80kWh battery energy storage system

BMS host computer user manual

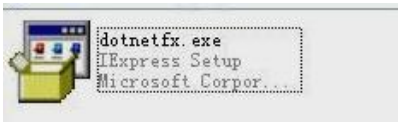
Contents

I、 Operating environment

The software runs on the PC and its compatible machines, using the WINDOWS operating system. The system environment requires the support of Microsoft.NET Framework 2.0 or later. Please ensure that the software has been installed before use. The installation is as follows:

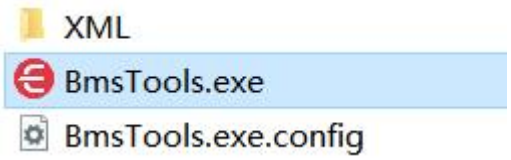
1. Download the Microsoft.NET Framework

2, double-click the downloaded program to install (different versions of the installation steps are different, you can refer to Microsoft's official instructions for installation)

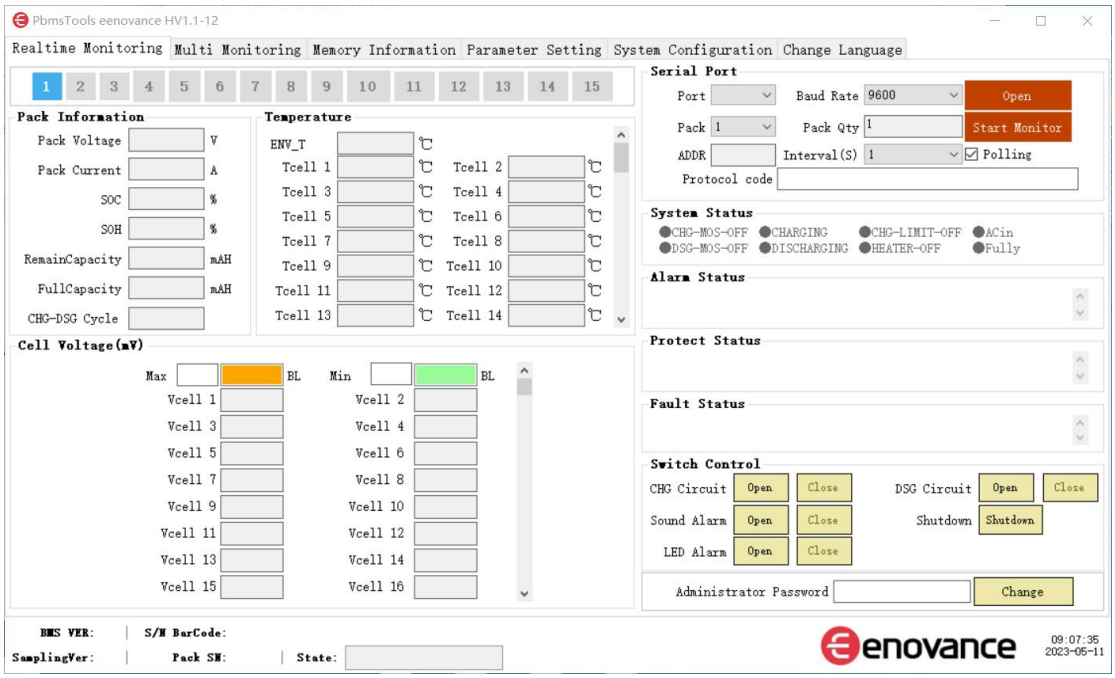


II、 Start the upper computer

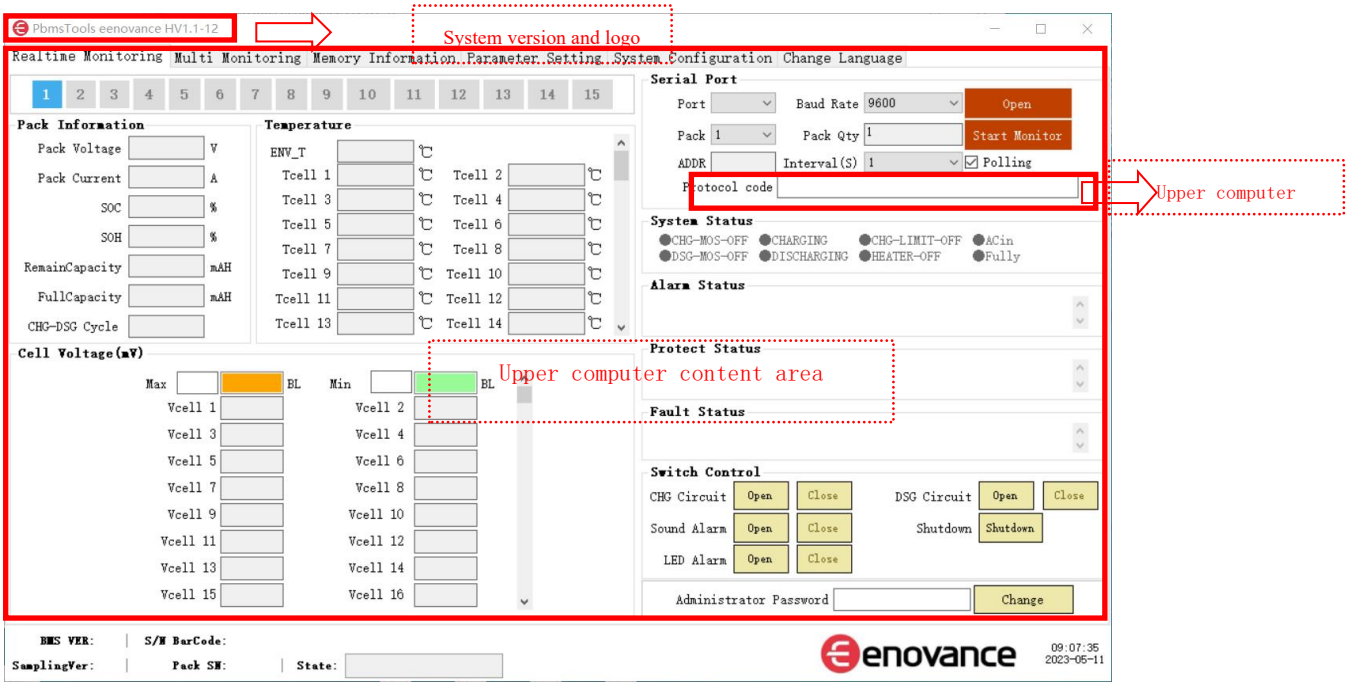
(1) This software does not need to be installed independently, as long as the environment meets, double-click the main program Tools.exe file to run and use.



