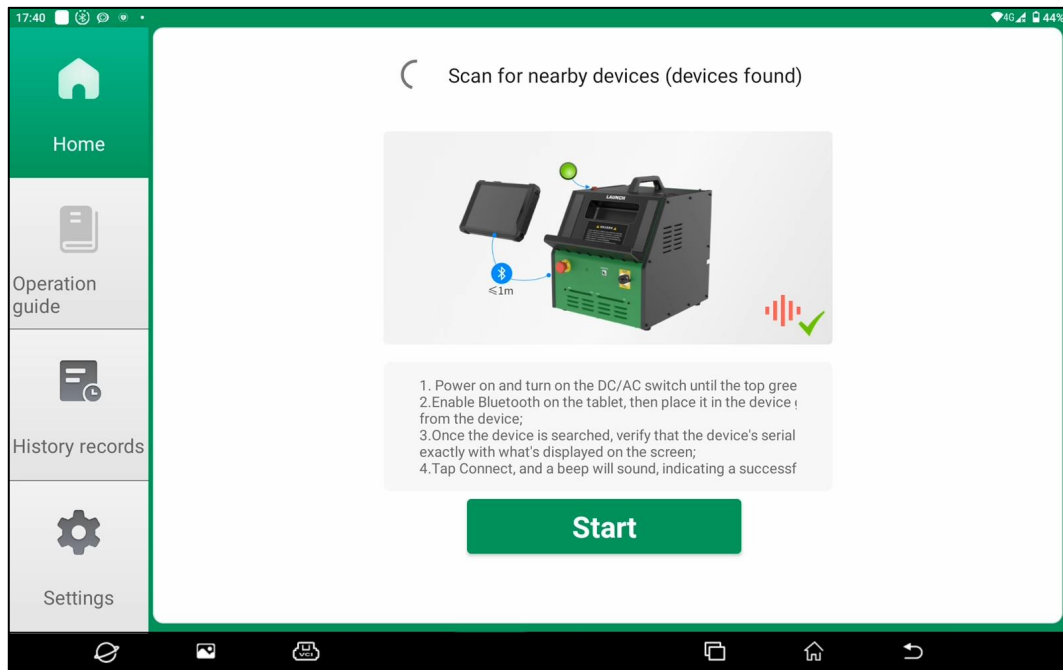
- (2) If the diagnostic device has previously been connected to the EVM324, the app will enter the device display screen after startup and display the device to which the diagnostic device is connected.



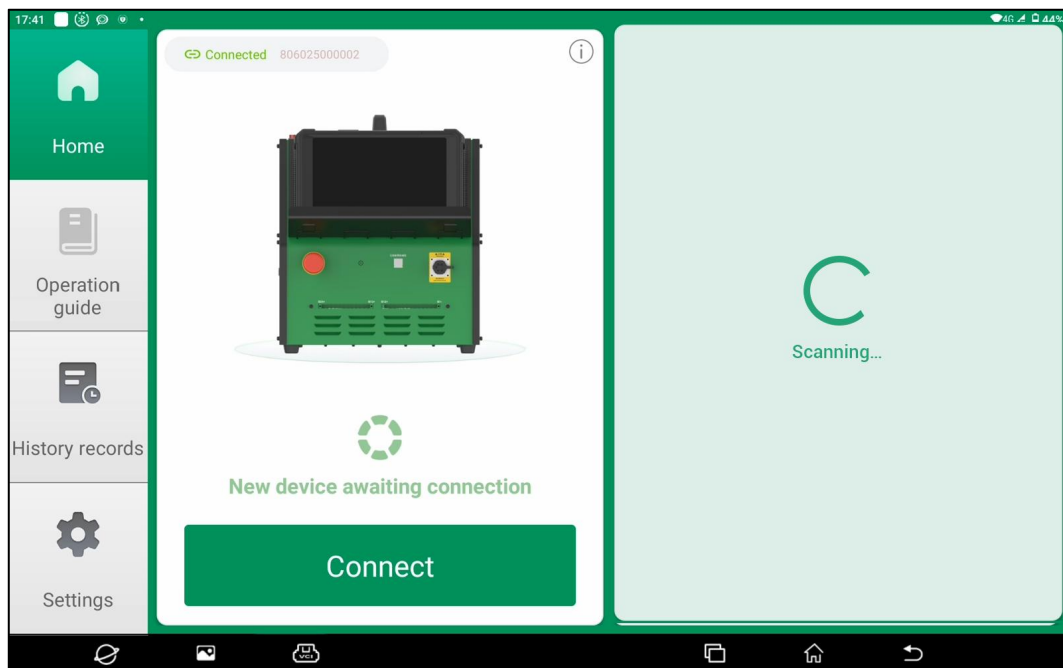
If the diagnostic device hasn't been connected to the EVM324 before, the app will open the device search page upon startup. Follow the on-page instructions to connect power to the EVM324, turn on its DC and AC switches, and wait for the green light on top of the device to light up.



- (3) Activate the Bluetooth function of the diagnostic device and ensure that it remains within 1m of the EVM324.
- (4) Once the EVM324 is found, the page shows "Devices found", and the **"Start"** button changes from gray to green. Click the **"Start"** button to go to the home page.

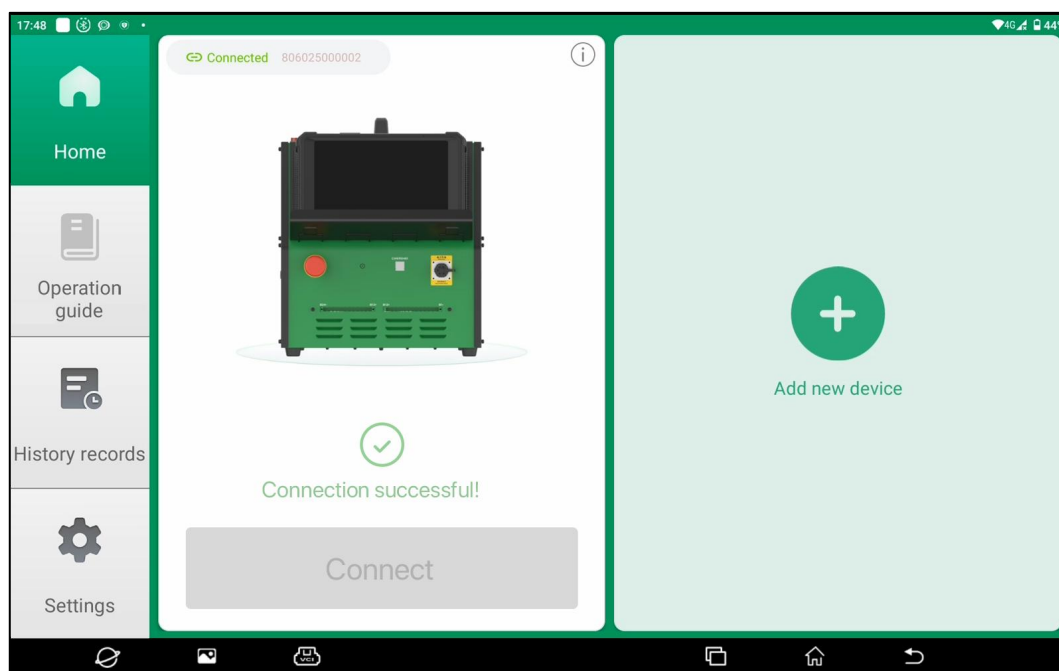


- (5) Once the EVM324 serial number is verified to exactly matches the serial number shown on the screen, click the **"Connect"** button.

