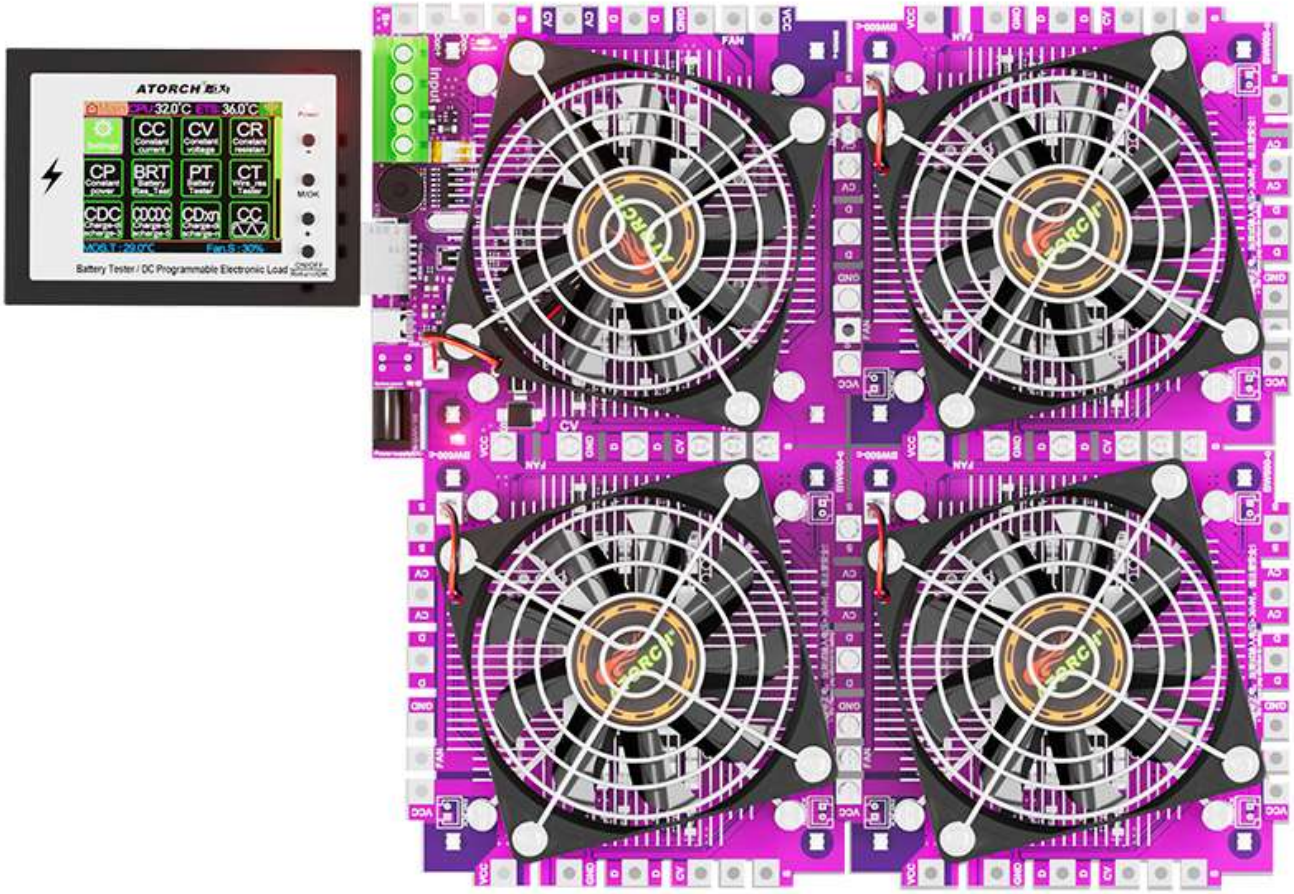
BW600 WiFi Series Battery tester

--User Manual--

2.4-inch high-definition color screen WiFi/Bluetooth digital transmission curve version

Multi functional Charging and discharging tester for battery capacity/DC power supply

☐ 150W ☐ 300W ☐ 450W ☐ 600W



(This product will be updated at any time, please pay attention to the web page description for detailed update details)

1.Product parameters:

Test voltage:1~200V

Working current:☐0.02~30A/150W/ ☐0.02~50A/300W/ ☐0.02~50A/450W/ ☐0.02~50A/600W

BW600 Discharge power: voltage * current < 150 W & < 300 W & < 450 W & < 600 W

Maximum support for 1200W power (requires 7 150W expansion power modules 24V/50A/1200W)

(The actual running current is limited by the maximum power, please adjust the current according to the law of energy conservation)

The built-in over-current, over-temperature, over-power safety protection functions, if the protection interface is popped up, please pay attention to the parameter adjustment, shall adjust to the maximum power, and then discharge, you can first slowly and smoothly adjust the preset value in the start and discharge, in order to adjust up to the maximum power for discharging

Supports WiFi and Bluetooth

Phone APP download: Search in google play or apple app store: "tuya" or "smart life" app

Support PC software, data cable directly connected, please download the software for online operation!

Download website:

http://en.atorch.cn/NewsDetail.aspx?ID=92

Computer online software manual download:

http://en.atorch.cn/upload/file/20250830/6389217582483042597381115.pdf

2.Product application:

1.1 Battery capacity test

The Load tester is designed for the discharge of various batteries,18650 battery,car battery including NiMH, NiCd, LiPo, LiFe and Pb, as well as capacity testing.

1.2 Mobile power test

This tester supports discharging of mobile power supply and capacity test.

1.3 Power performance test

The tester supports performance and aging tests of various DC power supplies.

2:Parameter Description

2.1.1 Power supply: DC12V/1A

2.1.2 Voltage range: 001.000-200.000V,

2.1.3 Current range: 0.020-30.000A, step 0.001A (the current is automatically adjusted according to the power limit)

2.1.4 Discharge method:

CC: Constant current discharge of the battery, which supports testing of battery capacity or power supply current.

CP: Discharge the battery with constant power for use or test power such as constant power equipment.

2.1.5 Discharge power:150W/300W/450W/600W(**Need to purchase the corresponding discharge power**)

2.1.6 Four wires: voltage and current channels are separated, with high test accuracy

2.1.7 IPS display: voltage, current, time, capacity, power, electric energy, etc.

2.1.8 PC connection: The tester can be connected to the computer through Bluetooth to achieve more functions, such as graphics, calibration, firmware upgrades, and test cycles.

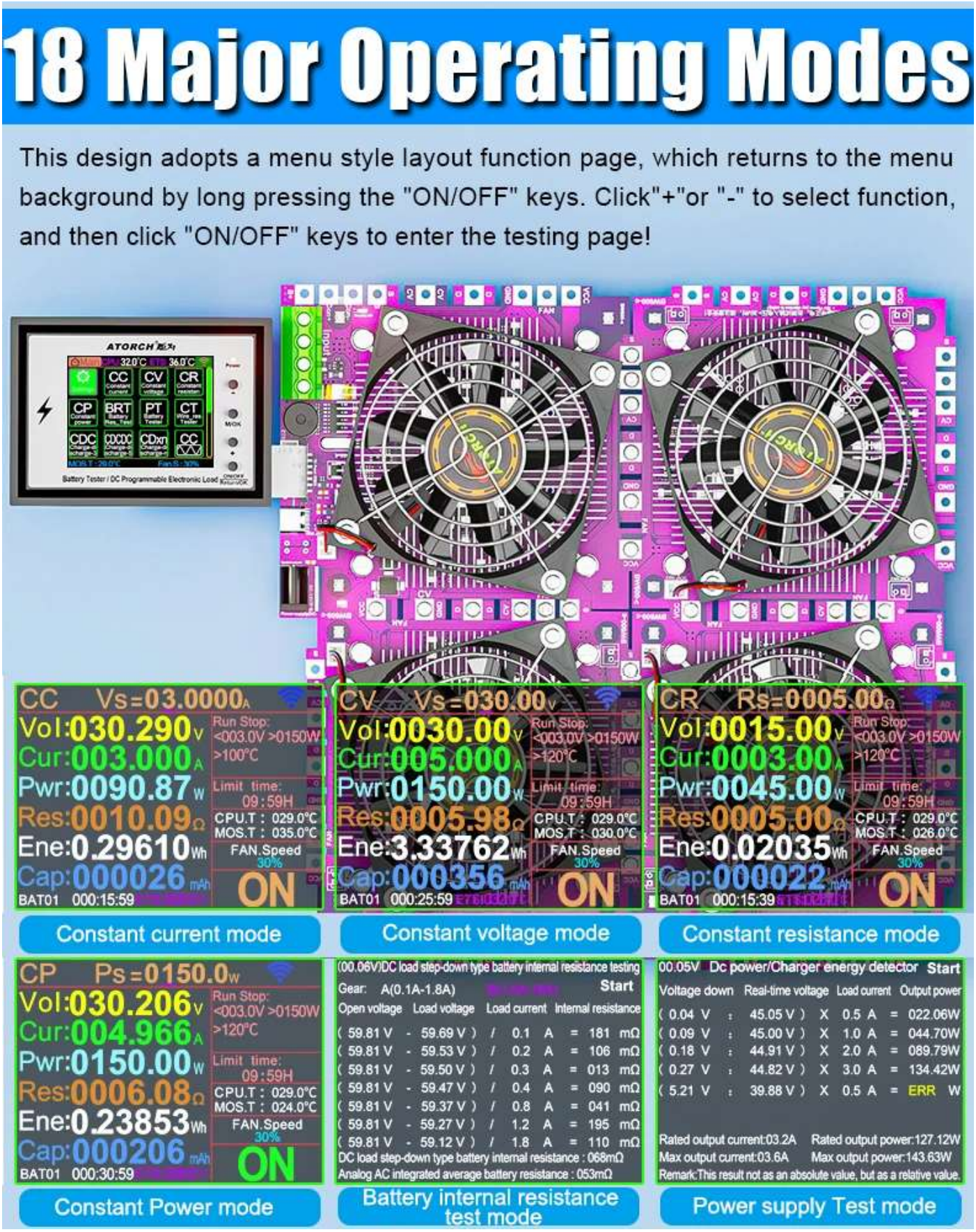
3.Regarding Charging Instructions

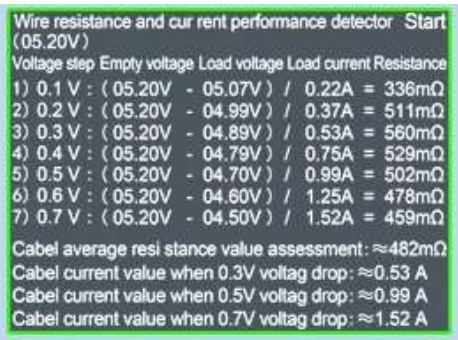
This discharge tester has been upgraded to support battery charging parameter testing, with a maximum support of 100V voltage and 20A current charging testing. Please do not exceed this

parameter testing, and an additional charging control module needs to be purchased to activate this function

