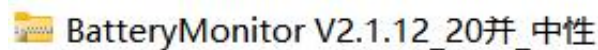# Battery Monitor V2.1.12

Operating instructions of the upper monitor

1、 Unpress the upper monitor file

2、 Open the upper monitor software

1) Double-click to open the decompression file

2) Double-click to open the drawing upper monitor executable,Figure 2-1

Figure 2-1

3、 Load the upper monitor protocol

1) Open the upper monitor, click "Import Protocol", and select "Agreement" in the upper monitor file to open,Figure 3-1
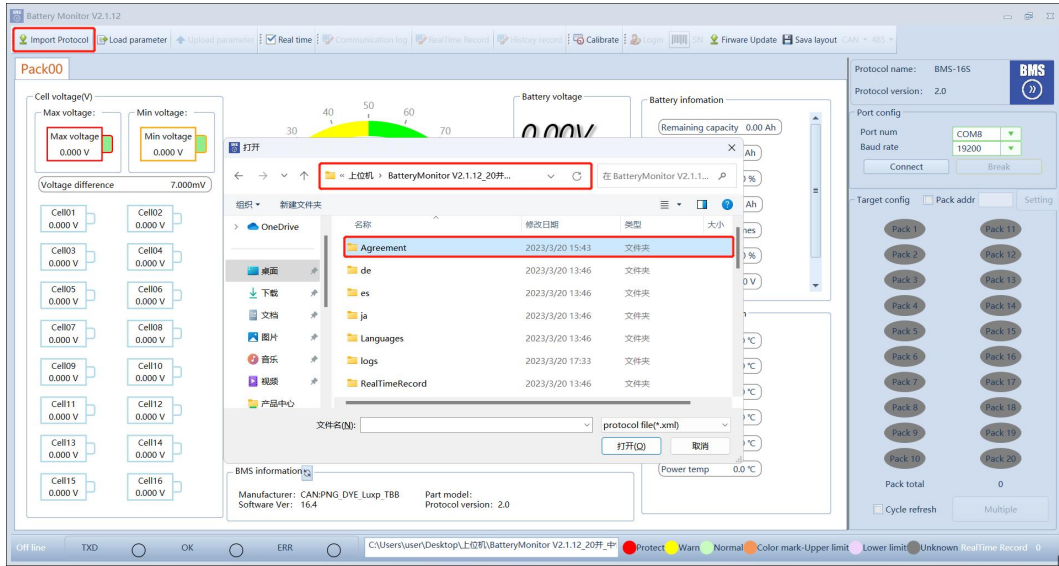
Figure 3-1

2) Select the protocol file corresponding to the string, the prefix EN corresponds to the English protocol, the prefix without EN corresponds to the English protocol (example: 16 string English protocol------16S_V20_ADDR_EN), click open,Figure3-2
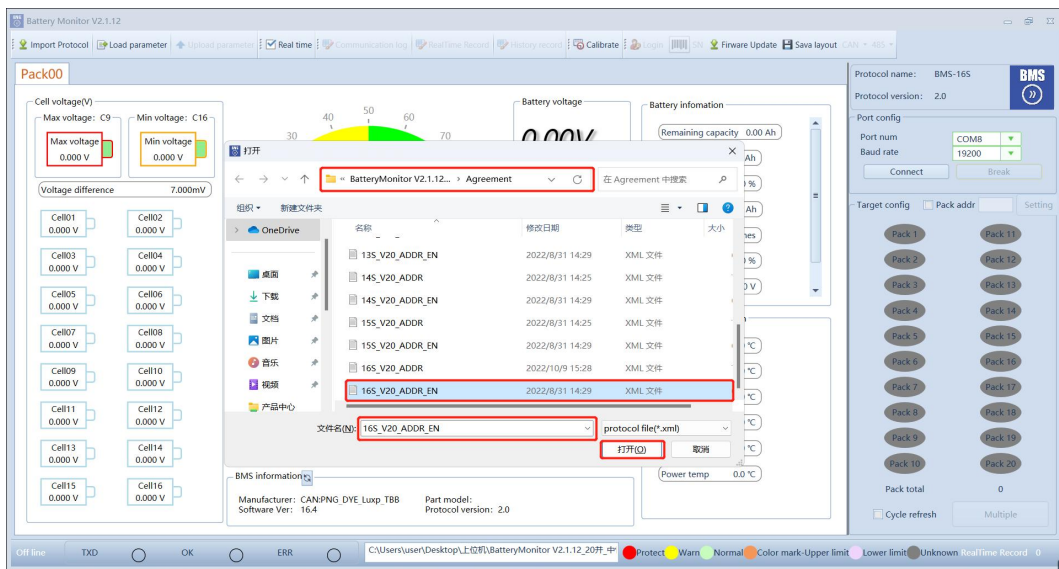
Figure 3-2

