Contents

1. Safety Precautions

(1) Observetherelevantrequirementsoftheusermanualtooperatethedevice.

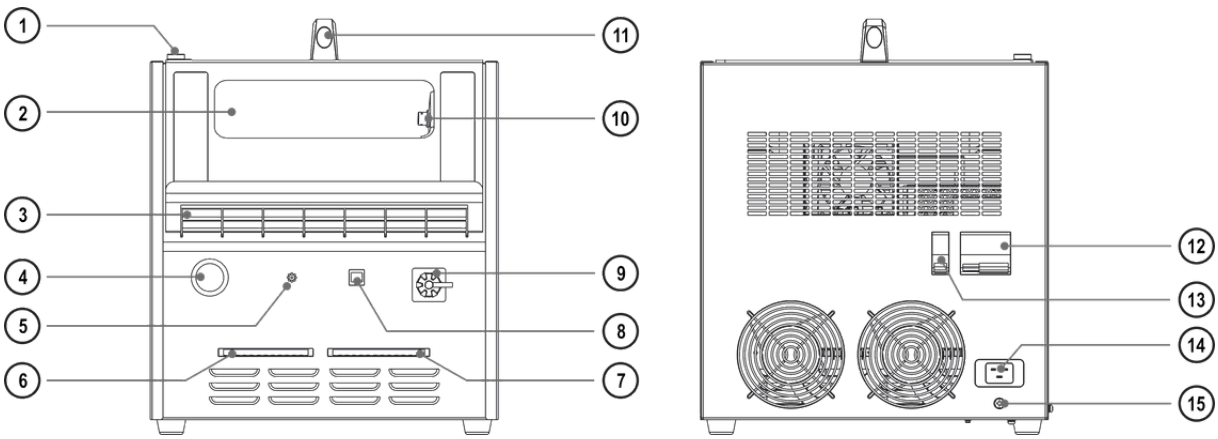
(2) Whenoperatingthedevice,makesuretotakeproperinsulationmeasuresandweardry,clean insulated gloves.

(3) Intheeventofdevicemalfunction,pleasedisconnectthepowersupplyandthetestcables.

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

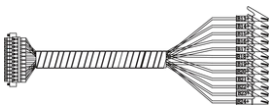
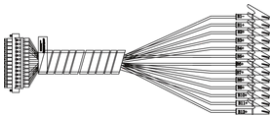
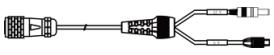


S/N	Name	Description
1	Power indicator	The green light is ON when the device is switched on.
2	Dedicated slot for charging cable	For storing charging cable.
3	Diagnostic device holder	For the placement of the diagnostic device.
4	Emergency stop switch	For cut-off of the device power supply and immediate 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 par am ete rs ; 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)	1	
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	-

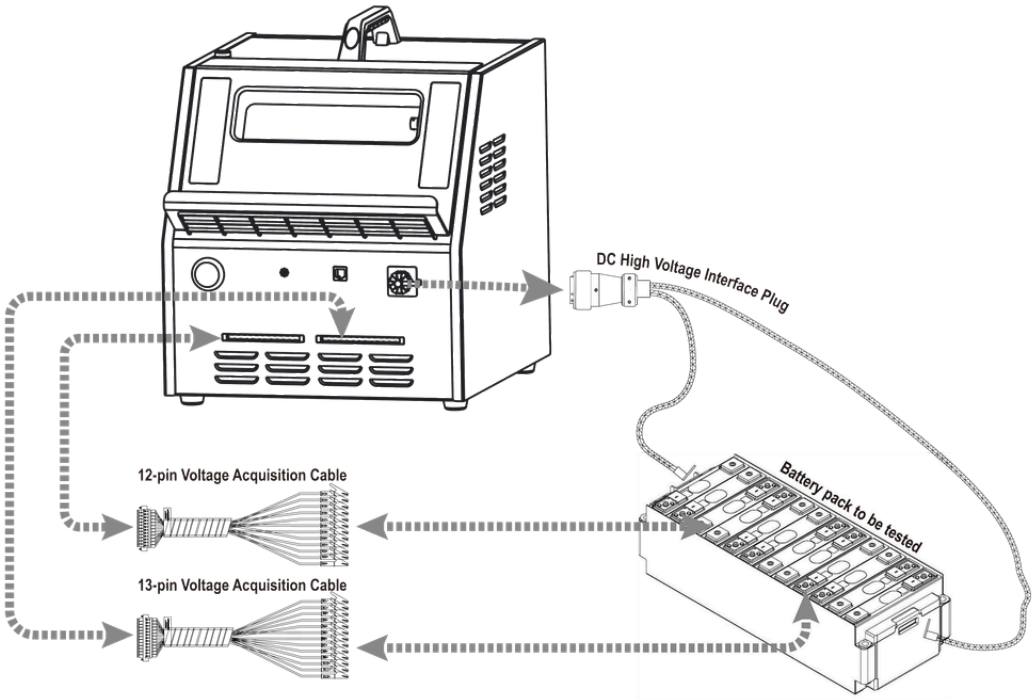
2.3 Technical Characteristics

Parameter	Description
Model	EVM324
Operating Power Sup pl y	AC100~240V, 50/60Hz

Operating Voltage	Discharge voltage: DC 0-5V, Charge voltage: DC 0-110V
Voltage Detection Accuracy	±0.1%FS+5mV (maximum range: 5V)
Operating Current	Discharge current: 0.1 ~ 20A, Charge current: 0.5 ~ 40A
Current Detection Accuracy	±0.5%FS±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
PC Data Communication	TCP/IP, USB-Device
Wireless Communication	W i-Fi
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.

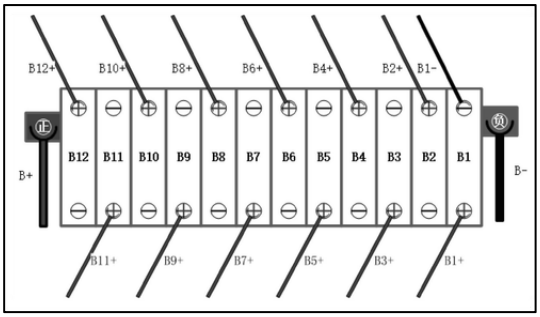
Connect the voltage acquisition cable to the battery cell

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) Ifthenumberofcellstobemeasureddoesnotexceed12:Connectthechannel1interfaceofthe

device with a 13-pin voltage acquisition cable;

(2) Ifthenumberofcellstobemeasuredexceeds12:Connectmorecellstothechannel2interfaceof 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, and set the maximum target current based on the AC input load size to prevent overcurrent.

3.2 Device Operation

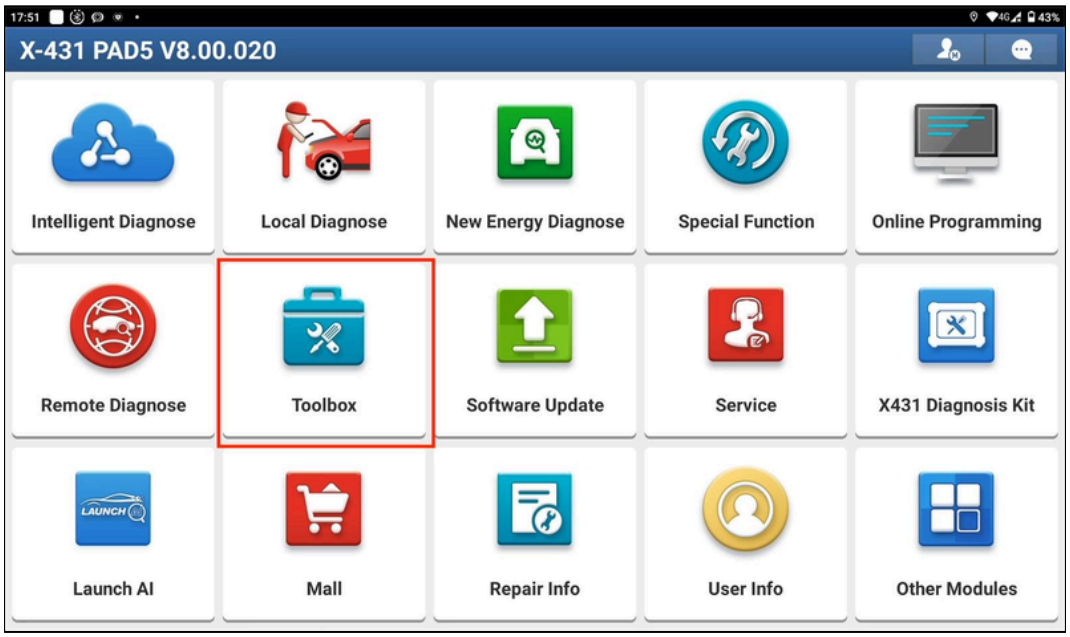
EVM324 is operated with a diagnostic device (optional) loaded with the **"Battery Equalizer"** and

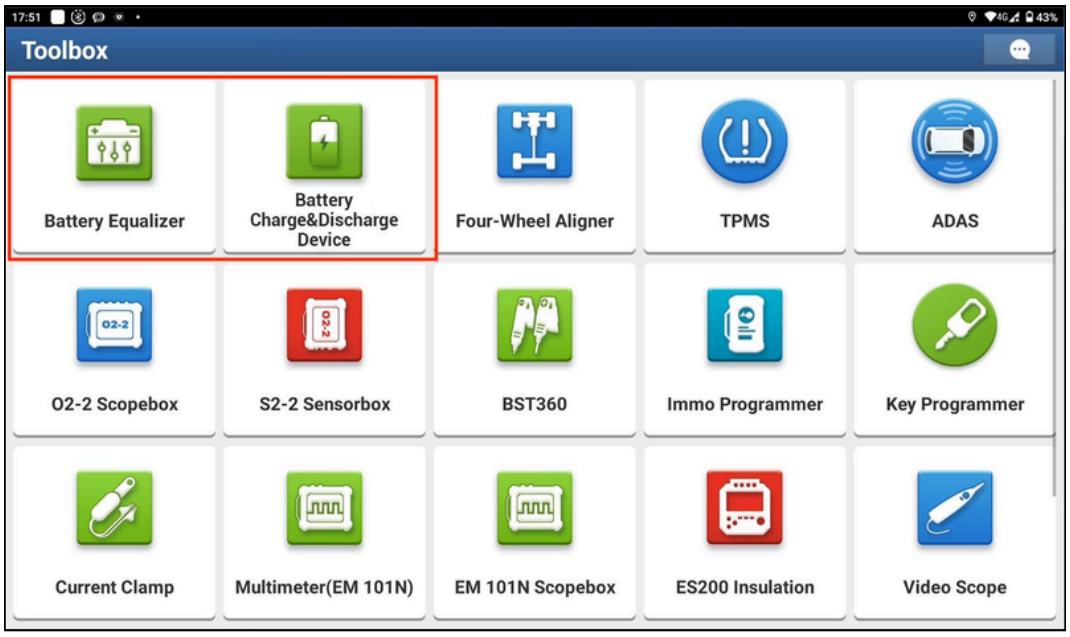
"Battery Charge&Discharge Device" apps.