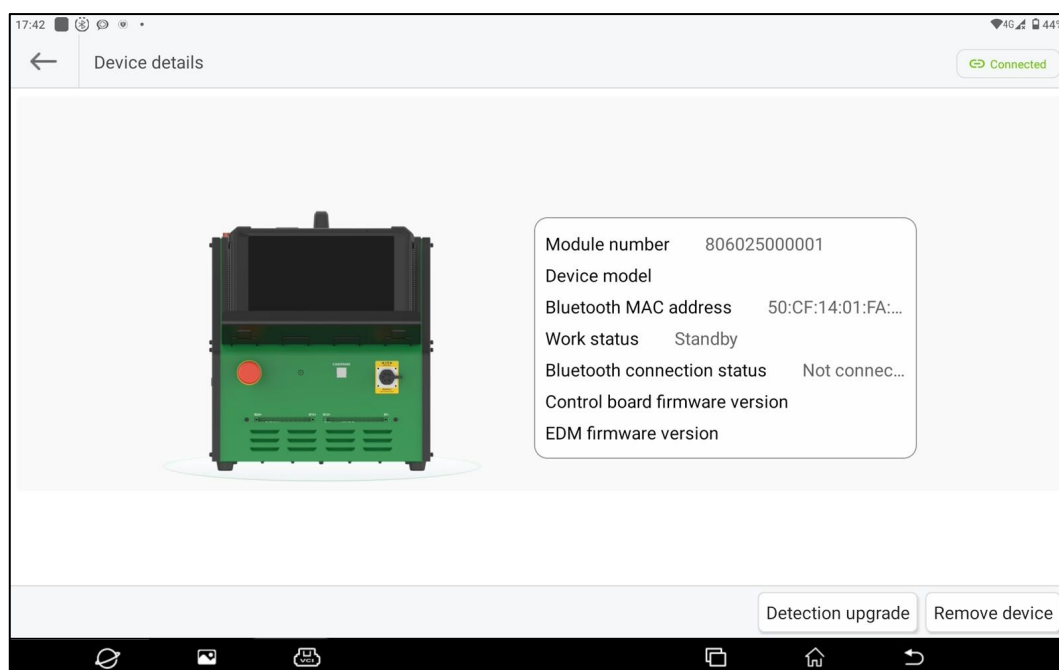


- (6) When the buzzing sound indicates a successful connection, the device connection status shown before the serial number on the screen changes to "Connected." Click the **"Add"** button to add a new device in the same manner.

Note: The diagnostic device can connect and bind with up to two EVM324 devices at the same time. To connect a new device after reaching this limit, you must first unbind one of the previously connected devices.



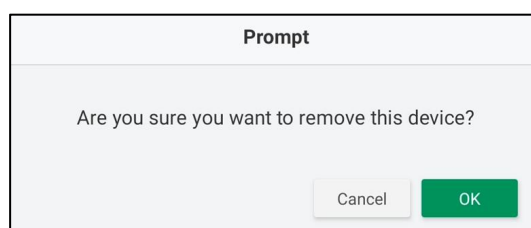
- (7) Click the "i" button in the top right corner of the individual device screen to go to the device details page, where you can view device information, perform firmware upgrades, and unbind the device.



- (8) Click the **"Detection upgrade"** button to upgrade the device to the latest version.

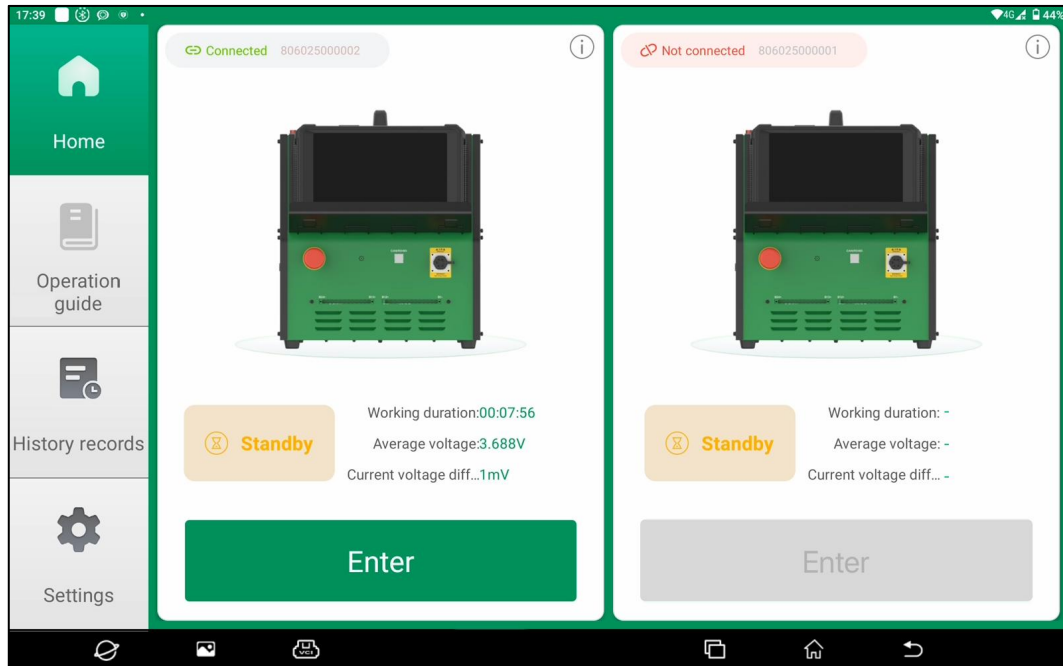
Note: Upgrade is not available when the device is in the operating state.

- (9) Click the **"Remove device"** button and then click **"OK"** to unbind the device from the diagnostic device.