4.Function interface introduction(18 Major Operating Modes):

This product adopts the high-end and cost-intensive "2.4-inch high-definition large color Chinese and English display screen", designed a variety of functional interface content,
Various parameters are displayed on one screen, and different function interfaces can be switched by short pressing the button. The interface diagram and introduction are as follows



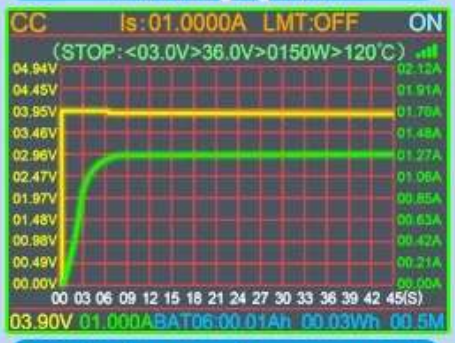


Line resistance test mode

Battery charging and discharging and charging mode

Battery charging/discharging/charging/discharging/charging mode

Cycle charging mode



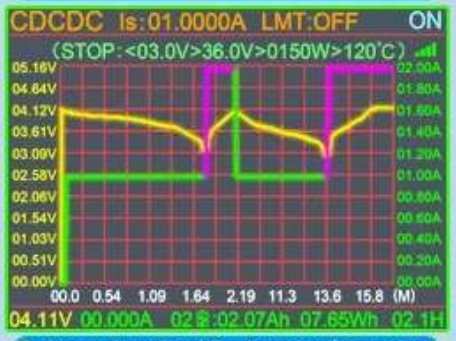
Constant current curves mode

Constant voltage curves mode

Constant resistance curves mode

Constant Power curves mode

Battery charging and discharging and charging curves mode



Battery charging/discharging/charging/discharging/charging curves mode

Battery capacity detection mode

Dynamic Load Aging Test Mode

The BW600 series has upgraded to the latest feature, which supports battery charging mode measurement!

Need to purchase BW600 charging module separately!

The maximum charging current is 20A!

Name:BW600 Charging Control Module

Function:

Implement Charging/Cycling Charging test function

Maximum switch voltage:100V

Maximum switch current:20A

Notes:

1.This is not a charger, this is a charging control module, which is a bridge and a switch component connecting the charger and battery.

2.Only supports constant current power supplies/constant current chargers/dedicated chargers, etc

3.The charging current is controlled by setting the constant current source size of the charger, and this charging control module will not adjust the size!

4.The charger input has positive and negative reverse connection protection. Do not reverse the connection, as there is no current or indicator light when connected in reverse!

5.Two input methods: wiring and DC5.5 interface. Please do not connect them for testing at the same time

The following functions require the purchase of a charging control module to take effect!

Battery charging and discharging and charging mode

Battery charging/discharging/charging/discharging/charging mode

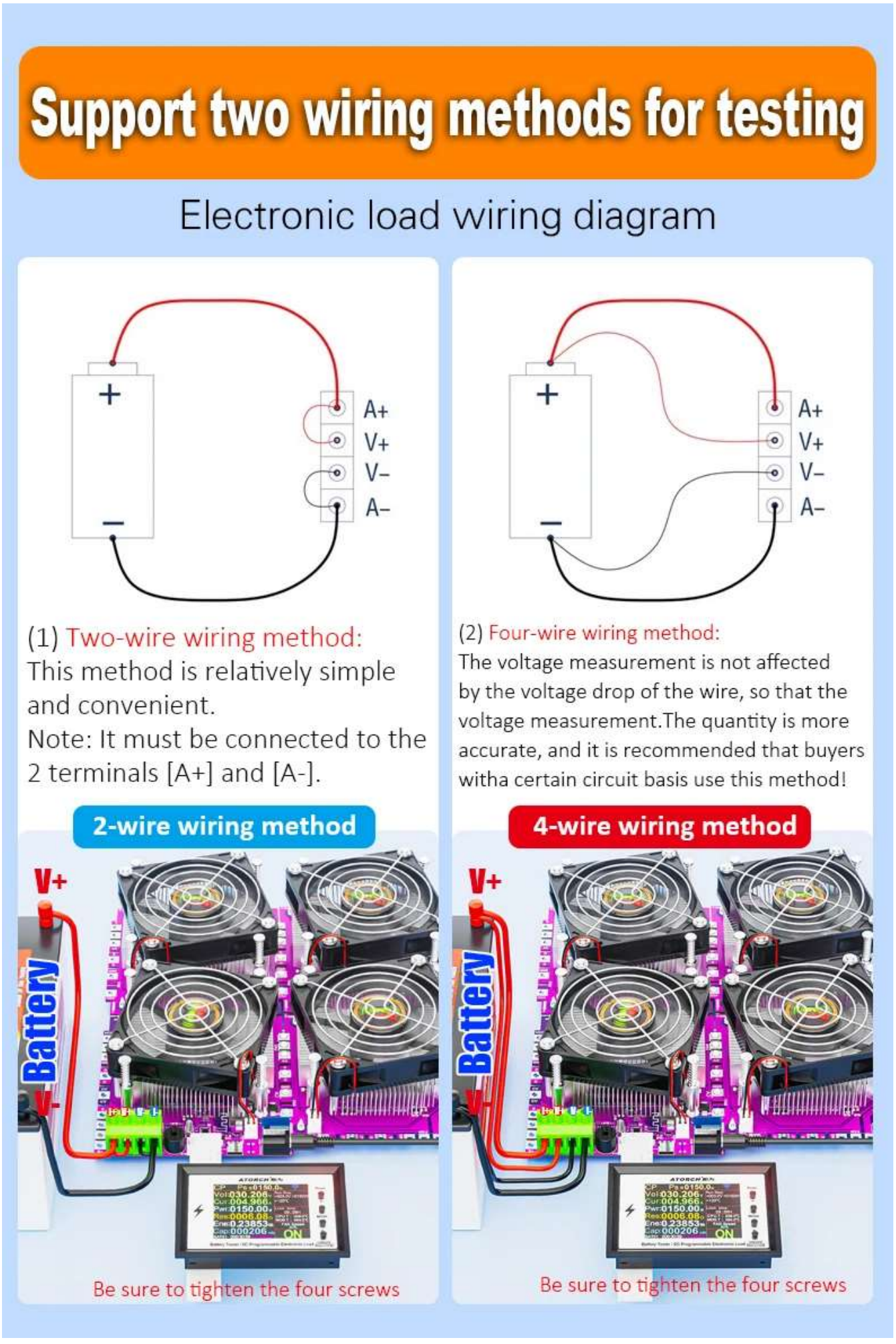
Cycle charging mode

Battery charging and discharging and charging curves mode

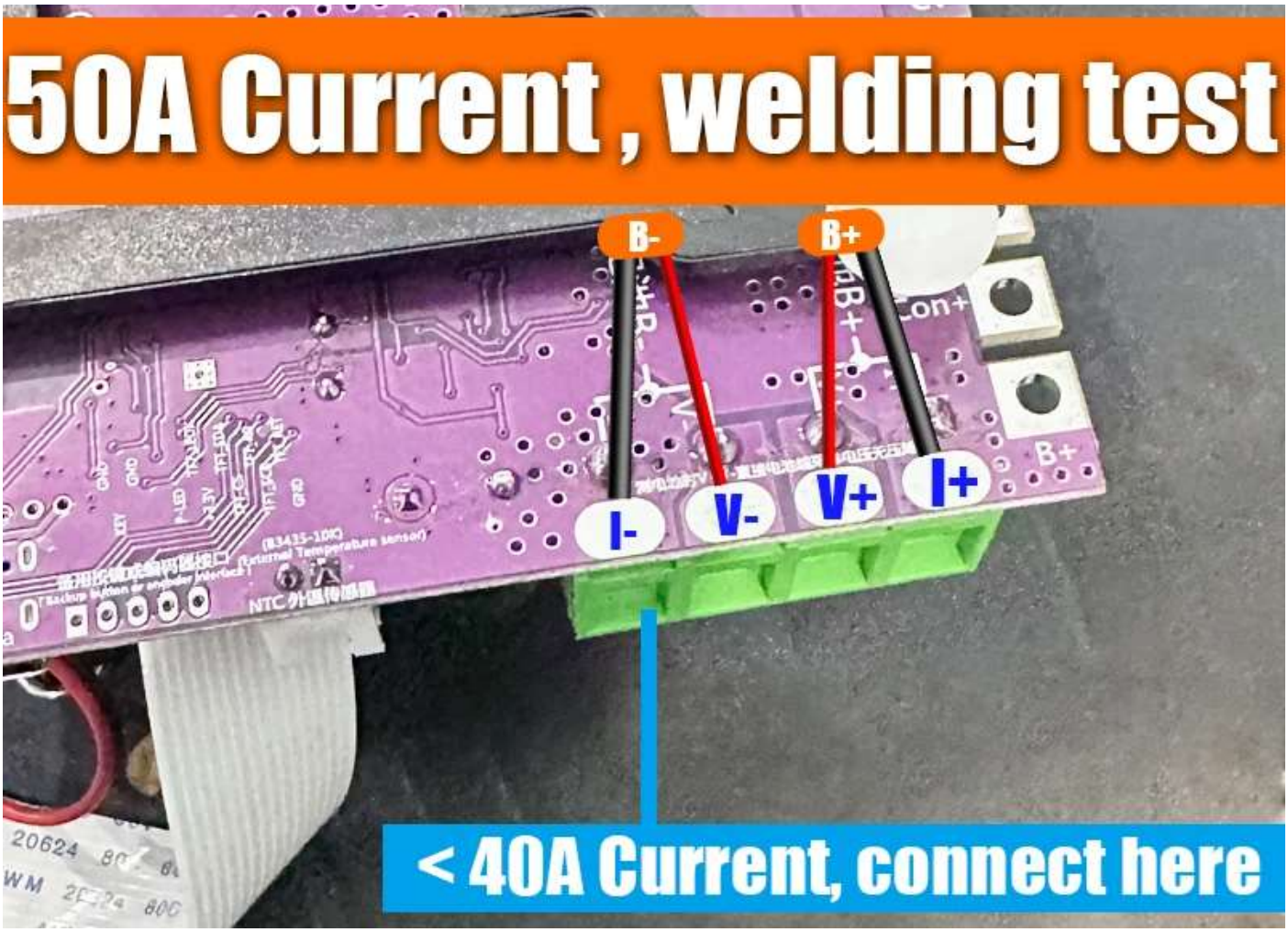
Battery charging/discharging/charging/discharging/charging curves mode

