EB Tester Software

User Manual

V1.8.5

Release Date 2020-02-15

Contents

1. System requirements

✧ Processor main frequency>2G Hz

✧ RAM>1G, more RAM is suggested.

✧ Free disc space>1G

✧ Either Windows XP/Win7/Win8/Win10

✧ Computer monitor: 1024×768 or higher

2. Software installation

First install the tester software. Please double click this one to start installation.

eb_setup_v1.8.5_e...

Next install the USB port driver. Please double click this one to start installation.

PL2303_Prolific_D...

After the installation is completed, plug in USB cable and you can find corresponding port number in Device Manager in your computer. (Click on the Start button and then on Control Panel.

EB software can't identify any port number larger than COM10, please change the port number to smaller than 10 in Ports if it's larger than 10 in your computer system:

3. Quick start

(1) Connect the tester to your computer through a USB to TTL serial converter cable.

(2) Start EB software and select the corresponding port of TTL cable in Device Manager.
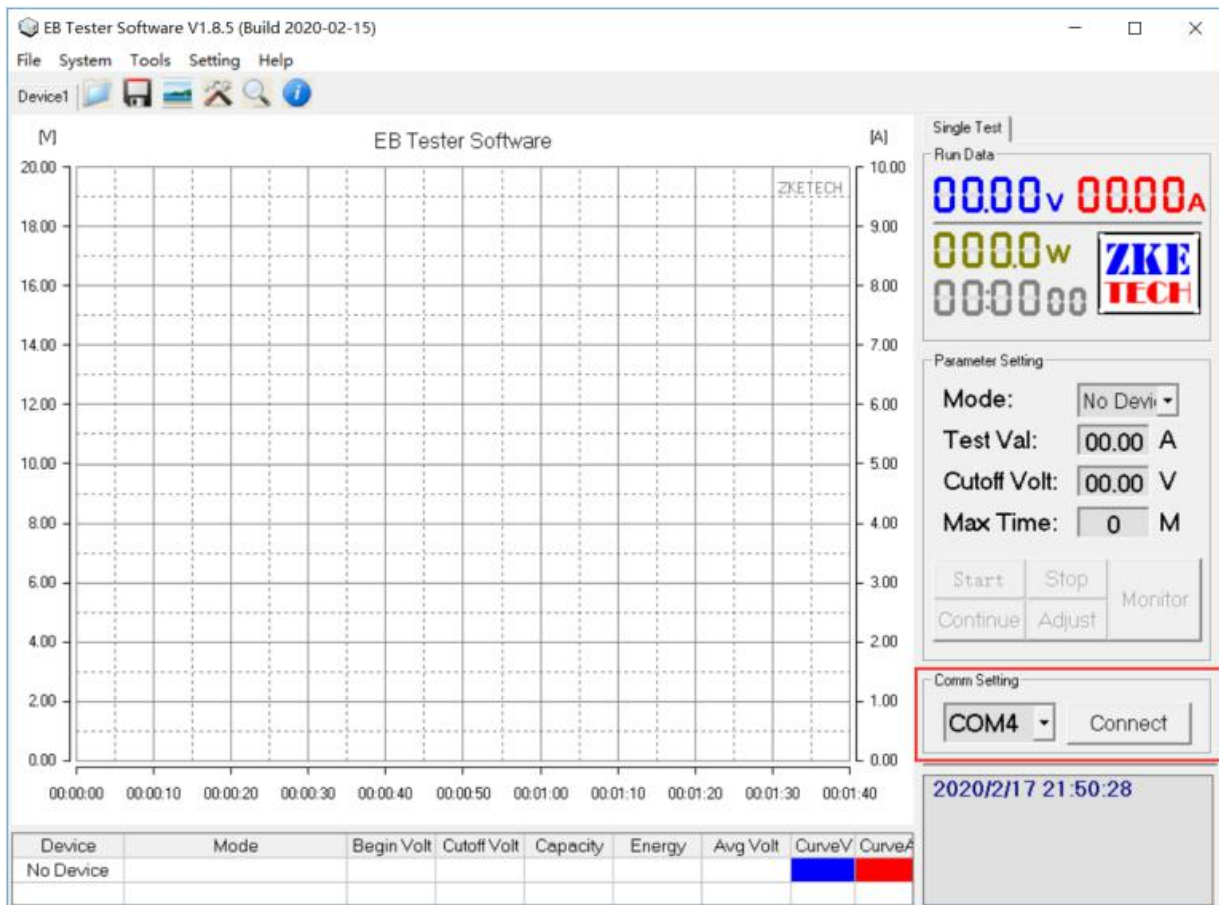
(3) Click on "Connect" button to build connection between the computer and the tester (the tester should stop operation and stay at test interface).