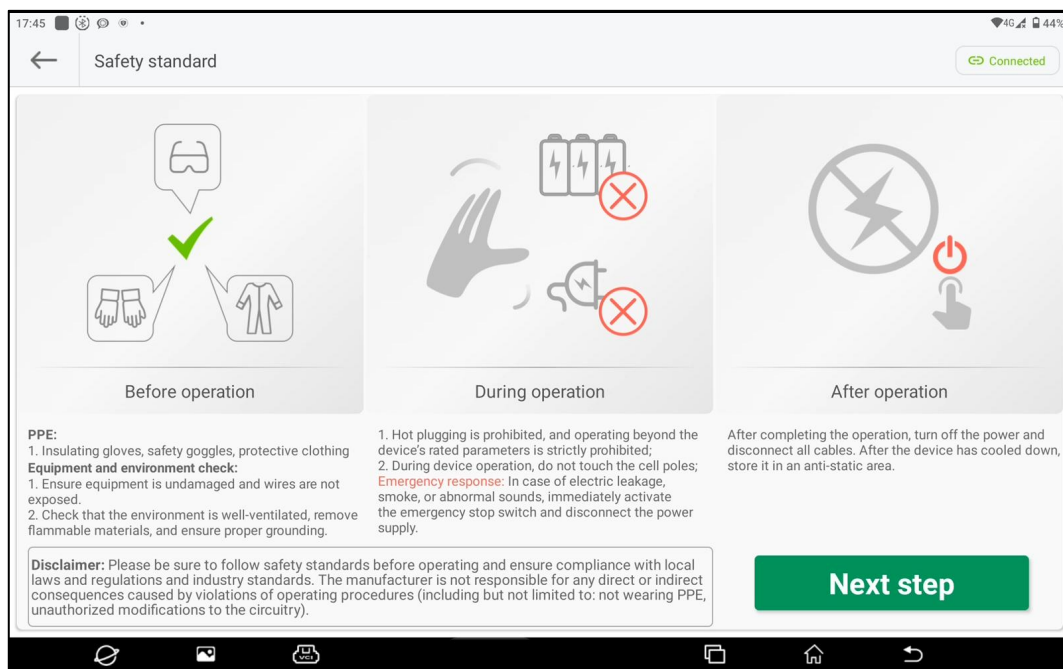


3.2.2 Battery Equalizer

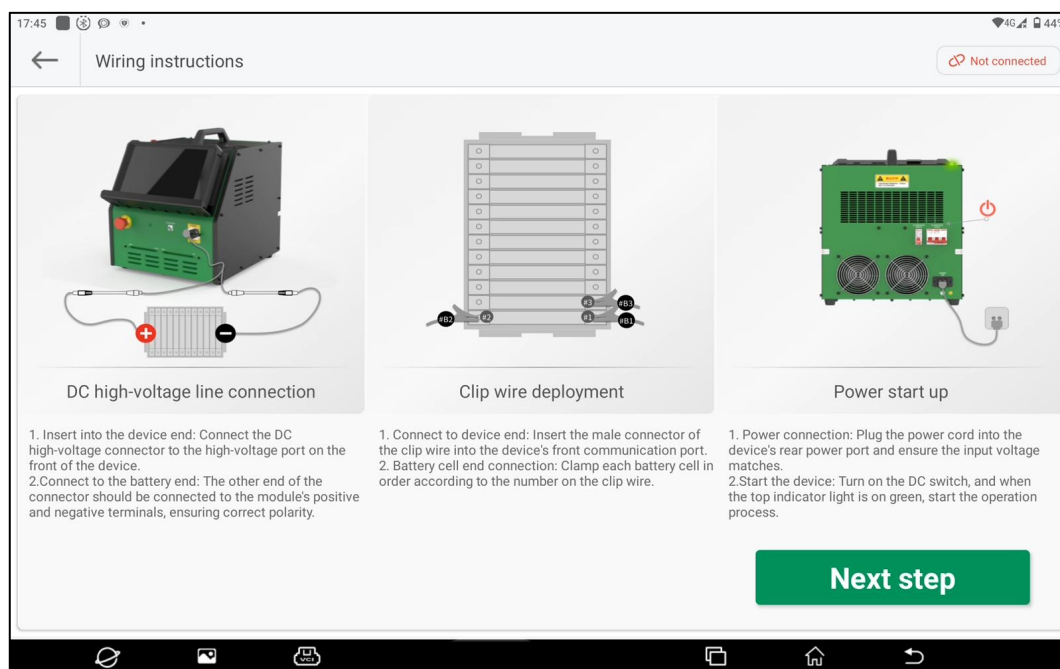
- (1) Click the **"Battery Equalizer"** button on the diagnostic device to go to the home page, and click the **"Enter"** button on the device card to go to the safety specification screen.



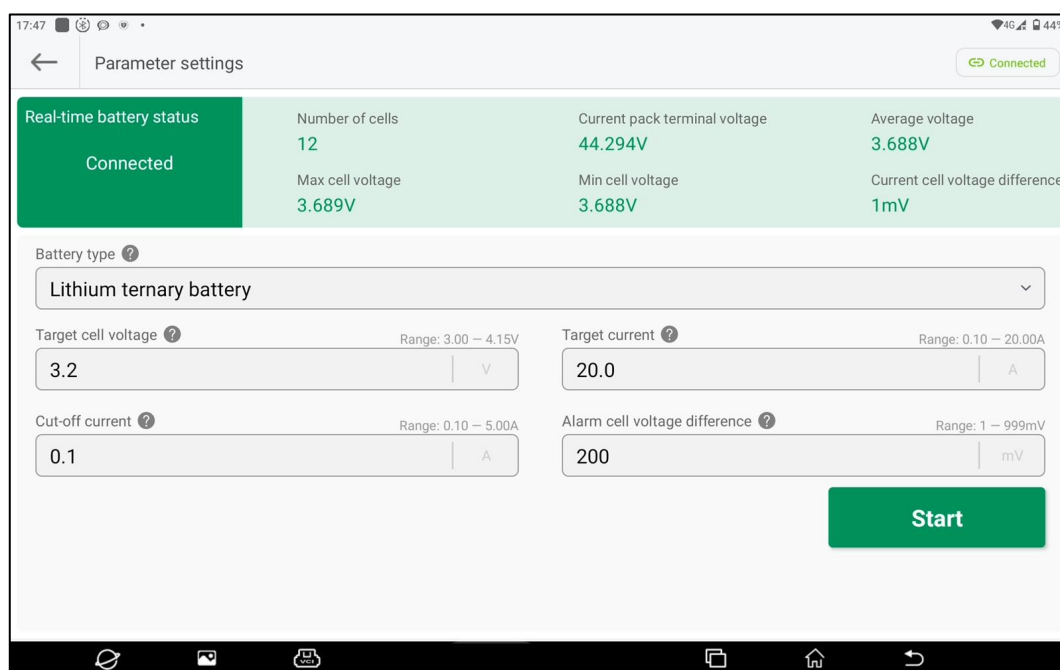
- (2) Once you have learned and understood the relevant safety regulations for operating the device, click the **"Next step"** button to go to the wiring instruction page.



- (3) Click the **"Next step"** button to go to the parameter settings screen after following the wiring instructions to connect the device.



- (4) In the parameter settings screen, you can view the real-time battery status and set its parameters. Click the **"Start"** button to save the current settings and begin balancing after setting the parameters.



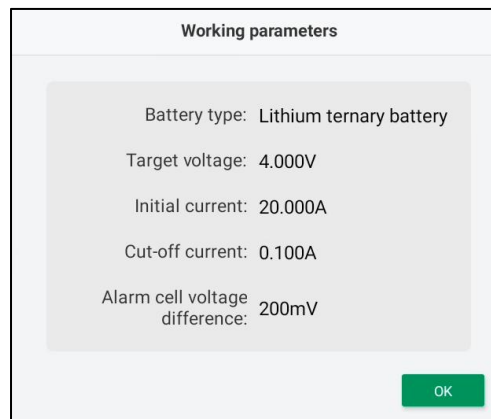
Parameter Description	
Real-time battery status	Connection status of the battery module.
Number of cells	The number of connected cells is displayed.
Current pack terminal voltage	The terminal voltage of the battery module is displayed.
Average voltage	The average cell voltage is displayed.
Max cell voltage	The maximum cell voltage is displayed.
Min cell voltage	The minimum cell voltage is displayed.

Current cell voltage difference	The voltage difference between the maximum cell voltage and the minimum cell voltage.
Battery type	Select based on the specific type of battery to be tested, as parameter ranges differ for various battery types.
Target cell voltage	The target cell voltage value for balancing operation.
Target current	Sets the maximum current allowed to be reached during balancing operation.
Cut-off current	Current threshold for termination of balancing operation.
Alarm cell voltage difference	Threshold value for cell voltage difference to trigger an alarm.

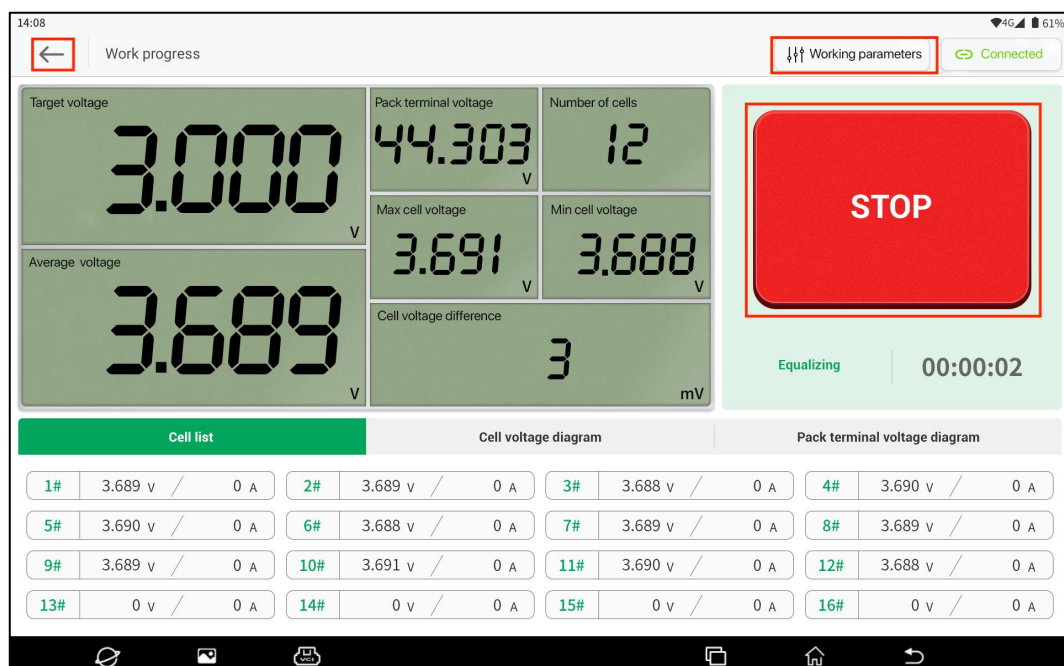
(5) During the balancing process, you can monitor the progress, including the list of cells, cell voltage chart, and terminal voltage chart.