Battery capacity detection mode

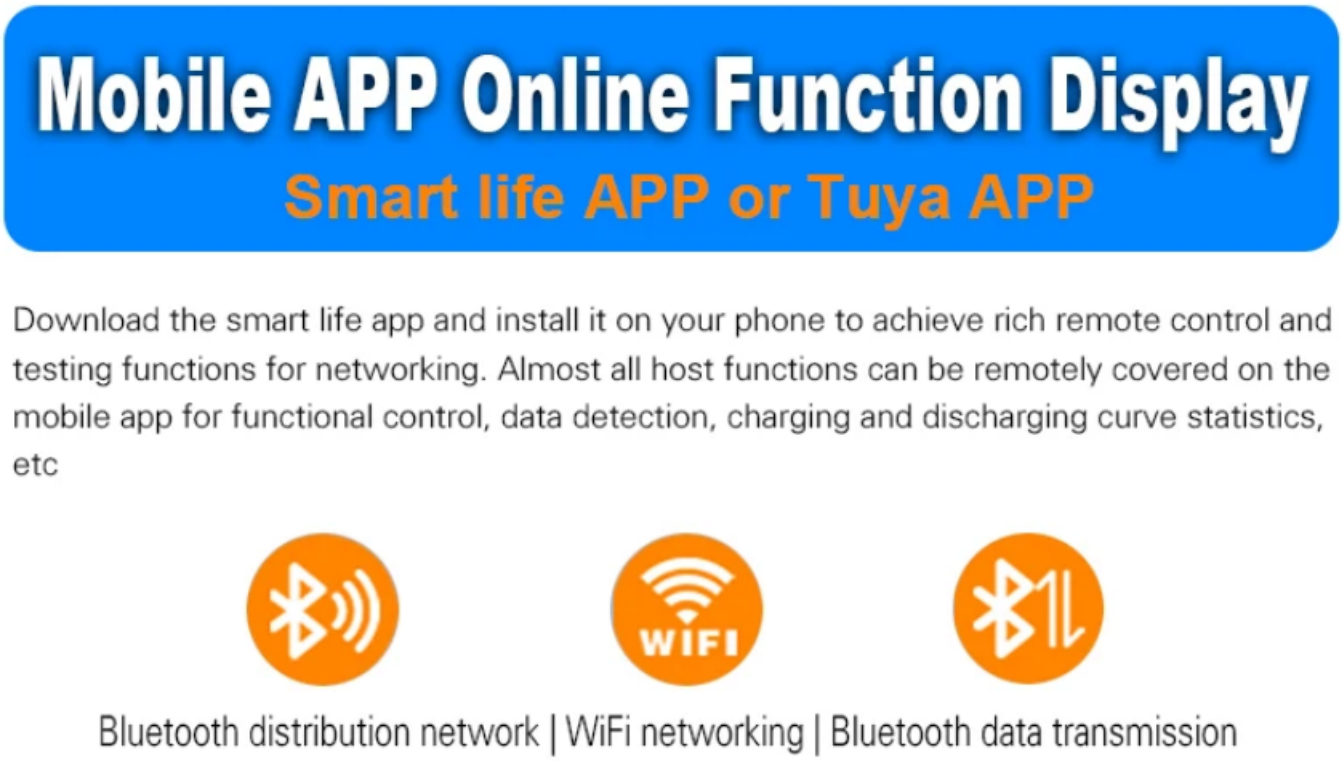
5.The wiring method of the product should be tested according to the following diagram, tighten the four screws, and maintain good contact!

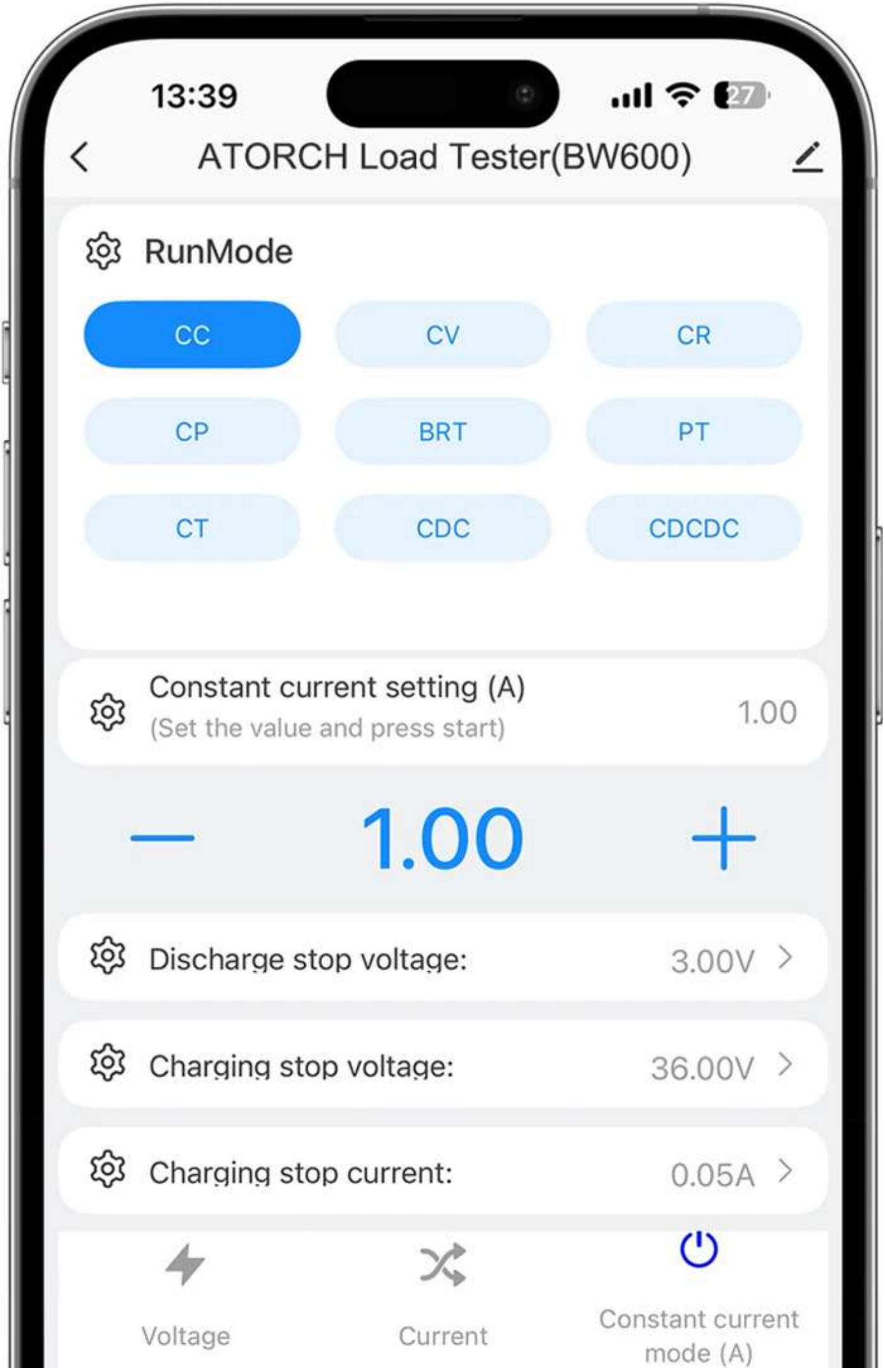


6.Maximum 50A test, wiring test required, terminal post can only withstand a maximum current of 40A



7.Support Tuya or Smart Life APP online testing to detect test data!




13:39
ATORCH Load Tester(BW600)
RunMode
CC
CV
CR
CP
BRT
PT
CT
CDC
CDCDC
Constant current setting (A)
(Set the value and press start)
1.00
1.00
Discharge stop voltage:
3.00V
Charging stop voltage:
36.00V
Charging stop current:
0.05A
Voltage
Current
Constant current mode (A)

0.00V	0.863A	OFF

Power	Capacity	Current electricity
0.00W	0mAh	0.00Wh

CPU temperature	Fan temperature	External tempera...
31.0°C	29.6°C	Not connected

Current battery capacity group
(It is forbidden to set this item when the discharge switch is turned on)
Bat01 >

Clear Zero mAh and Wh
(Clear the current battery accumulative capacity and other values)

Real time data refresh switch
(Real time reporting of data for 2 minutes after opening)

Voltage, current and power statistics (cloud h...