（4）After startup, the main interface is as follows



III、 Interface block Description



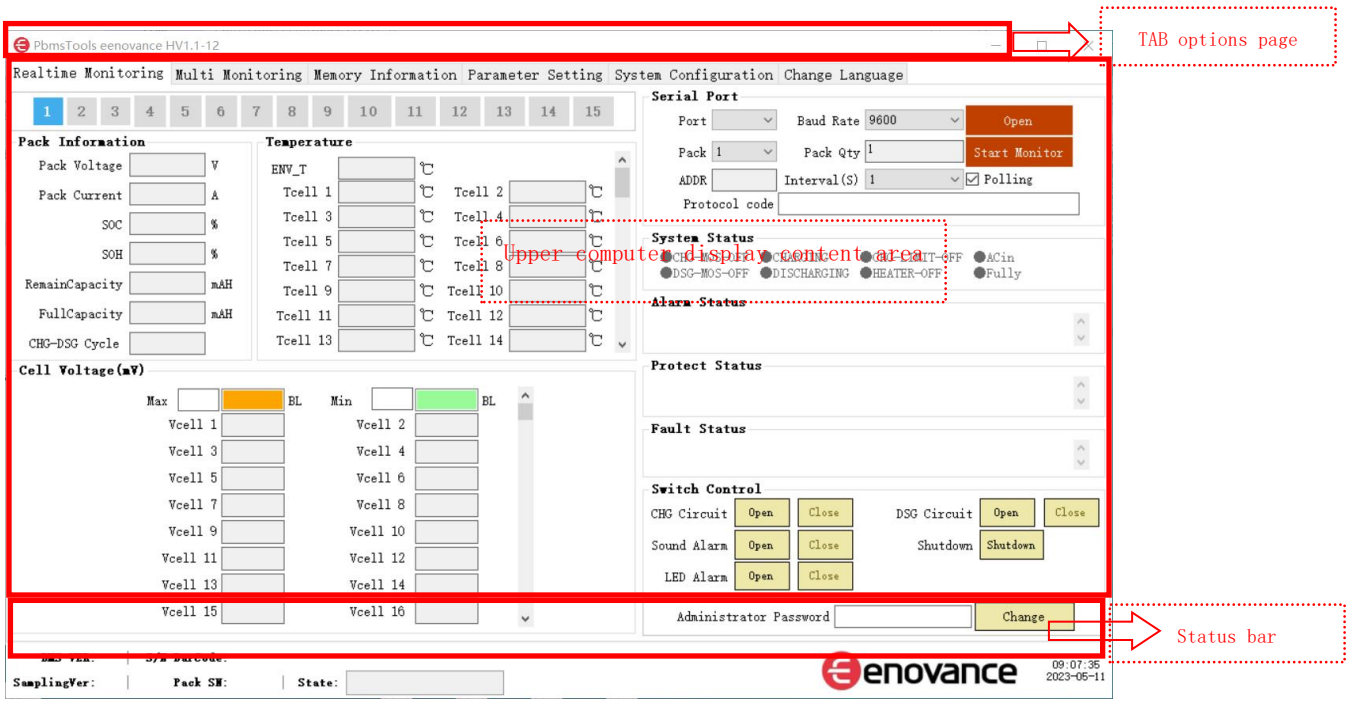
(1) As shown in the figure above, the interface is mainly divided into: head, host computer content area, and host computer negotiation area.

Head: The LOGO of the host computer, the name of the host computer, the version number of the host computer are placed here.

Upper computer negotiation area: located at the bottom of the interface. Select the communication protocol from the drop-down box. The host computer is an aggregation host computer, and the host computer corresponding to each protocol is a sub-host computer. When switching protocols, the content area of the host computer will load the sub-host computer corresponding to the protocol. There are as many sub-host computers as there are protocols. Each sub-host is independent, unrelated, and does not affect each other.

Host computer content area: After selecting the protocol in the "Host Agreement Area", the content area loads the host computer interface of the protocol according to the protocol.

（2）"Host content area" is divided into label page, content area and status bar, as shown in the following figure:



TAB page: here is the page name of each function page, click a name to switch the page.