3.2.1 Connect the Diagnostic Device

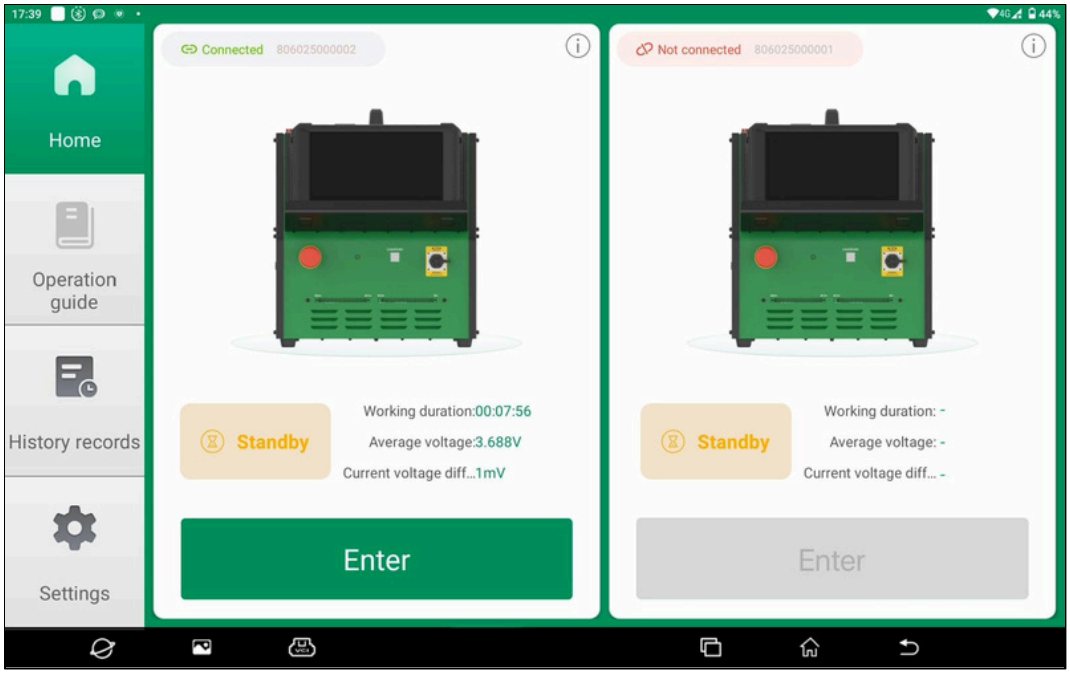
(1) Onthehomepageofthediagnosticdevice,clickthe**"Toolbox"**button,thenclickeitherthe **"Battery Equalizer"** or **"Battery Charge&Discharge Device"** button within the expansion module to start the corresponding app.

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.

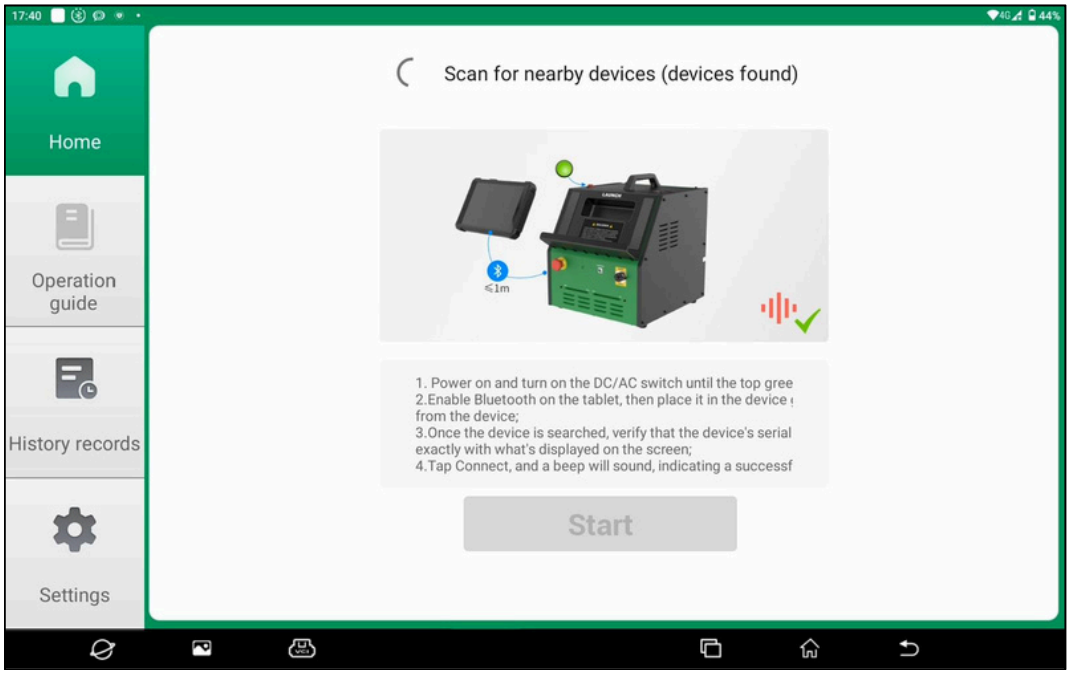




(2) If the diagnostic device has previously been connected to the EVM324, the app will enter the device display screen after startup and display the device to which the diagnostic device is connected.

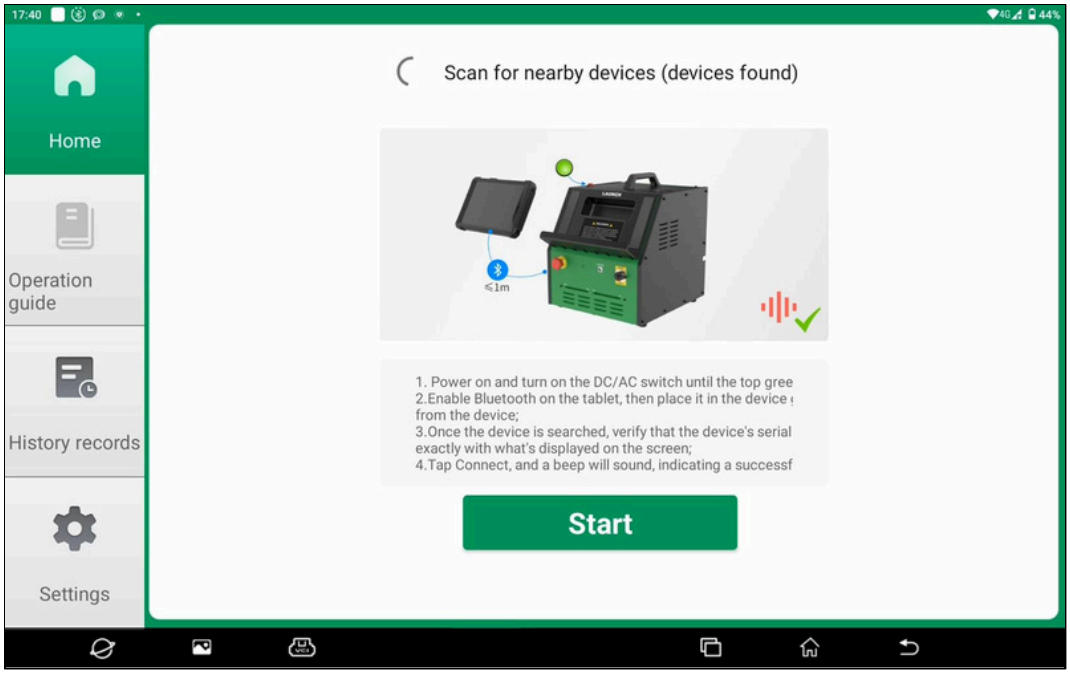


If the diagnostic device hasn't been connected to the EVM324 before, the app will open the device search page upon startup. Follow the on-page instructions to connect power to the EVM324, turn on its DC and AC switches, and wait for the green light on top of the device to light up.

