DL24MP-150W-DK User Manual

2.4-inch HD color screen Bluetooth digital transmission curve version

battery capacity / DC power multi-function tester

Input voltage: 2-200V
Input current: 3MA-23±2A
Power: 150W

DL24MP-150W-DK
Electronic discharge load meter

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

Product parameters:

Test voltage:2~200V

Working current:3MA~23A±2A

DL24 Discharge power: voltage * current < 150 W

(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

2.Product application:

1.1 Battery capacity test

The 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):

2.1 Power supply: DC 12V/1A

2.2 Voltage range: 0-200.00V, step 0.01V

2.3 Current range: 0.010-20.00A, step 0.01A (the current is automatically adjusted according to the power limit)

2.4 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.

2.5 Discharge power:150W

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

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

2.8 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.Function interface introduction:

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

startup screen

Complete test report

ComPlete!
Cut off voltage:<002.0v
Ene:073.5 wh
Cap:005840 mAh
Timming: 002:20:45

Constant Current (CC)

I S=02.0000A   CC
Vol:0011.73v   Time discharge
Cur:0002.00A   01:58
Pwr:0023.45w   Cutoff voltage
Res:0005.86Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   ON

Constant Power (CP)

P s=0150.0w   CP
Vol:0029.41v   Time discharge
Cur:0005.09A   01:58
Pwr:0149.62w   Cutoff voltage
Res:0005.78Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   ON

Constant Voltage (CV)

Vs=029.0v   CV
Vol:00029.0v   Time discharge
Cur:0003.97A   01:58
Pwr:0114.98w   Cutoff voltage
Res:0007.30Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   ON

Constant Resistance (CR)

Rs=0030.00R   CR
Vol:0029.87v   Time discharge
Cur:000.995A   01:58
Pwr:0029.73w   Cutoff voltage
Res:0030.00Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   ON

BRT test mode

BRT
Vol:0012.44v   Time discharge
Cur:0000.00A   01:58
Pwr:0000.00w   Cutoff voltage
Res:9999.99Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   OFF

(12.48 V)DC load step-down type battery internal resistance testing
Sm1 Battery Big Battery   Start
open voltage   Load voltage   Load current   Itenal resistance
(12.48V   -   12.45V) /   0.1 A   =   312 mR
(12.48V   -   12.44V) /   0.2 A   =   259 mR
(12.48V   -   12.41V) /   0.3 A   =   229 mR
(12.48V   -   12.38V) /   0.4 A   =   262 mR
(12.48V   -   12.25V) /   0.8 A   =   292 mR
(12.48V   -   12.10V) /   1.2 A   =   321 mR
(12.48V   -   11.87V) /   1.8 A   =   340 mR
Dc load step-down type battery internal resistance:287 mR
Analog integrated average battery internal resistance:106 mR

PT test mode

PT
Vol:0012.44v   Time discharge
Cur:0000.00A   01:58
Pwr:0000.00w   Cutoff voltage
Res:9999.99Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   OFF

12.51V   DC power / Charger energy detector   Start
voltage down   Real-time voltage   Load current   output power
(0.10   V   : 12.38 V)   X 0.4 A   =   00484 W
(0.30   V   : 12.18 V)   X 1.0 A   =   01152 W
(0.68   V   : 11.80 V)   X 2.0 A   =   02361 W
(1.73   V   : 10.75 V)   X 0.4 A   =   ERR W

Rated output current :12.3A Rated output power:120.89W
Max output current :12.6A Max output power :123.61W
Remark:This result is an absolute value, but an absolute value.