(4) When the connection completes successfully, you will find the same operational data in the software as that's shown on the tester. Device model changes from "No Device" to the tester model.
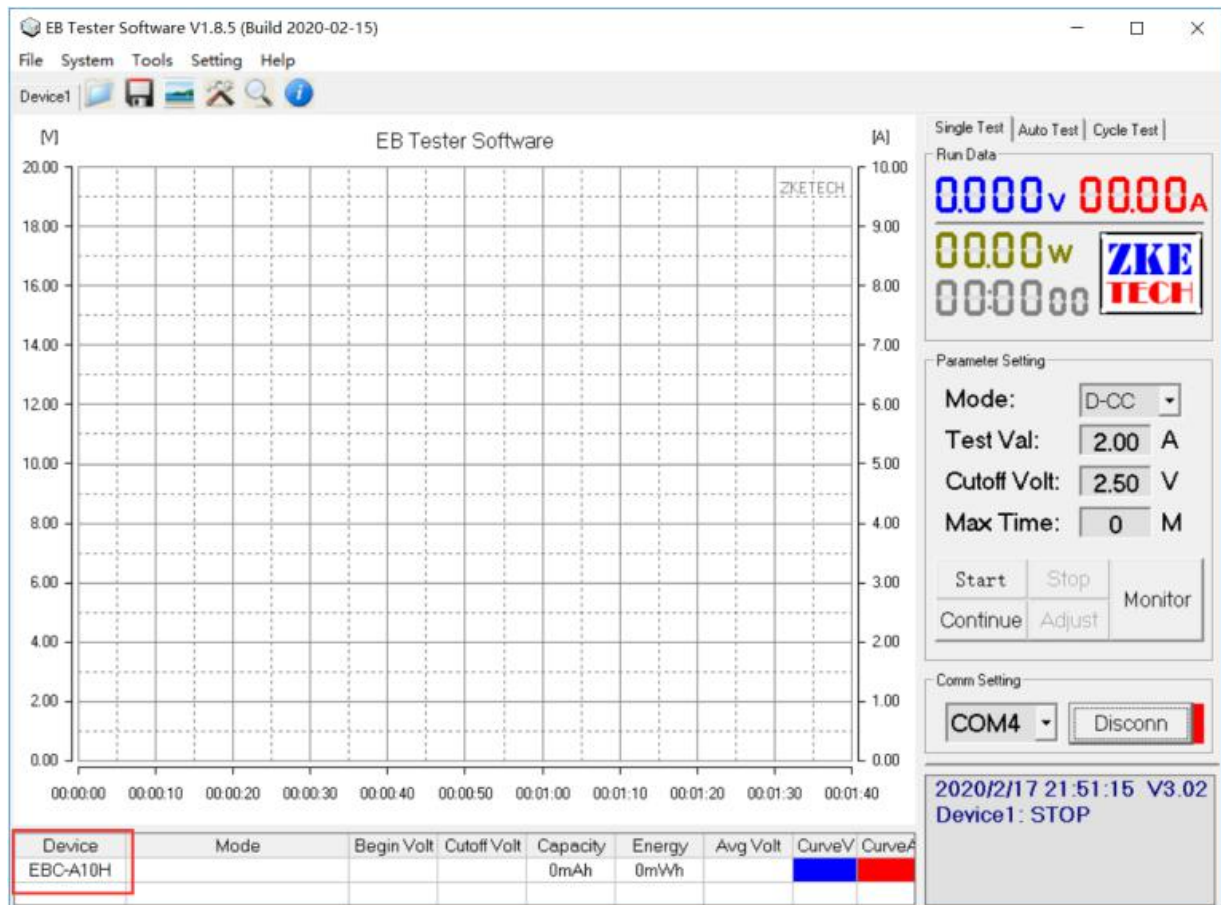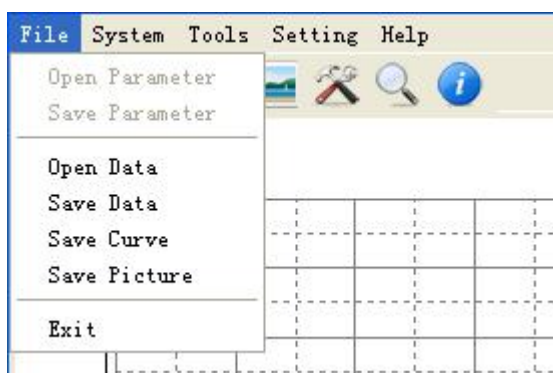
(5) Set up parameters in Parameter Setting and click on "Start" button to start testing.

(6) Click on "Curve V" and "Curve A" to change the curve colors.

4. Software menu

4.1 File menu

✧ Open Parameter —— Open parameters saved for the last single test.
✧ Save Parameter —— Save parameters for the current single test.
✧ Open Data —— Open the last saved curve data.
✧ Save Data —— Save the current curve data.
✧ Save Curve —— Save current curve image.

✧ Save Image —— Save current curve and data images.
✧ Exit —— Exit the software.

4.2 System menu
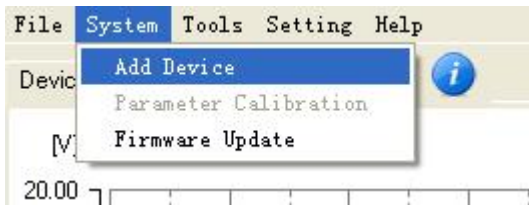
✧ Parameter Calibration —— Open parameter calibration interface.
✧ Firmware Update —— Open firmware upgrading interface.
✧ Add Device —— Add more testers. The software supports up to 10 devices.

4.3 Tool menu

✧ Clear Curve —— Remove the current curve.
✧ Find Ports —— Search for valid serial ports in your computer (including ports connected by USB to TTL cable and others).