5-1) Click the **"STOP"** button to terminate the current balancing process. Once stopped, you can view the test data in the **"History records"** section.

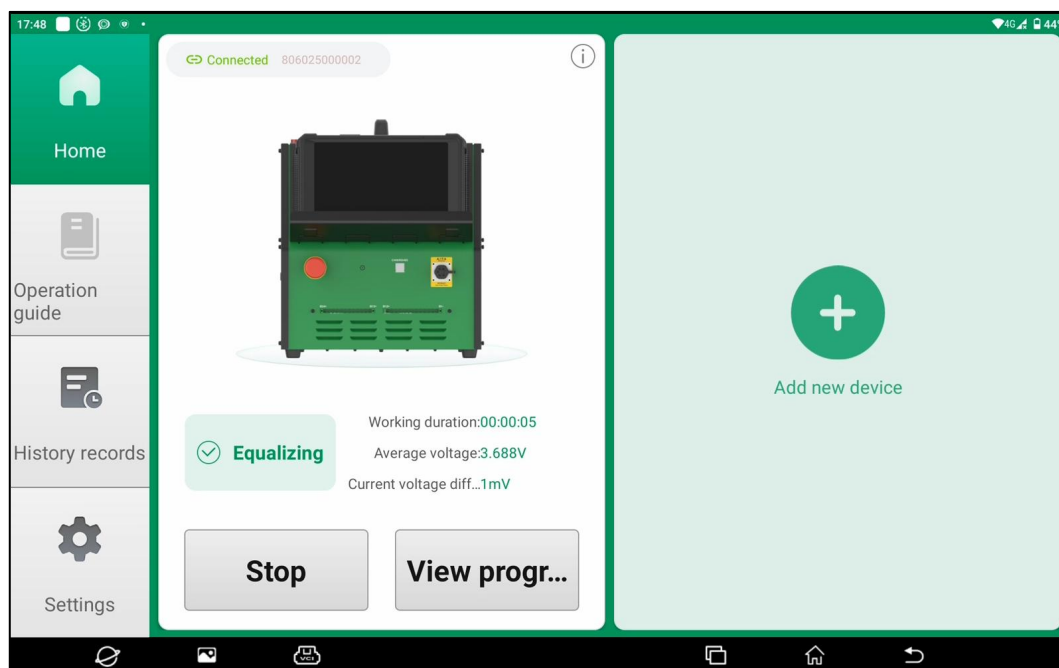
5-2) In the work progress screen, click the **"Working parameters"** button to pop out the following window, where you can view the currently set parameters.



5-3) In the work progress screen, click the "**←**" button to return to the home page and check the device status.

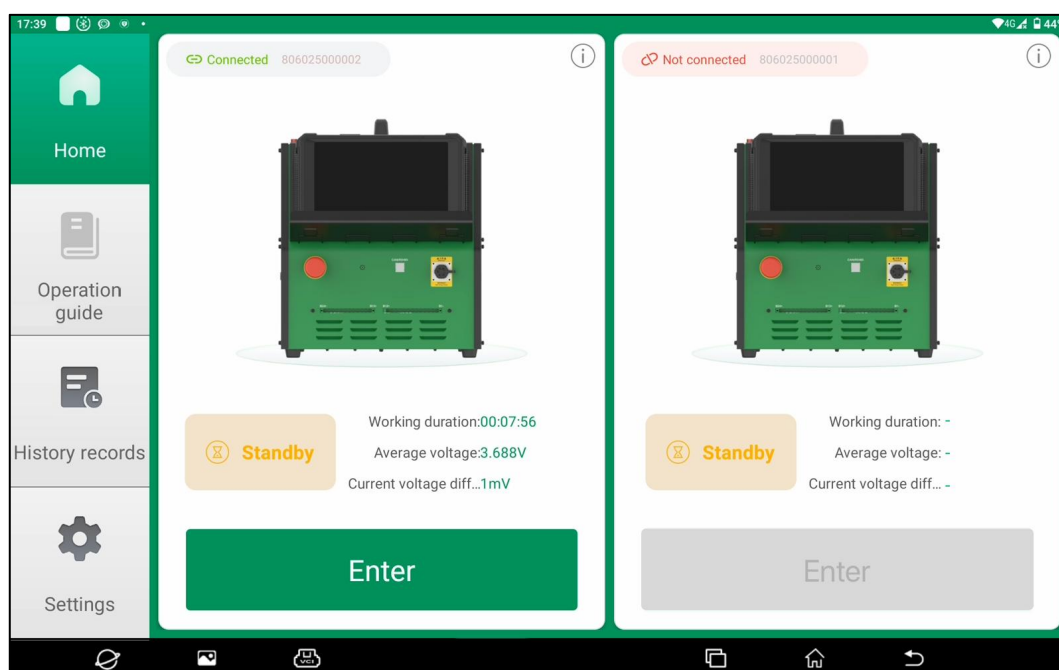


- (6) Click the **"View progress"** button on the home page to switch to the operating progress screen, and click the **"Stop"** button to terminate the current balancing process.

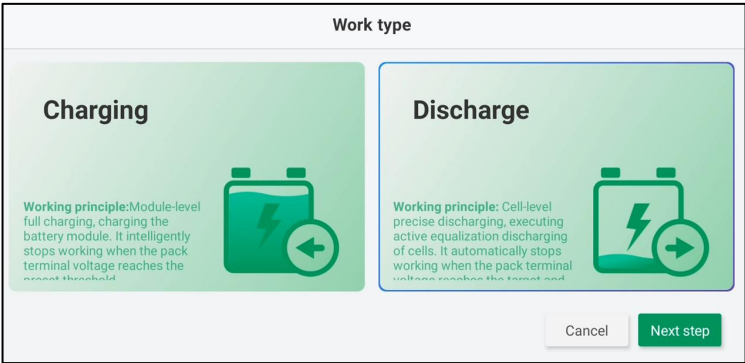


3.2.3 Battery Charge&Discharge Device

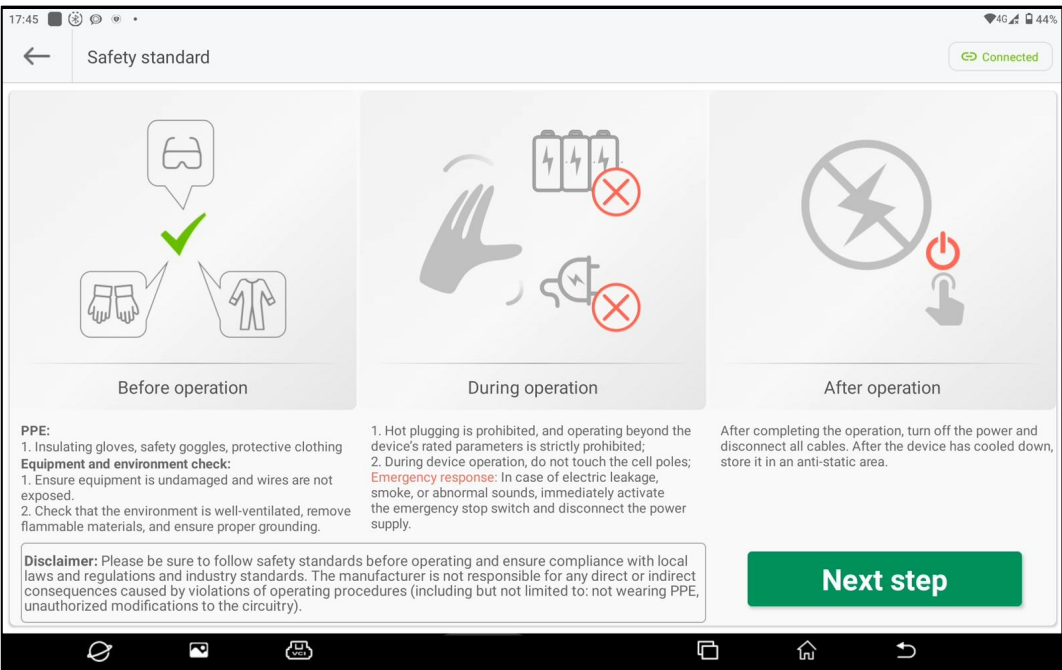
- (1) Click the **"Battery Charge&Discharge Device"** button on the diagnostic device to go to the home page, and click the **"Enter"** button on the device card to pop up the work type selection window.



