

# DIY Kit Product Operating Instructions

## 套件产品操作说明书

深圳市鑫力能电子有限公司

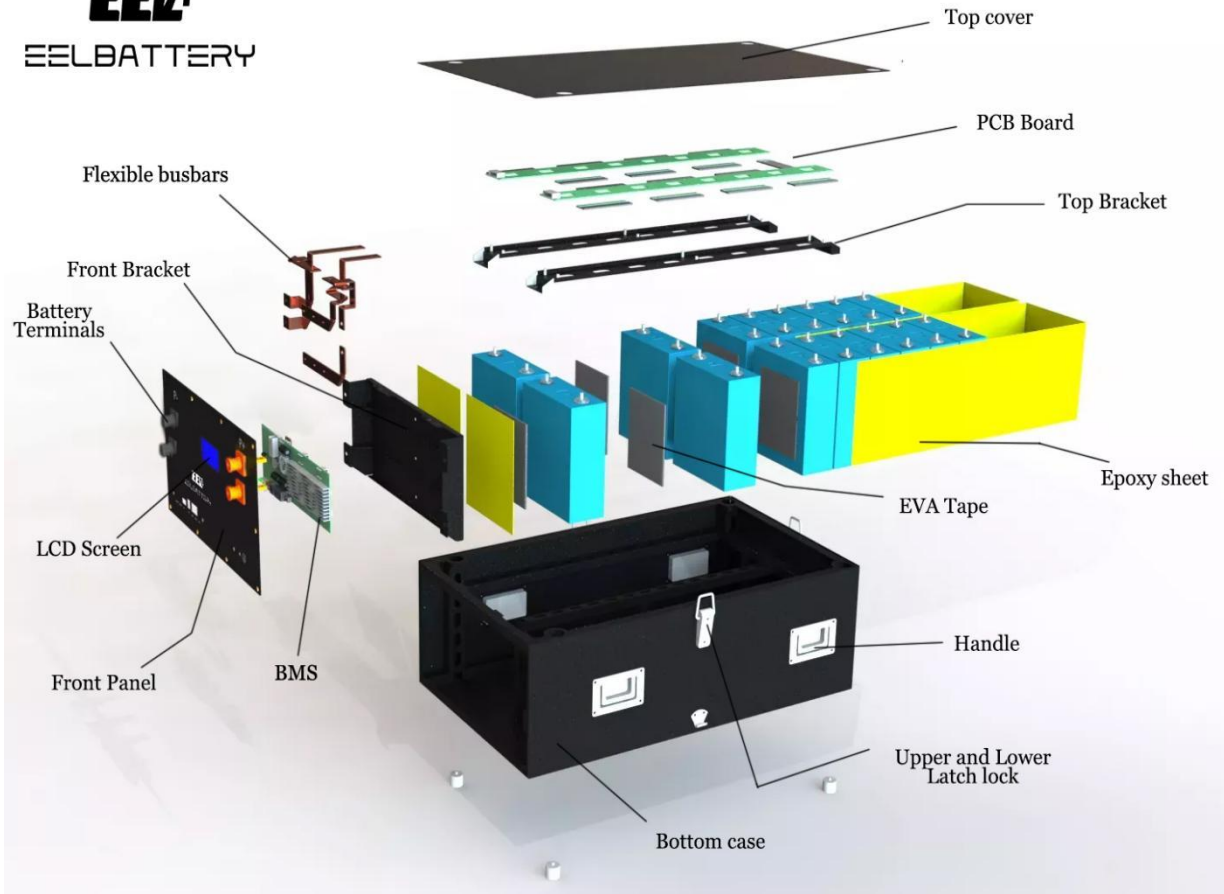
SHENZHEN EEL BATTERY CO.,LTD

地址：广东省深圳市龙岗区横岗街道银信中心 E 座 1403 室

Add: Room 1403, Yinxin Center E Block, Henggang Street, Longgang District, Shenzhen, Guangdong,China.

Battery Kit Operation.....	3
Upper Computer Operation.....	6
1. Decompress the host computer file.....	6
2. Open the monitor software.....	6
1) Open the folder.....	6
2) select the upper computer software.....	6
3) double click to open the upper computer...	6
3. Load protocol file.....	6
1) Select Import Protocol.....	6
2) pop up the folder.....	6
3) select the protocol suffix EN.....	6
4) click OK.....	6
4. Communication Port Configuration.....	8
1) Port number .....	8
2) Baud rate : 9600.....	8
3) Click Connect .....	8
5. Login.....	9
6. Loading and uploading parameters.....	9
6.1 Upload Parameters.....	9
6.2 Modify parameters.....	10
6.3 Load Parameters.....	10
7. Communication Protocol Configuration.....	12
8. Display Interface Introduction.....	15
9. Parallel Mode.....	18
10. Firmware update.....	20
11 .Real Time Record.....	22

# Battery Kit Operation



**1 Bottom pad**

**4 Case screws**

**7 M8 screws for connection**

**2 BMS screws**

**5 Terminal screws**

**3 Bracket screws**

**6 Bus bars screws**



# Installation instructions

## Step

## Figure



**Pay attention to the connection sequence of positive and negative poles**

*Refer to next page(P5)*

## Parts List

1 \* Battery Case  
(Bottom case, Front Panel, Top Bracket, Front Bracket, Top cover)

1 \* Battery BMS

2 \* PCB Board  
(for BMS and Cell Connection)

1 \* Weak electric switch

1 \* LCD Screen

1 \* LCD Screen Sticker

3 \* Wires  
(LCD Screen wire, PCB board A and PCB board Connector)

2 \* Battery Terminals

6 \* Copper busbars (BMS connection)

15 \* Flexible busbars (Cell connection)

10 \* Epoxy sheet (Between cell and the case)

26 \* EVA Tape (Between cells)

Put on the Epoxy board

Stick the EVA protection on the cells

Put the cells into the box carefully

Fasten the front panel

Stick the EVA protection on the bracket

Use 6 N.M to fasten the nuts

Fasten the BMS board

Put on the terminals

Fasten the LCD screen

Fasten the terminals

Connect the bus bars with BMS and terminals

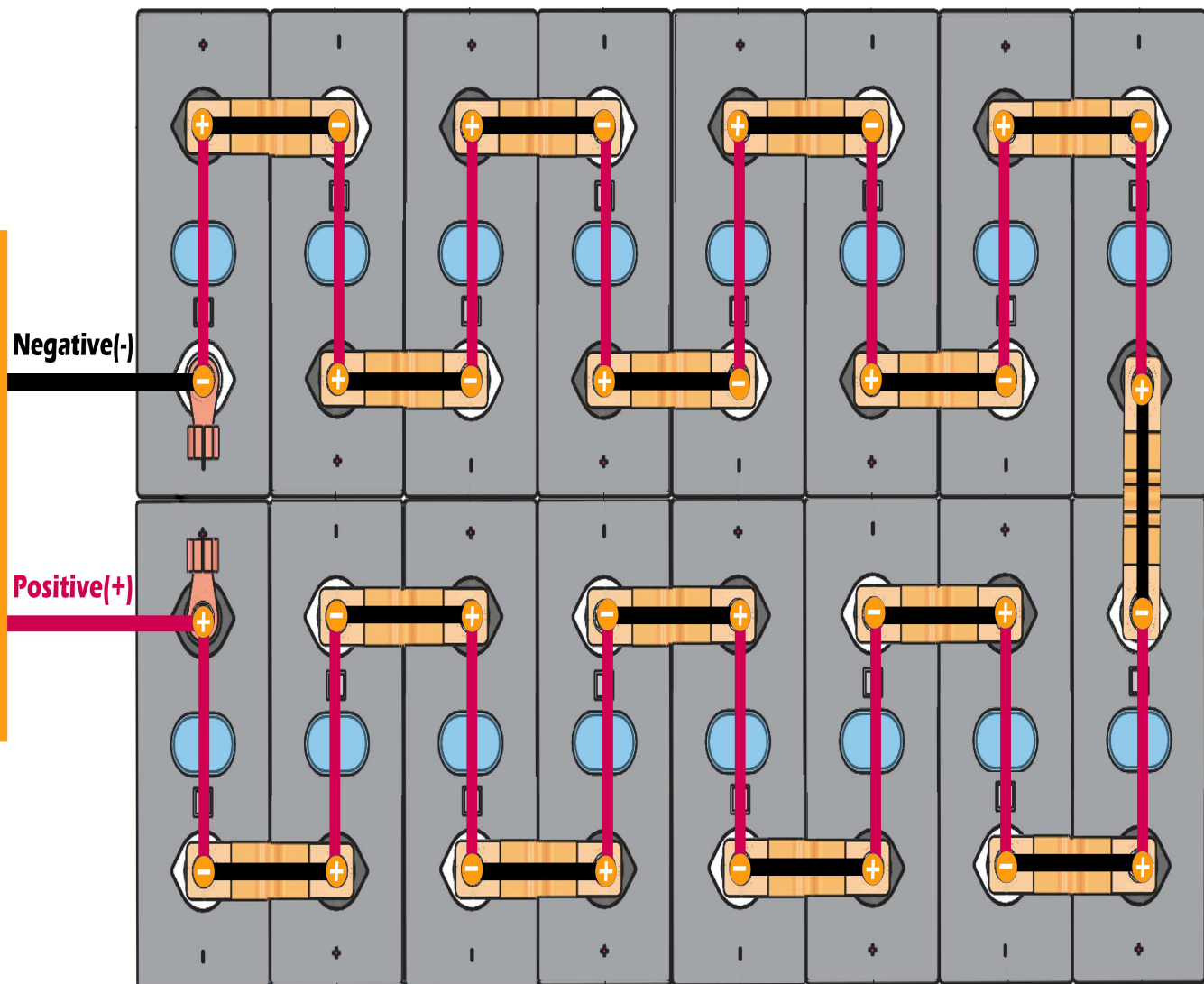
Put on the weak electric switch

Fasten the front panel and top cover

Connect the 485 to USB port for settings



**BMS**

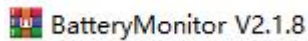


EELBATTERY



# Upper Computer Operation

## 1. Decompress the host computer file



## 2. Open the monitor software

- 1) Open the folder
- 2) select the upper computer software
- 3) double click to open the upper computer