Day Month Year

Voltage Current Power

2025/06/27

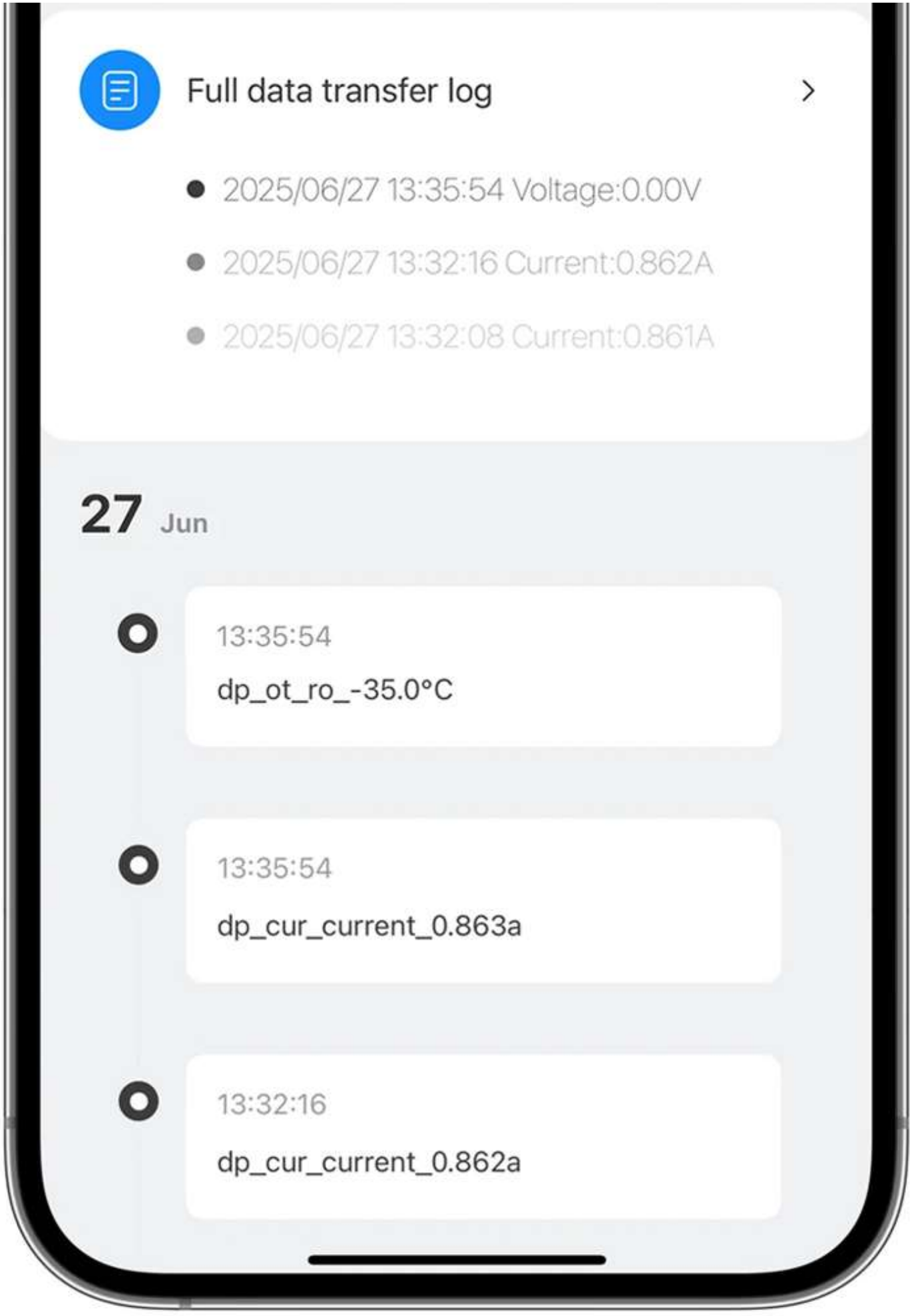
Time limited discharge
(Press the countdown to discharge after start) 0.00H >

Screen brightness:
(Set the working screen backlight brightness level 0-9) 9级 >

Fan over_temperature protection:
(The discharge tube is overheated to stop discharging 40~150°C) 120°C >

Probe over_temperature protection:
(Probe temperature over temperature protection 0~150°C) 75°C >

ATORCH official store
Purchase other and contact to download software and manuals, etc. >


Full data transfer log
2025/06/27 13:35:54 Voltage:0.00V
2025/06/27 13:32:16 Current:0.862A
2025/06/27 13:32:08 Current:0.861A
27 Jun
13:35:54
dp_ot_ro_-35.0°C
13:35:54
dp_cur_current_0.863a
13:32:16
dp_cur_current_0.862a

8. Support HID data cable and computer online communication software testing!

8. Introduction to Main Function Testing

8.1.CC（Constant current） Mode Description：

Mainly tests: Battery constant current or DC power constant current test

8.2.CV（Constant voltage） Mode Description

Mainly tests the constant voltage of DC constant current source power supply

Attention: CV mode, do not test with batteries as it may damage the device or battery!

8.3. CR(Constant Resistance) Mode Description

Mainly tests the discharge of fixed resistors from batteries or DC power sources

8.4. CP(Constant power) Mode Description

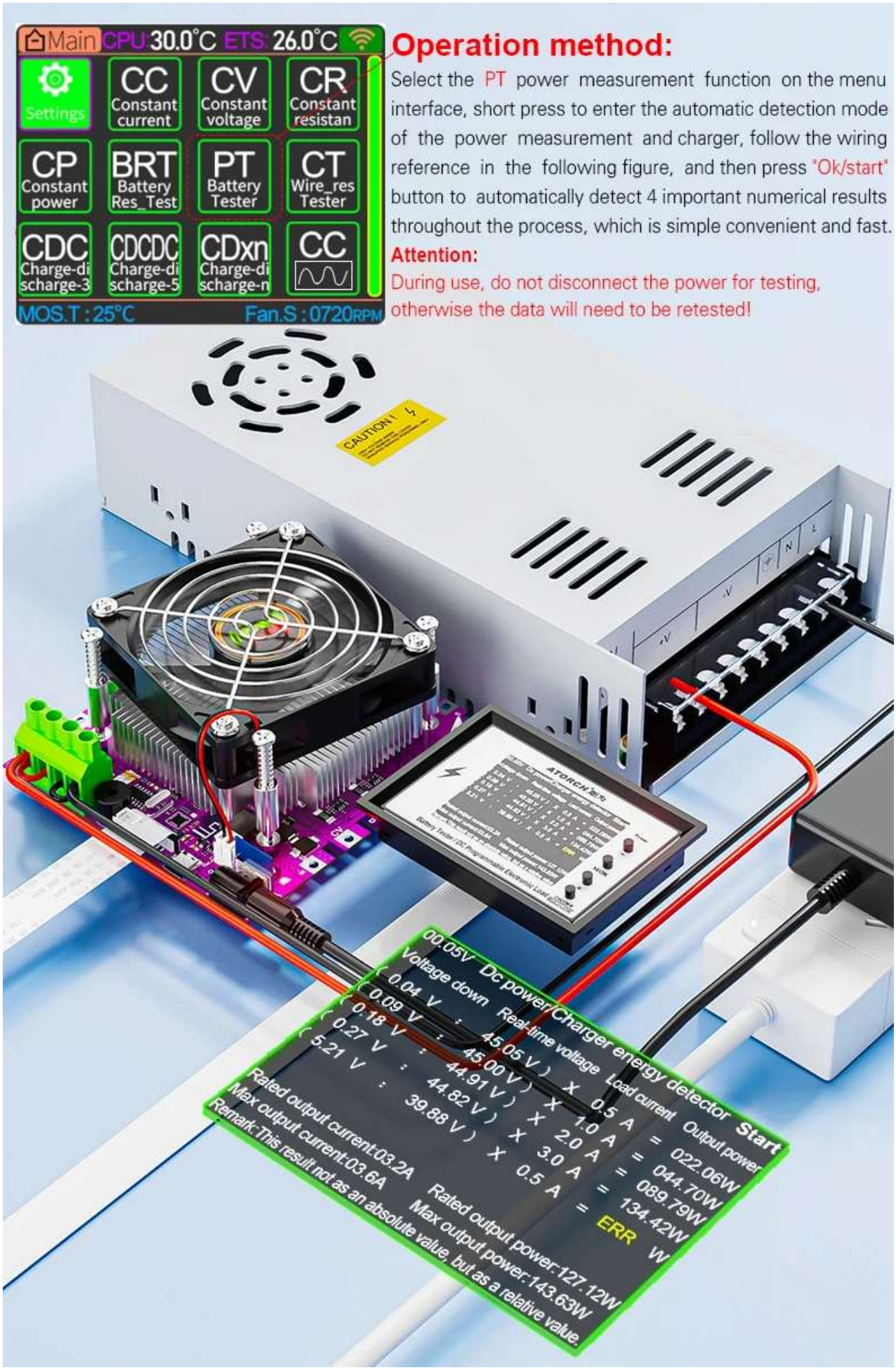
Mainly tests the maximum power constant test of chargers and DC power supplies

8.5.BRT(Battery internal resistance) Mode Description

Mainly testing internal resistance of the battery, smaller internal resistance, the better!

8.6.PT Mode Description

Automatic detection of charger/DC power supply power, current, and performance throughout the process



8.7.CT Mode Description

Fully automatic testing of wire internal resistance and current performance

8.8.CDC Mode Description

Fully automatic cyclic charging-discharging-charging Simultaneously selectable Chinese and curve display interface

8.9.CDxn Mode Description

Battery full automatic charging and discharging cycle testing function

Operation method:

Select the CDxn charge and discharge cycle test function on the menu interface, press briefly to enter this function , follow the wiring diagram as shown in the figure, and then press the start button. The entire process will automatically cycle and detect 1–99 group sets of values . The discharge aging detection performance is simple and convenient.

Attention:

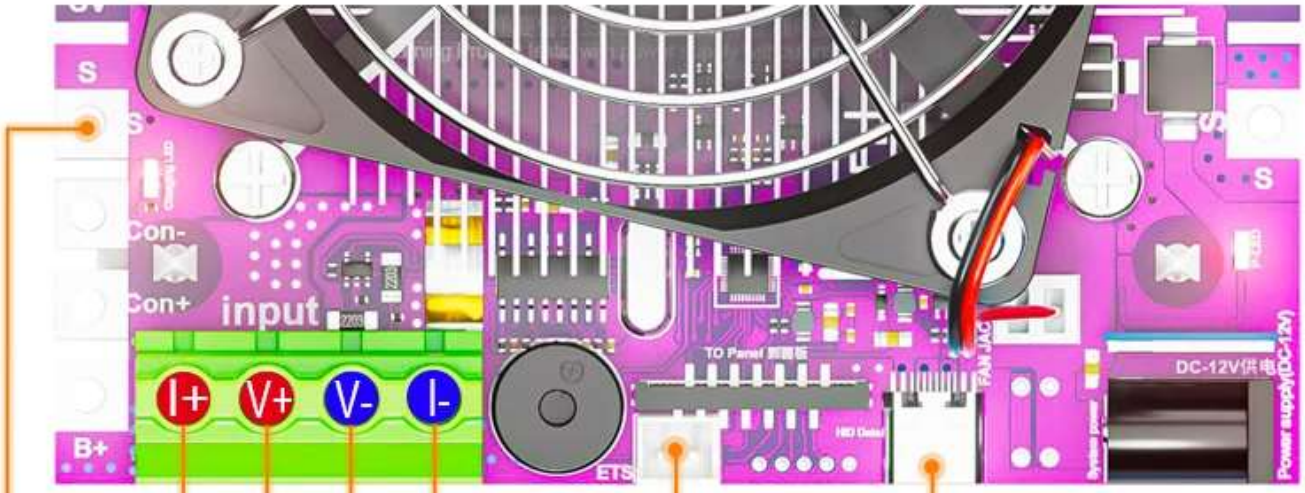
During use, do not disconnect the power for testing, otherwise the data will need to be retested!

9.0 Introduction to the interface of accessories

Method for setting up software and hardware with different power levels for splicing

Standard accessories:
HID computer online data cable, Test board, external temperature probe.