4.4 Setting menu
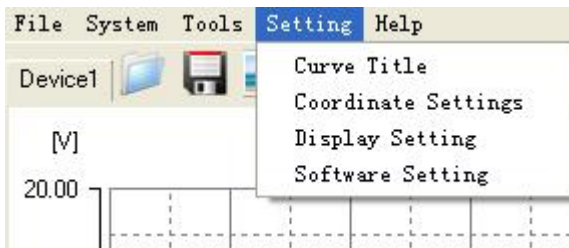
✧ Curve Title —— Edit current curve title.
✧ Coordinate Setting —— Open the coordinate setting interface.
✧ Display Setting —— Open the display setting interface.
✧ Software Setting —— Open the software setting interface.

4.5 Help menu

✧ Help —— Open help page.
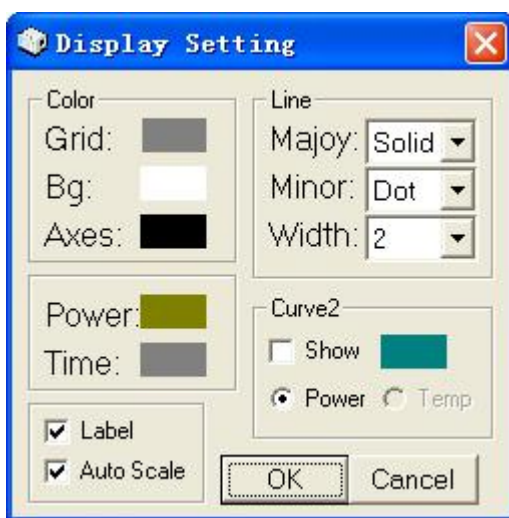✧ About —— Open software information page.

4.6 Toolbar

From left, you will find "Open Data", "Save Data", "Save Image", "Display Setting", "Find Ports" and "About Software".

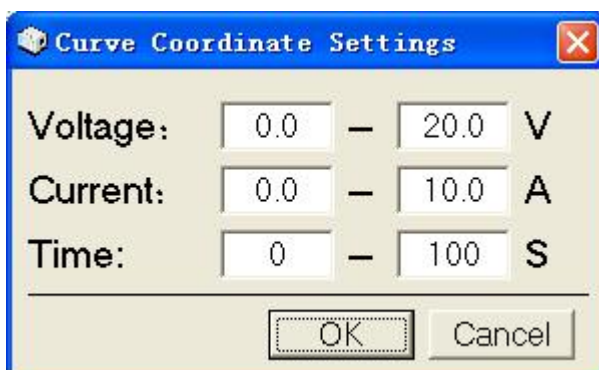# 5. Software functions

5.1 Display Setting

✧ It allows you to select your favorite color and line for the curve display area.
✧ Select "Curve Label" to show curve label right to the curves.
✧ Select "Auto Coordinate" to automatically adjust the range of coordinate axes.

5.2 Coordinate Setting

Set the range of coordinate axes in the curve area. It doesn't work when "Auto Coordinate" is selected.

5.3 Software Setting
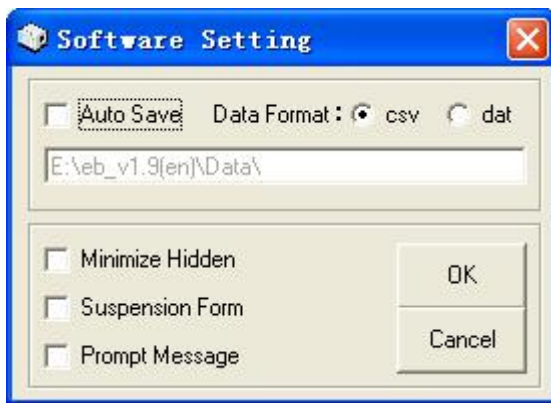
✧ Auto Saves ── Automatically saved data after testing is completed.
✧ Prompt Message ── Prompt message after testing is completed.

5.4 Curve Review

(1) Click on "Open Data" menu, and on the pop-up menu you can select "Time" on the X axis or "Capacity" on the X axis.
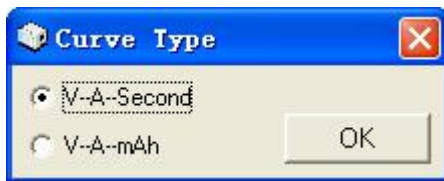
(2) The curve interface will pop up when you select the curve type.
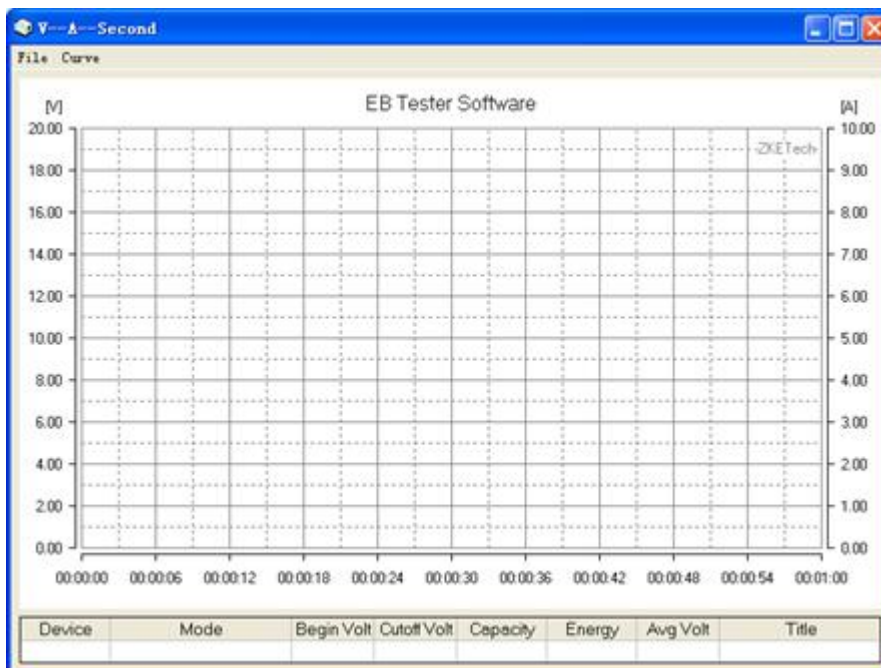
(3) Click on "File" and it shows all curve files saved on your computer. Select the file you want to open.
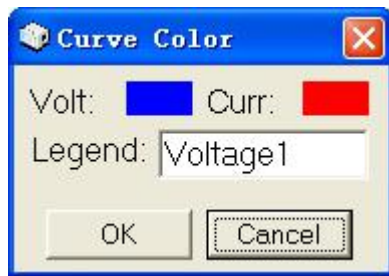
Click on "Curve" menu and you can change the selected curve's title and its display settings.