Agreement	2022/3/18 9:12	文件夹	
BatteryMonitor V2.1.8	2022/3/18 9:13	文件夹	
de	2022/3/18 9:12	文件夹	
es	2022/3/18 9:12	文件夹	
ja	2022/3/18 9:12	文件夹	
Languages	2022/3/18 9:12	文件夹	
logs	2021/10/21 9:28	文件夹	
RealTimeRecord	2021/10/21 9:27	文件夹	
ru	2022/3/18 9:12	文件夹	
Battery Monitor V2.1.8操作说明.pdf	2021/10/21 8:56	PDF 文件	6,075 KB
<b>BatteryMonitor.exe</b>	<b>2021/10/21 20:12</b>	<b>应用程序</b>	<b>1,785 KB</b>
BatteryMonitor.exe.config	2021/10/20 19:52	XML Configurati...	3 KB
BatteryMonitor.pdb	2021/10/20 20:10	PDB 文件	522 KB
DevExpress.Data.v15.2.dll	2017/11/17 21:43	应用程序扩展	5,082 KB
DevExpress.Data.v15.2.xml	2017/11/17 21:43	XML 文档	1,098 KB
DevExpress.Data.v15.2.dll	2017/11/17 21:43	应用程序扩展	5,082 KB

## 3. Load protocol file

- 1) Select **Import Protocol**  
See Figure 3-1
- 2) pop up the folder (select *Agreement* in the upper computer folder)  
See Figure 3-1
- 3) select the protocol suffix EN in the Agreement folder that corresponds to the English protocol (e.g. 16s \_ V20 \_ ADDR \_ EN)  
See Figure 3-2
- 4) click **OK**  
See Figure 3-3

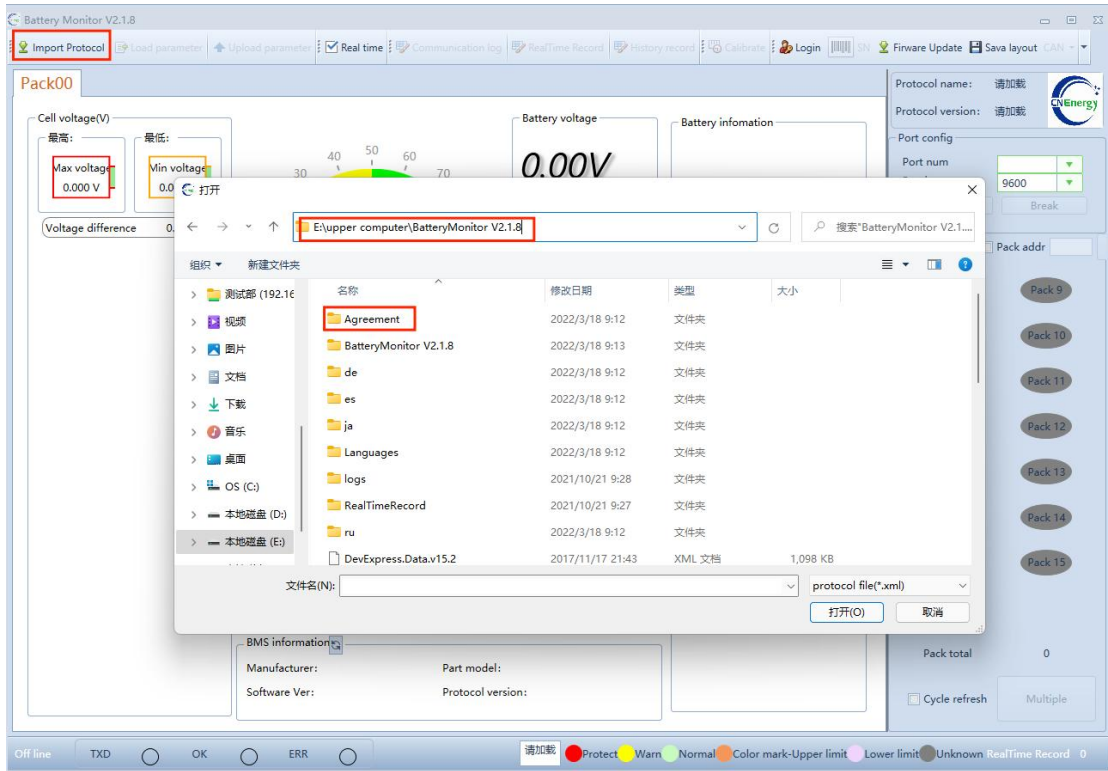


Figure 3-1

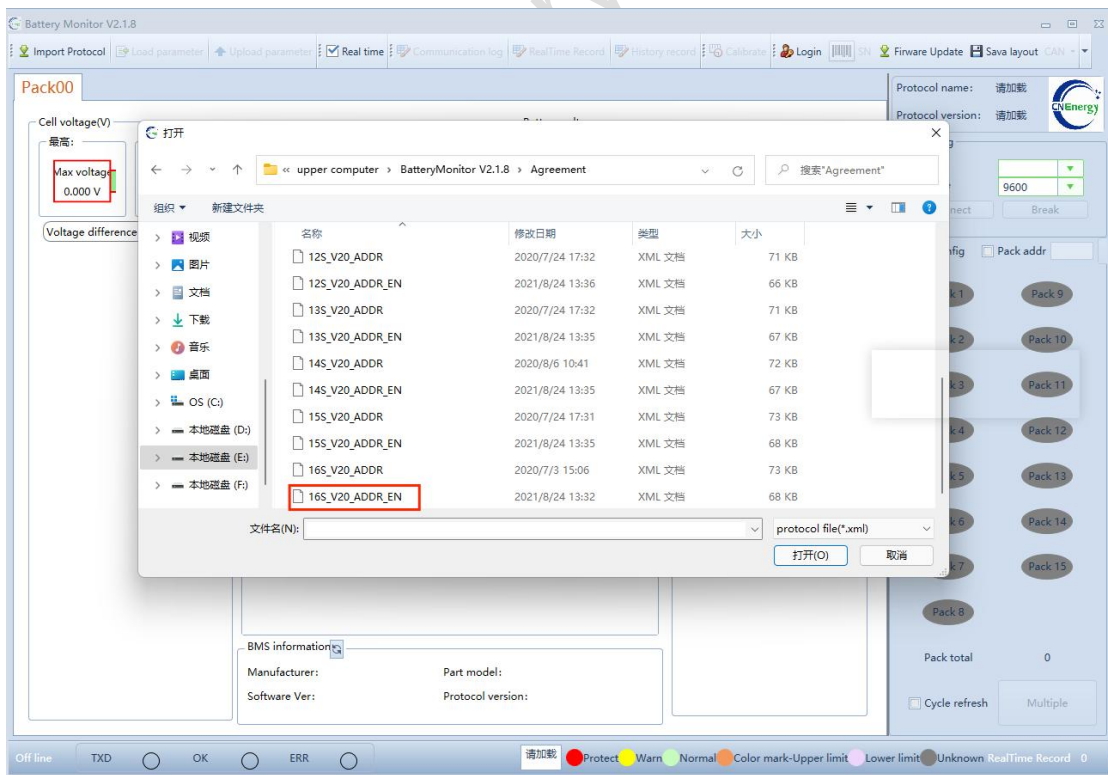


Figure 3-2

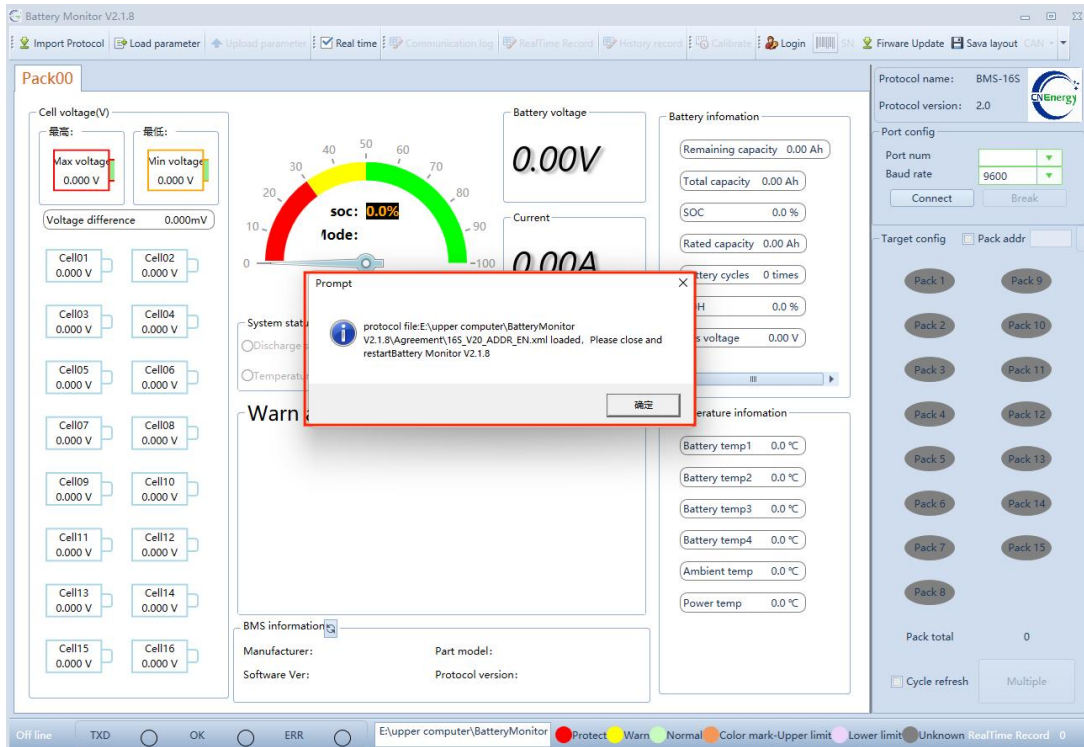


Figure 3-3

## 4. Communication Port Configuration

- 1) **Port number** (the upper computer will automatically identify the USB to 485 serial port number)
- 2) **Baud rate** : 9600
- 3) Click **Connect** (After successful connection, the upper computer displays the battery data.)