3) Click to determine,Figure3-3

Figure 3-3

4、 Communication port configuration

1) Select serial port (upper monitor automatic identification USB to 485 serial port, string slogan automatic recognition)

2) Baud rate: 19200

3) Click on the connection,Figure 4-1
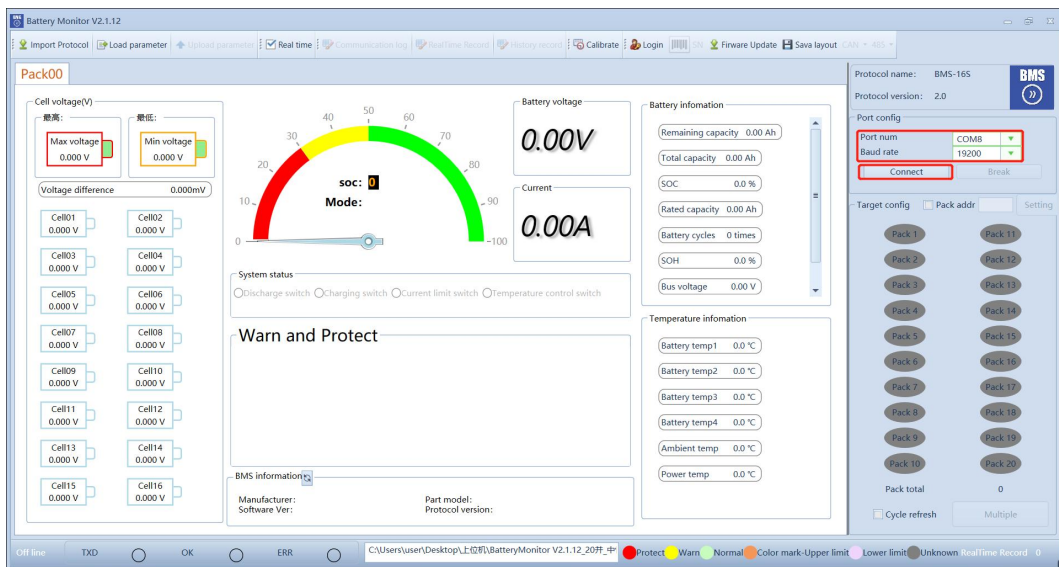
Figure 4-1