On the pop-up "Curve Color" menu, you can click on "Voltage" or "Current" to change curve colors and click on "Label" to change curve labels.

(4) Press left mouse button to zoom in at the curve display area.
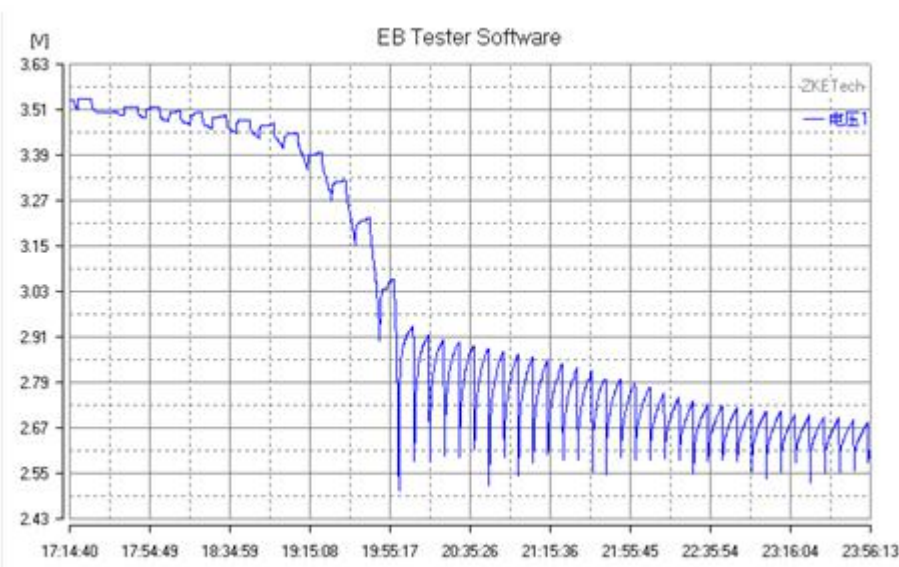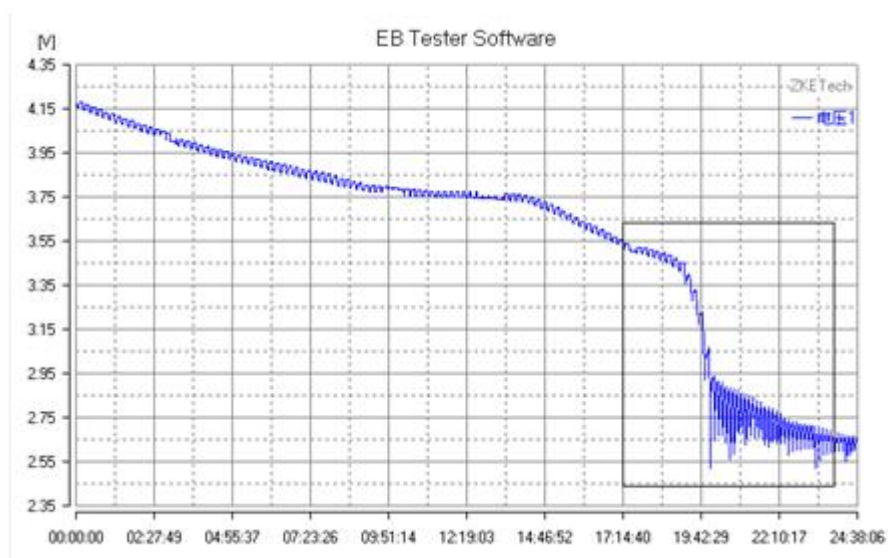
Click on left mouse again to go back to the original curve display.