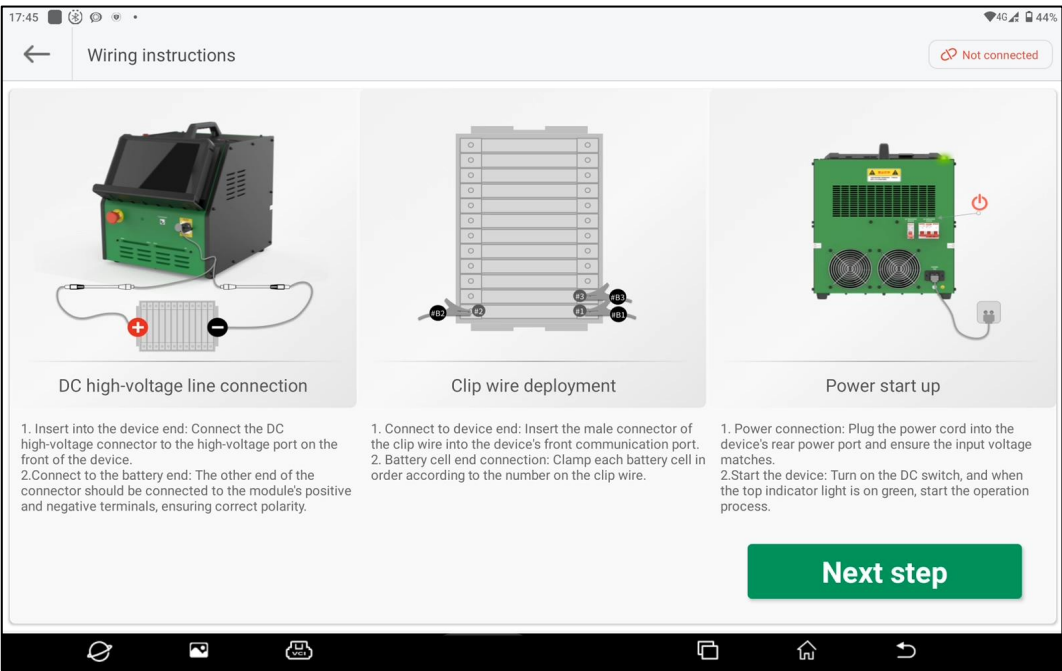
- (2) Click the **"Next step"** button to go to the safety guideline screen after selecting **"Charging"** or **"Discharging"** in the popup window. The following is an example of the subsequent steps when selecting the job type of **"Charging"**.



- (3) Once you have learned and understood the relevant safety regulations for operating the device, click the **"Next step"** button to go to the wiring instruction page.



- (4) Click the **"Next step"** button to go to the parameter settings screen after following the instructions to connect the device.



- (5) In the parameter settings screen, you can view the real-time battery status and set its parameters. Click the **"Start"** button to save the current settings and begin charge/discharge after setting the parameters.

17:52 4G 43%

← Parameter settings Connected

Real-time battery status
Connected

Number of cells: 12
Current pack terminal voltage: 44.294V
Average voltage: 3.688V
Max cell voltage: 3.689V
Min cell voltage: 3.688V
Current cell voltage difference: 1mV

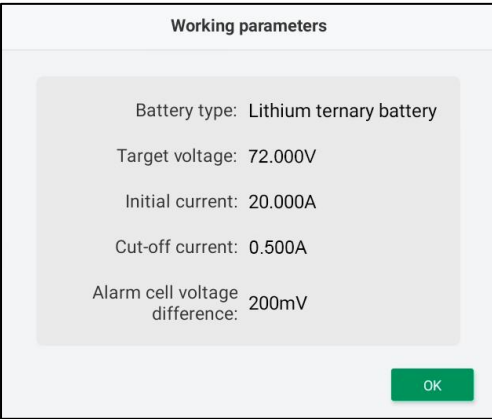
Battery type: Lithium ternary battery

Target pack terminal voltage: 50.4 V (Range: 36.00 – 50.40V)
Target current: 20.0 A (Range: 0.50 – 40.00A)
Cut-off current: 0.5 A (Range: 0.50 – 5.00A)
Alarm cell voltage difference: 200 mV (Range: 1 – 999mV)

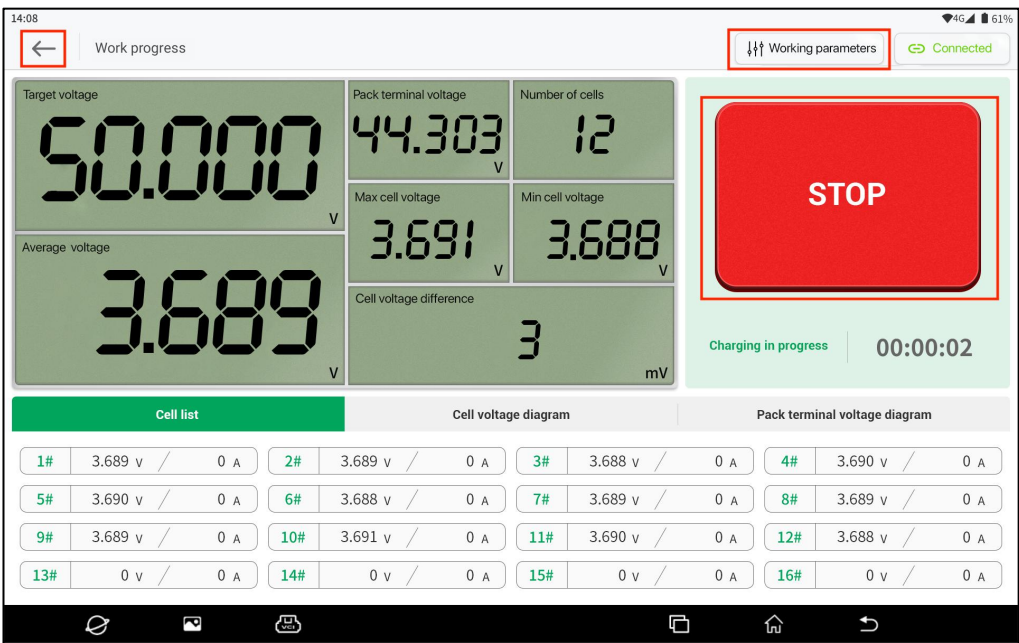
Start

Parameter Description	
Real-time battery status	Connection status of the battery module.
Number of cells	The number of connected cells is displayed.
Current pack terminal voltage	The terminal voltage of the battery module is displayed.
Average voltage	The average cell voltage is displayed.
Max cell voltage	The maximum cell voltage is displayed.
Min cell voltage	The minimum cell voltage is displayed.
Current cell voltage difference	The voltage difference between the maximum cell voltage and the minimum cell voltage.
Battery type	Select based on the specific type of battery to be tested, as parameter ranges differ for various battery types.
Target pack terminal voltage	The target voltage value for charging/discharging the battery module.
Target current	Set the maximum current allowed to be reached during charging/discharging.
Cut-off current	Current threshold for termination of charging/discharging.
Alarm cell voltage difference	Threshold value for cell voltage difference to trigger an alarm.