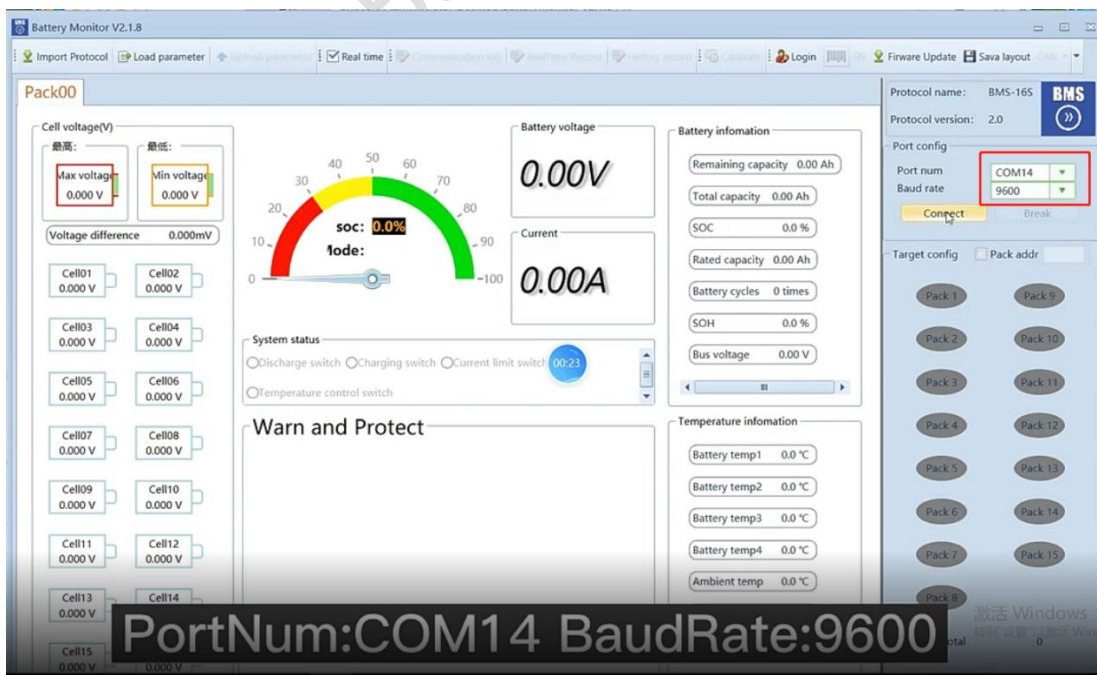
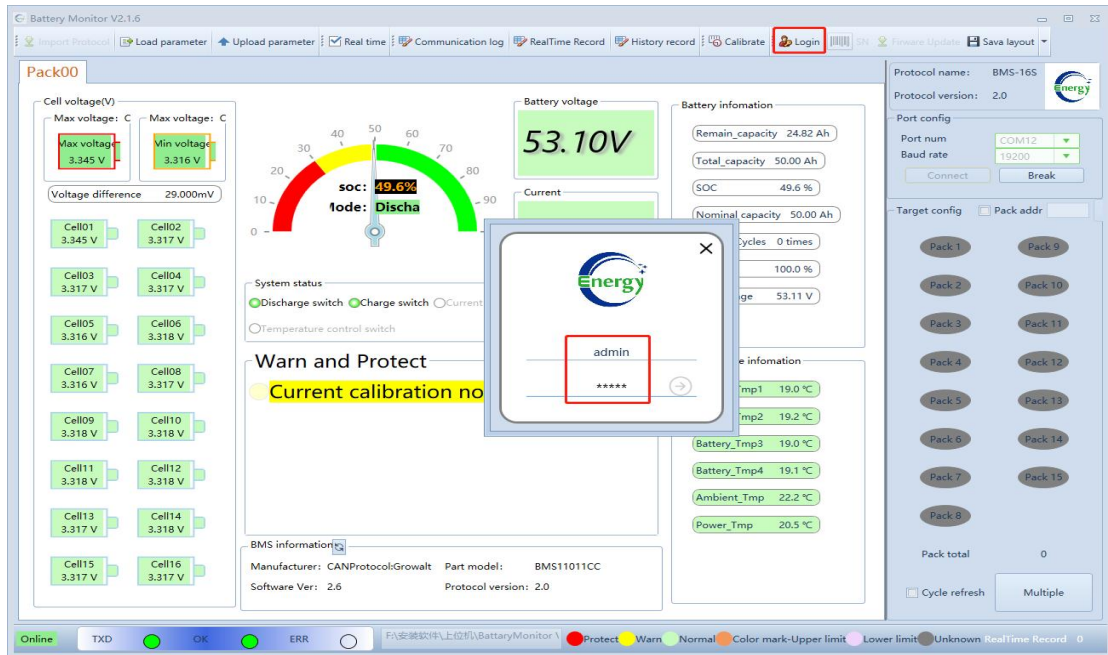


Figure 4-1



## 5. Login

Account: admin  
Password: admin



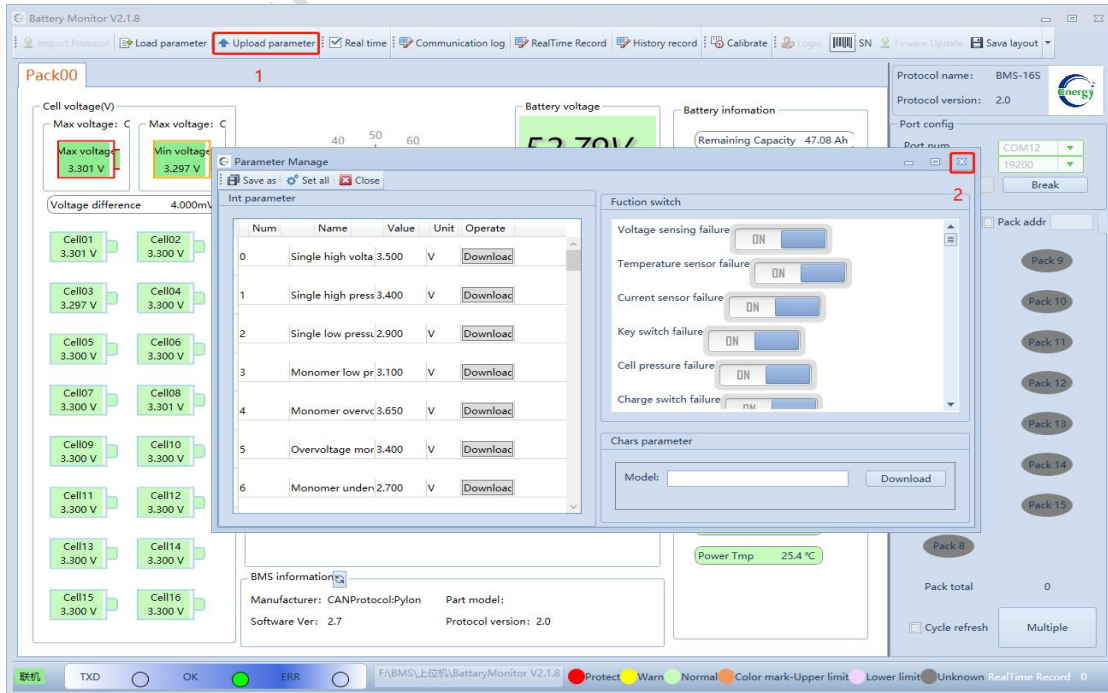
## 6. Loading parameters and uploading parameters

Load parameter: download parameter to BMS from upper computer

Upload parameter: upload parameter to upper computer from BMS

### 6.1 Upload Parameters

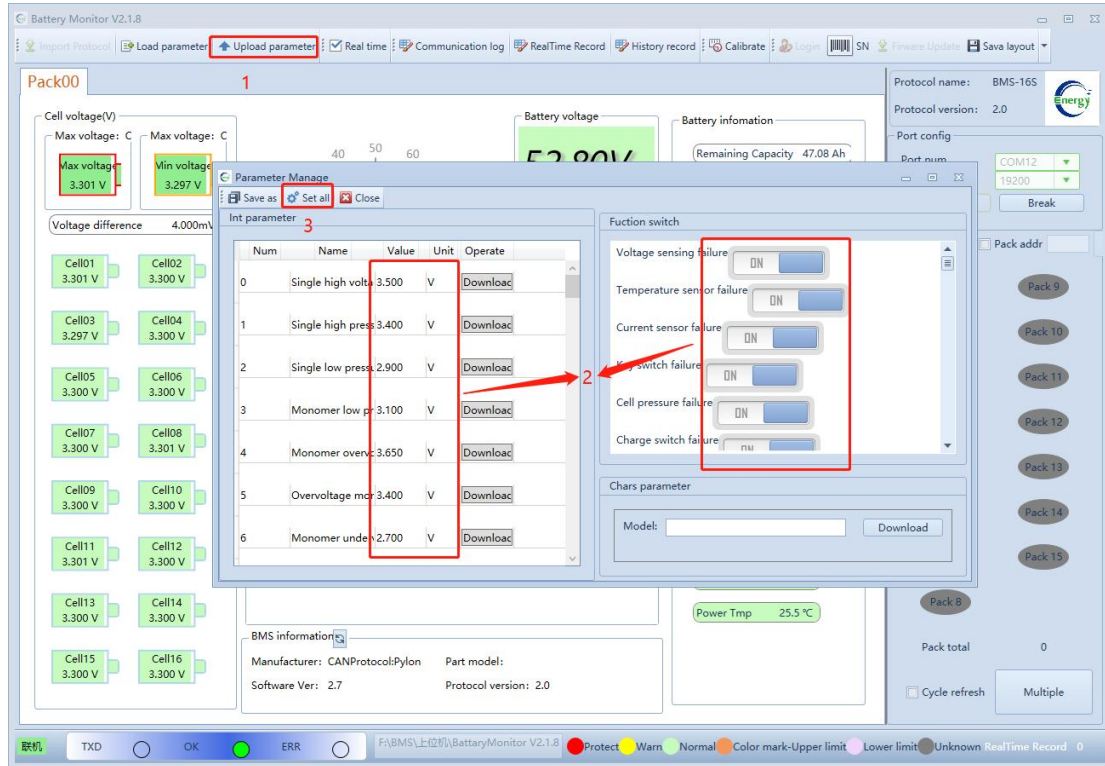
When you use the upper computer at the first time, downloading parameters directly without checking is not allowed, you need to upload the parameters at first and then close them