CT test mode

CT
Vol:0012.44v   Time discharge
Cur:0000.00A   01:58
Pwr:0000.00w   Cutoff voltage
Res:9999.99Ω   <002.0v
Ene:52.5209 Wh   In.Temp:026.9°C
Cap:004062 mAh   Board.T:027.5°C
Timing:021:39:39ExTemp:026.6°C   OFF

Wire resistance and current performance detector Start
(12.41 V)
Voltage step   Empty voltage   Load Voltage   Load current   Resistance
1) 0.1V :   (12.33 V - 12.28V) /   0.40 A   = 209mR
2) 0.2V :   (12.33 V - 12.18V) /   0.69 A   = 286mR
3) 0.3V :   (12.33 V - 12.08V) /   0.98 A   = 304mR
4) 0.4V :   (12.33 V - 11.98V) /   1.27 A   = 313mR
5) 0.5V :   (12.33 V - 11.88V) /   1.55 A   = 318mR
6) 0.6V :   (12.33 V - 11.78V) /   1.85 A   = 323mR
7) 0.7V :   (12.33 V - 11.87V) /   1.45 A   = ER RmR
Cabel average resistance value assessment: ≈ 292mR
Cabel current value when 0.3V voltage drop: ≈ 0.99A
Cabel current value when 0.5V voltage drop: ≈ 1.56A
Cabel current value when 0.7V voltage drop: ≈ 1.03A

--Key Button operate Description--

1)Short press the "ON/OFF" button to start and stop, short press the upper left corner of the "M" button to move the cursor and then adjust the corresponding value with the "+/- " button

2) Long press the "+/- " button at the same time to clear all accumulated data such as the current capacity, battery time, etc. (Long press the "ON/OFF" button to enter the background, also can be cleared in the background menu)

3) Long press the "M" button and the function mode starts to flash, then short press the "+/-" button to select the function (CC/CV/CR/CP/BRT/PT)

4) In OFF mode, long press the "ON/OFF" button to enter the background interface, then short press the "M" button to switch the setting column, and the "+/-" button to adjust the number

5) Short press the "+/-" button in the constant current accuracy column of the background setting interface to switch the constant current accuracy (10mA Or 1mA)

6) When the system is not supplying power, press and hold the "M" button and do not let go. Then power on again. Enter the splicing power option and jump to the actual power value before let go

7) Long press the "M" button the function mode starts to flash, short press the "M" button again to enter the setting adjustment value of the time-limited discharge and Cut off voltage column value

--Panel Main buttons and description--

Ⅰ:Bluetooth indicator(Flashing waiting for Bluetooth connection,Long light indicates successful connection)

Ⅱ:"+" Valve Increase Button(Short press the button to increase the number, long press the button to increase continuously,When the mode is flashing, short press the button to cycle backwards)

Ⅲ:"M" Set Button(Long press "M" key to start function mode, press "+" or "-" key to switch CC/CV/CP/CR/BRT/PT mode, long press "M" key to start function mode, short press "M" again Key to switch between Time Discharge and Cut off voltage. Press the "+" or "-" key to set the value, the default is OFF)

Ⅳ:"-" Value Reduce Button(Short press the button to decrease the number and long press the button to decrease continuously. When the mode is flashing, short press to cycle forward)

Ⅴ:"ON/OFF" Run ON/OFF Button(Short press the button, it is ON or OFF

Long press the button to enter the product background settings, and use the "M" button and "+" or "-" button to set the parameters)

--Host Parameters and description--
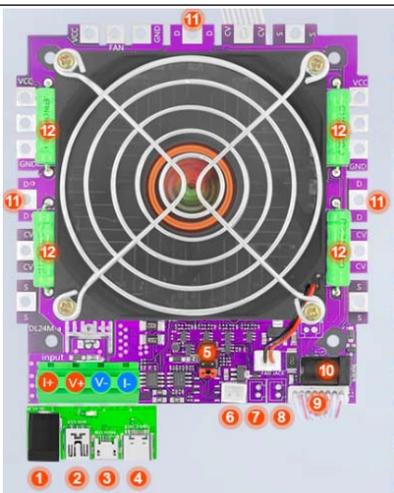
1.Test various DC power inputs

2.MiNi USB detection port inputs

3.Micro USB detection port inputs

4.Type-c USB detection port inputs

5.DIY assembly Different power reserve jumper positions (150W/300W/450W/600W)