4) After a successful connection, the upper monitor will displays the battery

data,Figure 4-2
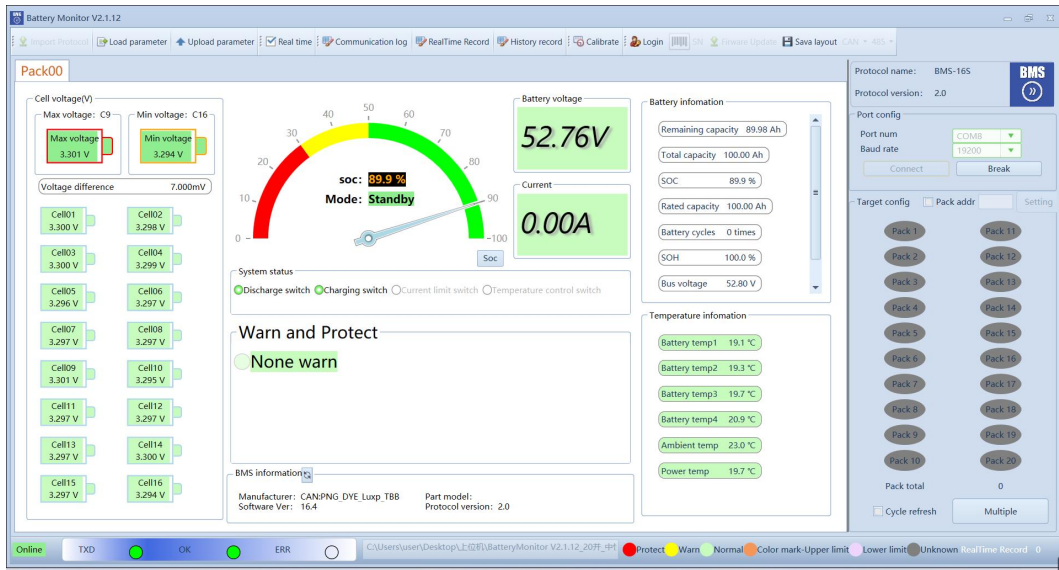
Figure 4-2

5、Login

Username:admin

Password:admin

Figure 5-1
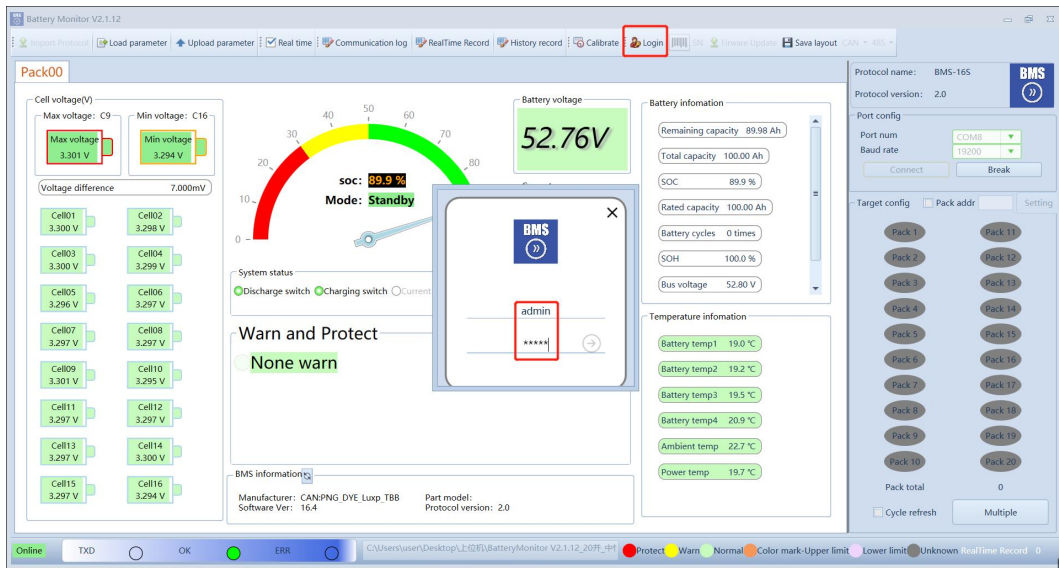
Figure 5-1

6、Load parameters and upload parameters

Load parameters: Download the parameters from the upper monitor to the BMS