## 6.2 Modify parameters

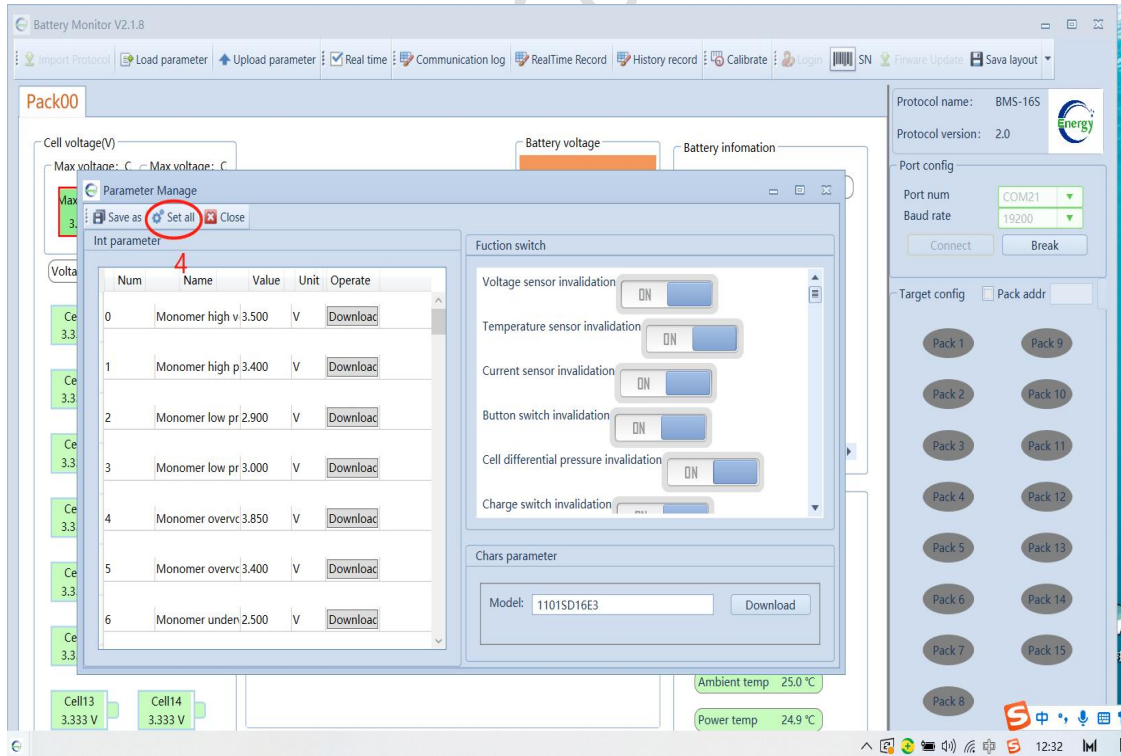
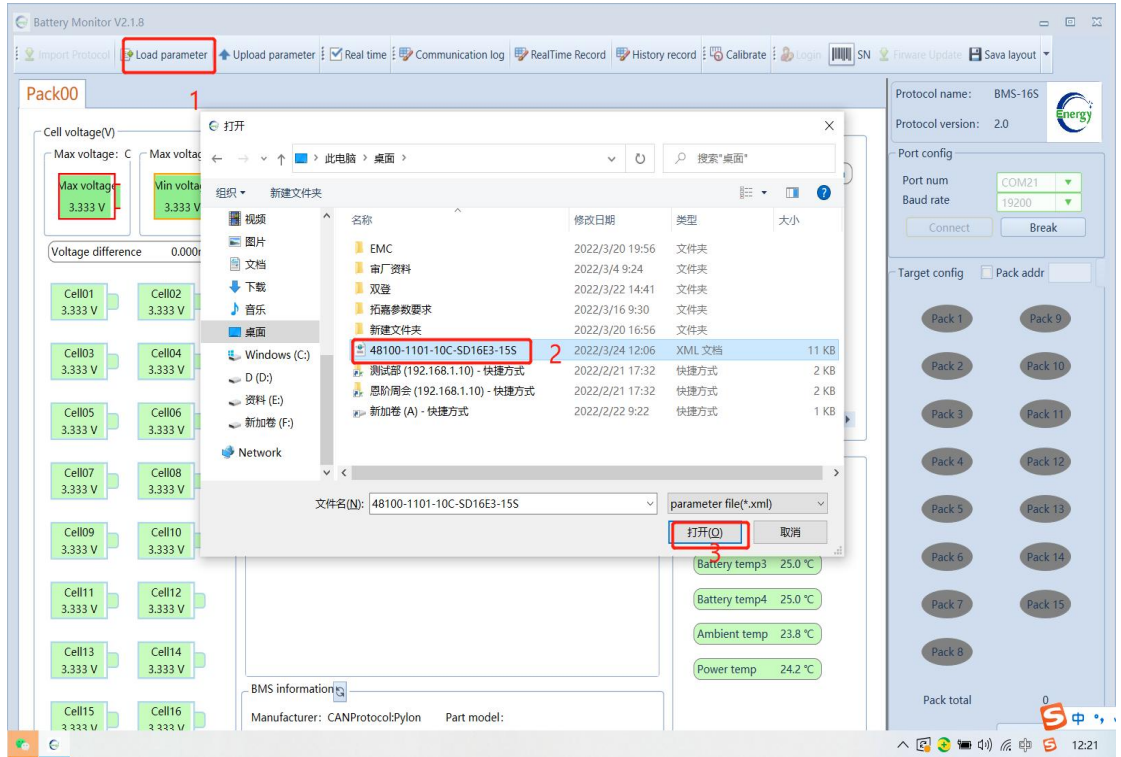
- 1) Click "**Upload Parameters**" here to upload parameters from BMS
- 2) Change the internal BMS parameters and function switches
- 3) Click **Set all** to enable the modification

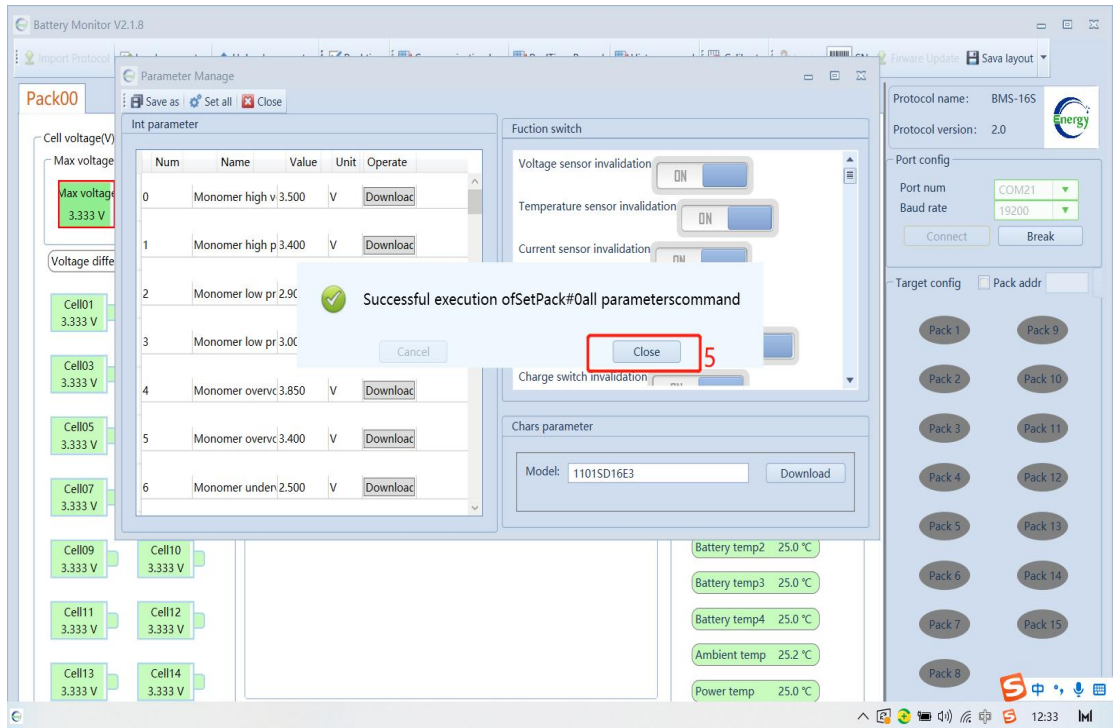
*Note: The red numbers in the figure below indicate the operation sequence*



## 6.3 Load Parameters

- 1) Click **Load Parameters** (step 1 below)
- 2) Chose the **target parameter document** (step 2 below) and click **open** (step 3 below)
- 3) Click **Set All** (step 4 below)
- 4) Click **Close** (step 5 below) after prompting success  
Parameters have been configured OK





## 7. Communication Protocol Configuration

Click **CAN**, Select the corresponding CAN protocol according to the inverter type

- 1) 5 options: Pylon / Growatt / Victron / Sofar / Luxpower

Protocol Type	Supported Inverter Brands
Pylon	Pylon/Goodway
Growatt	Growatt
Victron	Victron
Sofar	Sofar
Luxpower	Luxpower

See Figure 7.1

- 2) after switching the protocol, confirm whether the protocol is switched **successfully**, refresh the protection board information

See Figure 7.2

- 3) the corresponding manufacturer information will displayed in **“BMS information”** frame