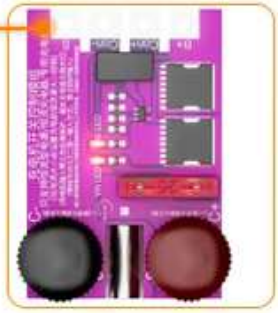
Additional accessories that need to be ordered:
High voltage Protocol Triiger board;20A high current Test Fixture
Charging control module;18650 and other Battery test Boxes



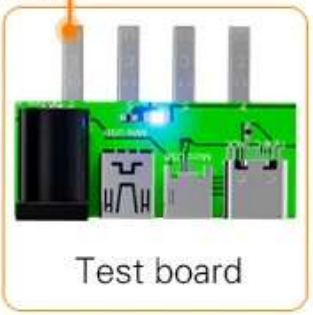
High voltage
Protocol trigger board

20A Test fixture

HID computer online data cable



Charging control module



Test board

18650 and other
Battery test boxes

External
Temperature sensor

10.Accurate comparison between products and large instruments

Accuracy evaluation of current and voltage Comparison of Precision of Professional Instruments

The precision is strictly calibrated by our engineers before leaving the factory, using innovative soft calibration technology. The precision is learned through software on large instruments, and small errors caused by hardware are repaired through software to achieve measurement precision that is exactly the same as that of large instruments.

Voltage accuracy comparison

Professional instrument voltage: 30.000V

BW600 voltage: 30.000V

Current accuracy comparison

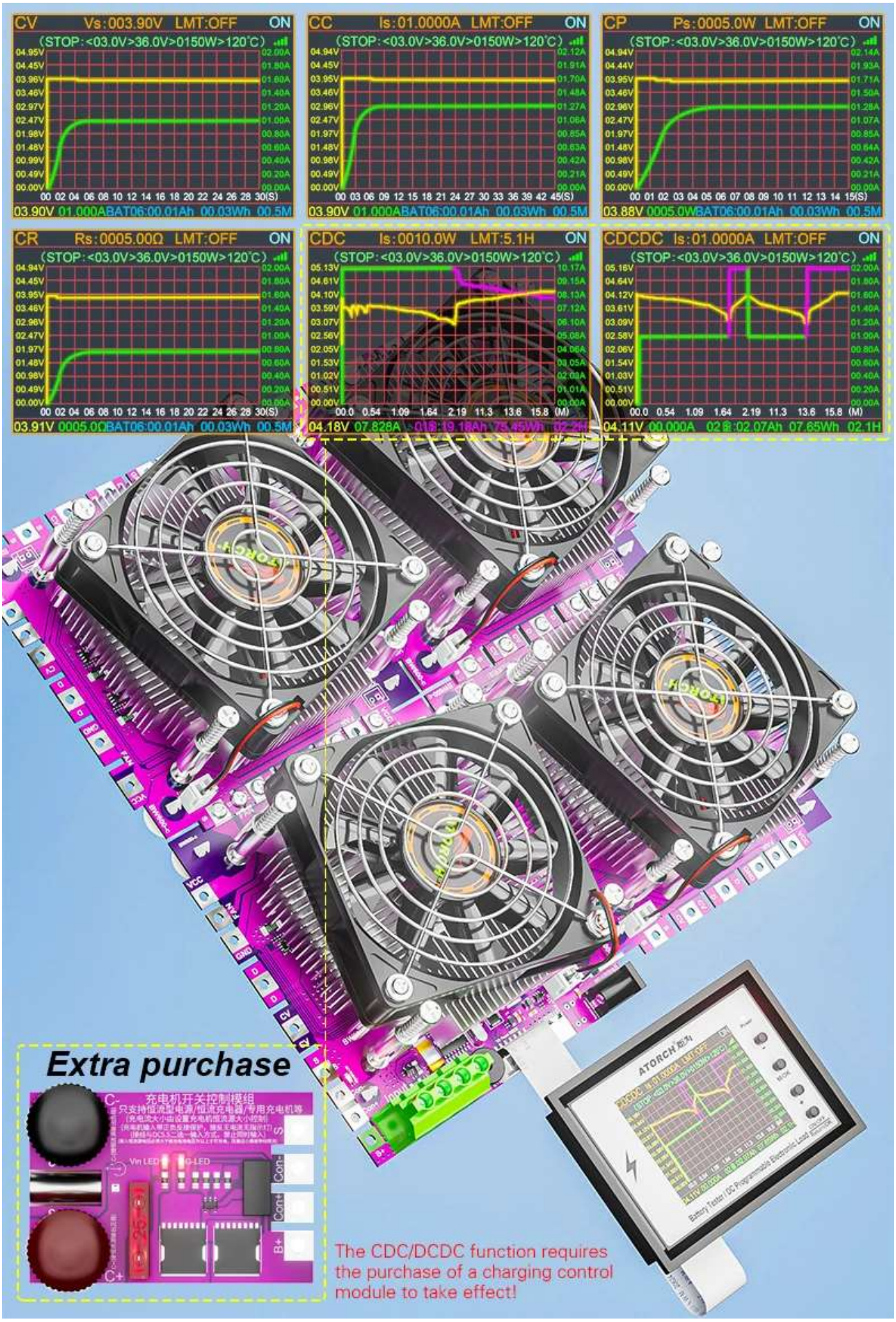
Professional instrument current: 2.000A

BW600 current: 2.000A

11. Test various types of Batteries

12. Battery capacity grading charging and discharging curve

（This function needs to be used in conjunction with the charging control module, and an additional charging control module needs to be purchased!）



13. Battery capacity animation Measurement display

ATORCH has set up a separate animation display interface for calculating battery capacity percentage, with power-off memory and data storage functions. When removing the battery, it can store charging capacity data for future viewing, facilitating capacity testing of the battery. When the battery is powered off, the current capacity is temporarily stored, and restarting will accumulate the current used capacity. If not needed, it can be manually cleared to accurately measure and calculate the battery capacity value.

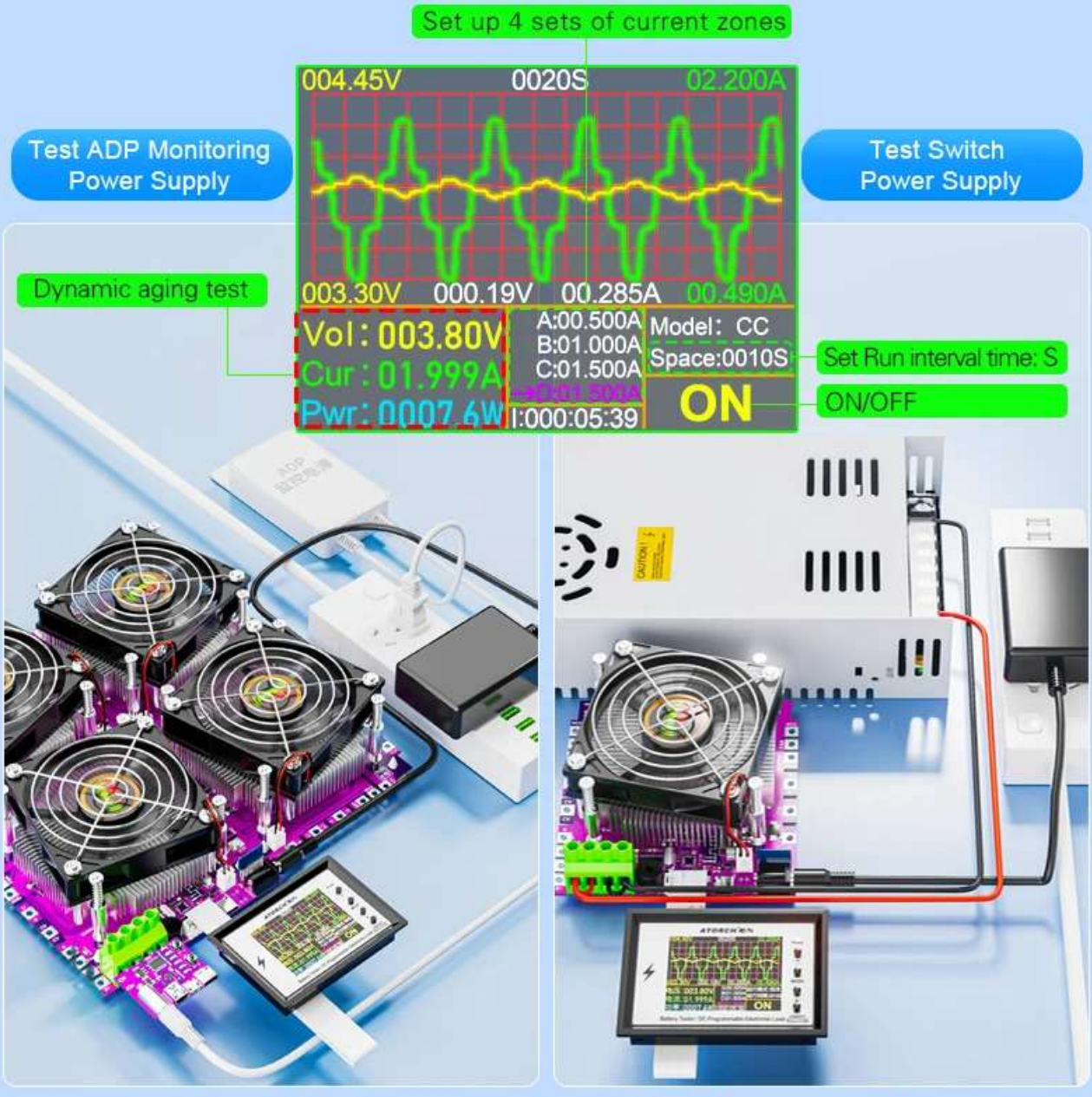
14. Dynamic aging test

New Function

Dynamic aging test

The innovative feature of conducting cyclic aging tests with four different currents (ABCD) through new dynamic settings,

BW600 can simulate the peak, valley, rated value, and average of the current required by the equipment during operation for cyclic discharge aging, which can make the device The stability of quality performance of aging power supplies in simulated equipment scenarios is an important means and basis for factories and individual users to conduct aging tests to identify the stability of power supply performance and quality.