6.External NTC temperature probe

7.Straight needle seat XH2.54-2P port

8.Straight needle seat XH2.542P port

9.8p cable connected to the panel

10.DC5.5 system power supply

(Must supply DC12V 1A2A/3A/5A)

| | 11.Power increase expansion interface |
| | 12.Resistor*4 |

4.Two kinds of 1mA or 10mA current test gear

Operation method: Long press the "ON/OFF" Button to enter the background, press the "M" Button,
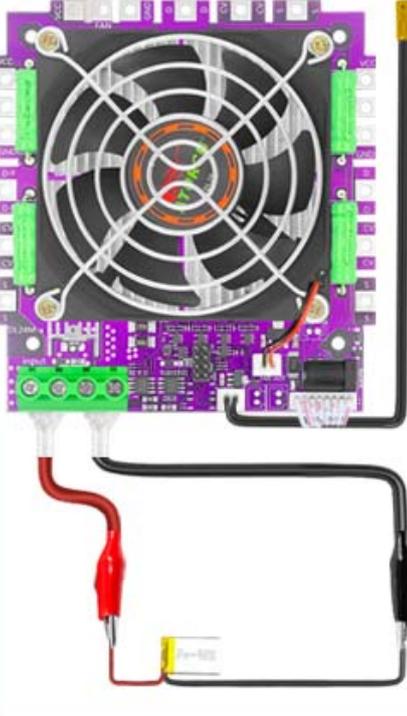
select 05 item: Precision of current: O10mA ●1mA, set by "+" or "-"

(Tips: Start the test with a minimum of 3mA)

Measurement of small capacity batteries
Increase the thickness and automatic current constant current gear settings
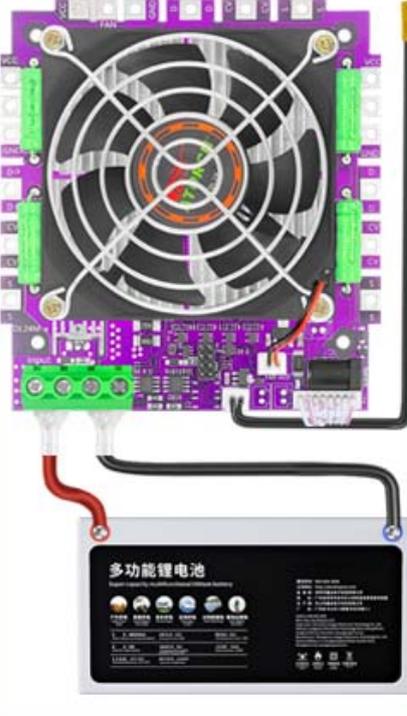
| 1mA measurement	10mA measurement	Automatic gear measurement
OAuto O10mA ●1mA(<2A)	●Auto O10mA O1mA(<2A)	OAuto ●10mA O1mA(<2A)
Test the capacity of <2A small batteries Simple, convenient and more accurate	This gear is used to measure large-capacity batteries The current range can measure the corresponding current value of the host	When the measurement is greater than2A, it will automatically jump to the 10mA block When the measurement is less than 2A, it automatically jumps to 1mA block

5.Two test wiring methods

Electronic load wiring diagram
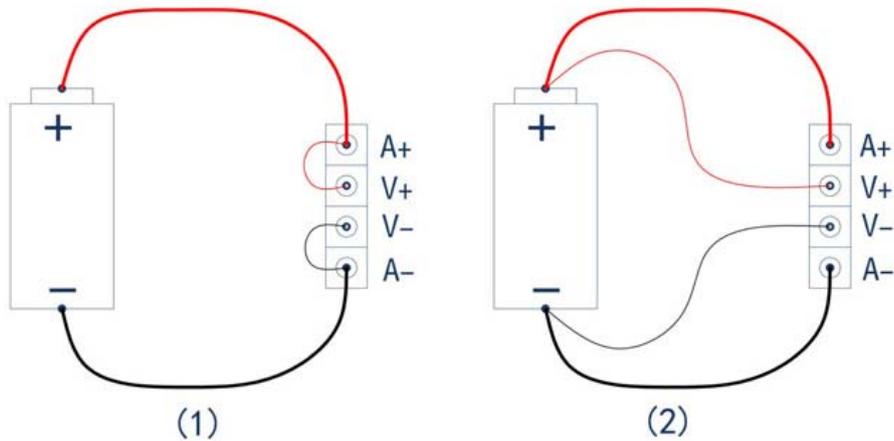
(1) **Two-wire wiring method:** this method is relatively simple and convenient.
Note: It must be connected to the 2 terminals [A+] and [A-].