See Figure 7.3

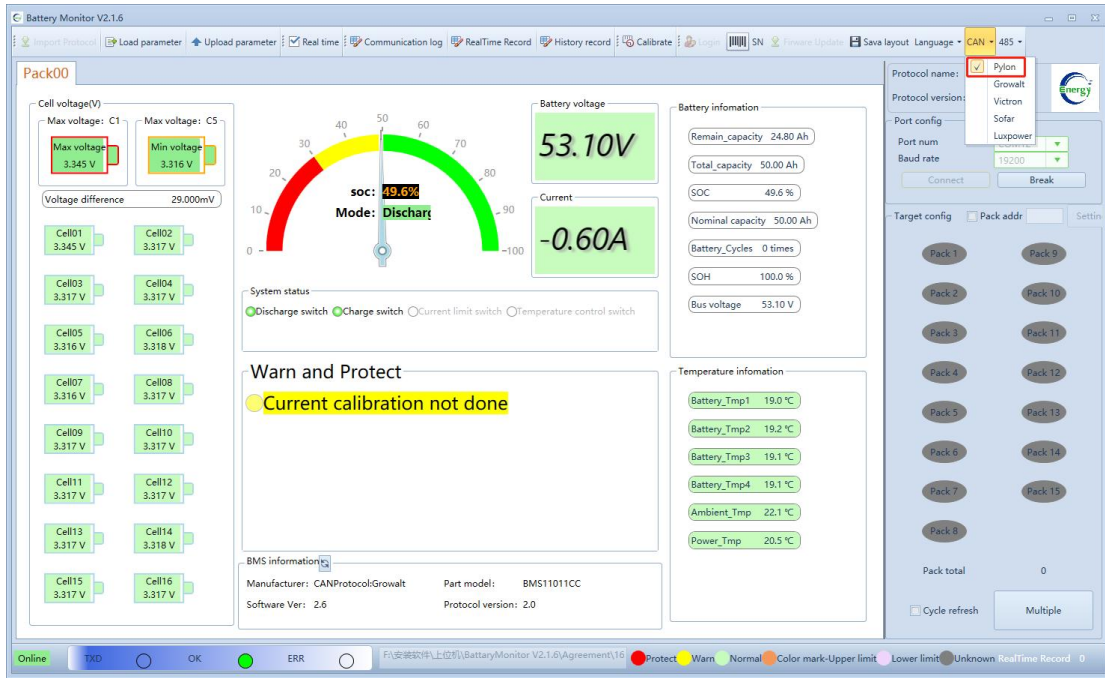


Figure 7.1

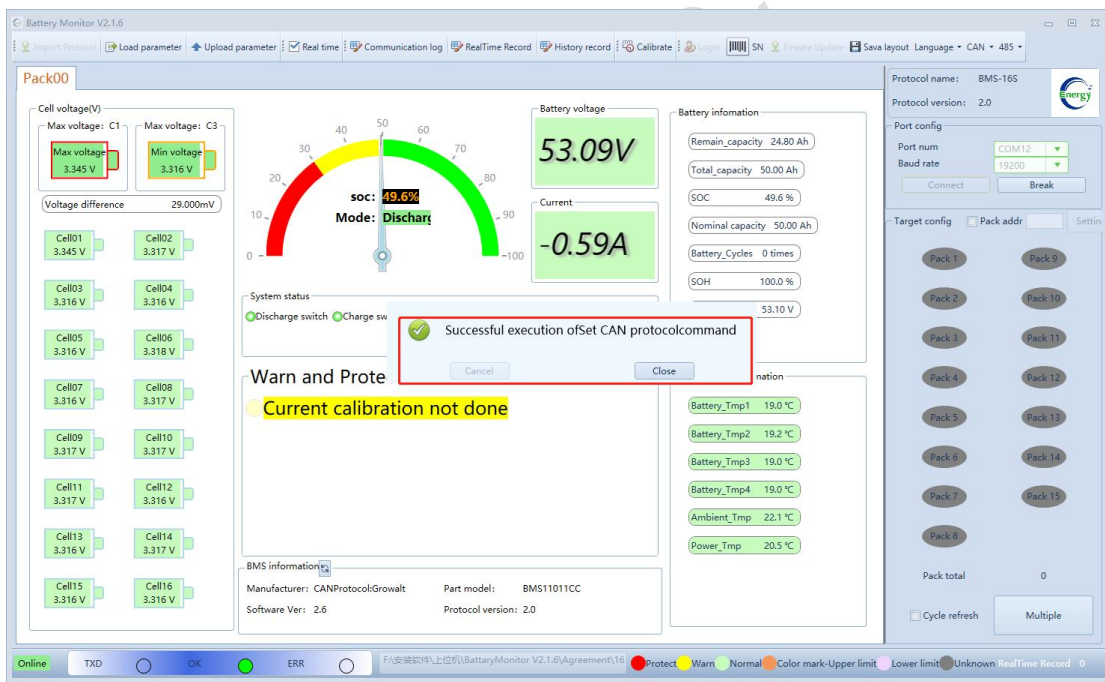


Figure 7.2

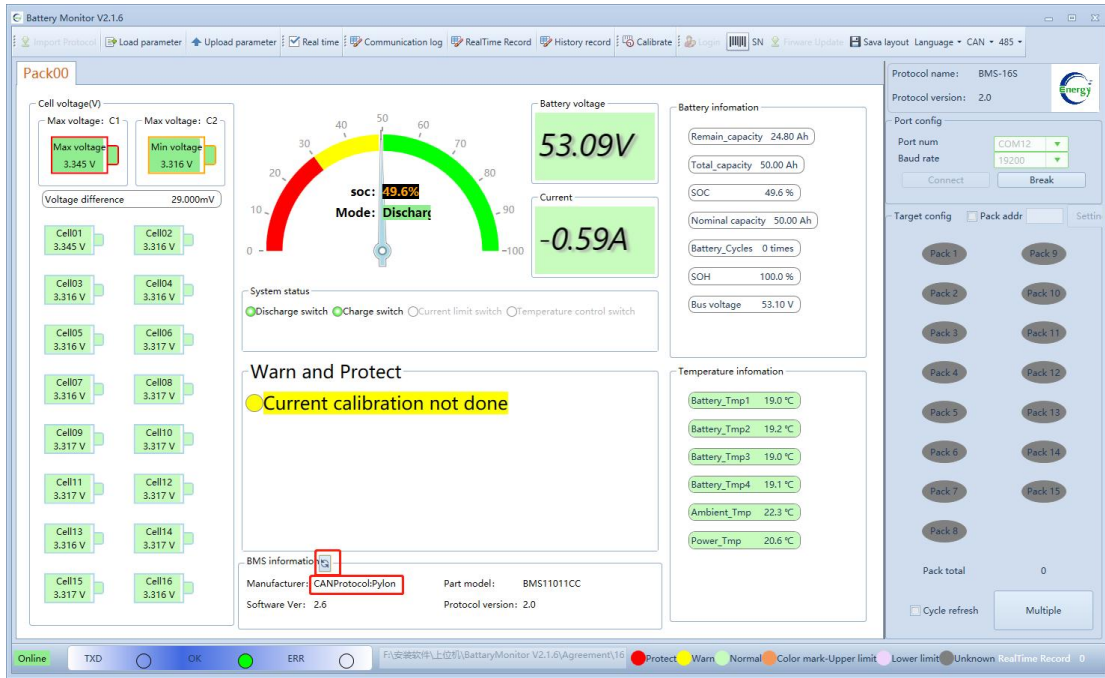


Figure 7.3

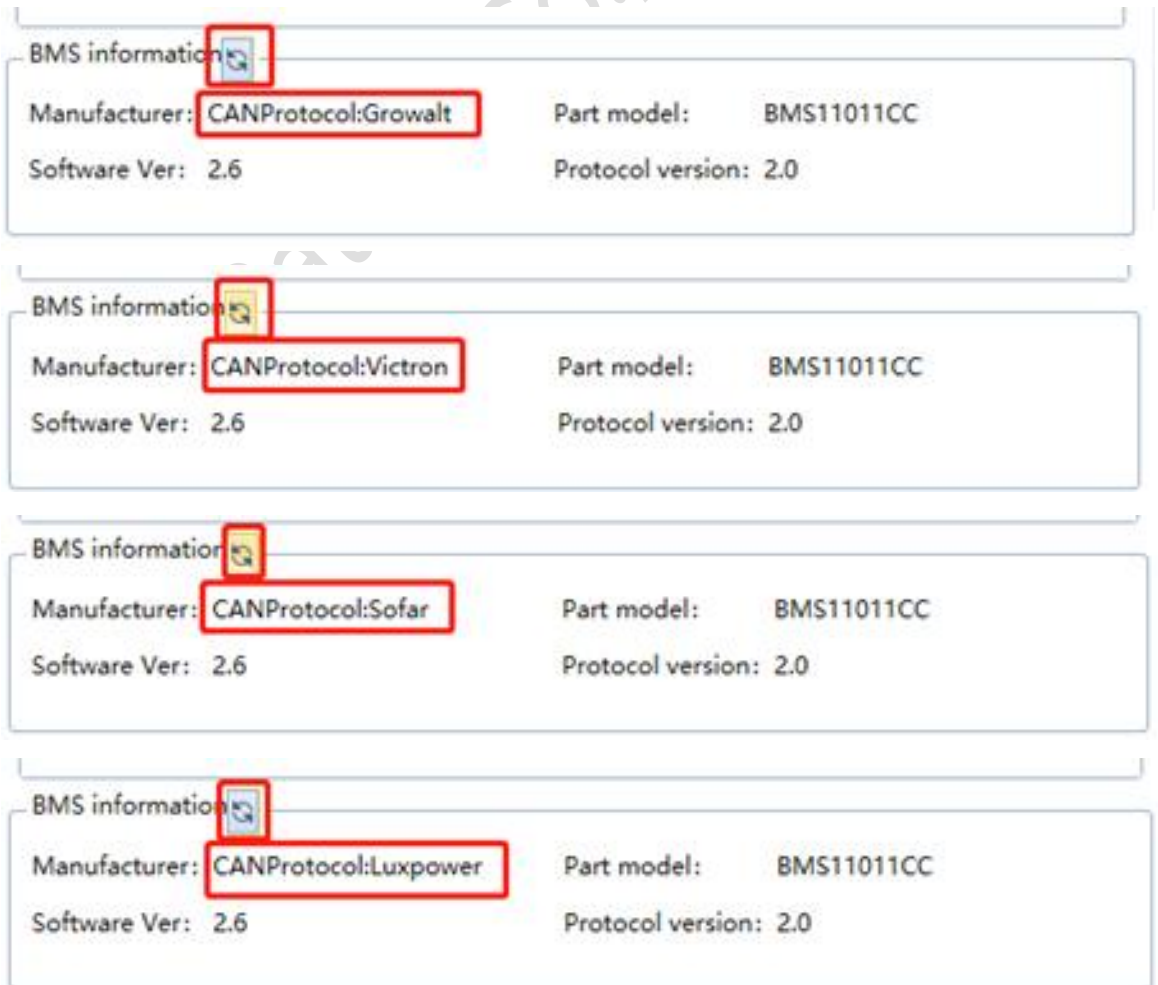


Figure 7.4(other manufacturer information)

## 8. Display Interface Introduction

After successful connection, the red box below is the display Interface Introduction

See Figure 8-1

Detailed introduction see Table 8-1

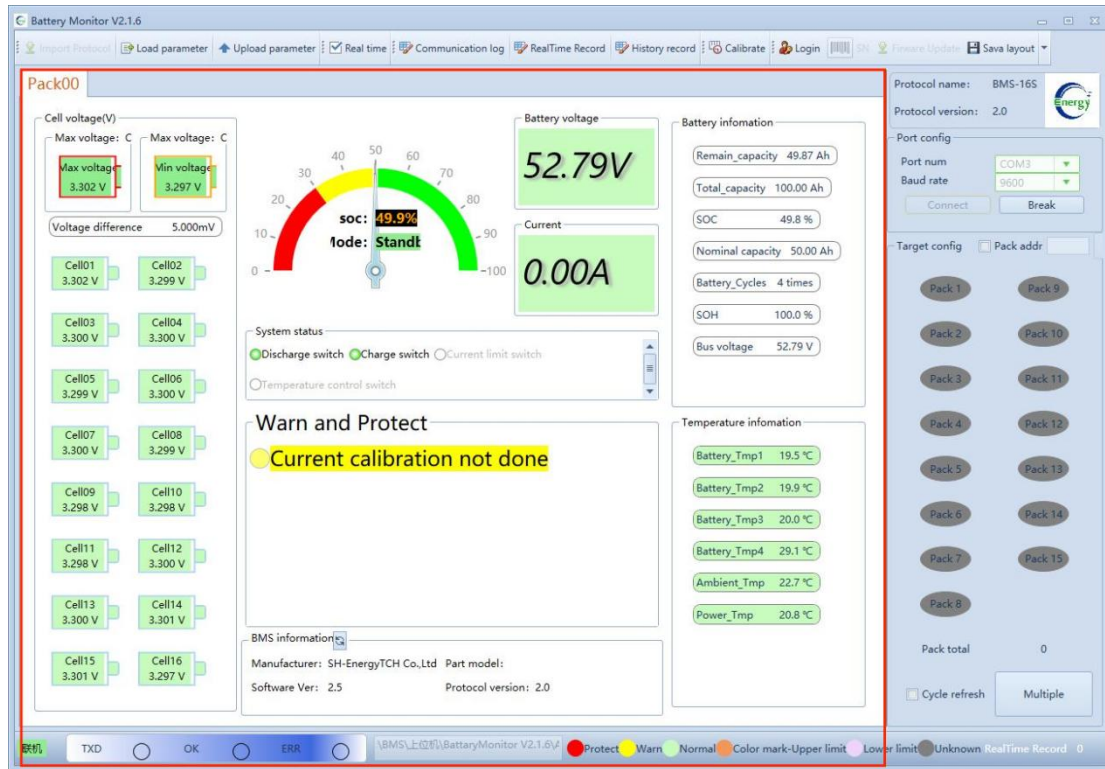








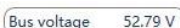


Figure 8-1

Name	Description	Notes	Figure
Max voltage	Highest voltage cell		
Min voltage	Lowest voltage cell		
Voltage difference	Voltage difference between the max voltage and min voltage		