(5) Open more than one file to get curve superposition, or overlapping of curves.
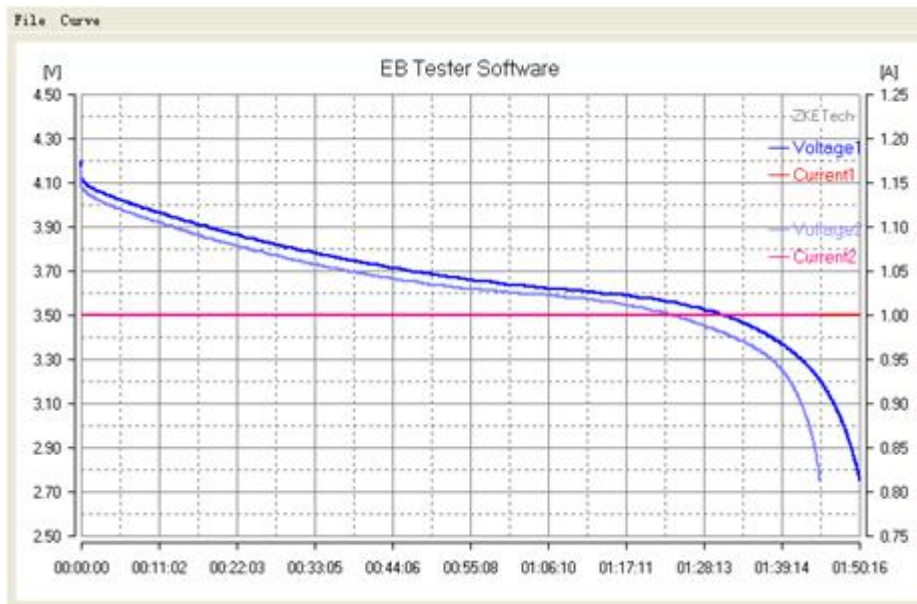
(6) Edit curve title and display settings on the "Curve" menu.

5.5 Single Testing
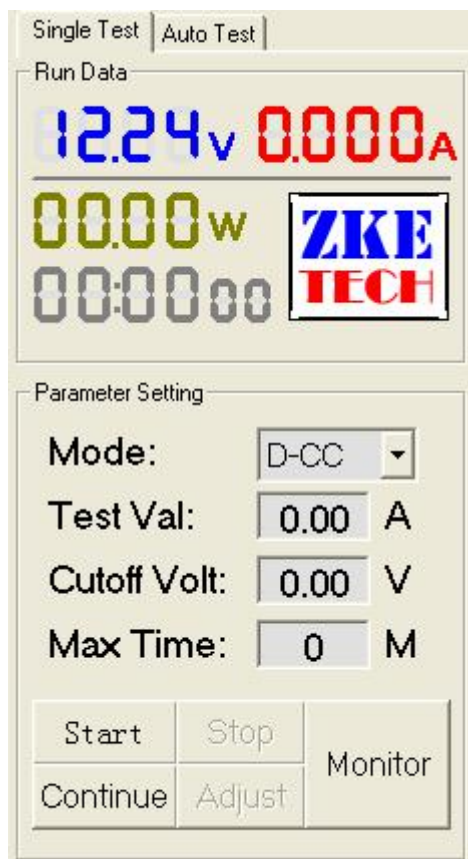
✧ Mode: Select the testing mode that you want.
✧ Test Val: Current in current mode. (It shows power in the mode of Constant Power)
✧ Cut-off Voltage: Testing stops as soon as voltage reaches below the set Cut-off Voltage. (The Cut-off Voltage is set constant voltage in the mode of CV).

✧ Run Time: The maximum testing period. Testing stops as soon as it lasts longer than it's set. There's no limitation when it's set to be 0.

✧ Start: Start current testing.

✧ Stop: Stop current testing.

✧ Continue: Continue last testing (Time, capacity and energy will accumulate).

✧ Adjust: It's valid in the mode of CC. It allows you to change value during discharging (Set the value and click on the "Adjust" button).

✧ Monitoring: It shows current and voltage curves when it's terminated and shows automatically during tests.

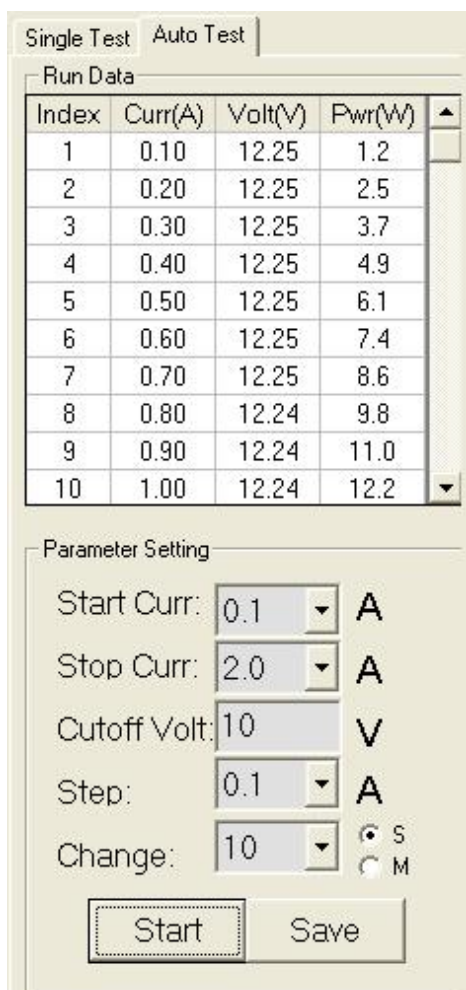✧ It allows you to set up two channels separately for the 2-Channel Testers.