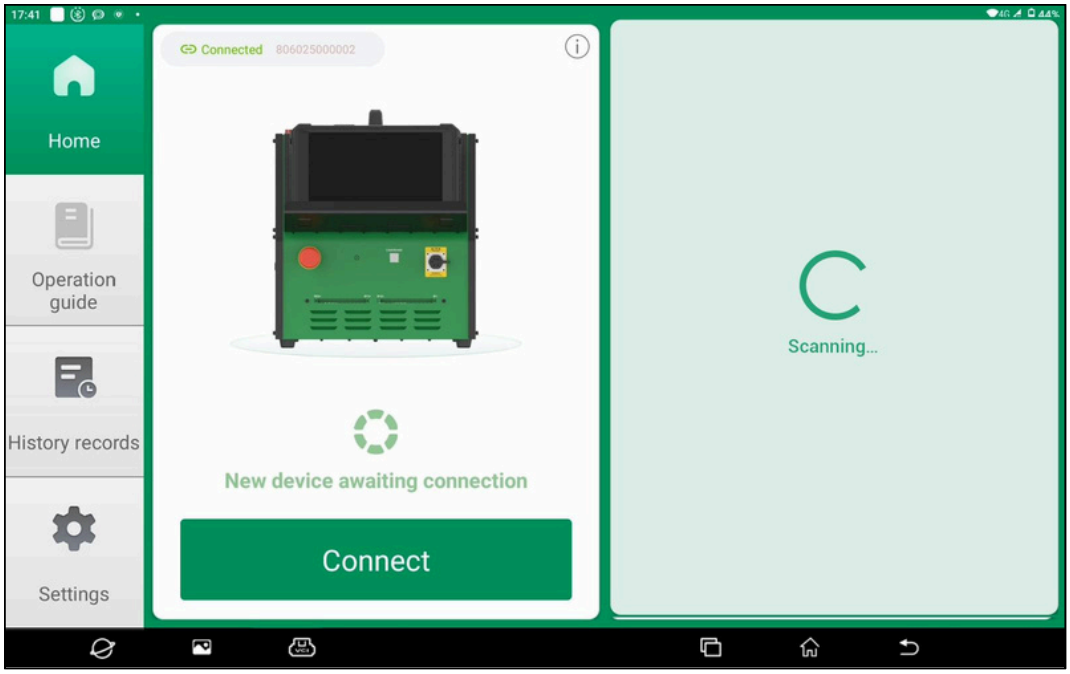


(3) Activate the Bluetooth function of the diagnostic device and ensure that it remains within 1m of the EVM3 2 4 .

(4) OncetheEVM324isfound,thepageshows"Devicesfound",andthe**"Start"**buttonchangesfrom gray to green. Click the **"Start"** button to go to the home page.

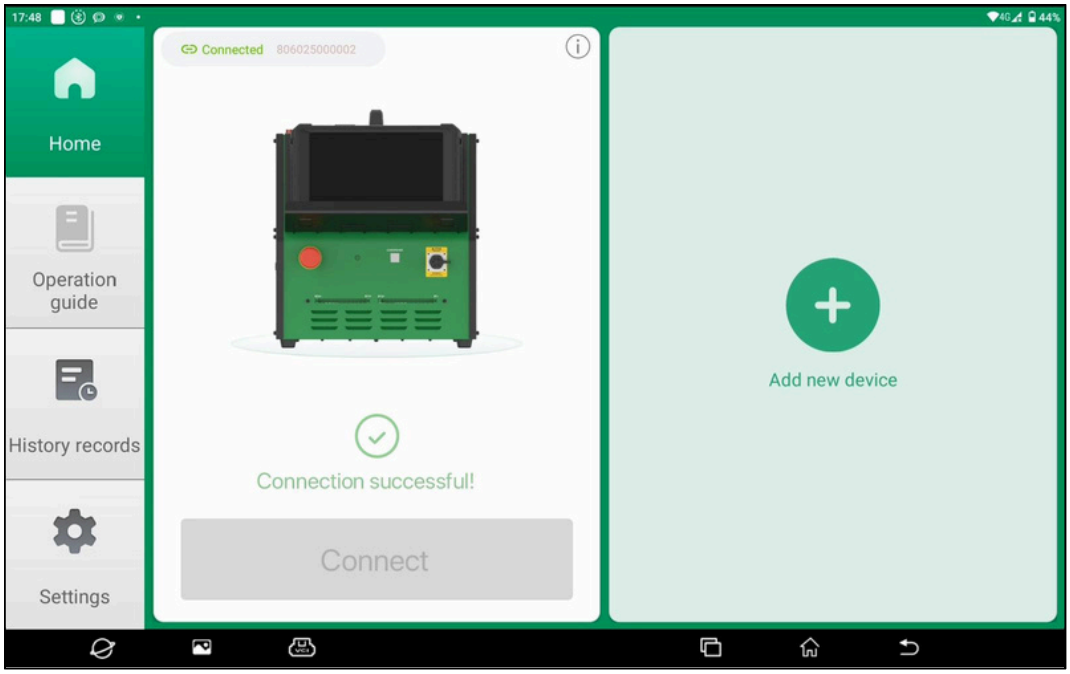


(5) OncetheEVM324serialnumberisverifiedtoexactlymatchestheserialnumbershownonthe screen, click the **"Connect"** button.

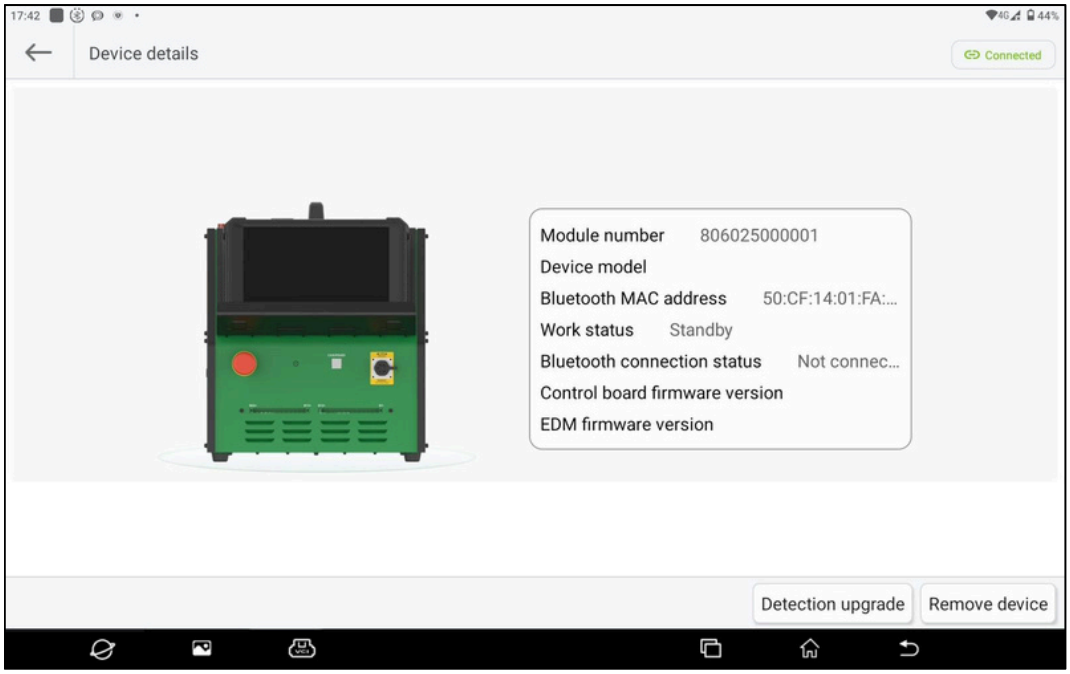


(6) Whenthebuzzingsoundindicatesasuccessfulconnection,thedeviceconnectionstatusshown before the serial number on the screen changes to "Connected." Click the **"Add"** button to add a new device in the same manner.

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.

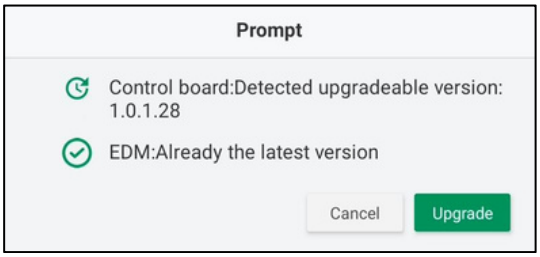


(7) Clickthe **"** **"**buttoninthetoprightcorneroftheindividualdevicescreentogotothedevicedetails page, where you can view device information, perform firmware upgrades, and unbind the device.

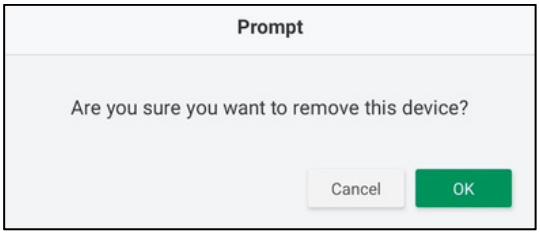


(8) Click the **"Detection upgrade"** button to upgrade the device to the latest version.

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

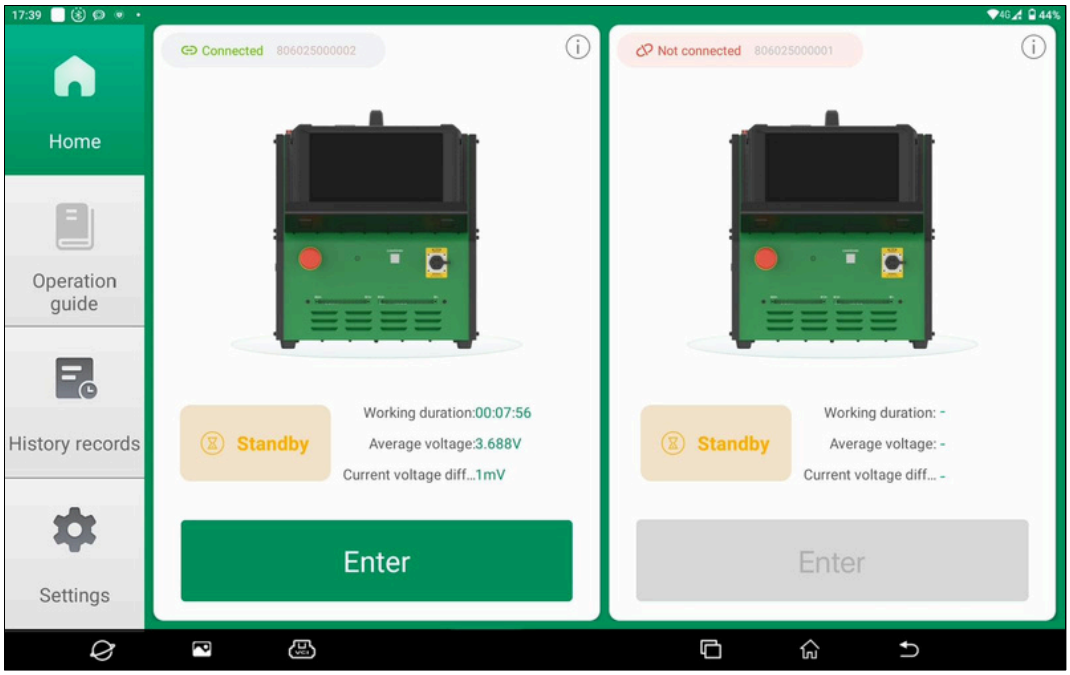


(9) Clickthe **"Remove device"** button and then click **"OK"** to unbind the device from the diagnostic device.