Content area: Here load the corresponding function page according to the label page switch.

Status bar: Here shows the communication progress bar, sample version, bar code, Pack SM function. This bar is a common area shared by all TAB pages.

IV、 Permissions

（1） For some features, you need to enter an administrator password to have permissions. Please enter the administrator password in the lower right corner of the implementation monitoring page. If the password is correct, the input box will be green, otherwise it will be white.

（2） The password is case insensitive and the initial password is paceadmin

（3） Button text font color on the interface: no password is white; Need a password but did not enter the password is invalid gray black; If you need a password and have entered it correctly, the color is yellow. The following is an example:

The font is white, indicating that it does not require a password;

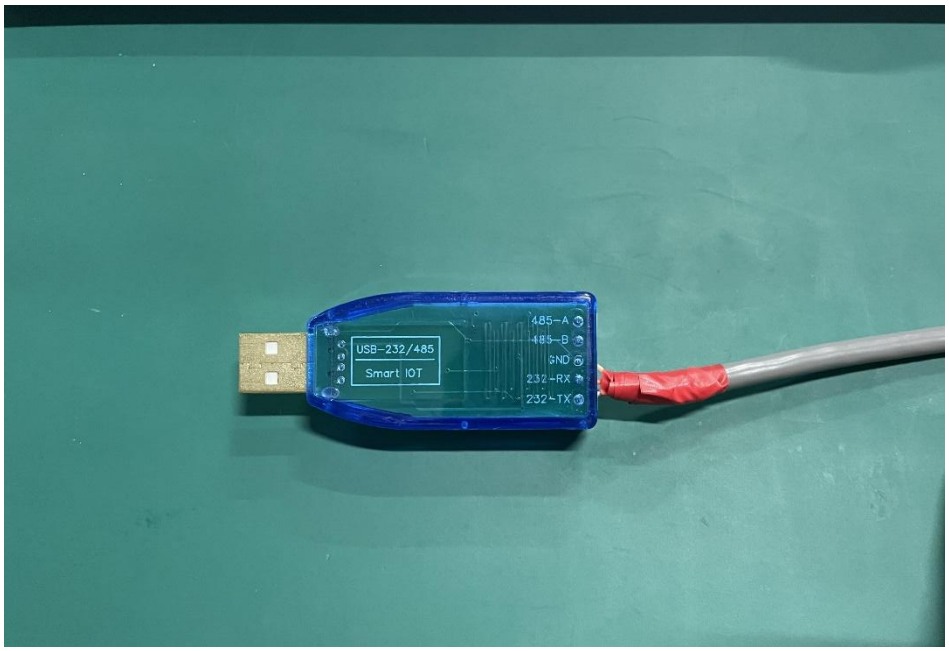
The font is gray and black, indicating that it can be used only after entering the password correctly;

If the font is golden yellow, it indicates that the password is required and correctly entered, and the password is available.

V、 Communication connection

(I) Communications

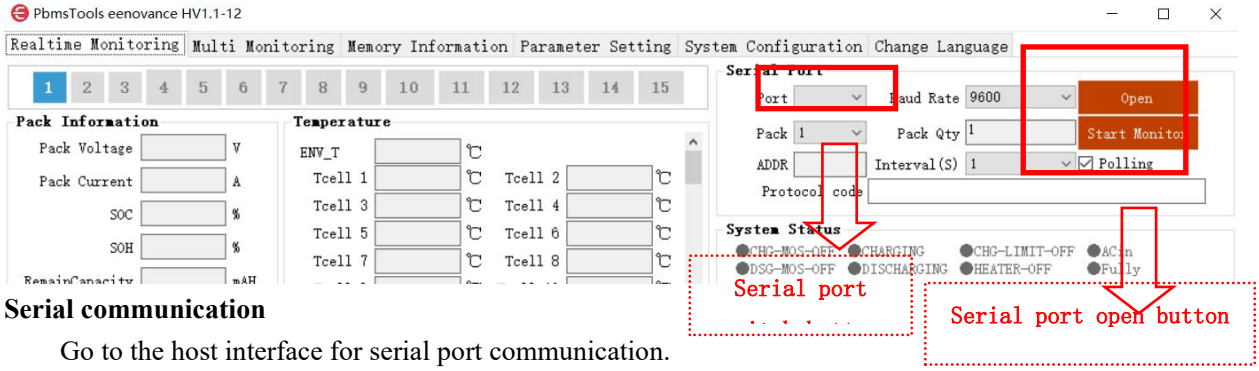
USB-232 communication cable



(II) Connect to the upper computer

Communication method:

The host computer supports serial communication mode, that is, the "open serial port" button displayed on the right serial bar. Select the corresponding baud rate to switch to the upper computer interface of this communication mode, and the background of the button is green after the switch. When the upper computer is loaded, the interface default baud rate is 9600.



Serial communication

Go to the host interface for serial port communication.

Open newsletter:

（1） After the device is powered on normally, insert the USB end of the communication cable into the USB port of the computer;

（2） Display the protocol in the protocol number box in the bottom area of the serial port bar; (Default protocol HV-SQ-RS232-BP-TS-V0. 03)

（3） In the "Serial port" group on the upper right of the home page of the host computer, "Serial port" select the COM port corresponding to the communication cable, "Address" select the address of the board connected to the communication cable, the address is "1", select "baud rate 9600".