(2) **The four-wire wiring method:** the voltage measurement is not affected
by the voltage drop of the wire, so that the voltage measurement.
The quantity is more accurate, and it is recommended that buyers with a
certain circuit basis use this method!

6.Test all kinds of batteries(The following description is the shared part of DL24MP. Please focus on physical objects)

	Test all kinds of batteries

7.Test all kinds of data cables/chargers

	Test/discharge/aging/get it all Play and test various USB data cables/chargers, first use a data cable Connect the corresponding interface of the load, connect as shown in the figure below, when the load is turned on in the constant current mode Adjust the current so that the voltage drop is 1V less than the no-load condition The current value at this time is the current value of the measured data line

8.Through testing various DC power adapters

	Play and measure the current, voltage, power and other parameters of various DC power adapters Use the DC power supply to connect the DC independent power supply port of the load meter, and then use the "Settings" button to connect as shown in the figure below. Precisely adjust the current to test the voltage and rated current of the power supply The DC power supply can also be aged for a long time, with strong functions, simple operation, convenient and quick testing

9.Intelligent one-key full automatic detection of DC power supply

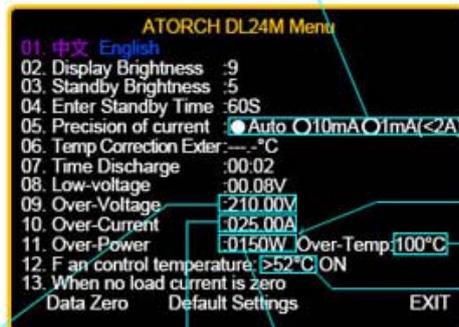|	PT mode of charger current power performance Press and hold the M button in the menu until the mode bar flashes, wait a while after pressing the ten-key PT mode Automatically enter the DC power supply/charger auto-detector mode, then plug in your tested power supply and Charger, then short press the start button, it will automatically start to run for a period of time and then report Displays 4 kinds of important numerical results, making complicated tests instantly simplified, accurate, and easy to use.

10.Test all kinds of power bank capacity

	Test all kinds of power bank capacity

Product background settings

Press and hold the ON/OFF button for about 3 seconds to enter the background settings

| S=01.9990ₐ CC |
| Vol:0011.73ᵥ Time discharge 01:58 |

The test current accuracy gear, when it is < 2A, the test current accuracy is: 0.000A, when it is > 2A, the test current accuracy is: 0.00A, it will be automatically adjusted, the default is Auto.

```
150W  25A
300W  30A
450W  35A
600W  40A
1200W 40A
1800W 40A
2400W 40A
3000W 40A

Tip: Please keep the same with the
hardware version!
```

ATORCH DL24M Menu
```
01. 中文  English
02. Display Brightness   :9
03. Standby Brightness   :5
04. Enter Standby Time  :60S
05. Precision of current  :⊙Auto ○10mA ○1mA(<2A)
06. Temp Correction Exter:---.-°C
07. Time Discharge       :00:02
08. Low-voltage          :00.08V
09. Over-Voltage         :210.00V
10. Over-Current         :025.00A
11. Over-Power           :0150W  Over-Temp:100°C
12. F an control temperature: >52°C ON
13. When no load current is zero
Data Zero    Default Settings            EXIT
```

Click the "+" button twice to enter the power and ampere selection, press the "+" or "-" button to select different power and amperage, press "M" button to confirm and return to the background

Over temperature alarm adjustment: 040°C-200°C

Default fan startup temperature: >52°C, can be adjusted from 040°C to 80°C, when you set it to 40°C, the fan starts, and -10°C turns off (that is, when the fan is turned off at 30°C)

>200.0ᵥ OVP!