15. Splicing methods for products with different power levels

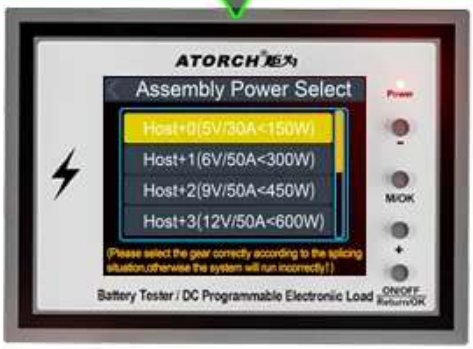
(150W/300W/450W/600W/1200W)

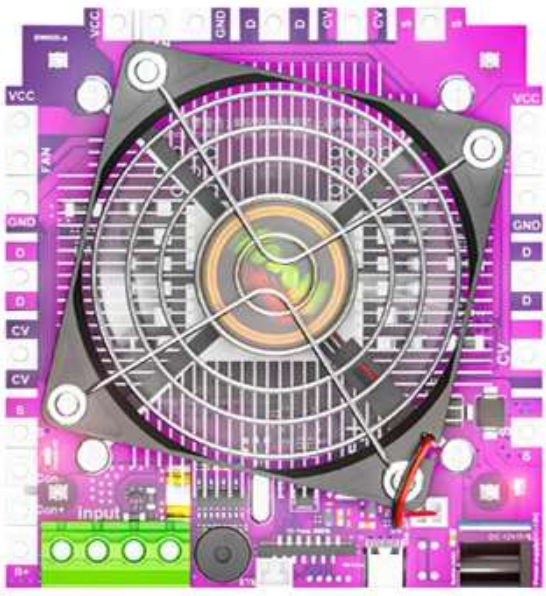
Method for setting up software and hardware with different power levels for splicing

Short press"+"/"–" keys on the homepage interface to switch to the "Settings" icon,short press"Return/OK" key to enter the system background, short press "+"/ "– " keys to switch to " 24.Assembly Power Select and then short press "Return/OK" key to enter assembly power selection, corresponding to the splicing purchased by oneself Select the corresponding power for the module, and then press and hold "Return/OK" keys to confirm. Long press "Return/OK" keys to exit measurement interface.

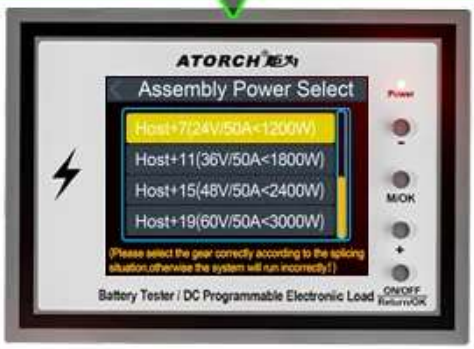
According to the instructions and hardware, 150W/300W/450W/600W/1200W Power can be assembled1500W–3000W power is reserved, please do not attempt, thank you!

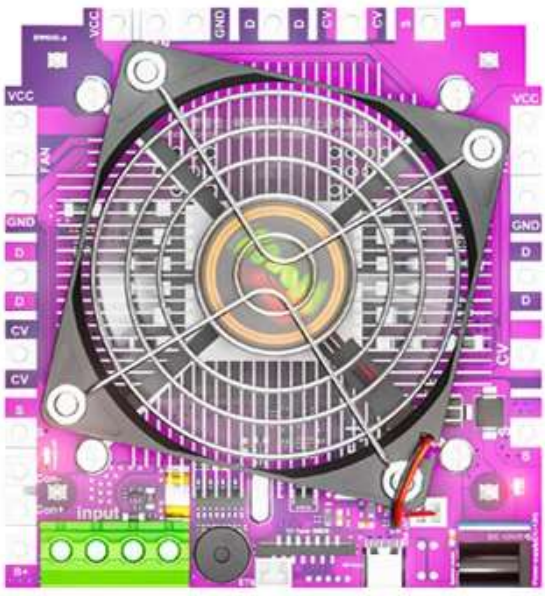
150W~600W Software Gear Setting



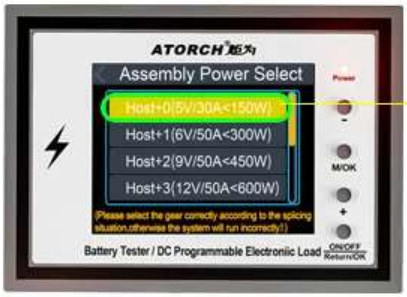


Above 1200W Software Gear Setting

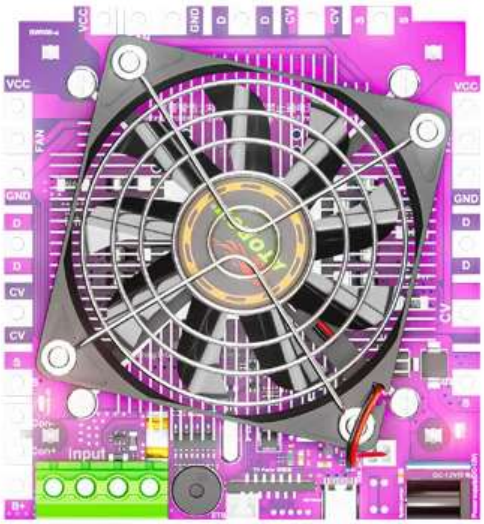




150W Power

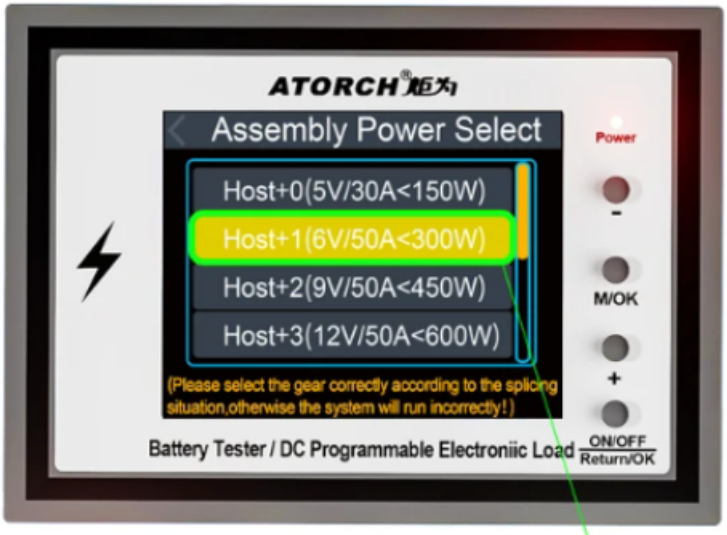


Software selection:
150W gear (default)



Host

300W Power

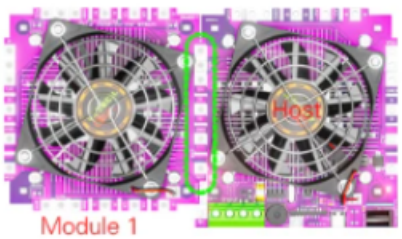


1.Software selection: 300W Gear
2.Three assembly methods, tighten the screws of the delivery according to the schematic diagram

Method 2

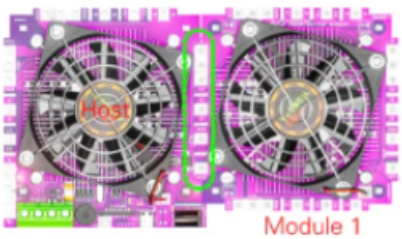
Module 1

Method 1



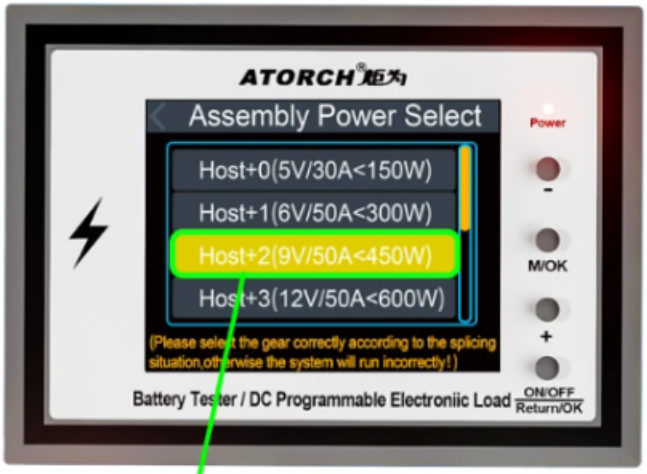
Module 1

Method 3



Module 1

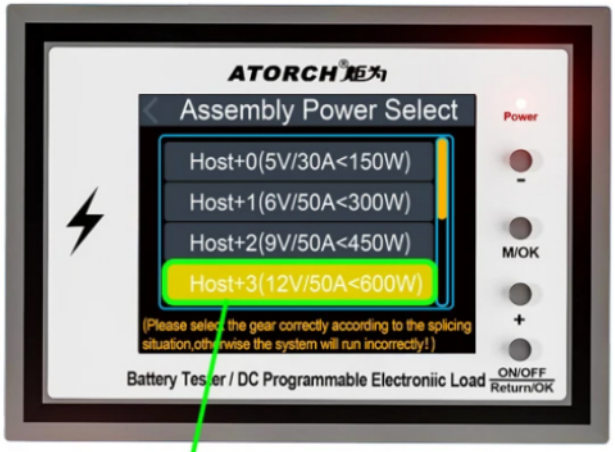
450W Power



Method 1 | Method 2 | Method 3

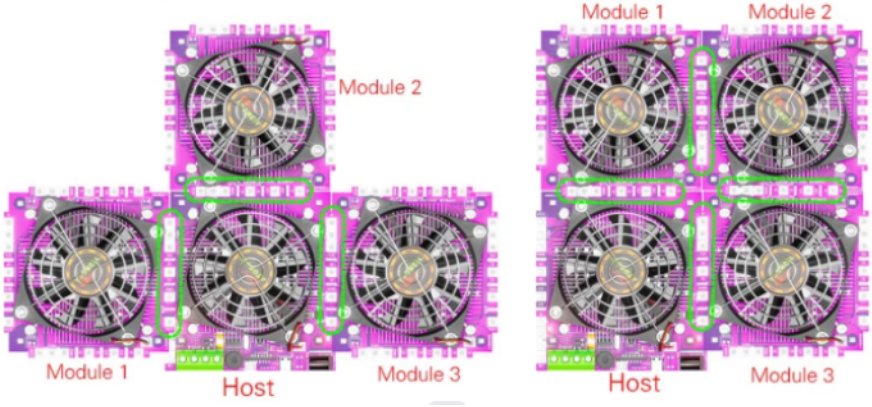
1.Software selection: 450W Gear
2.Three assembly methods, tighten the screws of the delivery according to the schematic diagram