5.6 Auto Testing (partial models without this function)

It automatically tests the voltage and power of power suppliers with different currents. It helps to analyze the maximum output current, power points and voltage changes under different currents.

(1) Set up Start Current and Cut-off Current

(2) Set up Cut-off Voltage

(3) Set up step gap and switch intervals

(4) Click on "Start" button, and the tester starts to perform discharging from the set start current to cut-off current on the bases of set step gap. The discharging stops whenever testing voltage is lower than the set cut-off voltage.

EB Tester Software
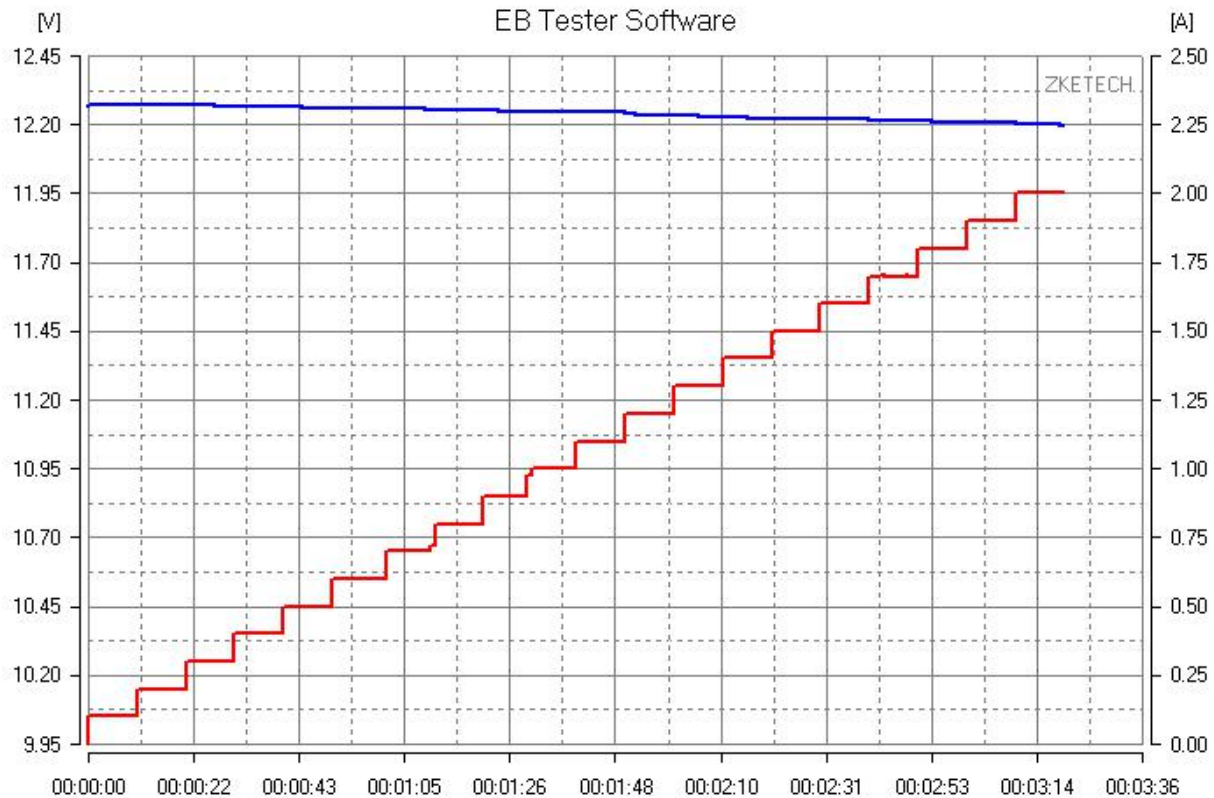
5.7 Cycling Testing (partial models without this function)

Run Data

Step	Mode	Capacity	Energy
1-1	D-CC	2.357	8.500
1-2	Wait	0	0
1-3	C-CV	2.389	9.558
1-4	Wait	0	0
2-1	D-CC	2.386	8.616
2-2	Wait	0	0
2-3	C-CV	2.384	9.542
2-4	Wait	0	0

Parameter Setting

Step	Mode	Set1	Set2	Cutoff
1	D-CC	2.600	2.80	0
2	Wait	0.00	0.00	5
3	C-CV	1.300	4.20	0.080
4	Wait	0.00	0.00	5
5	Cycle	0.00	0.00	2
6				

Open   Save

Setting   Clear   Start

It supports cycling tests, up to five steps and 999 cycles.

(1) Run Data shows testing results in each step.

(2) Parameter Setting shows testing processes in the current testing.