>025.0ₐ OCP!

>150.0ᵥ OPP!

>052.0°C OTP!

Overvoltage alarm | **Overcurrent alarm** | **Overpower alarm** | **Over temperature alarm**

13.Compatible with the current mainstream four online APPS

(Android/IOS/PC system) Online Testing

1) Apple Mobile APP:

Please search for **E_test** in the **Apple store** to download and install, then click the Bluetooth APP icon to open the software, and then click the Bluetooth icon above the software to enter the selection DL24M-BLE to connect, you can achieve mobile phone remote wireless remote control settings and Measurement function, the discharge status can be viewed at any time on the mobile phone, various data cleaning is visible, the voltage and current power curve of the discharge, etc.

2) Android phone APP(Only support Android 5.0 and above):

Scan the QR code on the back of the host to download the corresponding APP software or Android APP: search **E-test** at Google play to down load . After the installation is complete, open the software and click the Bluetooth icon to enter the direct selection of DL24M-BLE to successfully use it online. (No need for Bluetooth pairing, the software Bluetooth icon directly selects DL24M-BLE. can)

Android APP Download Address:http://www.mediafire.com/folder/31bc15uhq8odb/E-meter
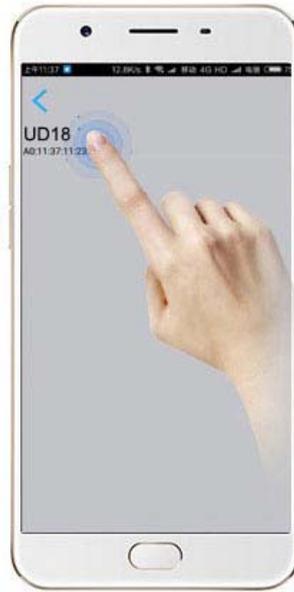
--App Connection Method--

Please click this "E-test"APP to open the software

①

When the USB tester is powered on, the Bluetooth indicator is flashing, turn on the E-test App softare icon, and allow Bluetooth to turn on.

②

Click the Bluetooth icon in the upper left corner of the APP to pop up the menu for selecting the USB tester model,**DL24-BLE**, return to the main APP interface.

③

During the measurement, the upper right corner shows the model currently online.**DL24-BLE** The bluetooth icon in the upper left corner turns blue, indicating that the measurement is in online communication.

If you find that you have turned on Bluetooth and the display list is blank, please open your GPS location or E-test's location information and storage information permissions, log out again, and then try to connect again!

If it appears blank and no list is displayed, please turn on GPS positioning in your phone settings

1 The Bluetooth signal list Not appears

2 Turn On GPS

3 The Bluetooth signal list appears

# How to find the Bluetooth symbol in E-Test APP

This operating instruction applies to all the company's Bluetooth products
(UD18/DT24/DL24/AT3010/DPT3010/T18... etc.)

Please open your phone, **Setting**>>find the **Apps**>>manage the **Permissions**>>**Location**>>find our **E-test app**>>find the **storage information** and **location information**>>open the permissions **allow**, you can find us bluetooth symbol In the E-test list.