（4） Click the red "Open" button, the button will turn green after the serial port is opened. If it fails to open, check to see if the serial port is occupied or if it is properly wired.

After the serial port is opened, if the Status progress bar on the left side of the status bar at the bottom of the status bar is running green, it indicates that the communication is normal, if it is red, it indicates that the communication is abnormal.

Turn off communication: Click the "Off" button.

VI、 Interface features

This manual is intended to explain the operation of the upper computer, about the BMS product protection logic, protection parameters and other Settings, please refer to the relevant specifications of the product, this document does not explain it.

Here, "HV-SQ-RS232-BP-TS-V0.03" upper computer interface to explain, the operation of other sub-upper computer can refer to the description of this article.

(I) Real-time monitoring

1) Interface introduction

Click "Live Monitoring" on the TAB page to enter the page if the following image:

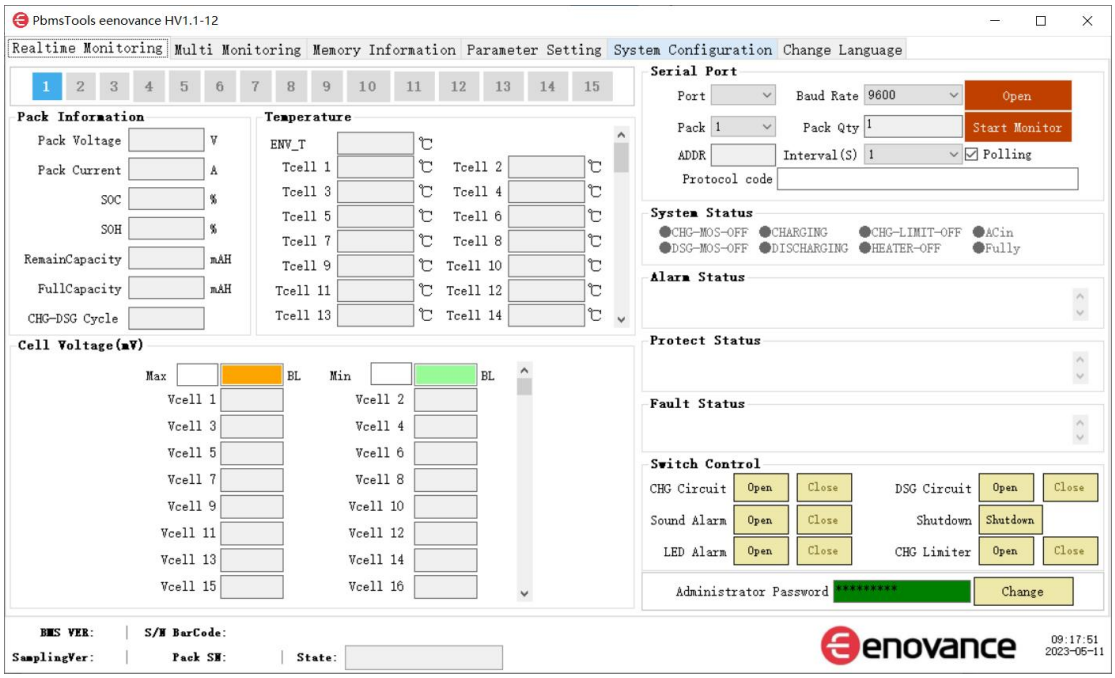


Figure 2-1

2) Description of each function group

Serial Port group

Used to connect devices for communication. See Connect the host computer for details on how to

open communication.

（1） "Start monitoring" : After canceling, you can stop the function of sending command monitoring data on the home page.

（2） "Wheel display" check box. When checked, it is automatic mode, and the "Display" drop-down box can no longer be manually switched, and the upper computer automatically switches the display in turn. After being unchecked, it will become manual mode, the host computer will no longer switch automatically in turn, and the "Display" drop-down box can be switched manually.

"System Status" group

All system states are listed here. If it is gray, the status does not occur. If it is displayed in blue, it means it is in the state.

"Switch Control" group

Here are the switches for all relays. When the switch button is blue, it indicates that it is started. Click it to close it. On the contrary, when the button is gray, it means that it is turned off, and click to turn it on.

"Battery Info" group

This group displays basic battery information such as voltage, current, SOC, etc.

"Cell Voltage" group

This group displays the maximum and minimum data for the cell voltage, as well as detailed voltage data for each pack of cells.

The "Temperature Information" group

This group displays the maximum and minimum data for the cell temperature, as well as detailed temperature data for each pack of batteries.

The "Alarm Status" group

When an alarm status occurs, the protection message is displayed here in red font. If there is no alarm, the black font here shows "None".

Protected Status group

When a protected state occurs, the protected message is displayed here in red font. If there is no protection, the black font shows "None" here.

Fault Status group

When a fault state occurs, the fault message is displayed here in red font. If there is no fault, the black font here shows "None".

(II) Parallel monitoring

1. Interface

Click the main interface TAB [Parallel monitoring] to enter the interface, when entering the interface, the boundary value is empty by default. As the picture below shows.

2. Function description

This page presents and saves all monitoring data on the home page in the form of tabular data.

The data interval is the Interval (seconds) selected in the upper right corner of the home page.

☐ Display

After checking the box, the table will automatically select the last row every time refresh, uncheck the box, the table refresh is no longer forced to choose, at this time users can freely choose the row, in order to consult the data.

Clear

"Button. Click to clear the data on the interface table so that it can be redisplayed. This action only clears the interface, not the database.