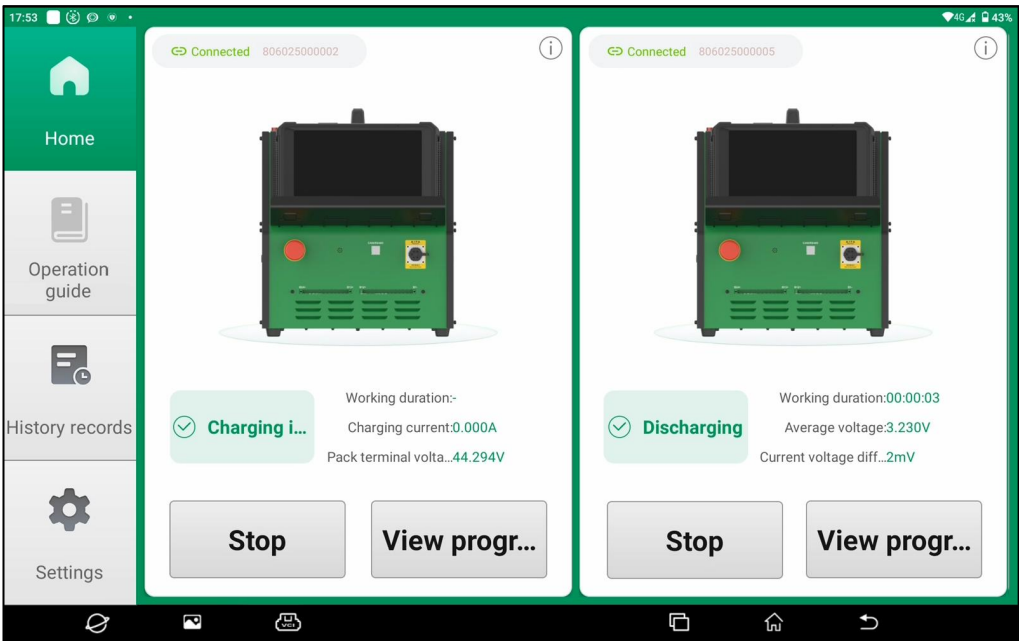
- (6) During the charging/discharging process, you can monitor the progress, including the list of cells, cell voltage chart, and terminal voltage chart.
- 6-1) Click the **"STOP"** button to terminate the current charging/discharging process. Once stopped, you can view the test data by clicking the **"History records"** button.
- 6-2) In the work progress screen, click the **"Working parameters"** button to pop out the following window, where you can view the currently set parameters.



6-3) In the work progress screen, click the "←" button to return to the home page and check the device status.

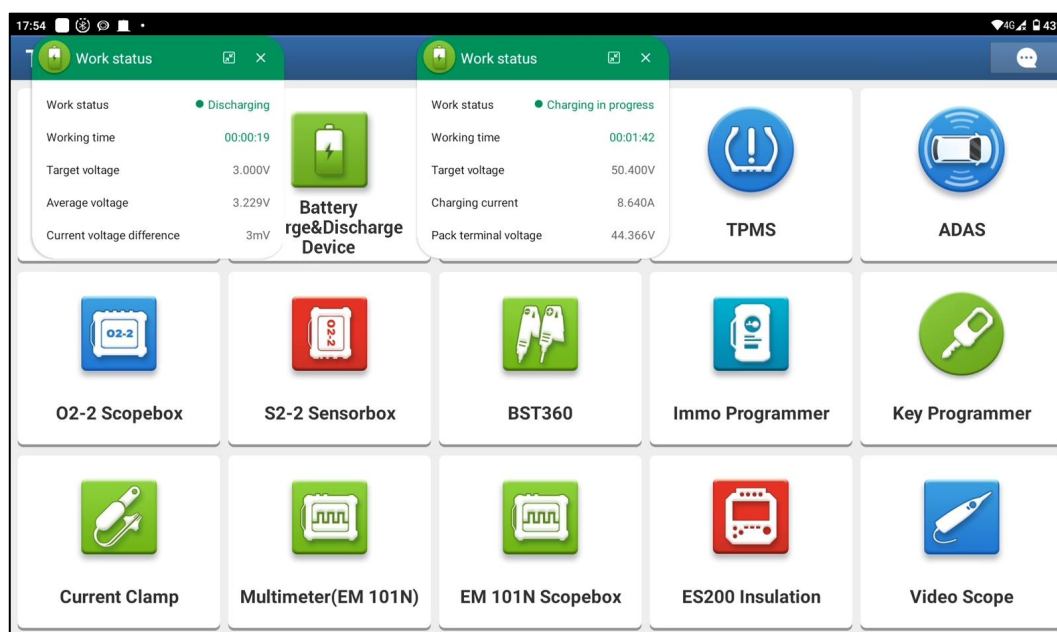


(7) Click the "View progress" button on the home page to switch to the operating progress screen, and click the "Stop" button to terminate the current charging/discharging process.



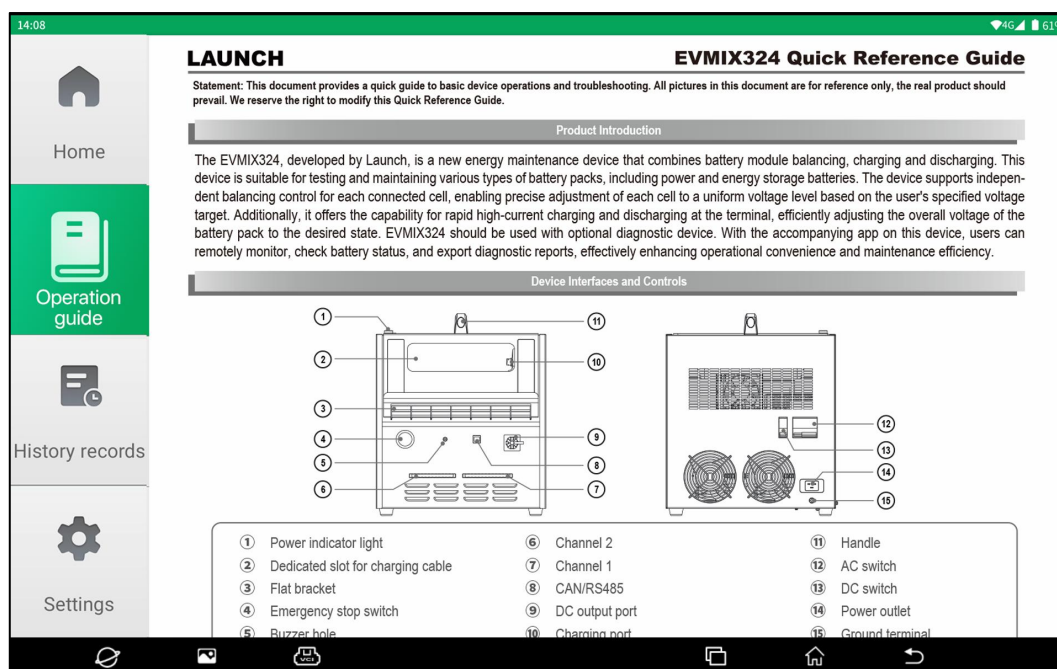
3.2.4 Floating Window Function

When using the **"Battery Equalizer"** and **"Battery Charge&Discharge Device"** functions, switching to another app will display a floating window on the desktop that shows the current status of the device, allowing users to check it anytime.