⚠ 1 Please open your phone settings

Click settings
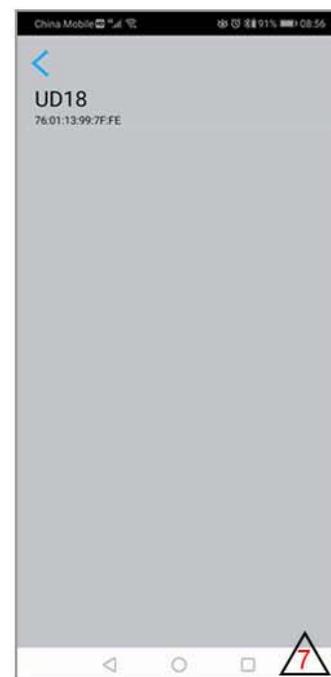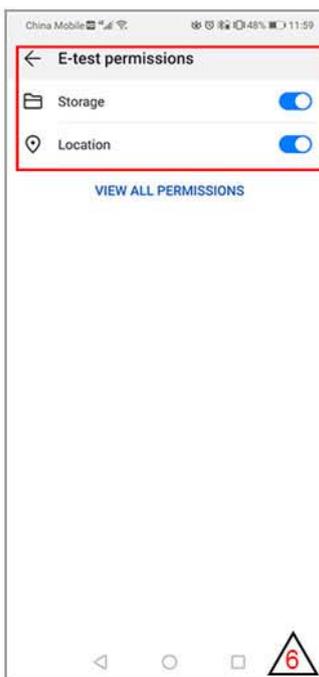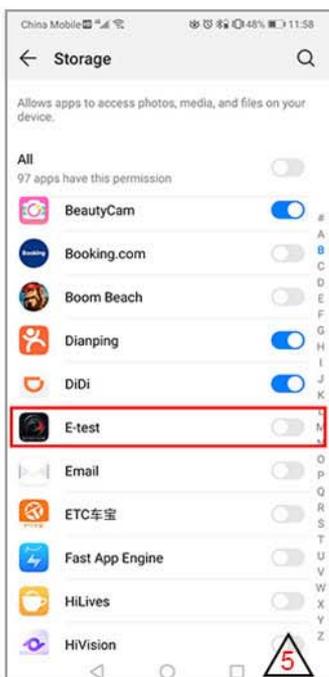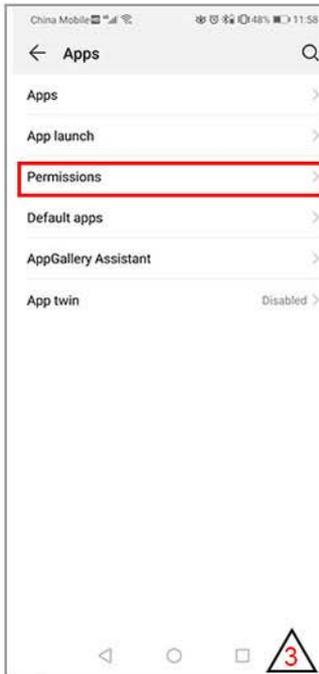
3) Computer Bluetooth wireless online APP:

First add the Bluetooth device to the serial port device of DL24M-SPP on the computer, then scan the QR code on the back of the host to download the corresponding APP software and store it. Open the software without installing and select the Bluetooth serial port model just added. You can successfully use online
https://www.mediafire.com/file/sxpzzzwdwvons9w/DL24_series_electronic_load_software_V1.1_version.zip/file