☐ AutoSave

When selected, the real-time data will be saved to the database and displayed on the

interface table. The data will be saved in the path of "PbmsTools eenovance HV1.1-12/data" in the directory on the host computer. After the upper computer is shut down, data will not be deleted, but data saving will be interrupted. If you want to start the upper computer again, you need to reselect the box.

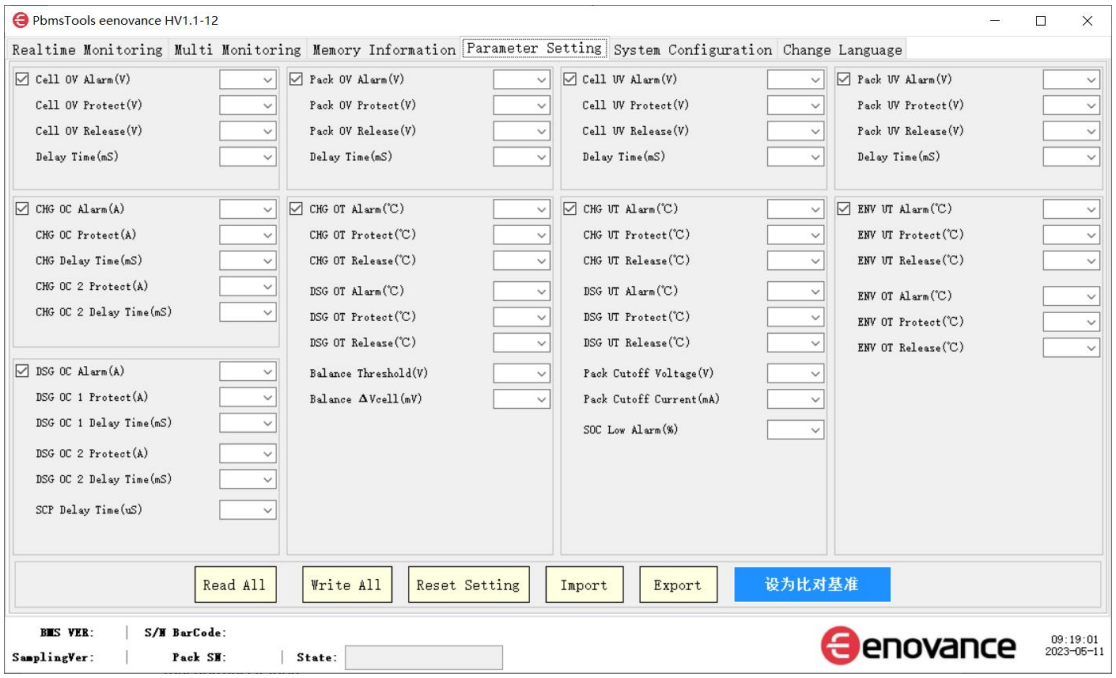
Table Name

The name of the table to which the current interface data is saved.

(III) Parameter Settings

1. Interface

Click the main interface TAB [Parameter setting] to enter the interface, as shown below



Function description

The parameters of this page are very important. For the specific parameter values and protection logic, please refer to the specifications of related products separately. Only the operation of the upper computer is explained here.

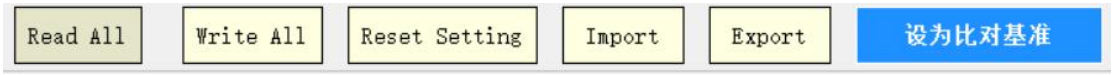
（1） About the input

The appropriate value can only be selected through the drop-down box after the individual options. There is no way to enter values autonomously via the keyboard

（2） About reading

a) Read as a one-click read.

Read all, i.e. click the button at the very bottom below to read. Read All



b) Read before and read after

Enter the value in the box, if the value is the same as before reading, the normal font will be displayed, if it is not the same as before reading, the font will be displayed in bold.

This function is to quickly tell the difference between before and after reading.

（3） About Writing

Writing requires a password first.

When writing, the value of the input box must meet the input range, otherwise a prompt will be given and the write will be rejected.

Write all with one click, that is, click the button at the bottom below to perform the write. Write All