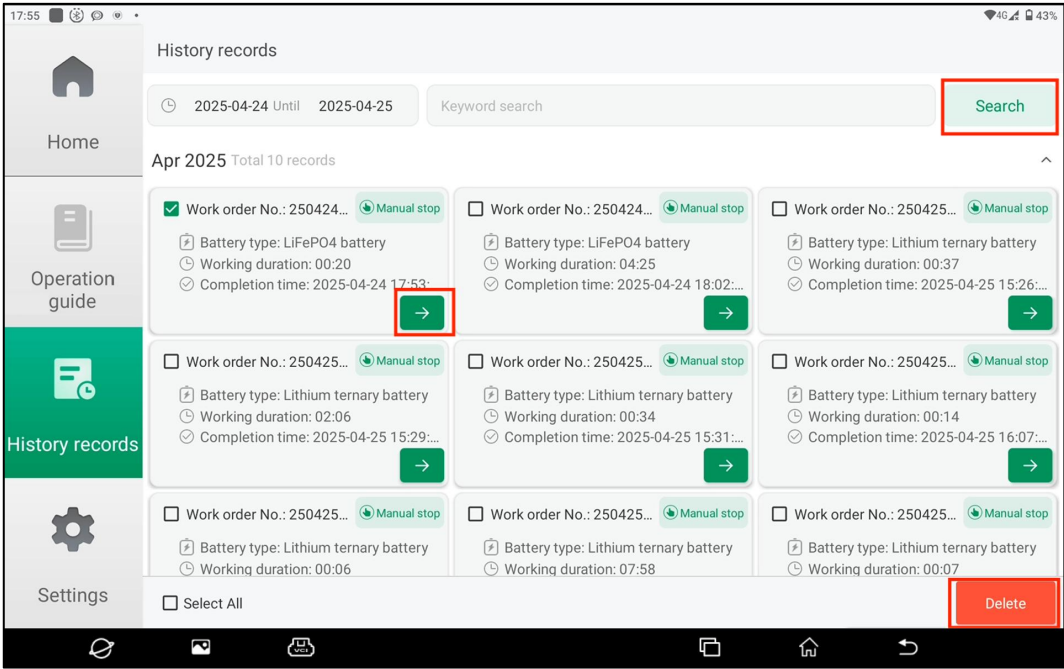
3.3 Operation Guide

Click the **"Battery Equalizer"** or **"Battery Charge&Discharge Device"** button on the diagnostic device to go to the home page, then click the **"Operation Guide"** button from the left-hand function module navigation to view the quick operation guide for the device.

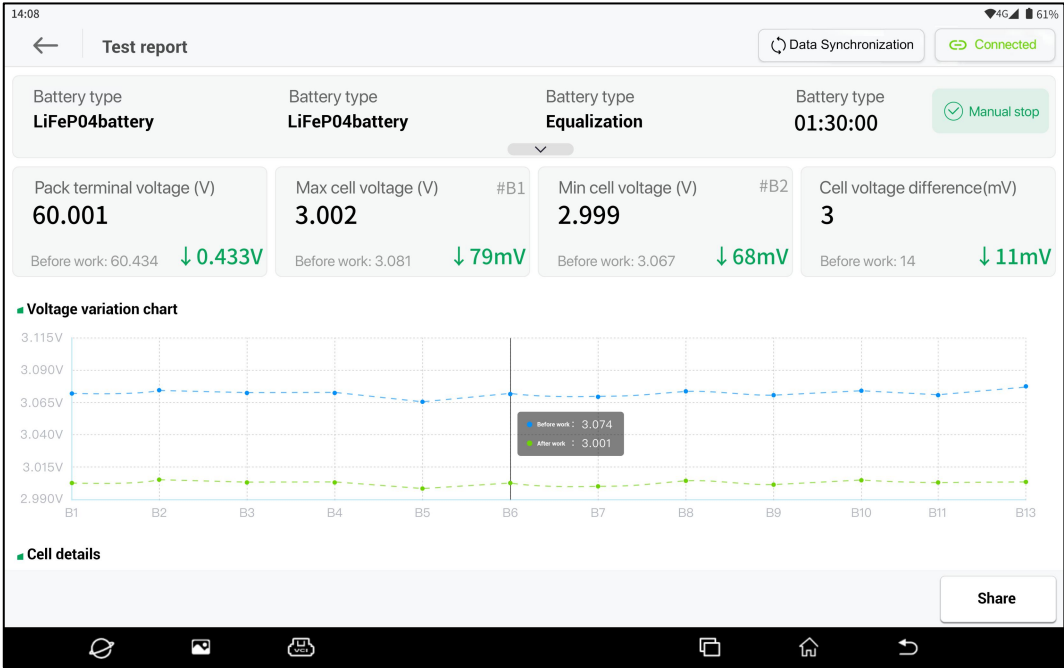


3.4 History Records

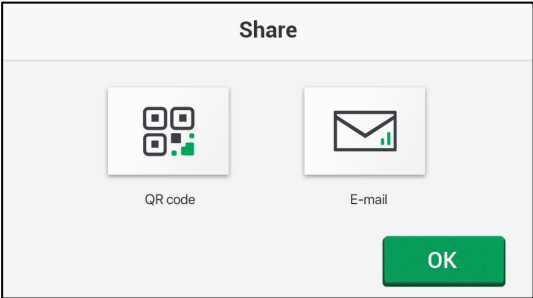
- (1) Click the **"Battery Equalizer"** or **"Battery Charge&Discharge Device"** button on the diagnostic device to go to the home page, then click the **"History Records"** button from the left-hand function module navigation to open the history screen.



- (2) Check one or more history records, and click the **"Delete"** button to remove them.
- (3) Set the start and end dates or keywords, then click the **"Search"** button to filter records that match the conditions.
- (4) Click the **"→"** button on an individual record card to view the detailed test report for that record.

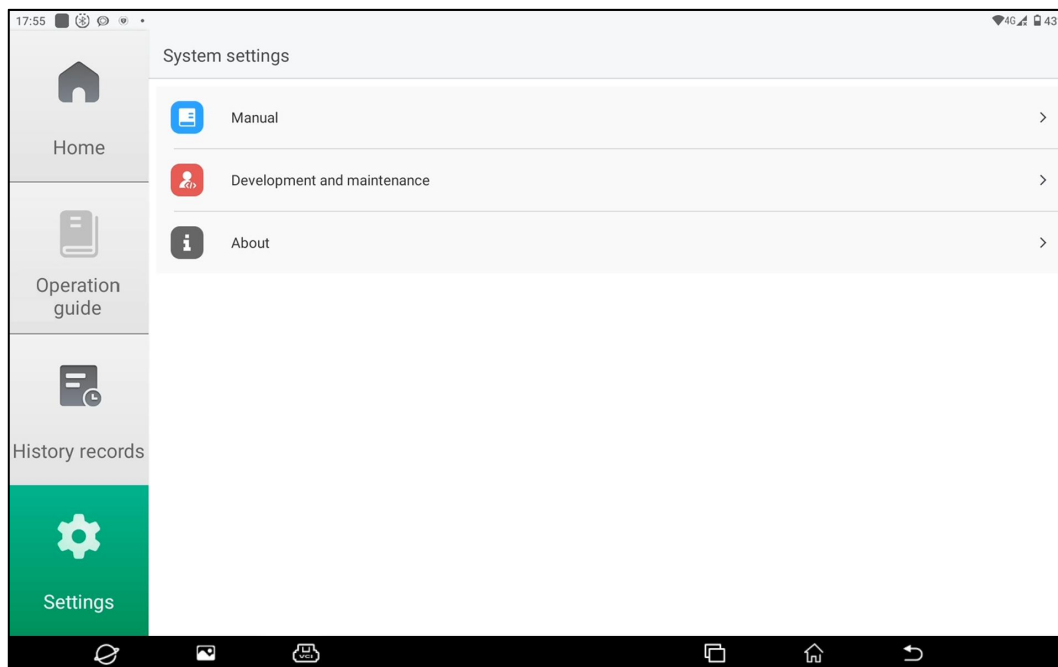


- (5) Click the **"Share"** button on the test report page to share the report via "QR Code" or "Email".