Battery voltage	Battery total voltage		
Current	Charge current Or Discharge current (negative value)		
Remain_capacity	Current battery capacity	Upload parameter-Num59 can set current capacity	
Total_capacity	Actual capacity after full battery		
SOC	State of charge	Remain_capacity/Total_capacity*100%	
Nominal_capacity	Rate capacity.	Upload parameter-Num58 can set capacity	
Battery_cycles	Cycle number	The number of cycles will be increased by one when the cumulative discharge capacity reaches 80% of the full capacity	
SOH	state of health		
Bus voltage	Port voltage. Detection of external voltage	When there is no external connection, the bus voltage is equal to the total battery voltage	







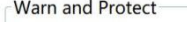
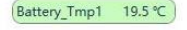




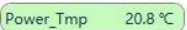
Discharge switch	Discharge switch indicator	Green: switch connected Gray: switch disconnected	 Discharge switch
Charge switch	Charge switch indicator	Green: switch connected Gray: switch disconnected	 Charge switch
Current limit switch	Current limit switch indicator	Green: switch connected Gray: switch disconnected	 Current limit switch
Temperature control switch	Temperature control switch indicator	Green: switch connected Gray: switch disconnected	 Temperature control switch
Warn and Protect	BMS warning and protect display area		
Battery_Temp1	Cell temperature1 value		
Battery_Temp2	Cell temperature2 value		
Battery_Temp3	Cell temperature3 value		
Battery_Temp4	Cell temperature4 value		
Ambient_Temp	Ambient temperature value		
Power_Temp	Power temperature value		

Table 8-1

## 9. Parallel Mode

### 1) Parallel pack selection

When several batteries (max to 16) are combined, ensure that the corresponding address dialed by the BMS is consistent with the address set (**pack x**) by the upper computer (click the pack number to light up or greyed the icon).

See Figure 9-1

2) When confirming the number of parallel machines, click connect to upper computer and select **Cycle Refresh**. The upper computer can see the number of parallel machines and pack refresh data

See Figure 9-2

3) On the upper computer interface, you can click **Multiple** to see each group of PACK data

See Figure 9-3

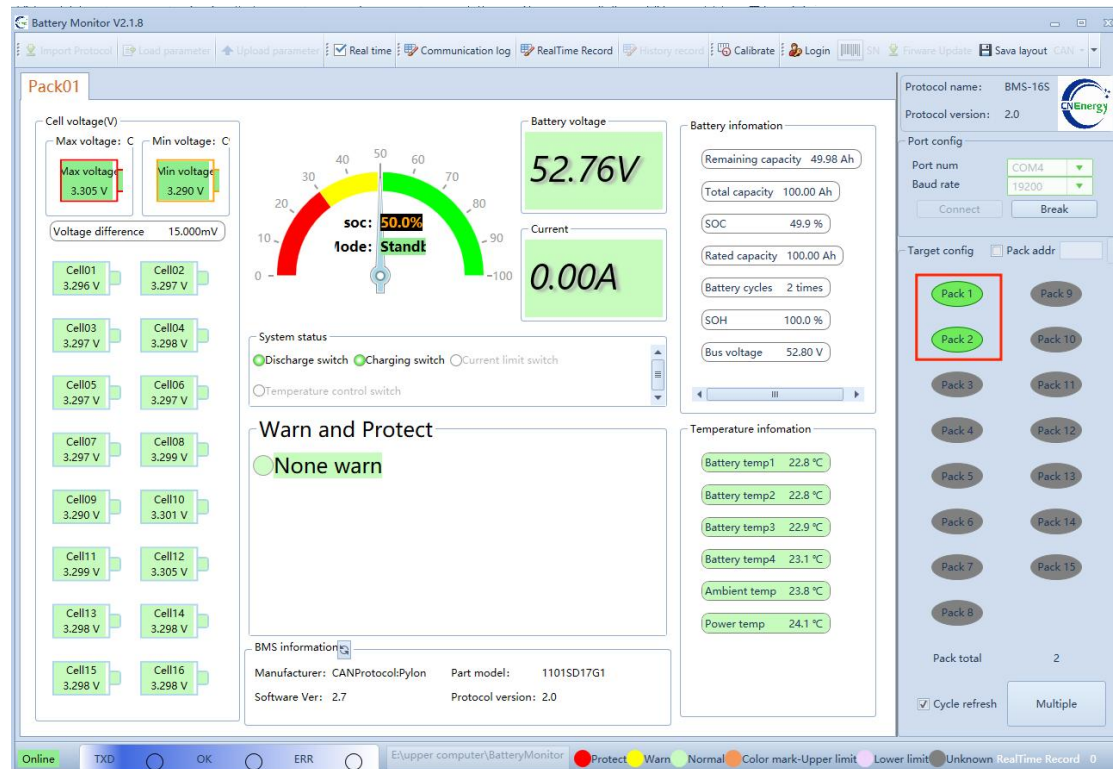


Figure 9-1

In figure 9-1, there are 2 pack icons display in the pack frame, this means there are 3 packs in parallel status. Only the slave pack can be displayed in the pack frame.

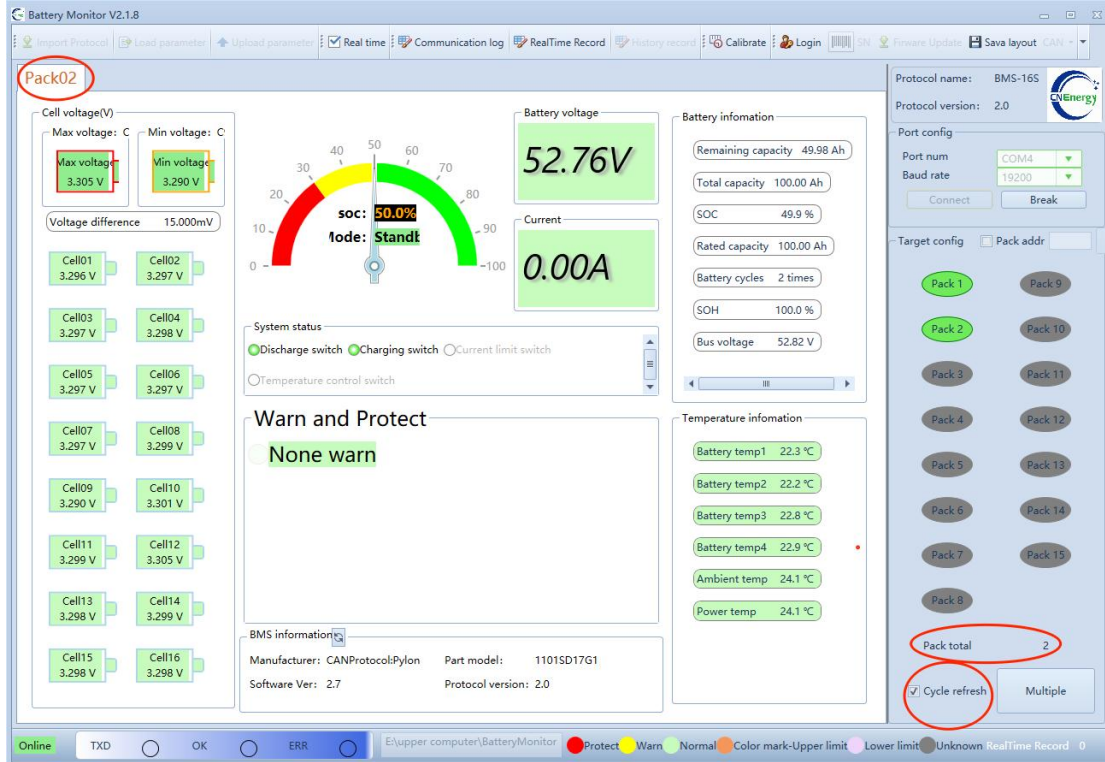


Figure 9-2

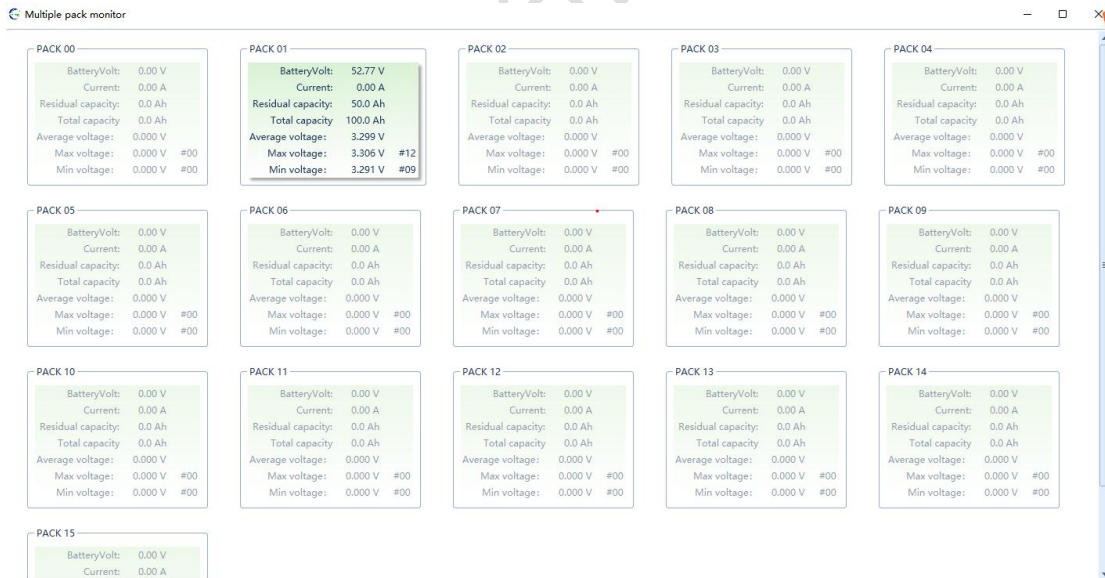
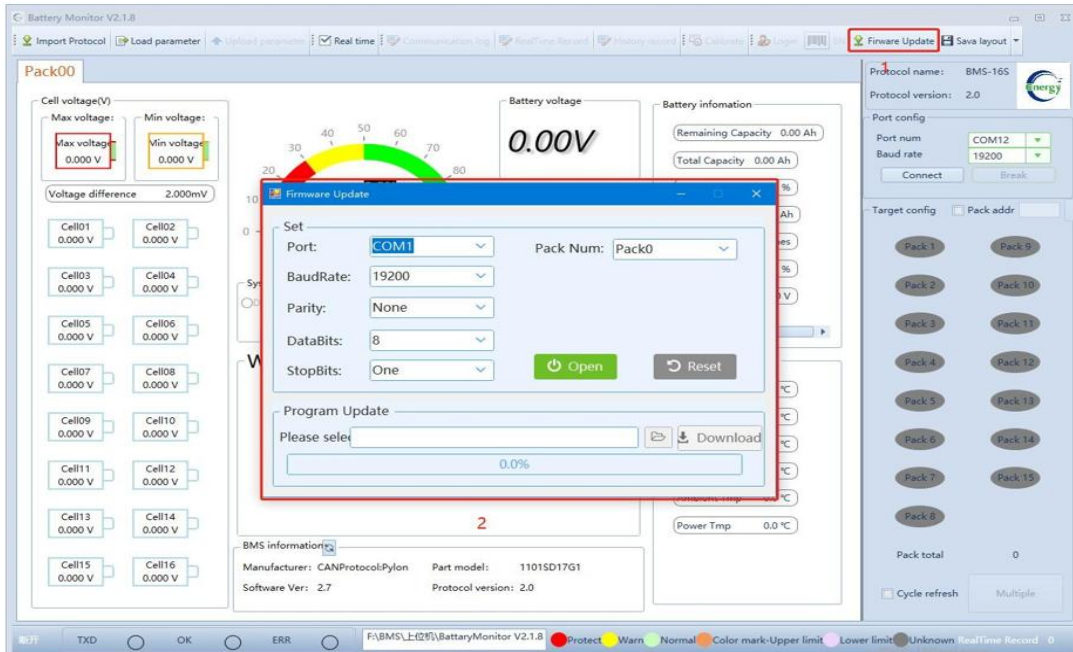