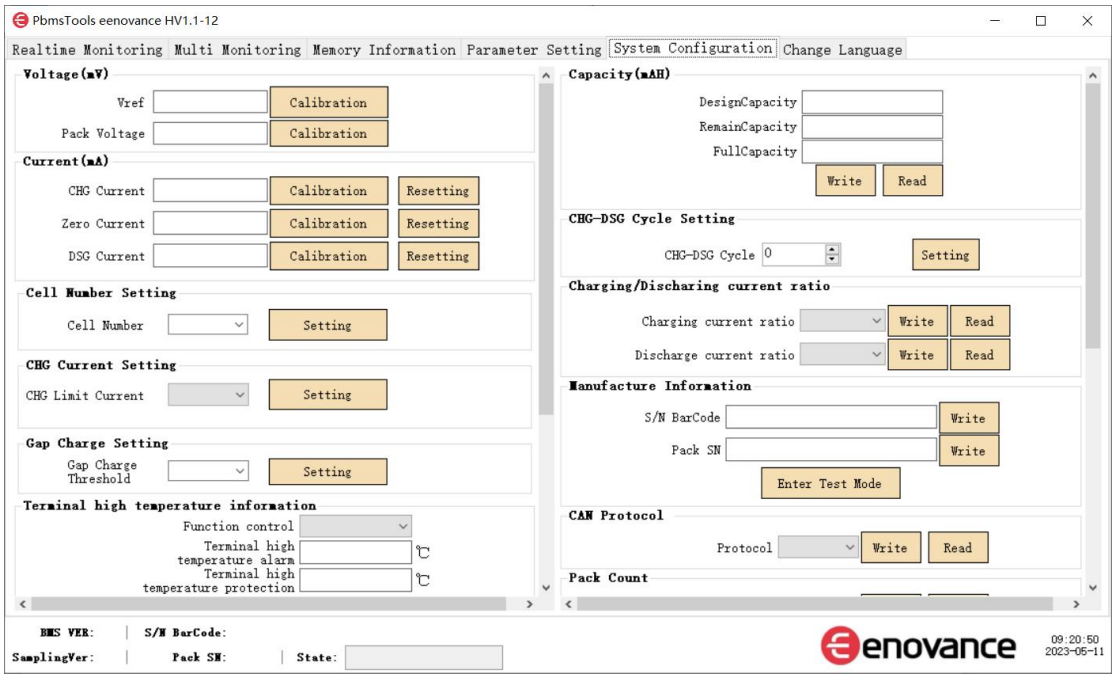
（4） Restore defaults

Click the button to restore the board's protection parameters to their factory defaults. Reset Setting

(IV) System Settings

1. screen

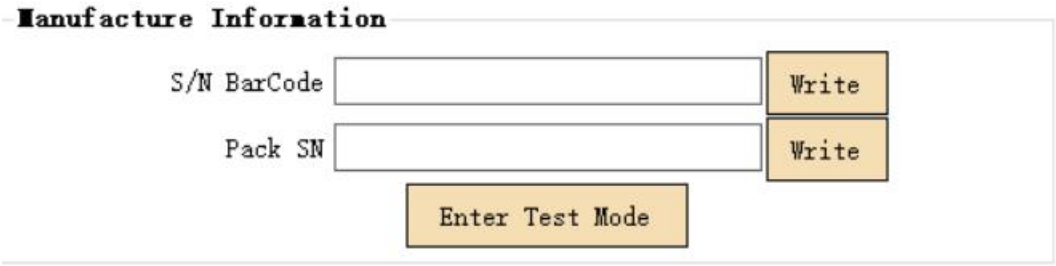
Click the main interface TAB [System Settings] to enter the interface, as shown below



2. Function Description

This page contains the voltage, current, charge and discharge cycle number of information read and set. Refer to the specifications of related products can be set.

Focus on the "Production information" function group



Description of barcode length

Barcode length, the maximum length that can be supported by the board subroutine. The number is determined by the board subroutine.

(V) Store information

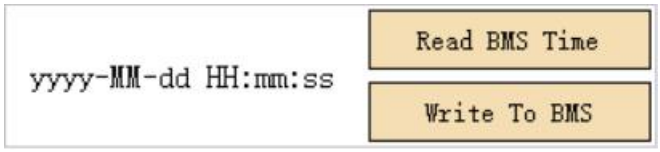
1. Interface

Click the main interface TAB [Store information] to enter the interface, as shown below

2. Function Description

This page provides alarm history data and status change history.

（1） BMS Time

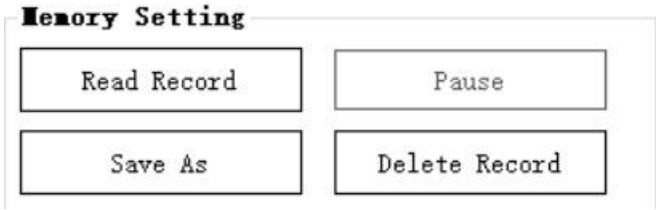


"Write automatically" check box: when checked, when the board communicates normally, the upper computer will automatically write the computer time to the BMS.

Read BMS time: button, click to extract the time of BMS.

Write System Time: button, click to write the current time of the computer to the BMS.

（2） Read stored data



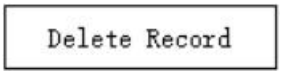
First of all, fill in the "range" to read the data line number, and then click the "read" button to read, read the process, the left table will show the read data, you can click the "pause" button to stop reading during the process. In the pause, you can click the "Continue" button to continue reading, or click the "read" button to read again. When the prompt "No more data"

is displayed, it means that the reading is finished.

（3） Save a record

Click the button to export the read data as an excel file. 

（4） Delete Data

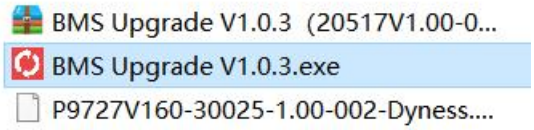
Click the button to delete data. 

The button is not visible until you have entered your password.