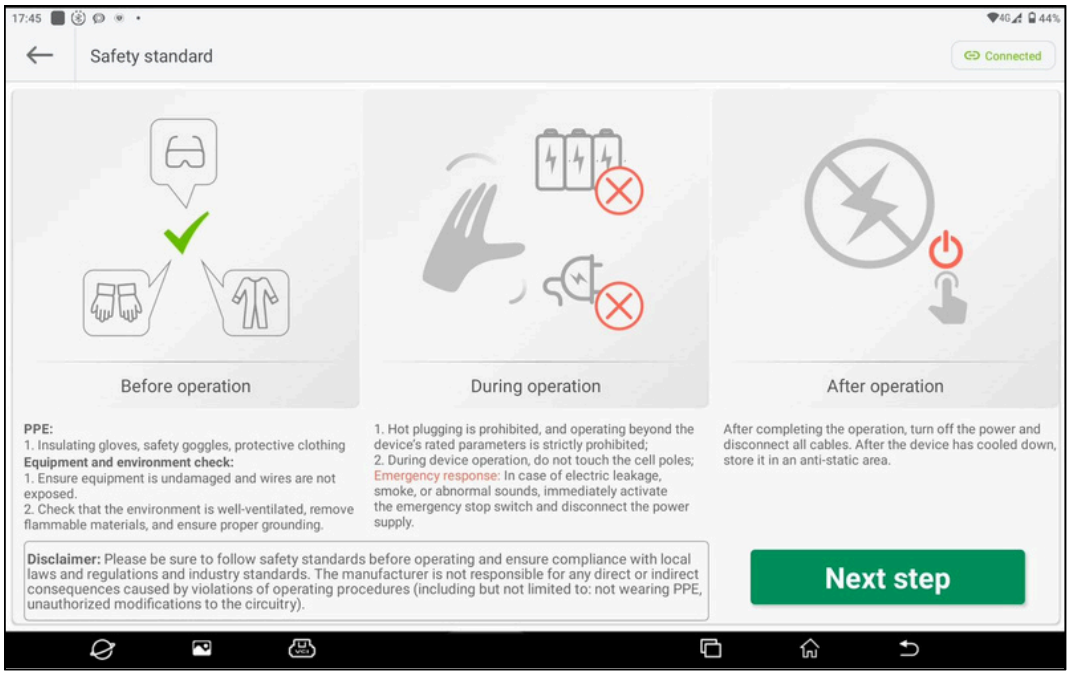


3.2.2 Battery Equalizer

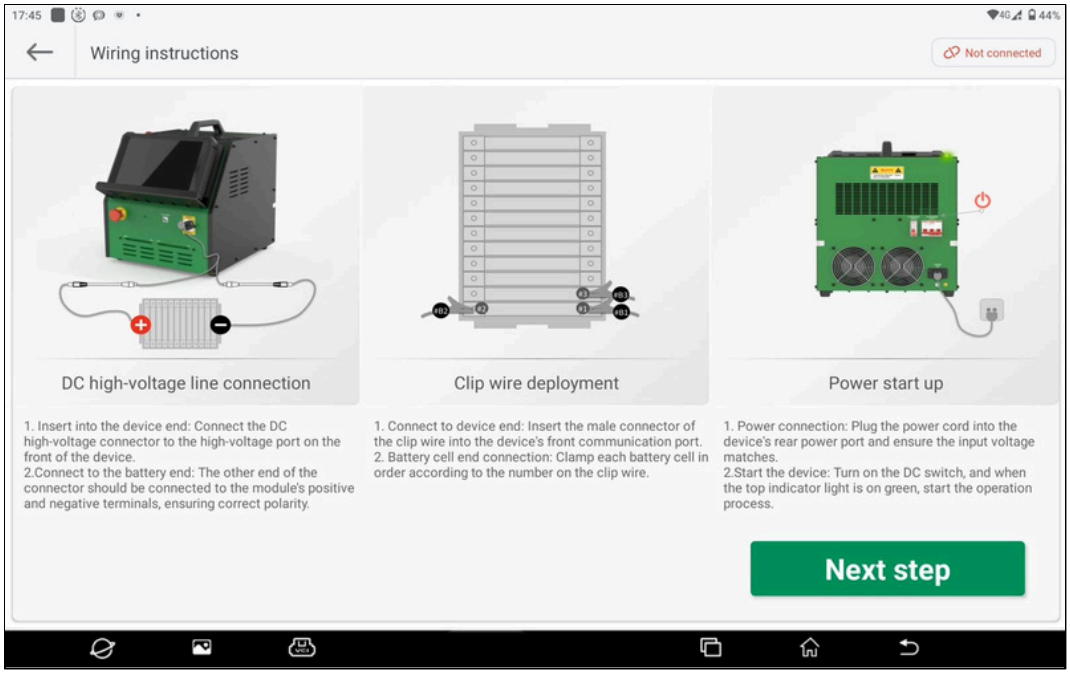
(1)Clickthe **"Battery Equalizer"** buttononthediagnosticdevicetogotothehomepage,andclickthe **"Enter"** button on the device card to go to the safety specification screen.



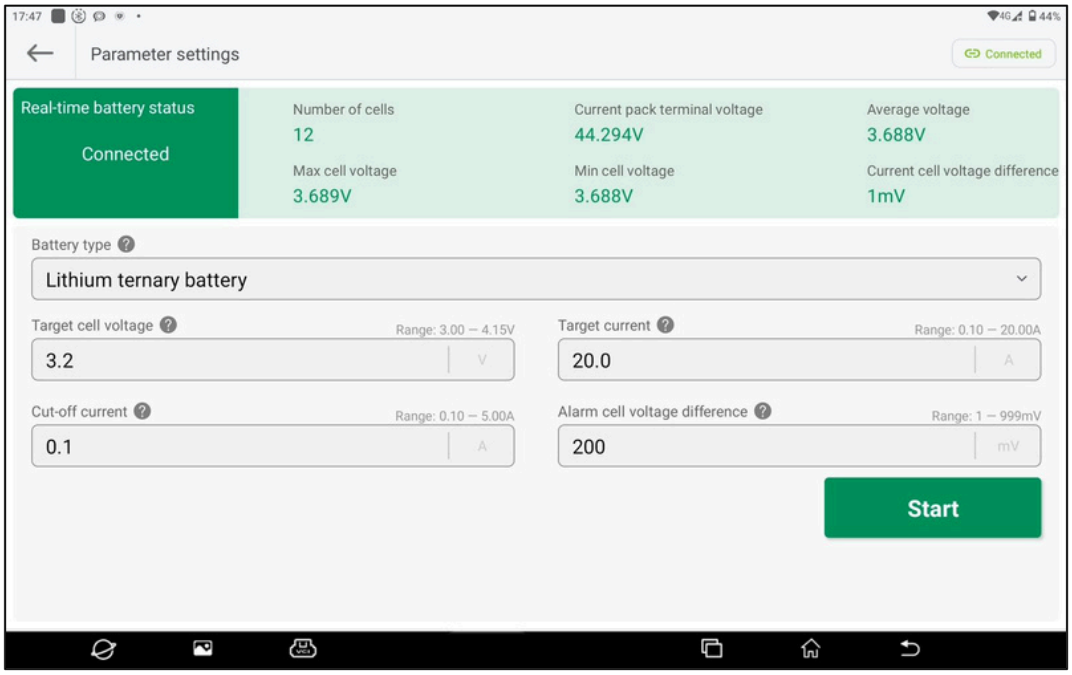
(2) Once you have learned and understood the relevant safety regulations for operating the device, click the **"Next step"** button to go to the wiring instruction page.



(3) Clickthe**"Nextstep"**buttontogototheparametersettingsscreenafterfollowingthewiring instructions to connect the device.



(4) Intheparametersettingsscreen,youcanviewthereal-timebatterystatusandsetitsparameters. 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.
Mincellvoltage	Theminimumcellvoltageisdisplayed.
Currentcell voltage difference	Thevoltagedifferencebetweenthemaximumcellvoltageandtheminimumcell voltage.
Batterytype	Selectbasedonthespecifictypeofbatterytobetested,asparameterrangesdiffer for various battery types.
Target cell voltage	Thetargetcellvoltagevalueforbalancingoperation.
Targetcurrent	Setsthemaximumcurrentallowedtobereachedduringbalancingoperation.
Cut-offcurrent	Currentthresholdforterminationofbalancingoperation.
Alarm cell voltage difference	Thresholdvalueforcellvoltagedifferencetotriggeranalarm.