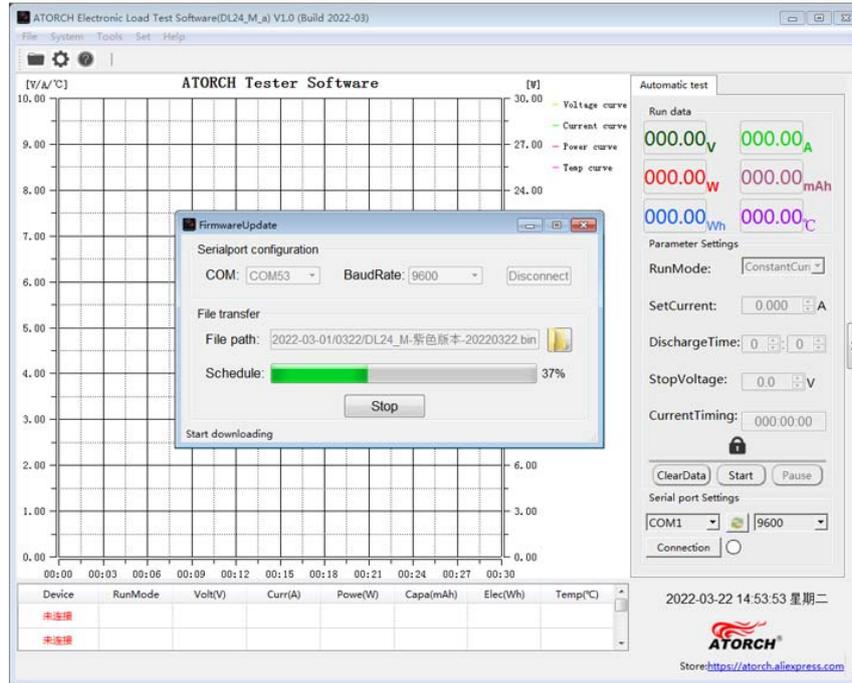New version of electronic load software
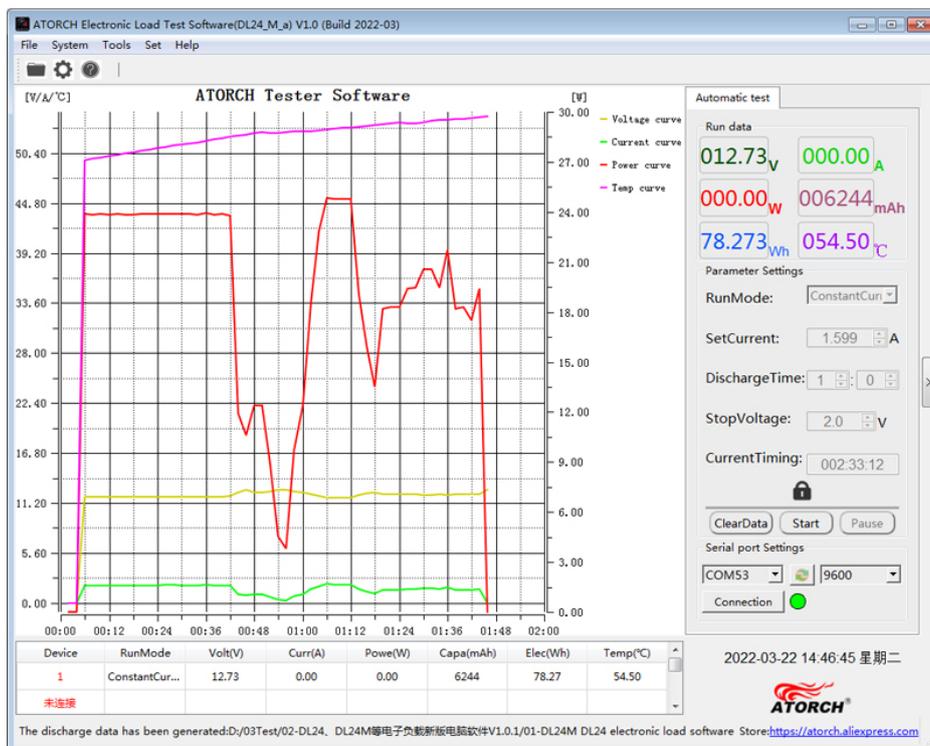
Background software can be set
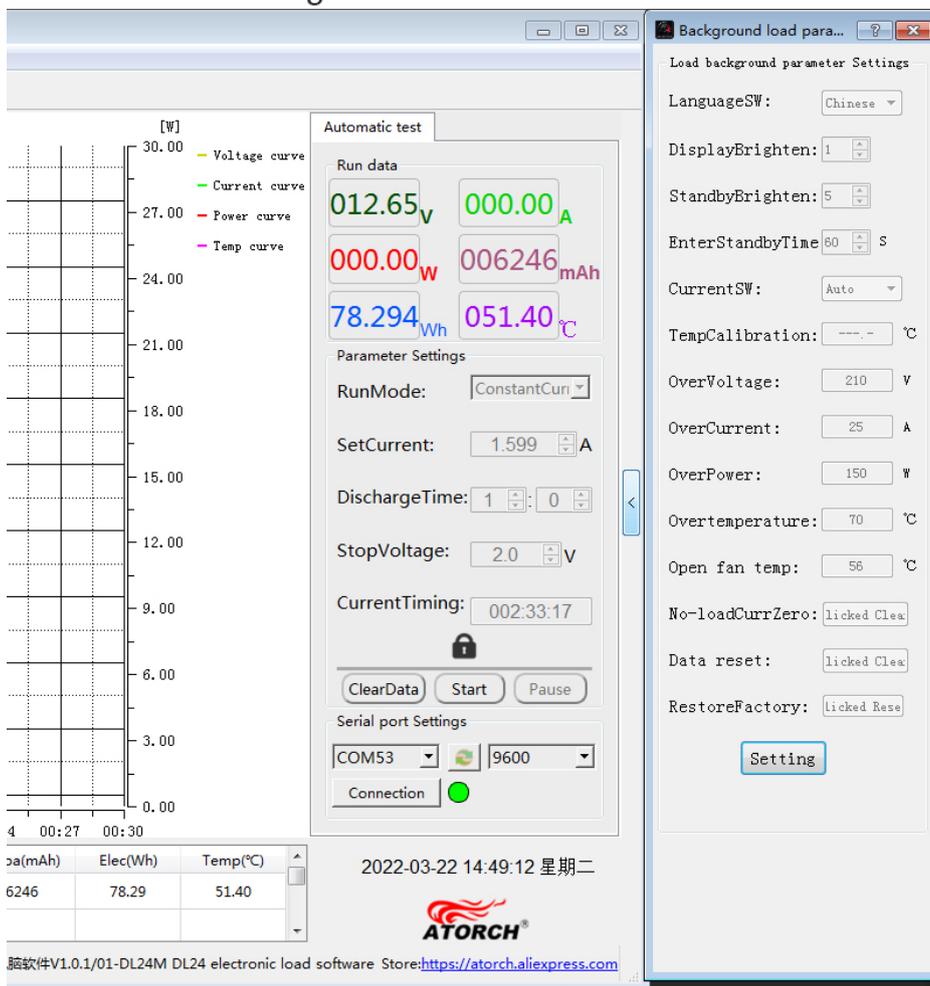
14.   Firmware upgrade