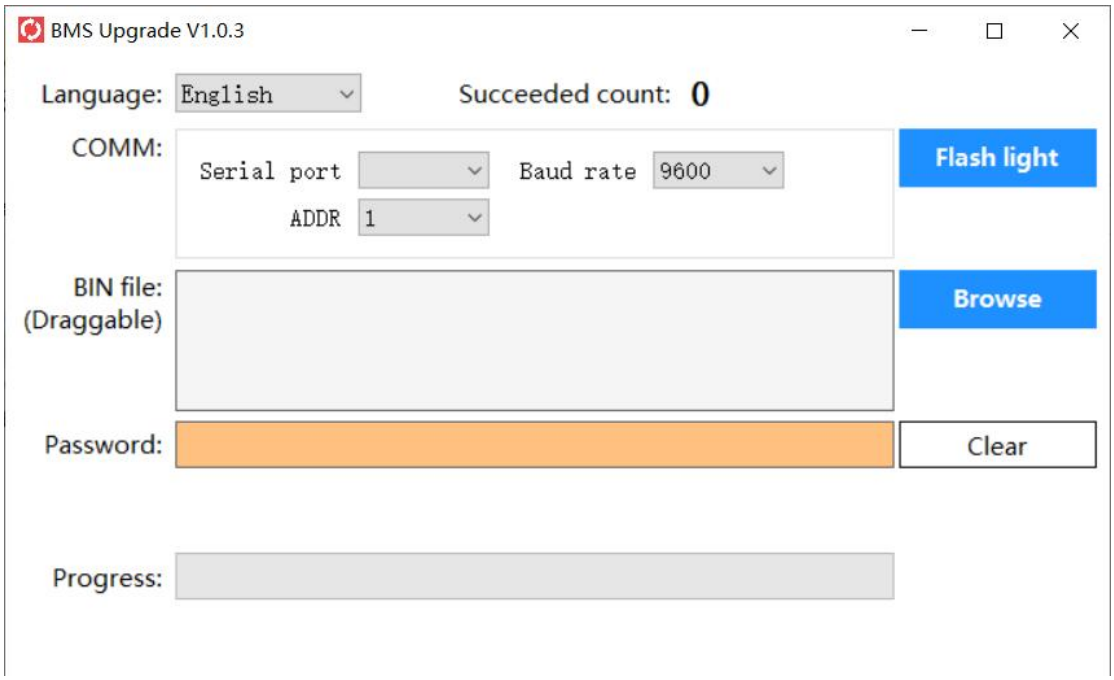
Note: This function deletes the data recorded in the BMS, use with caution.

(VI) Upgrade (serial communication)

1. Interface



Click on the upgrade program to enter the main interface, as shown below



2. Function Description

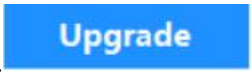
This page is used to upgrade BMS programs using bin files. Related functions are explained below.

（1） Upgrade Address Serial number: Indicates the number of boards that are being upgraded.

（2） BIN file (drag-and-drop)

BIN file can be directly dragged and dropped into this box, and the host computer automatically loads the file after dragging and dropping. Alternatively, click Browse on the far right to select BIN file.

（3） Password

Enter the password dedicated to the upgrade. If the password is correct, the input box is green. Otherwise, the input box is red or yellow. After entering the password, the button will be visible. 

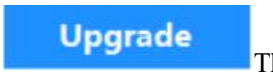
The default password is paceadmin

Click the "Clear" button on the right to clear the password so you can enter it again.

（4） Progress

Here is the upgrade progress bar, which dynamically displays the upgrade progress.

（5） Level Up

Click the button to start upgrading. 

This button is not visible until the upgrade password is entered.

1. Upgrade Steps

[Step 1]

Make sure the board is properly powered on, the communication cable is properly connected to the computer, and the serial port is not occupied.

[Step 2]

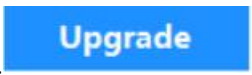
Drag the BIN file into the function box to the right of "BIN File (Drag-and-drop)" or click the "Browse" button to select the BIN file.

[Step 3]

Set the parameters of serial port, baud rate, address, etc.

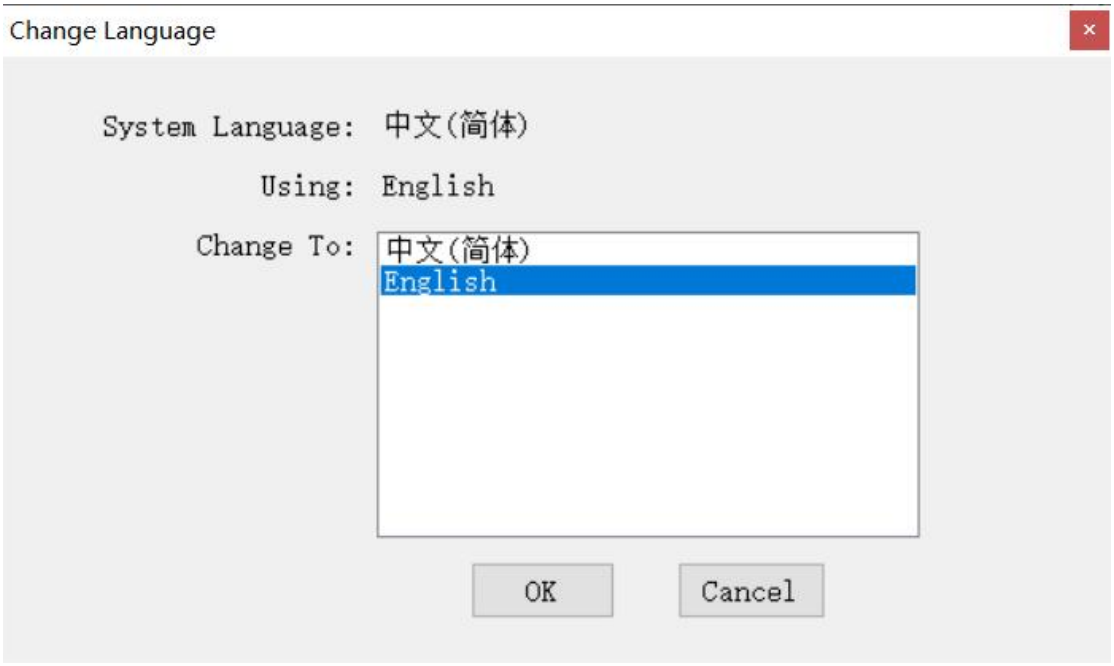
[Step 4]

Enter the password in the "Password" box, then the button is visible, click the button to

upgrade, until the host computer feedback the upgrade result. 