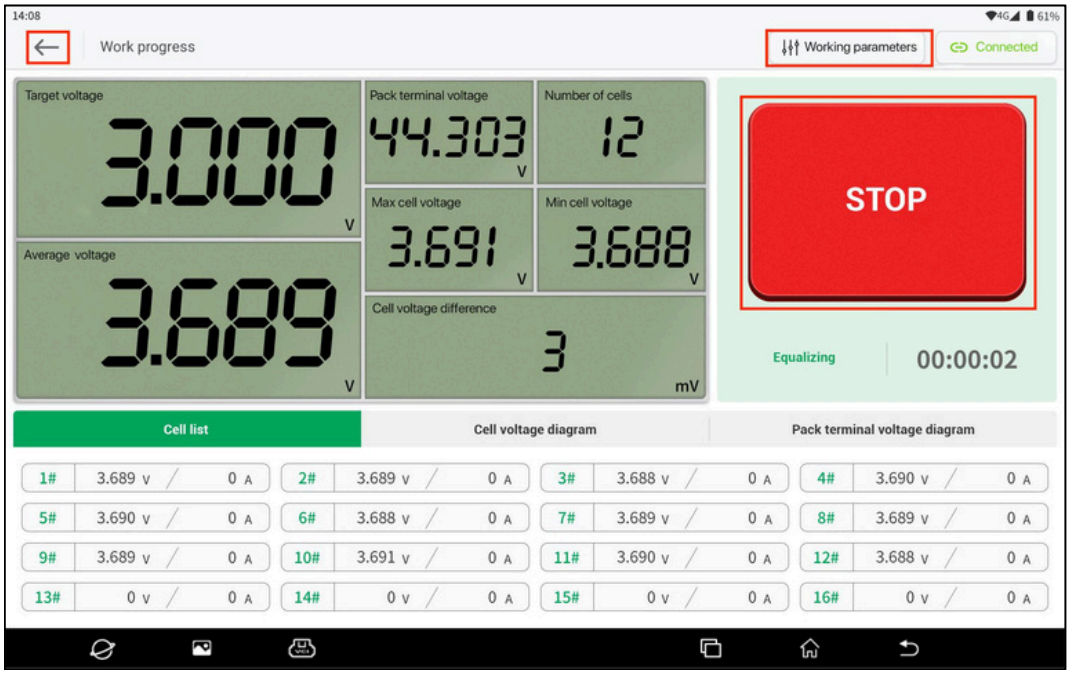
(5) During the balancing process, you can monitor the progress, including the list of cells, cell voltage chart, and terminal voltage chart.

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**.**

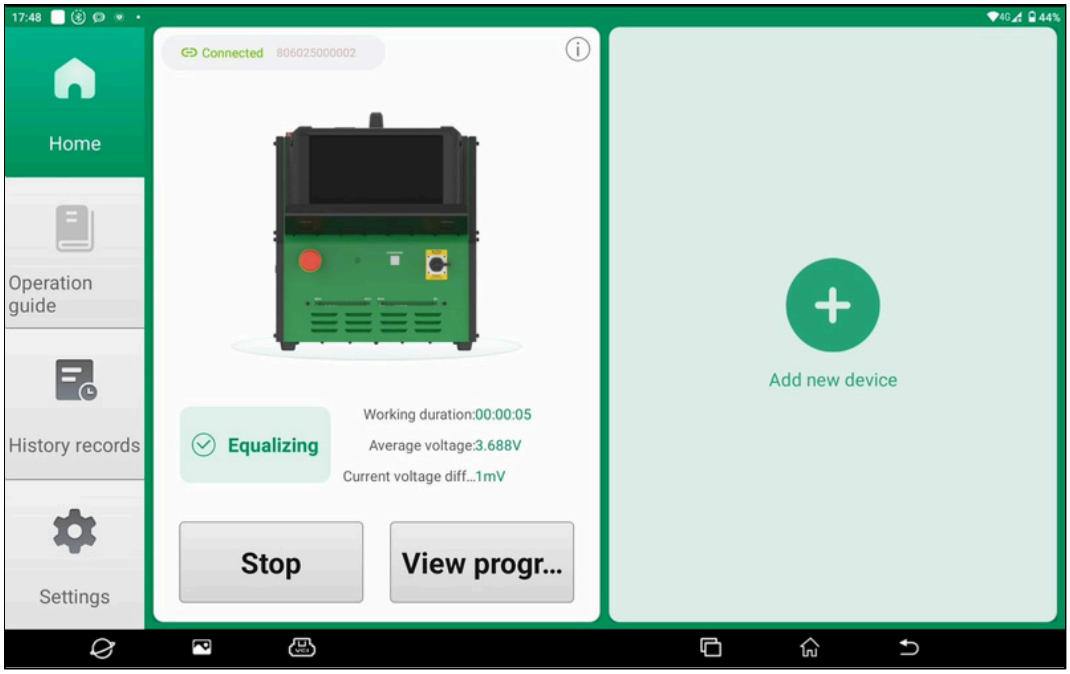
5-2) In the work progress screen, click the **"Working parameters"** button to go to the **"Parameter settings"** screen, where you can view and set parameters.

Note: The parameters cannot be set while the device is operating, which must be set after the device has stopped.

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

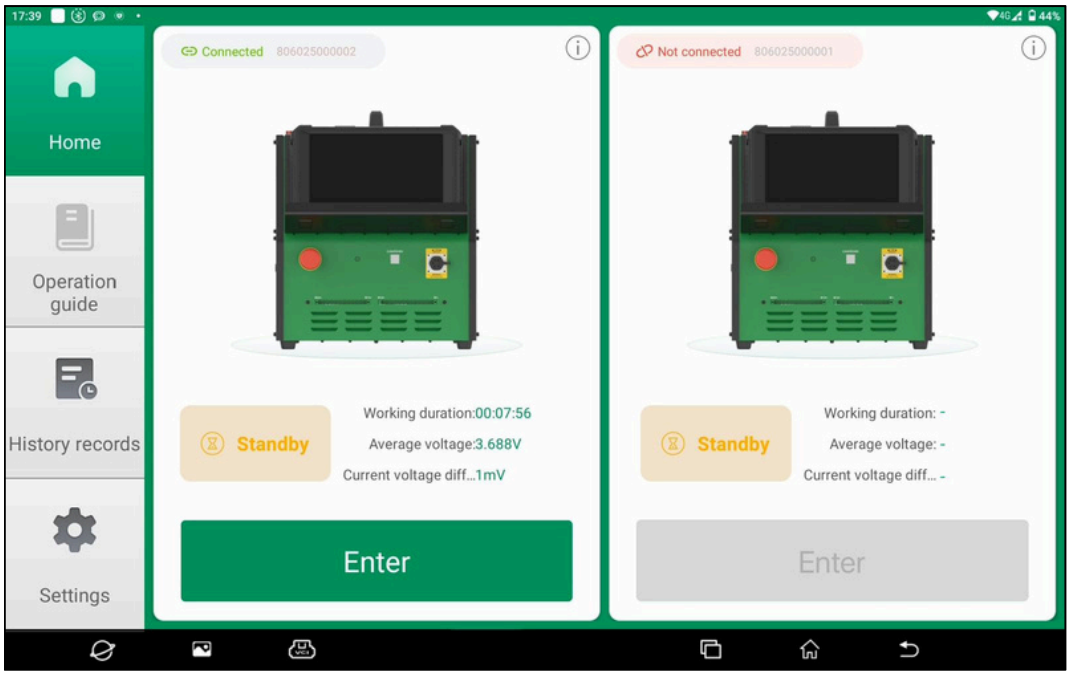


(6) Clickthe **"View progress"** button on the home page to switch to the operating progress screen, and click the **"S top "**button to terminate the current balancing process.

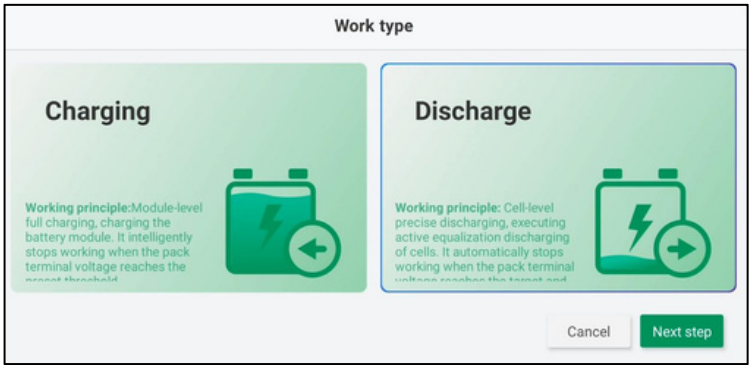


3.2.3 Battery Charge&Discharge Device

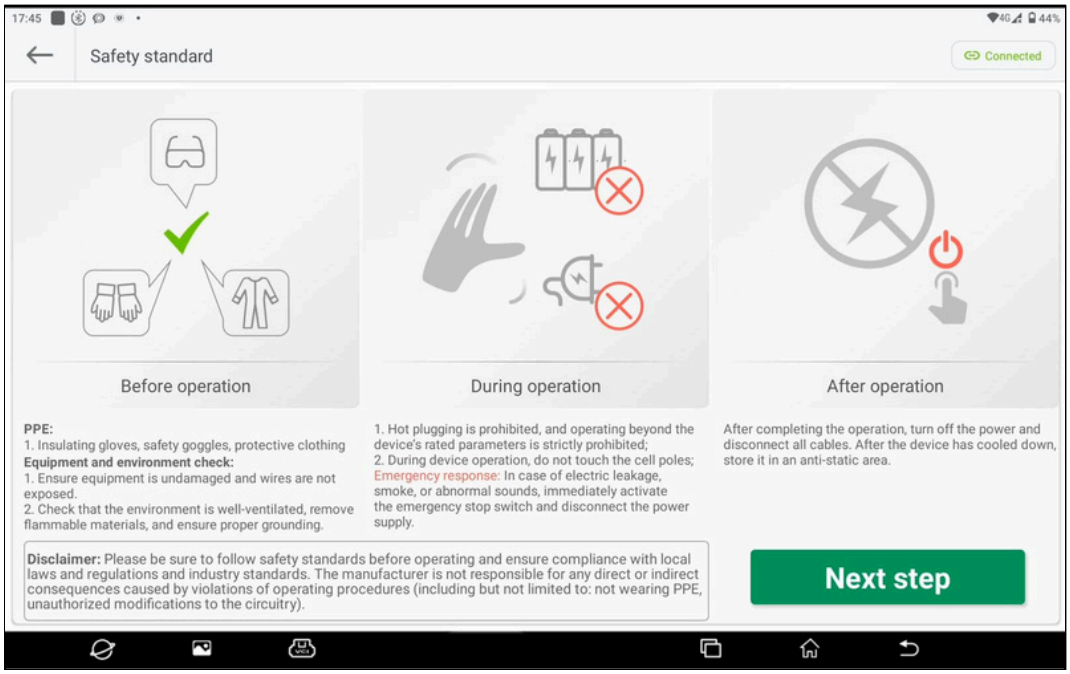
(1) Clickthe**"BatteryCharge&DischargeDevice"** button on the diagnostic device to go to the home page, and click the **"Enter"** button on the device card to pop up the work type selection window.