600W Power

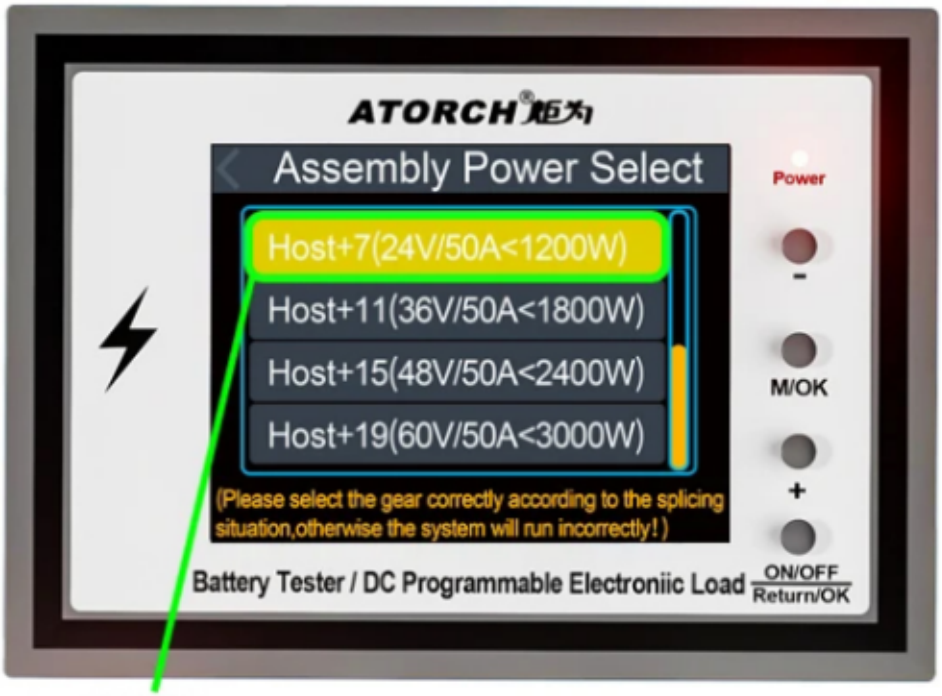


1.Software selection:600W Gear
2.Three assembly methods, tighten the screws of the delivery according to the schematic diagram

Method 1 | Method 2

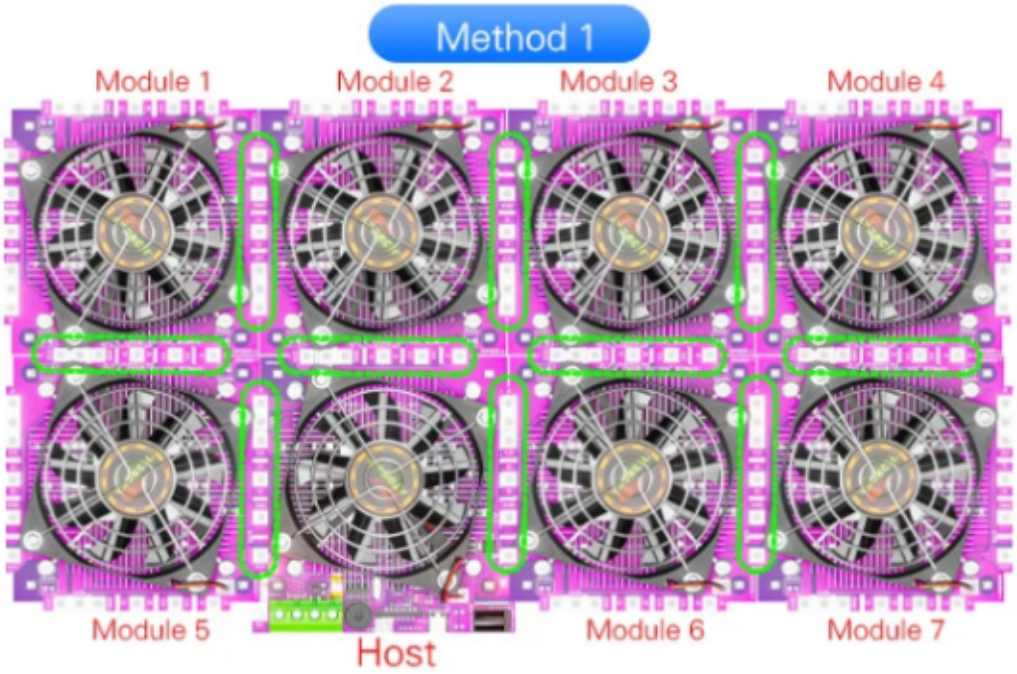


1200W Power



1.Software selection:1200W Gear

2.Three assembly methods, tighten the screws of the delivery according to the schematic diagram



At present, the maximum supported power is 1200W.

Please do not exceed this power for splicing to prevent product damage!

16. WIFI pairing and connection method

WiFI Voltmeter Distribution Network Description

WiFi connection to the network only requires three steps

*For voltmeters with WiFi modules

Download the Smart Life APP Smart Connection Meter "BW600"

01

- Smart life APP Tuya APP
- Can be downloaded from the mobile app market (Google Play Market, Apple APP Store)

Add "ATorch as WiFi Connected Electricity Meter "(BW600)"

02

After being powered on, the device's red light flashes and remains on to enter the distribution network mode; Waiting for WiFi connection.

Boot interface

Power on distribution network waiting the interface

Power on distribution network to enter the interface

Paired successfully WiFi interface

*For voltmeters with WiFi modules

Smart Life APP Pair Operation Steps

03

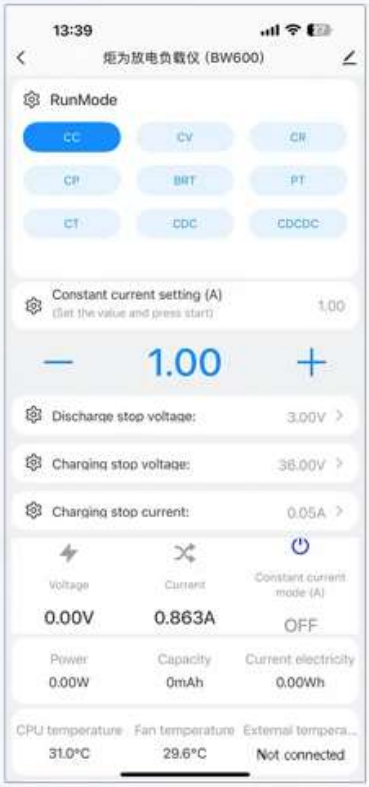
Attention: Be sure to turn on Bluetooth and location permissions when adding devices

Open the Smart Life app and it will automatically pop up
To add a device, click Add to proceed

Select device working WiFi and enter Click to manually enter the password

Enter the WiFi name and Password, and then Click Next to continue

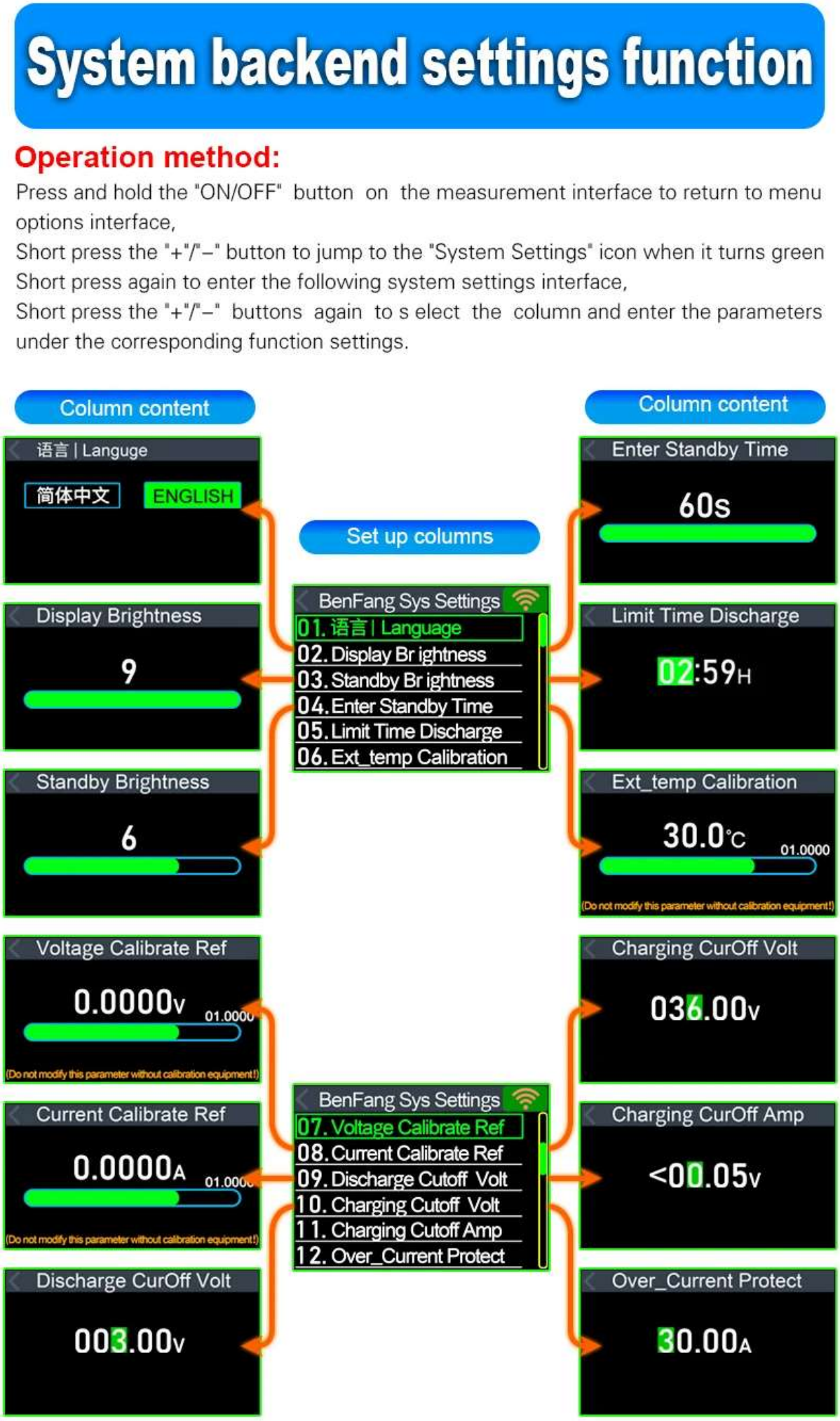
After pairing is completed, Click on Next