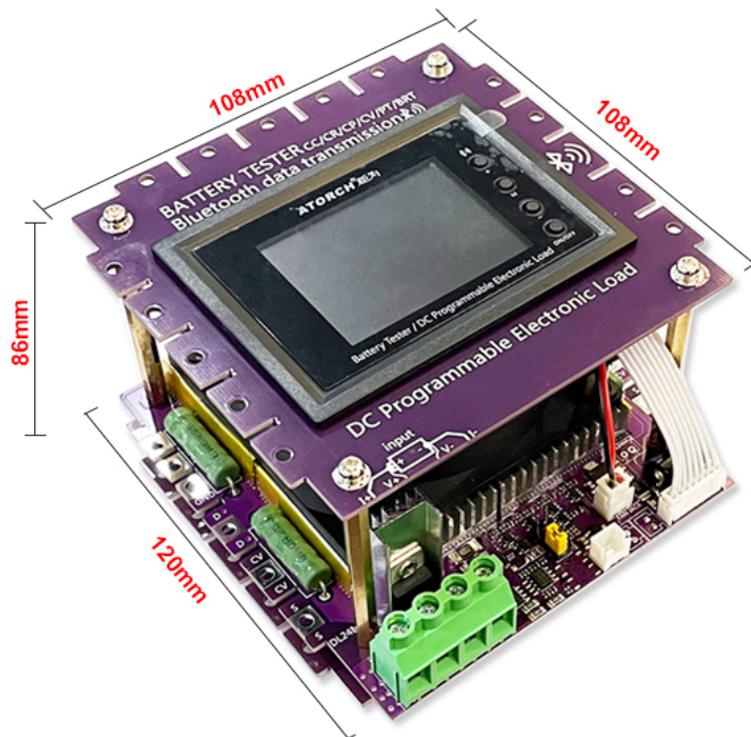## 15.   Product Size

Size above(length x width):106mmx106mm
Size below(length x width):106mmx118mm
High:85mm

IV.Product List

1.DL24MP-150W-DK Purple Color Display Bluetooth Digital Control Curve Version Load Tester x1

2.DC12V 1A power supply x1

3.Temperature probe x1

4.Red and black single line crocodile clip line x1

5.US to EU adapter x1