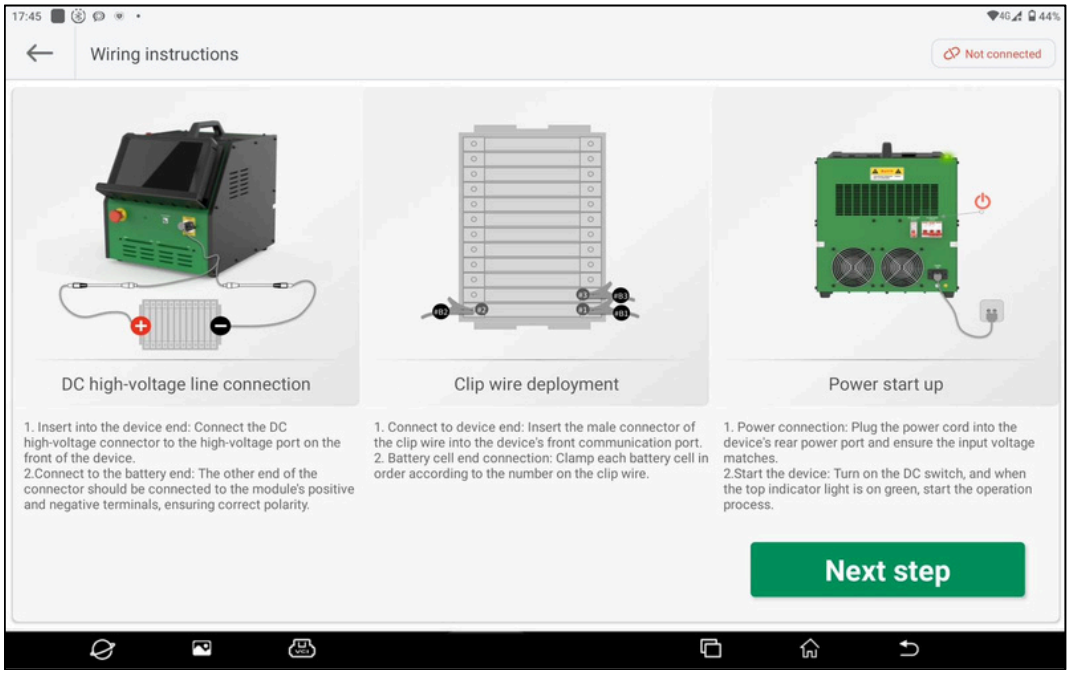
(2) Clickthe**"Nextstep"**buttontogotothesafetyguidelinescreenafterselecting**"Charging"**or **"Discharging"** in the popup window. The following is an example of the subsequent steps when selecting the job type of **"Charging"**.



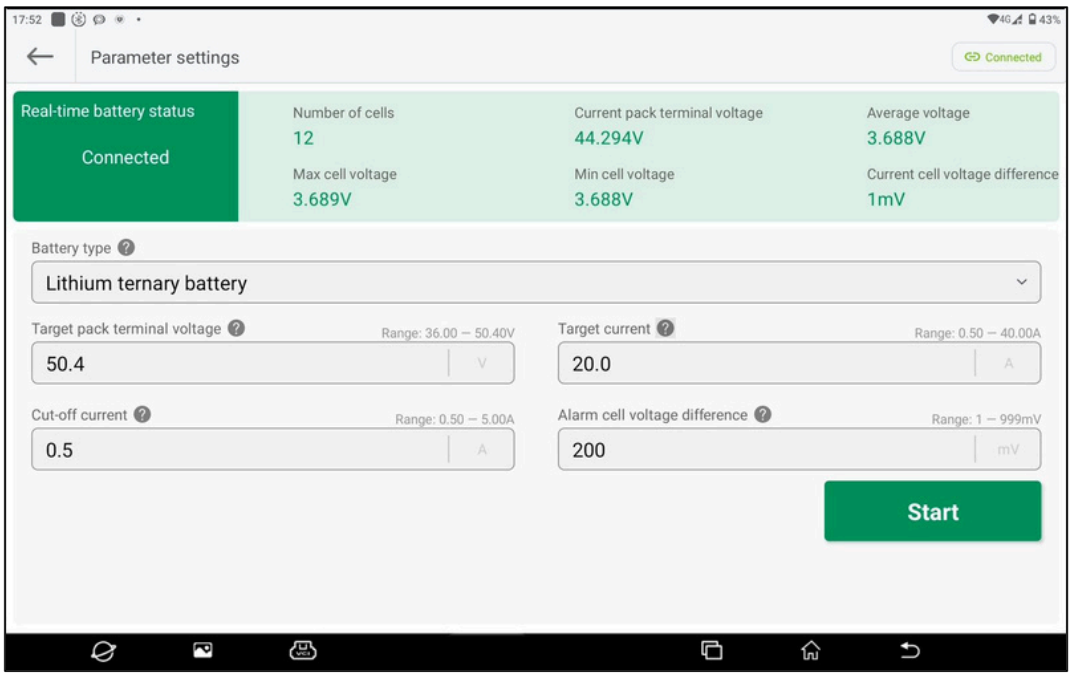
(3) Once you have learned and understood the relevant safety regulations for operating the device, click the **"Next step"** button to go to the wiring instruction page.



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



(5) Intheparametersettingsscreen,youcanviewthereal-timebatterystatusandsetitsparameters.
Click the **"Start"** button to save the current settings and begin charge/discharge 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 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.

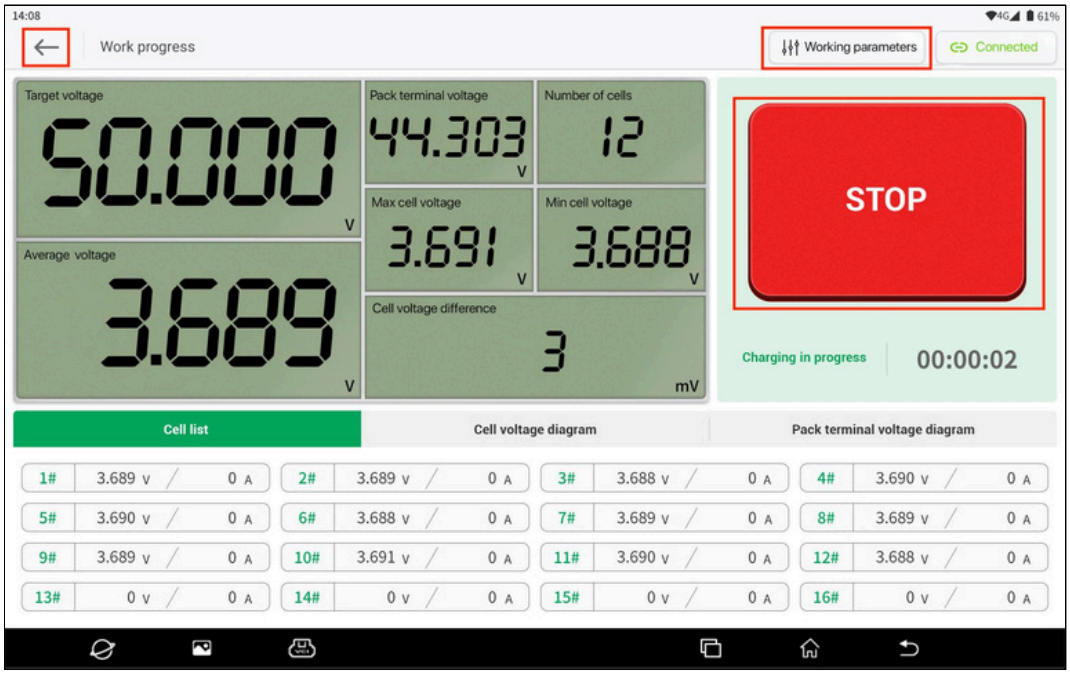
(6) Duringthecharging/dischargingprocess,youcanmonitortheprogress,includingthelistofcells, cell voltage chart, and terminal voltage chart.

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.