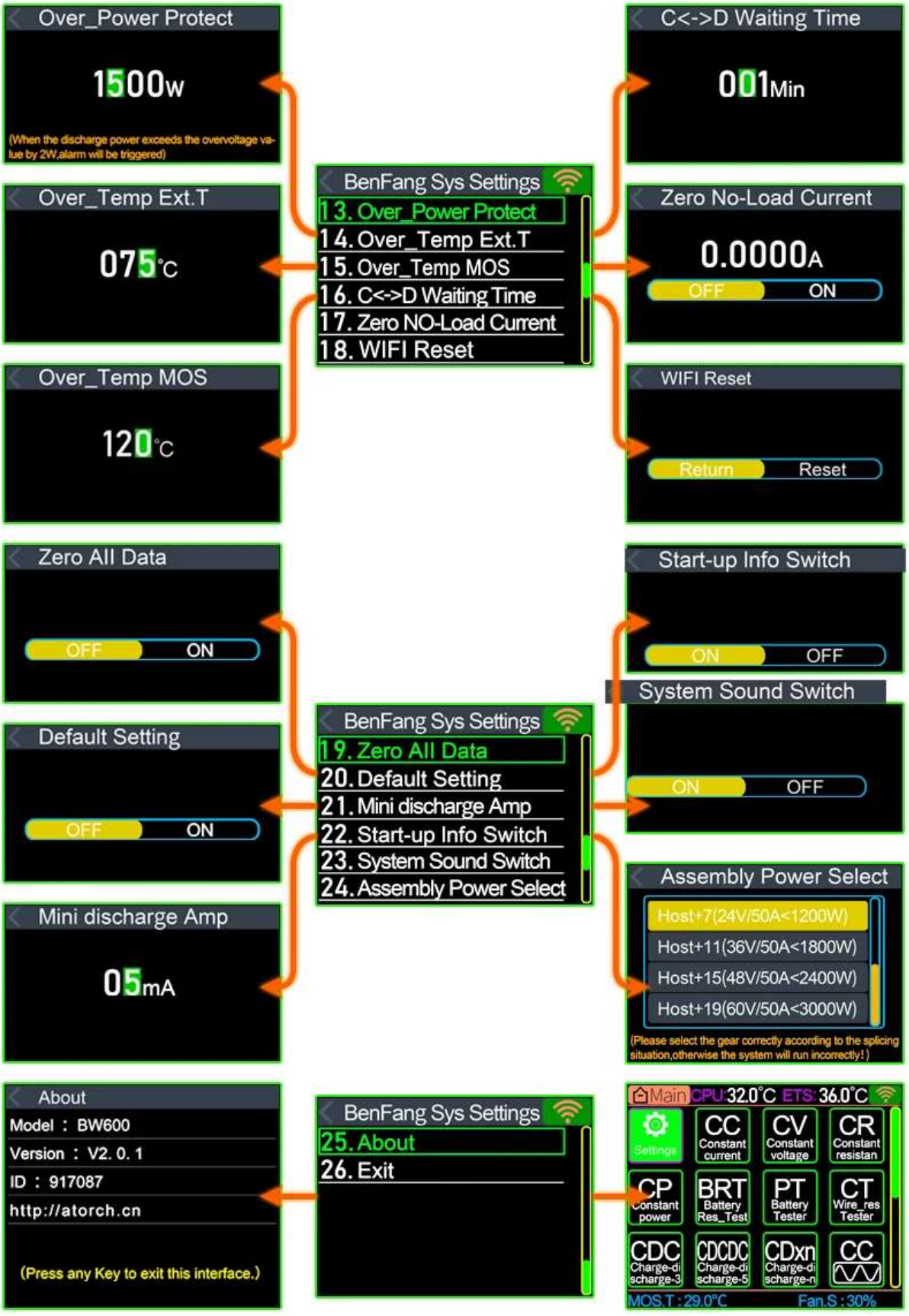


After a successful WiFi connection, multiple values can be set for remote control

After a successful connection, open the app and automatically connect via WiFi

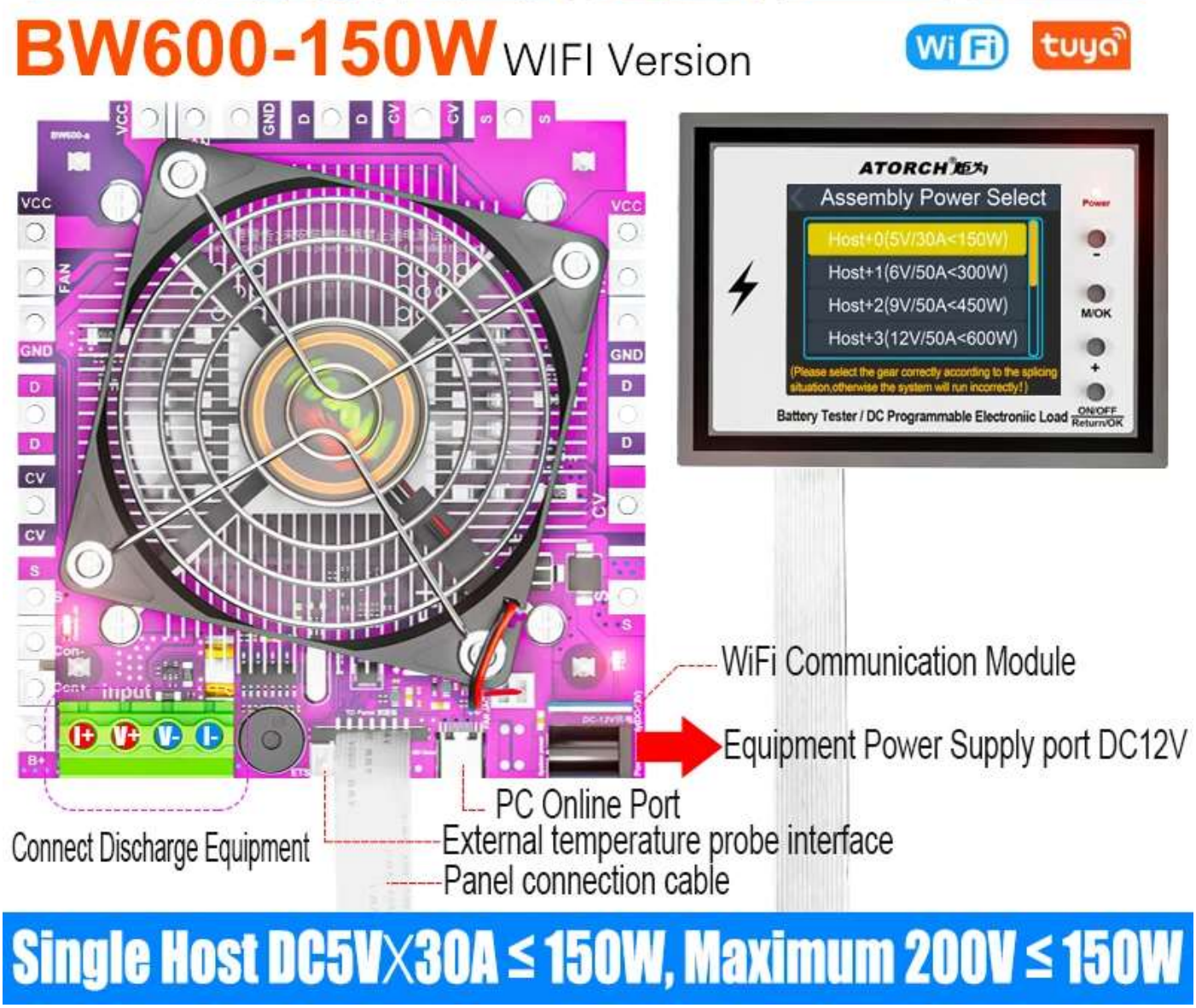
17. System backend settings function




Over_Power Protect
1500w
(When the discharge power exceeds the overvoltage value by 2W,alarm will be triggered)
Over_Temp Ext.T
075℃
Over_Temp MOS
120℃
BenFang Sys Settings
13. Over_Power Protect
14. Over_Temp Ext.T
15. Over_Temp MOS
16. C<->D Waiting Time
17. Zero NO-Load Current
18. WIFI Reset
C<->D Waiting Time
001Min
Zero No-Load Current
0.0000A
OFF
ON
WIFI Reset
Return
Reset
Zero All Data
OFF
ON
Default Setting
OFF
ON
Mini discharge Amp
05mA
BenFang Sys Settings
19. Zero All Data
20. Default Setting
21. Mini discharge Amp
22. Start-up Info Switch
23. System Sound Switch
24. Assembly Power Select
Start-up Info Switch
ON
OFF
System Sound Switch
ON
OFF
Assembly Power Select
Host+7(24V/50A<1200W)
Host+11(36V/50A<1800W)
Host+15(48V/50A<2400W)
Host+19(60V/50A<3000W)
(Please select the gear correctly according to the splicing situation,otherwise the system will run incorrectly!)
About
Model : BW600
Version : V2.0.1
ID : 917087
http://atorch.cn
(Press any Key to exit this interface.)
BenFang Sys Settings
25. About
26. Exit
Main
CPU:32.0℃
ETS:36.0℃
Settings
CC
Constant current
CV
Constant voltage
CR
Constant resistan
CP
Constant power
BRT
Battery Res_Test
PT
Battery Tester
CT
Wire_res Tester
CDC
Charge-discharge-3
CDCDC
Charge-discharge-5
CDxn
Charge-discharge-n
CC
MOS.T:29.0℃
Fan.S:30%

18. 150W Product list

1.BW600-150W Color Display Bluetooth Digital Control Curve Version Load Tesr x1
2.DC12V power supply x1
3.PC computer online cable x1
4.Temperature probe x1
5.Red and black single line crocodile clip line x1
6.US to EU adapter x1



Single Host DC5V×30A ≤ 150W, Maximum 200V ≤ 150W

19. 300W product list

1.BW600-150W Host Color Display Bluetooth Digital Control Curve Version Load Tesr x1
2.DC12V power supply x1
3.Male and female screws X10pcs /sets X1
4.Temperature probe x1
5.Red and black single line crocodile clip line x1
6.US to EU adapter x1
7.150W fan accessories X1
8.PC computer online cable x1

20.450W product list

1.BW600-150W Host Color Display Bluetooth Digital Control Curve Version Load Tesr x1
2.DC12V power supply x1
3.Male and female screws X10pcs /sets X2
4.Temperature probe x1
5.Red and black single line crocodile clip line x1
6.US to EU adapter x1
7.150W fan accessories X2
8.PC computer online cable x1

21. 600W product list

1.BW600-150W Host Color Display Bluetooth Digital Control Curve Version Load Tesr x1
2.DC12V power supply x1
3.Male and female screws X10pcs /sets X3
4.Temperature probe x1
5.Red and black single line crocodile clip line x1
6.US to EU adapter x1
7.150W fan accessories X3
8.PC computer online cable x1