(3) Click on the "Setting" button and you can open Parameter Setting interface for cycling tests.
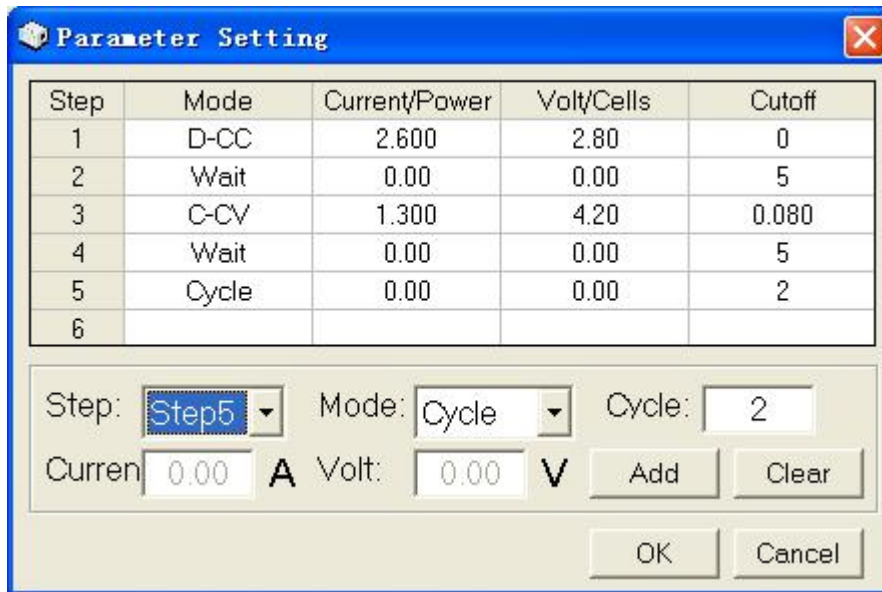
Select testing mode and parameters for the current step and click on "Confirm". Click on "Sure" button to go back to Cycling Testing interface.

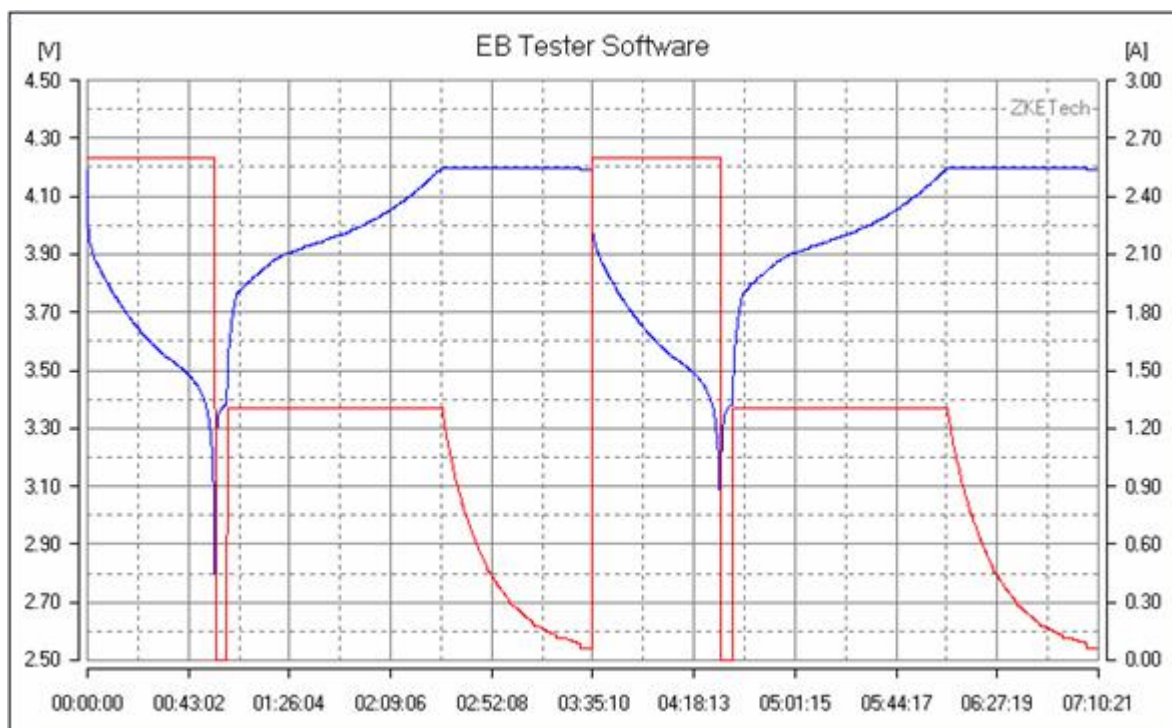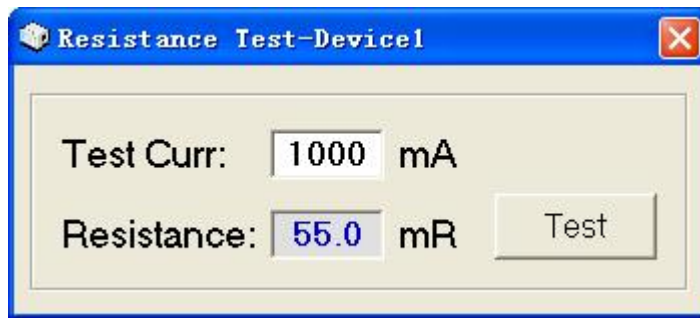(1) Click on "Open" button to select saved testing parameters.

(2) Click on "Save" button to save current testing parameters.

(3) Click on "Clear" button to remove current parameters.

(4) After you set up all parameters, click on "Start" button to start testing.

5.8 DC internal resistance testing (partial models without this function)

The tester can measure DC internal resistance in momentary discharge (Cell internal resistance include DC and AC, which are not all same).

(1) Set up Testing Current (usually we set it 1C or 0.5C, C means capacity), and click on "Testing" button to start.