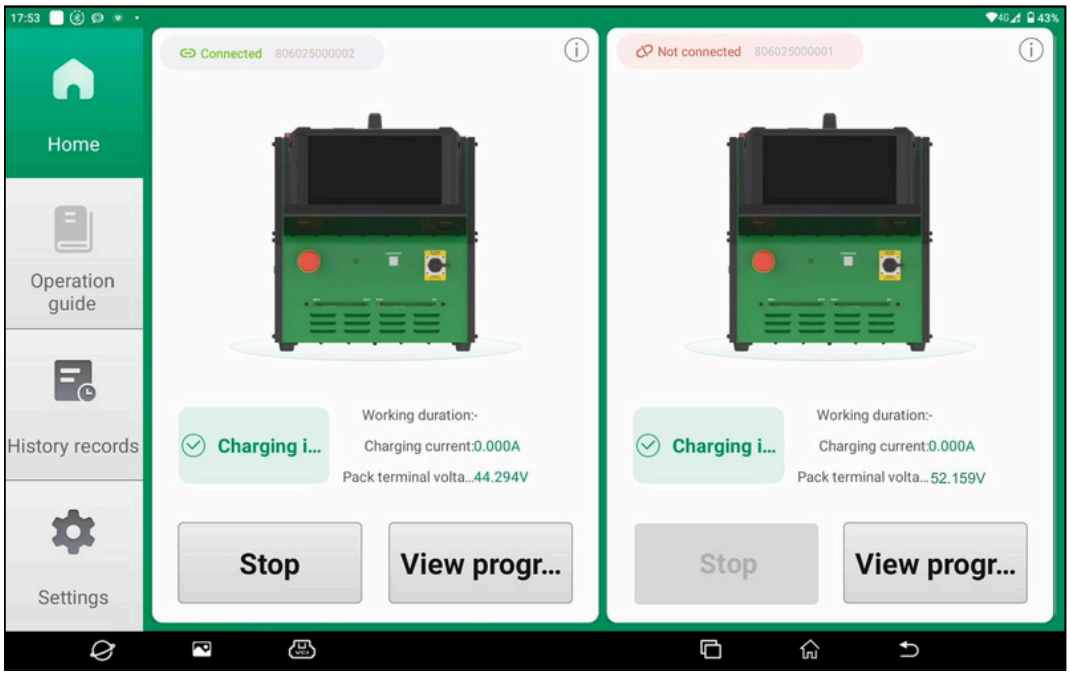
6-2) In the work progress screen, click the **"Working parameters"** button to go to the **"Parameter settings"** screen, where you can view and set parameters.

Note: The parameters cannot be set while the device is operating, which must be set after the device has stopped.

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

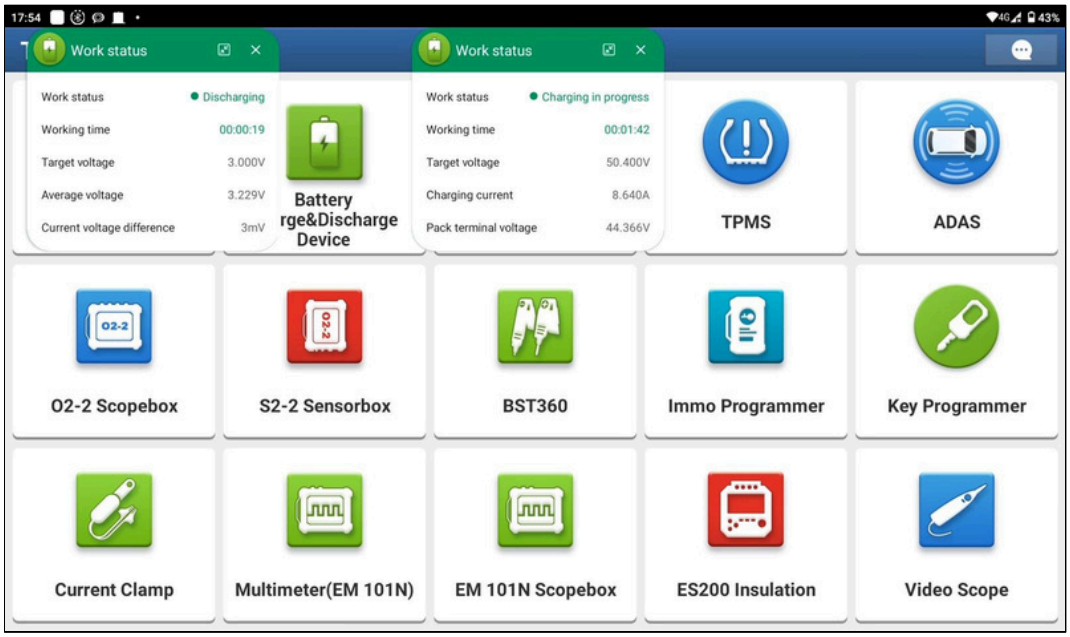


(7) Clickthe **"View progress"** button on the home page to switch to the operating progress screen, and click the **"S top "**button to terminate the current charging/discharging process.



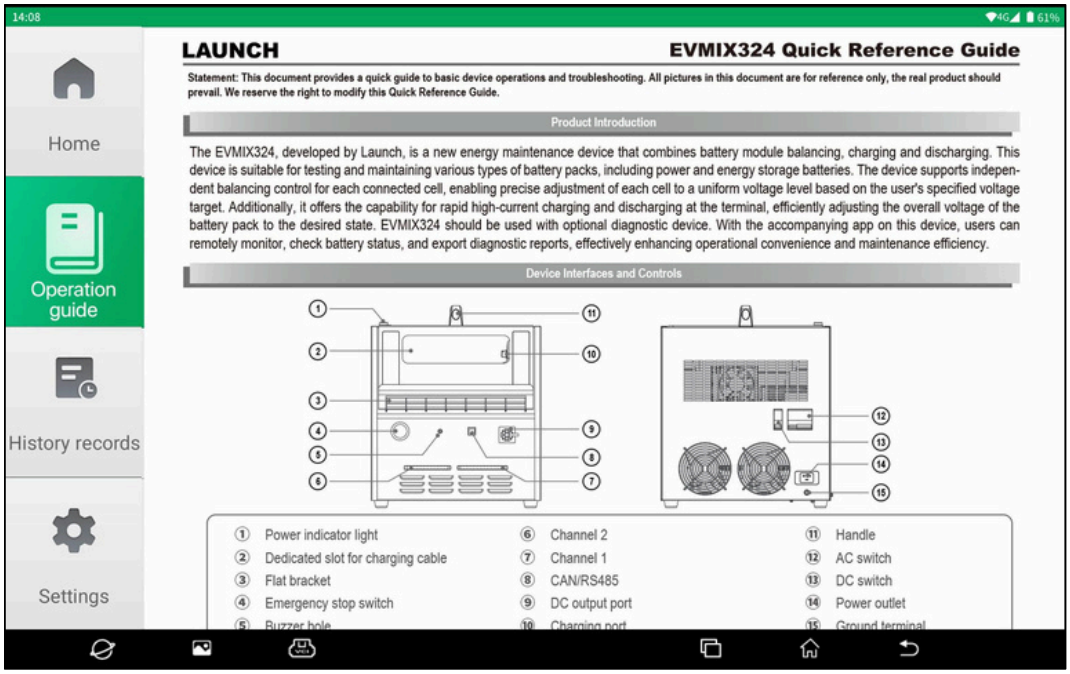
3.2.4 Floating Window Function

Whenusingthe **"Battery Equalizer"** and**"BatteryCharge&DischargeDevice"**functions,switchingto another app will display a floating window on the desktop that shows the current status of the device, allowing users to check it anytime.