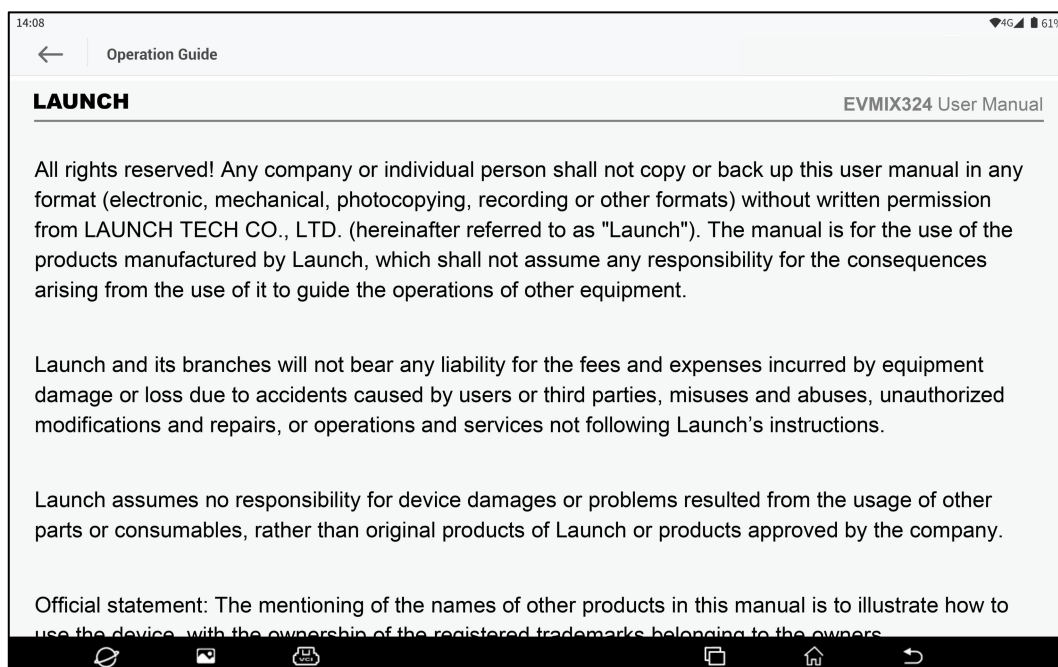
3.5 Settings

Click the **"Battery Equalizer"** or **"Battery Charge&Discharge Device"** button on the diagnostic device to go to the home page. Then, click the **"Settings"** button in the left-hand function module navigation to go to the settings screen, with the settings options including Manual, Development and Maintenance, and About.



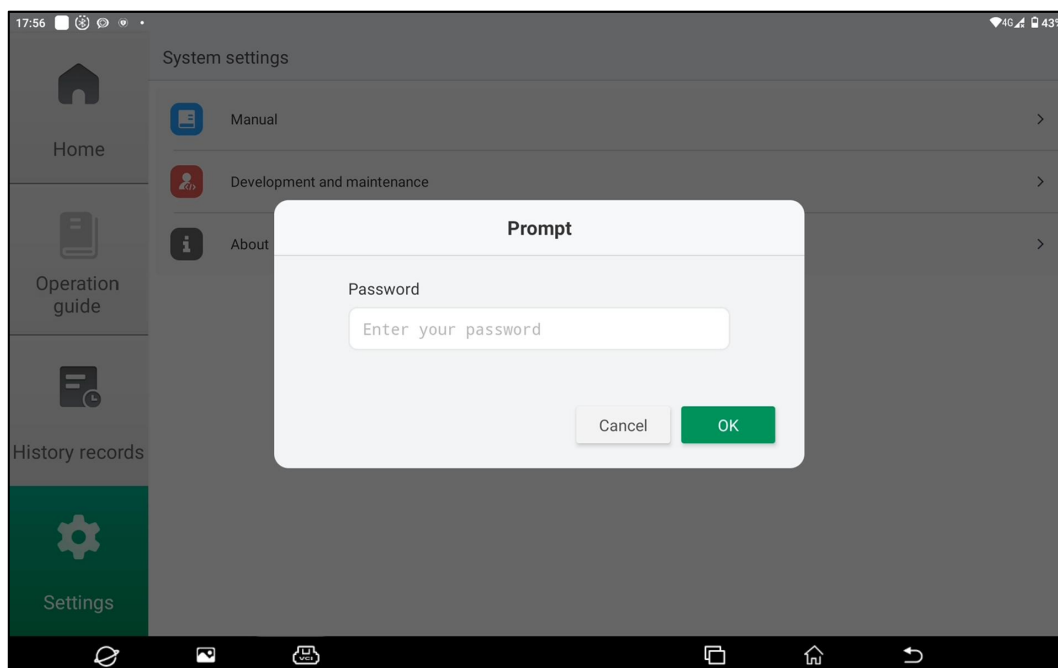
3.5.1 Manual

Click the **"Manual"** button to go to the manual screen, where you can view the Manual online.



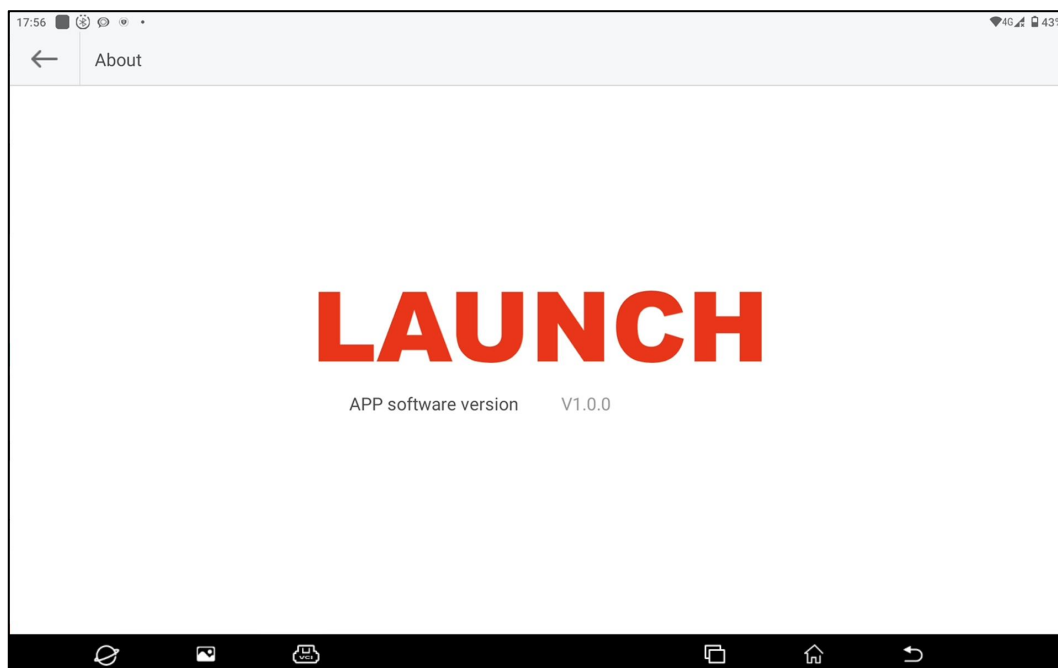
3.5.2 Development and Maintenance

Click the **"Development and Maintenance"** button to go to the development and maintenance screen. The development and maintenance functions are intended for testing by the manufacturer only, and accessing this page requires a special password. Unauthorized personnel are not allowed to access.



3.5.3 About

Click the **"About"** button to go to the following screen, where you can view the app version information.



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 1 year 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.

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

For any problem met during the operation, please 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:

Customer Service Center of LAUNCH TECH CO., LTD.

No.4012, Launch Industrial Park, North Wuhe Rd, Bantian Street, Longgang District, Shenzhen, China,

Zip Code: 518129

Launch Website: <https://www.cnlaunch.com>

Statement:

LAUNCH reserves the rights to make any change to product designs and specifications without notice.

The product interface may differ from what is displayed in the manual. Please refer to the actual product for accuracy. We have tried our best to make the descriptions and illustrations in the manual as accurate as possible, and defects are inevitable. If you have any question, please contact local distributor or after-sale service center of LAUNCH. LAUNCH does not bear any responsibility arising from misunderstandings.

FCC Caution.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.