(2) Before testing full charge the battery and make sure the tester has been turned off. (It supports testing DC internal resistance of a single battery).

(3) Wait for longer than five seconds for voltage recovery before you start the next testing.

(4) This function is not precise but just for reference. The precision ranks m Ω and is enough to distinguish a new battery from the old ones. (Each voltage and current cable should be connected to the battery. Otherwise the testing result will be larger than the actual value.).

(5) It can measure wire resistance values by connecting to a constant voltage source.

5.9 Parameter Calibration
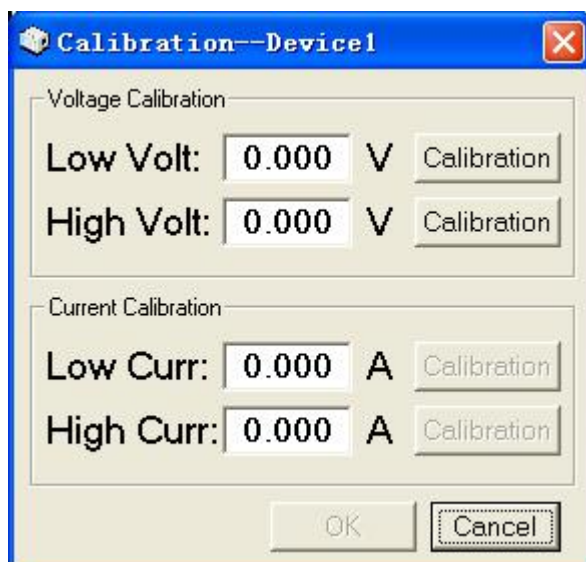
The tester support calibrating parameters by software and records the values in the device. It won't affect the values on different computers.

(1) Voltage calibration

✧ Connect the current channel to a low voltage (for example 1V). Measure the actual value with the multimeter and fill it in "Low Volt". Click on "VL Calibration" button.

✧ Then connect the current channel to a higher voltage (for example 4V). Measure the actual value with the multimeter and fill it in "High Volt". Click on "VH Calibration" button.

✧ Click on "OK" button to save calibrated parameters and exit.

✧ Calibrated voltage is accurate to current scale.

(2) Current calibration

✧ Make the device work at a low current (for example 0.5A). Measure the actual value with the multimeter and fill it in "Low Curr". Click on "CL Calibration" button.

✧ Set a higher current (for example 2A). Measure the actual value and fill it in "High Curr". Click on "CH Calibration" button.

✧ Click on "OK" button to save current calibration parameters and exit.

✧ Calibrated voltage is accurate to current scale.

(3) Recalibration for current and voltage is available.

(4) You need to calibrate different voltages for the testers with two voltage ranges. For example, you have to tester the "Low Volt" and the "High Volt" for both the range within 4.5V and that above 4.5V.

(5) You need to calibrate charging current and discharging current separately for the testers with both charge and discharge functions.

5.10 Quick Charger Test（Only EBD-USB supports this functionality）
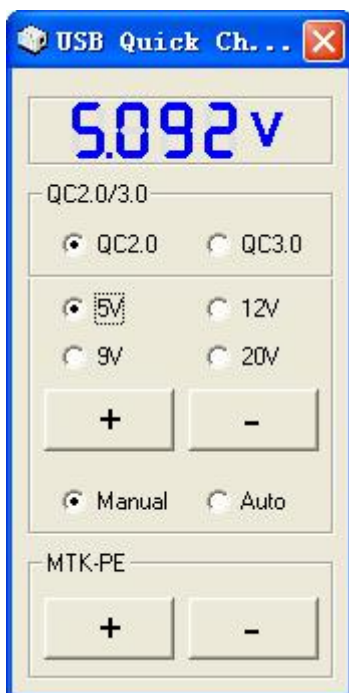
5.11 Firmware upgrade
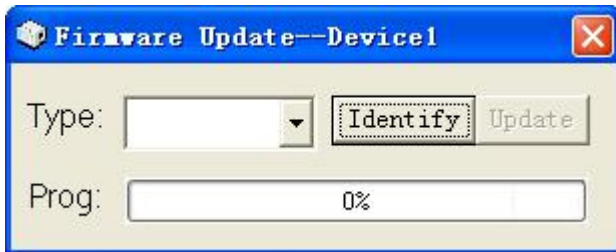
1） Press "ON" button and connect the tester to the power supply to enter the Firmware Upgrade mode.

2） Select the Port on the software interface but don't click on "Connected" button.

3） Click on "Firmware Upgrade" on the "System" menu to open the interface (above).

4） Click on "Identification" button and select the model.

5） Click on "Upgrade" to start upgrading.

6） The confirmation dialog box will pop up when the upgrading is completed and it disappears when you click on "OK". It goes back to the main interface afterwards.

7） If the firmware is successfully upgraded, you will find the date changes when you turn on the tester.

8） Notice: Don't connect the tester to testing source (batteries) in firmware upgrading.

6. Compatible models

✧ EBC-A/AH/A01/A05/A10/A10H/A20/A40L
✧ EBD-A/AH/A01/A10/A15/A20H/A30H
✧ EBD-M02/M03/M05/M10
✧ EBD-USB/EBD-USB+
✧ EBC-B10/B20H/B30H
✧ EBD-B10H/B20H

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