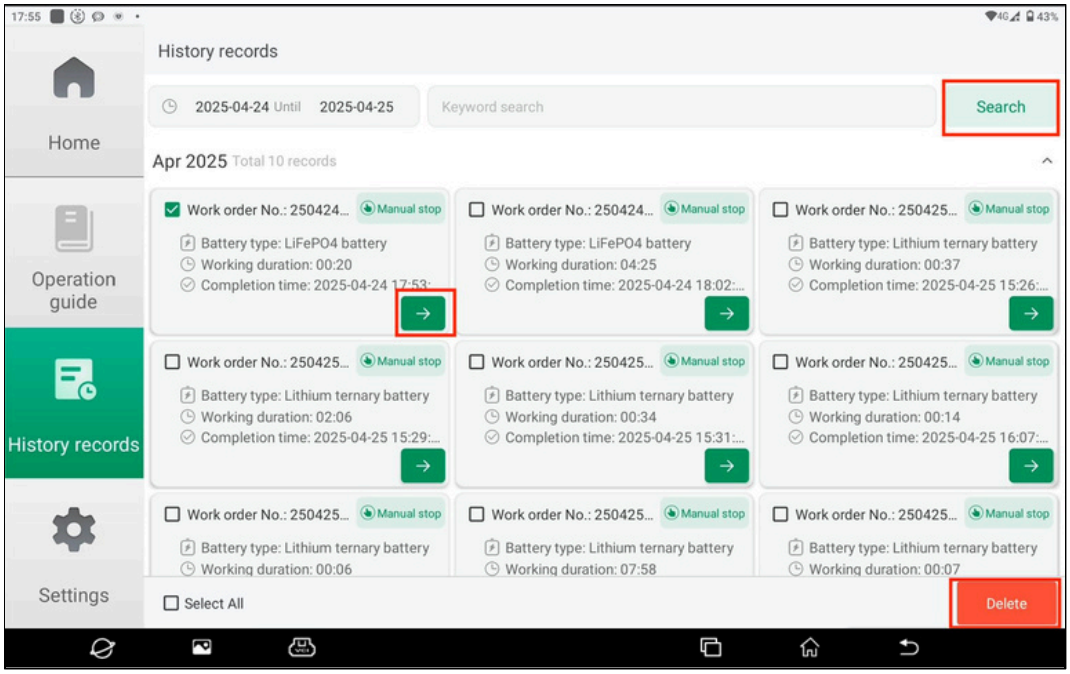
3.3 Operation Guide

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

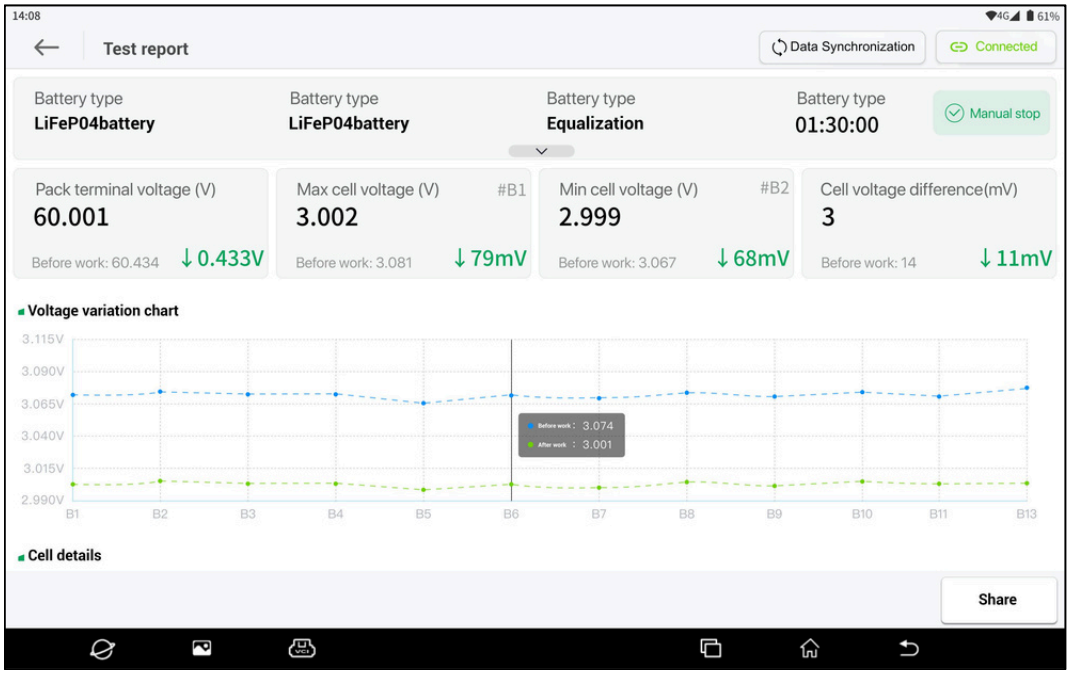
(1) Clickthe**"BatteryEqualizer"**or **"Battery Charge&Discharge Device"** button on the diagnostic device to go to the home page, then click the **"History Records"** button from the left-hand function module navigation to open the history screen.



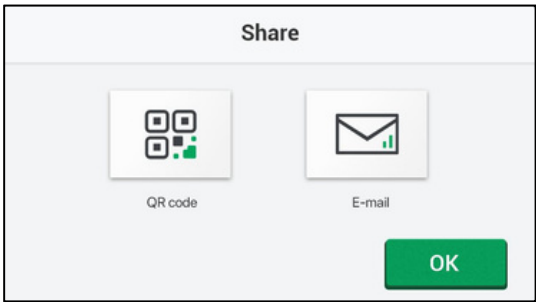
(2) Checkoneormorehistoryrecords,andclickthe**"Delete"**buttontoremovethem.

(3) Setthestartandenddatesorkeywords,thenclickthe**"Search"**buttontofilterrecordsthatmatch the conditions.

(4) Click the " ⟶" button on an individual record card to view the detailed test report for that record.

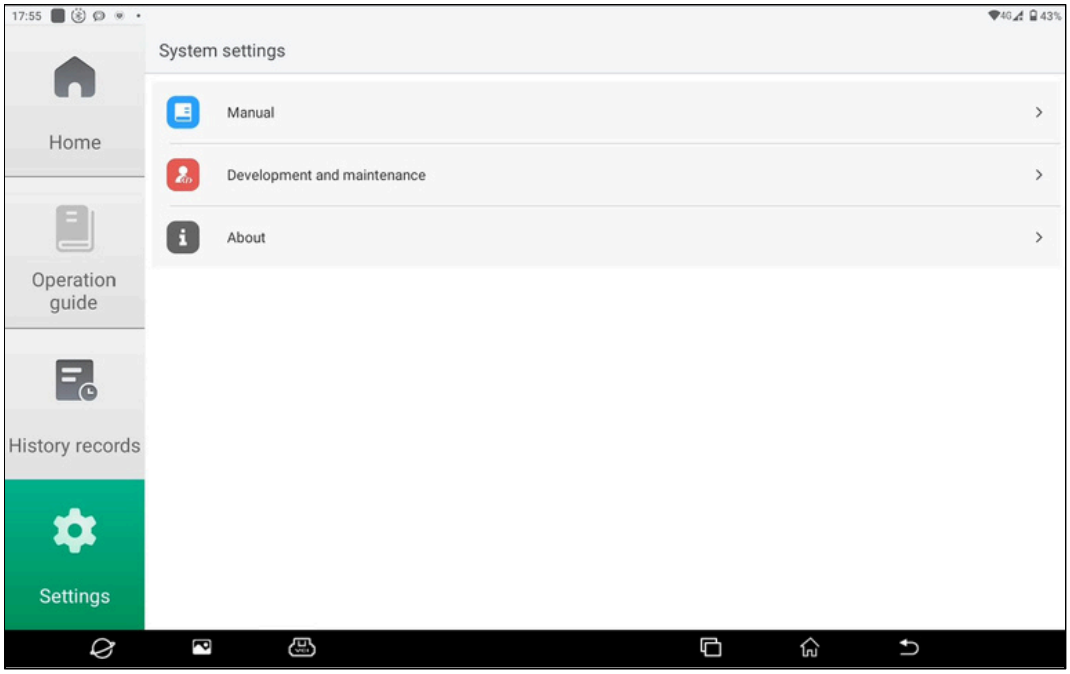


(5) Clickthe **"Share"** button on the test report page to share the report via "QR Code" or "Email".



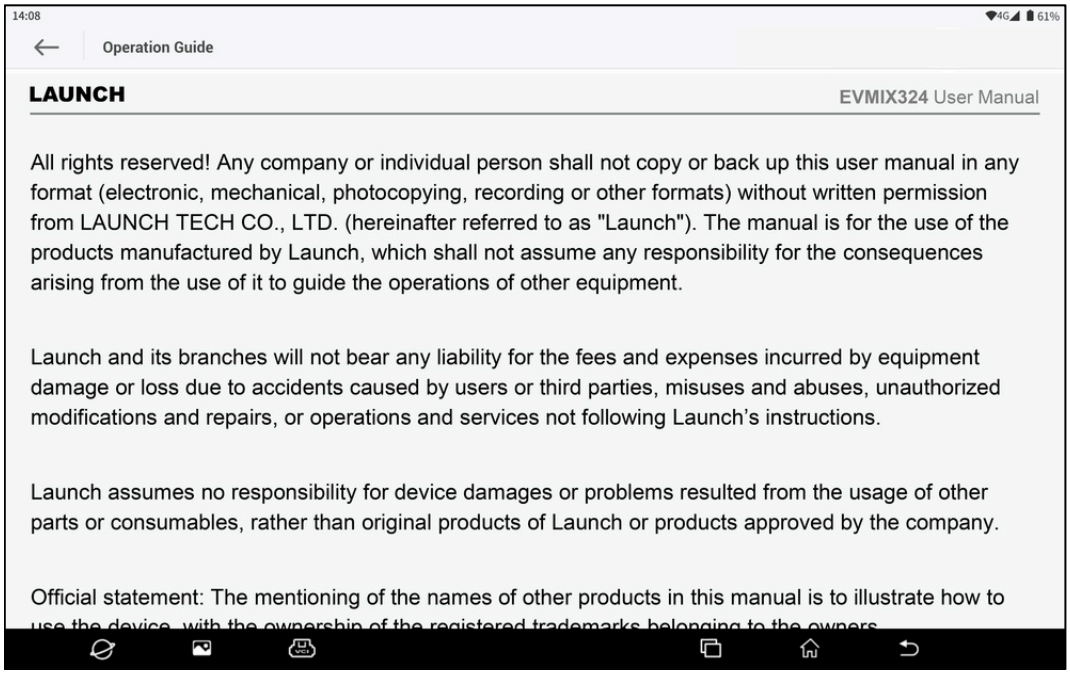
3.5 Settings

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.



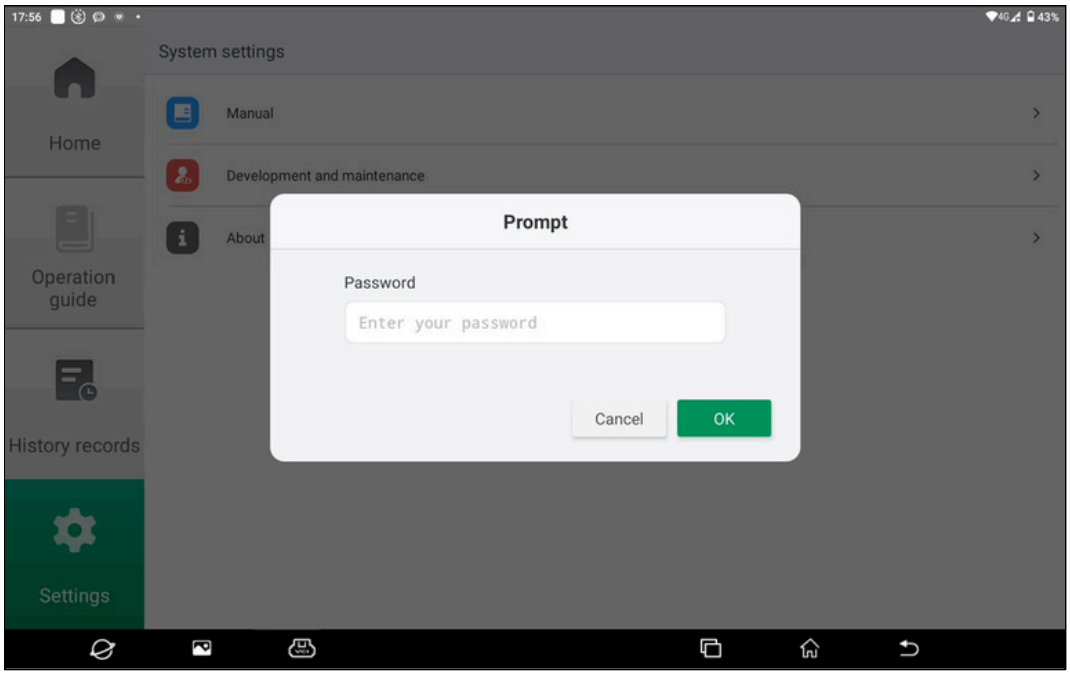
3.5.1 Manual

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



3.5.2 Development and Maintenance

Clickthe **"Development and Maintenance"** buttontogotothedevelopmentandmaintenancescreen. 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.