Figure 9-3

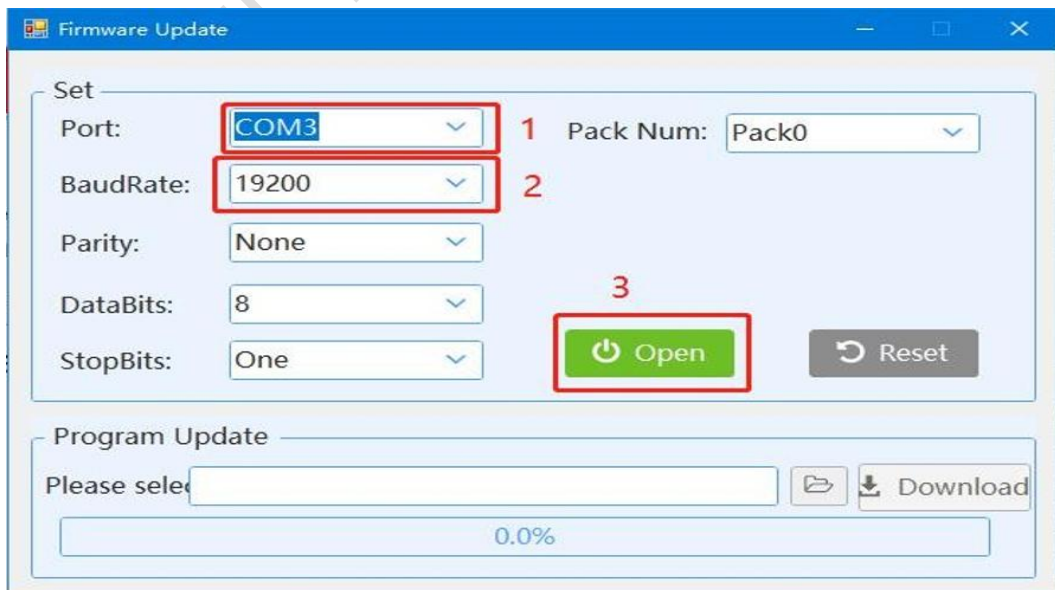
## 10. Firmware update

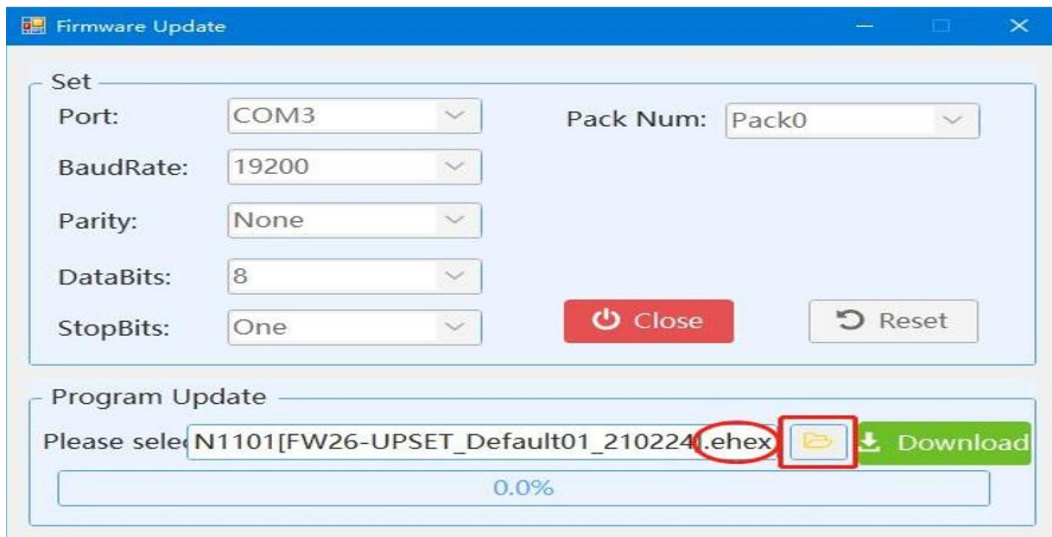
### 10.1 Open Firmware Update (BMS boot state)



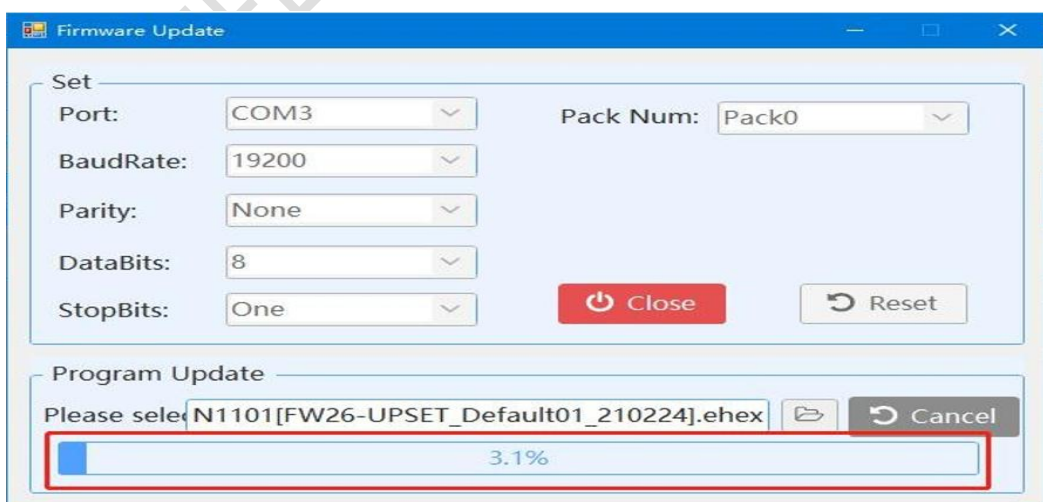
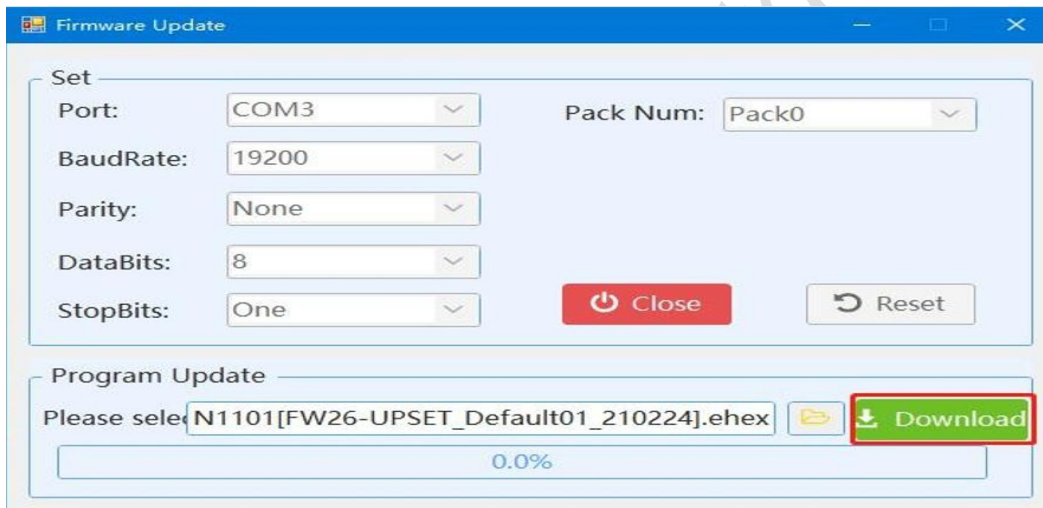
10.2 Use USB to 485 communication line, select the corresponding port, select the baud rate of 9600, and click Open.