(VII) Switch language

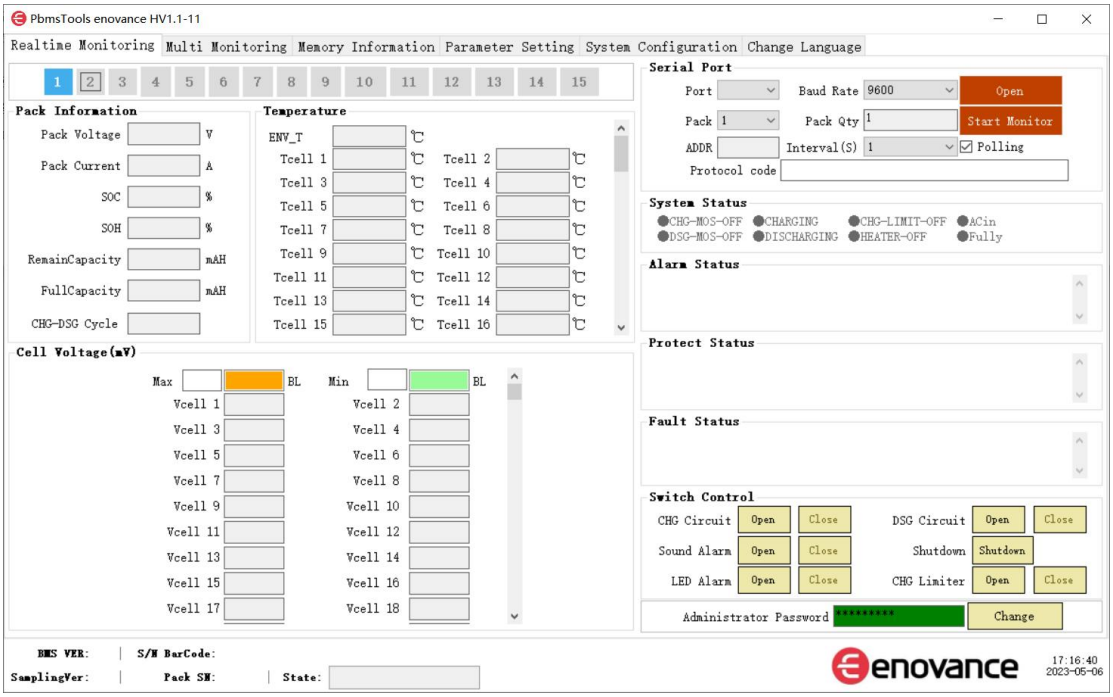
Click the main interface TAB [Switch language] will pop up the interface to switch languages, as shown below



In the pop-up "Change language" window, select a language in the "Change to" list, and then click the "OK" button to switch the upper computer interface language to this language. You can also directly double-click a language in the list to switch.

Note: When switching languages, the switching scope is limited to the current sub-host computer, and other sub-hosts are not involved, because each sub-host computer is independent of each other, the operation in a sub-host computer will not affect other sub-hosts.

The effect of switching to the Chinese interface is as follows:


PbmsTools enovance HV1.1-11
Realtime Monitoring
Multi Monitoring
Memory Information
Parameter Setting
System Configuration
Change Language
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Pack Information
Pack Voltage V
Pack Current A
SOC %
SOH %
RemainCapacity mAH
FullCapacity mAH
CHG-DSG Cycle
Temperature
ENV_T
Tcell 1 Tcell 2
Tcell 3 Tcell 4
Tcell 5 Tcell 6
Tcell 7 Tcell 8
Tcell 9 Tcell 10
Tcell 11 Tcell 12
Tcell 13 Tcell 14
Tcell 15 Tcell 16
Cell Voltage(mV)
Max BL Min BL
Vcell 1 Vcell 2
Vcell 3 Vcell 4
Vcell 5 Vcell 6
Vcell 7 Vcell 8
Vcell 9 Vcell 10
Vcell 11 Vcell 12
Vcell 13 Vcell 14
Vcell 15 Vcell 16
Vcell 17 Vcell 18
Serial Port
Port
Baud Rate 9600
Open
Pack 1
Pack Qty 1
Start Monitor
ADDR
Interval(S) 1
Polling
Protocol code
System Status
CHG-MOS-OFF CHARGING CHG-LIMIT-OFF ACin
DSG-MOS-OFF DISCHARGING HEATER-OFF Fully
Alarm Status
Protect Status
Fault Status
Switch Control
CHG Circuit Open Close
DSG Circuit Open Close
Sound Alarm Open Close
Shutdown Shutdown
LED Alarm Open Close
CHG Limiter Open Close
Administrator Password ********
Change
BMS VER:
S/N BarCode:
SamplingVer:
Pack SN:
State:
enovance
17:16:40
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