10.3 Select folder — — Jump out of corresponding box — — choice the target program ( This program. *ehex* format )

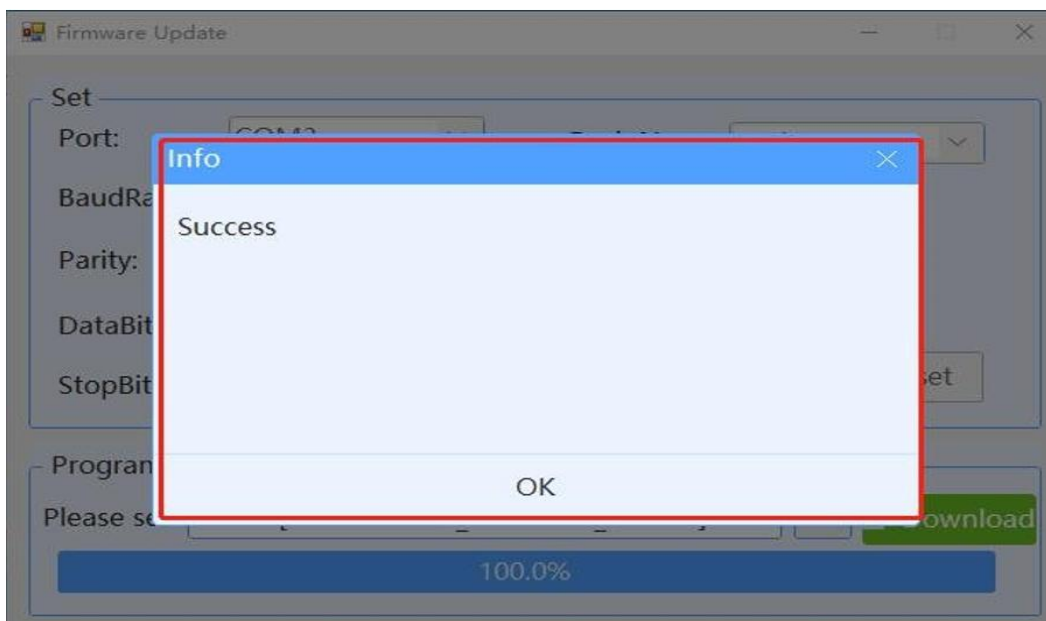




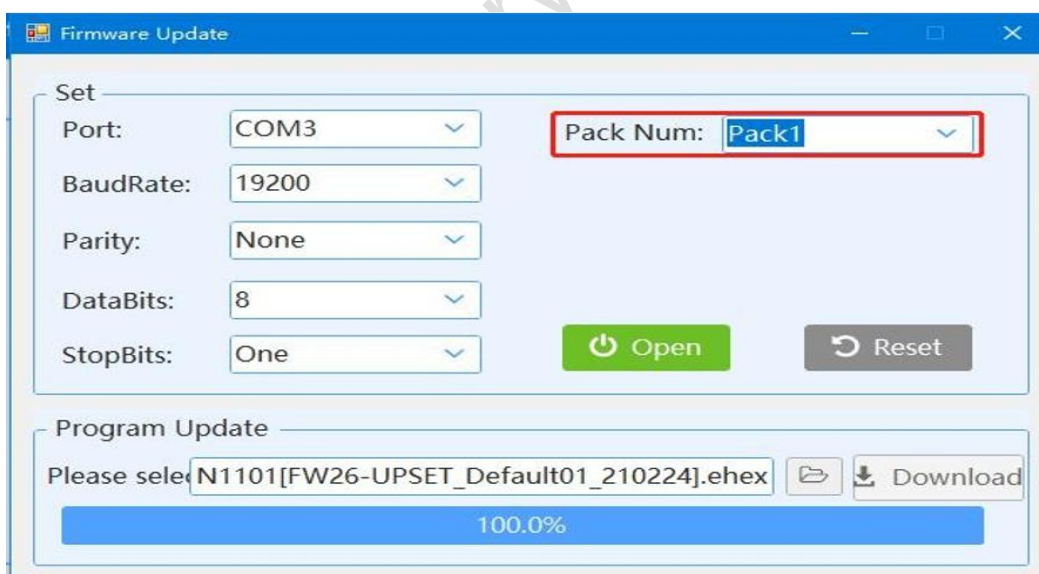
10.4 Click **download** and the progress bar will appear (When you report an error, try pressing the reset button or downloading it several times)



10.5 after the program upgrade **OK**, prompt download successful proof that the program upgrade OK.



**Note:** This upgrade software can also be upgraded according to the corresponding address. If the address of BMS is consistent with the address of Pack number, it can be upgraded.



## 11 .Real Time Record

The real time record will record all the real time information of the battery. The function can be used for automatic monitoring of battery working status

- 1、 Click **Real Time** to enable real time record  
See figure 11-1
- 2、 Click **Real Time Record** to edit the detail information

See figure 11-1/11-2/11-3

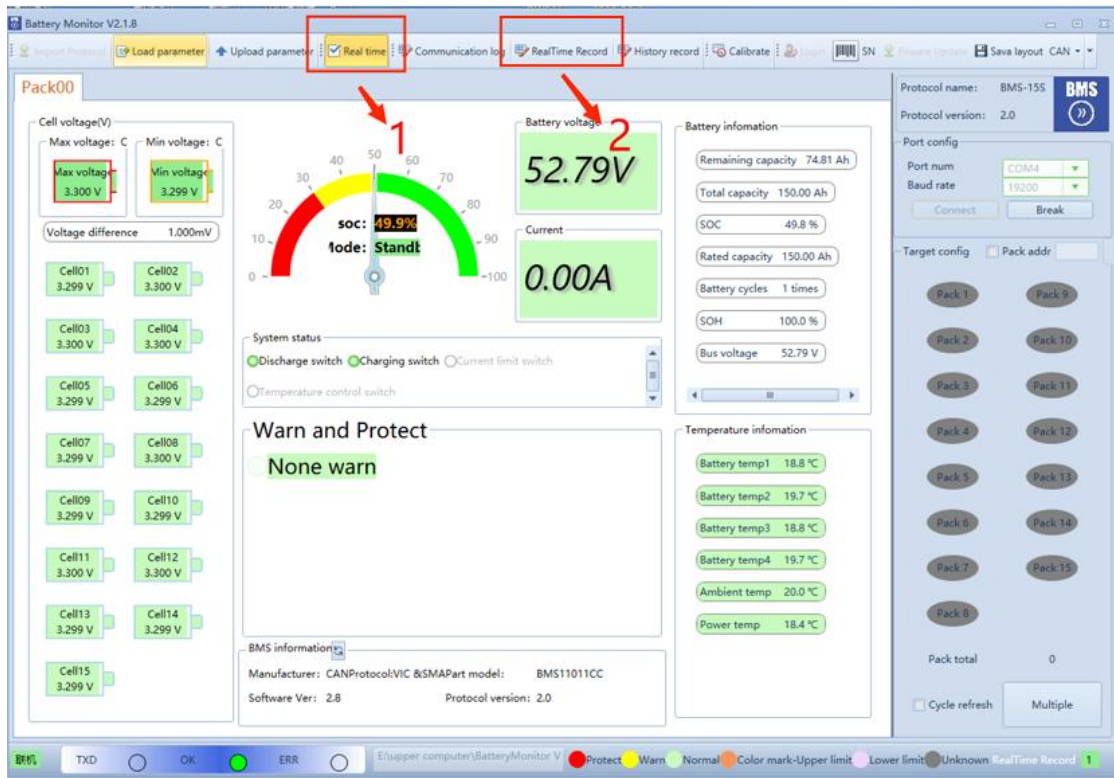


Figure 11-1

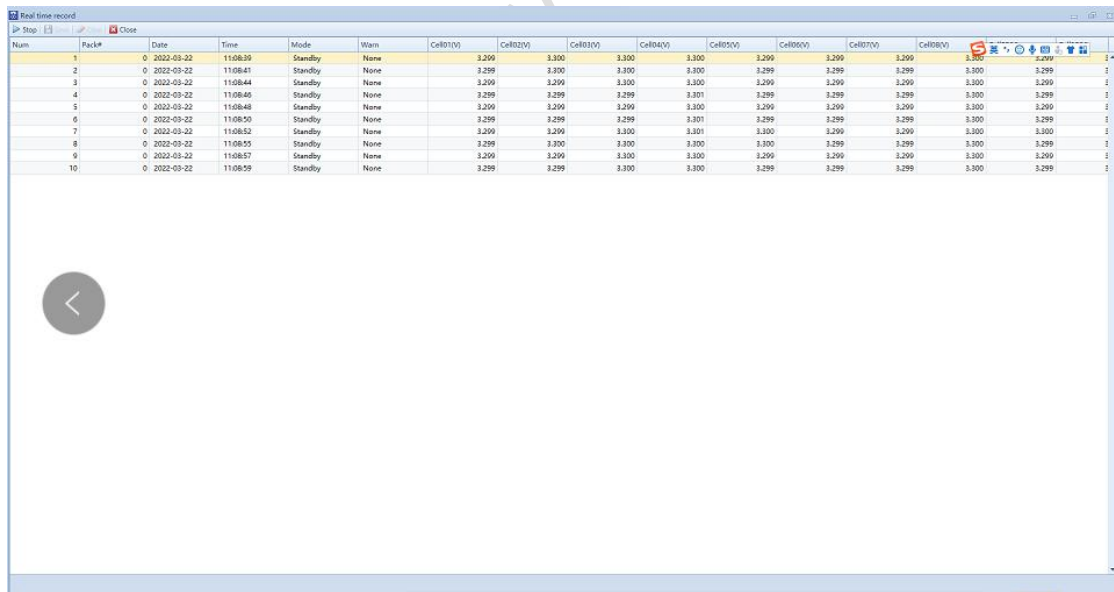


Figure 11-2

Click **STOP** to stop record.

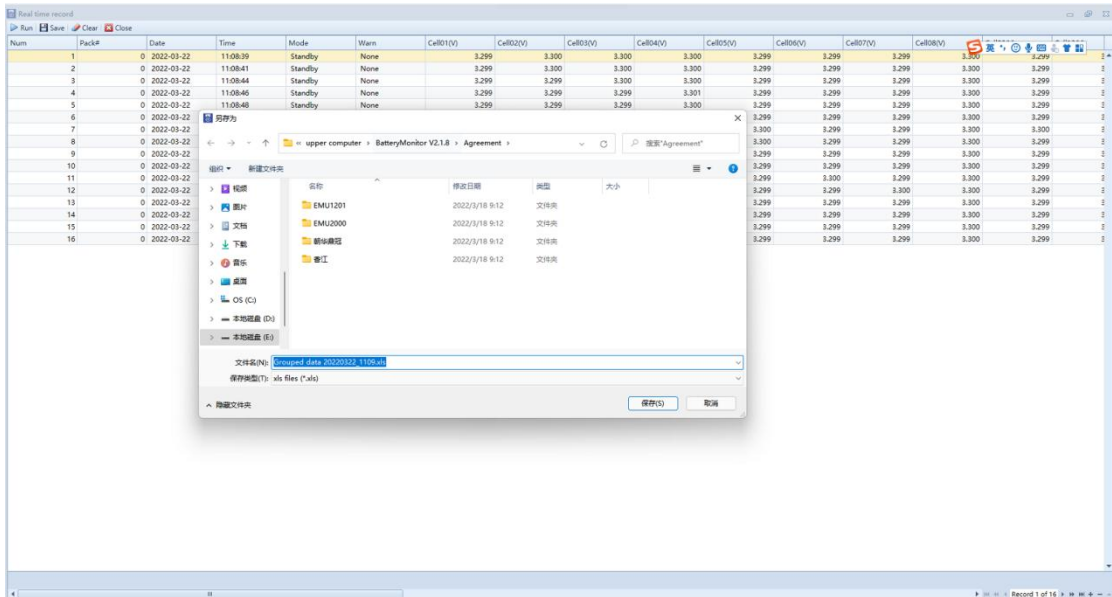


Figure 11-3

- Click **RUN** to record again.
- Click **Clear** to empty the record frame.
- Click **Save** to export the record document.

EEL Battery Co., Ltd.