Upload parameters: From the BMS upload parameters to the upper monitor

6.1、Load parameters

1) For the first load parameters, you need to "upload parameters" and then "close",Figure 6-1
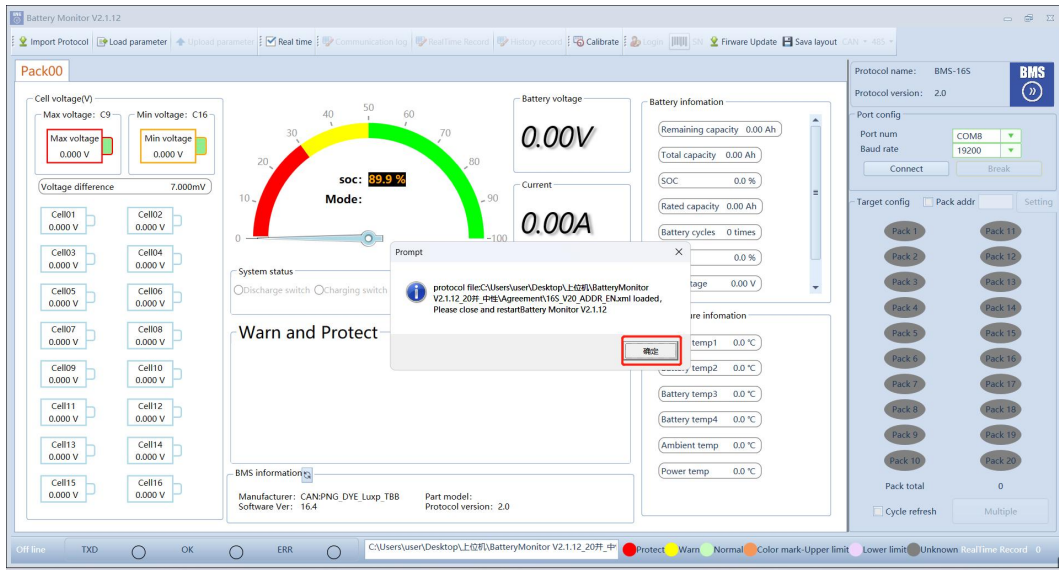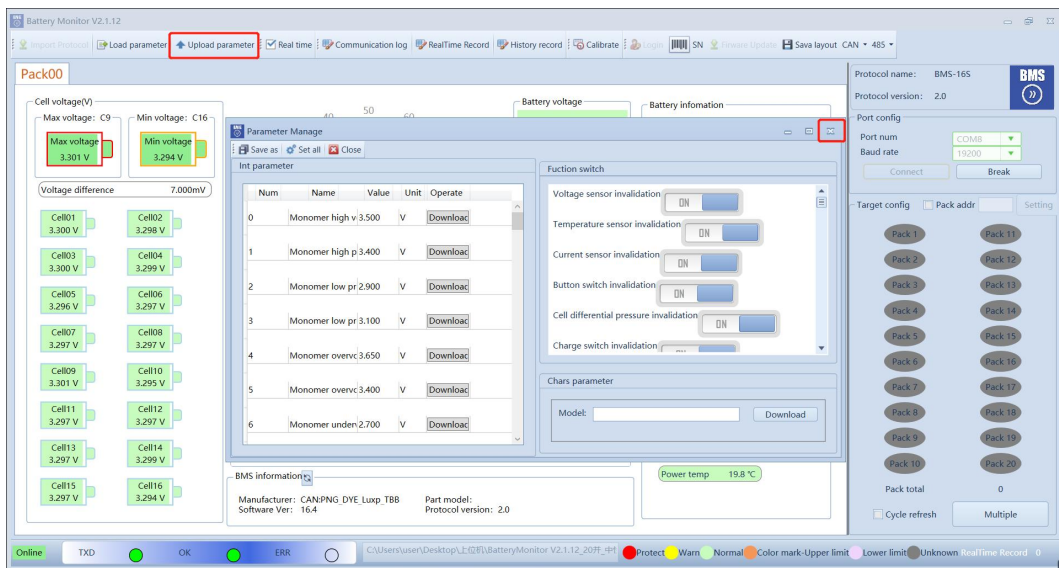

Figure 6-1

2) Click "Load Parameters" to select the parameter document to load,Figure 6-2
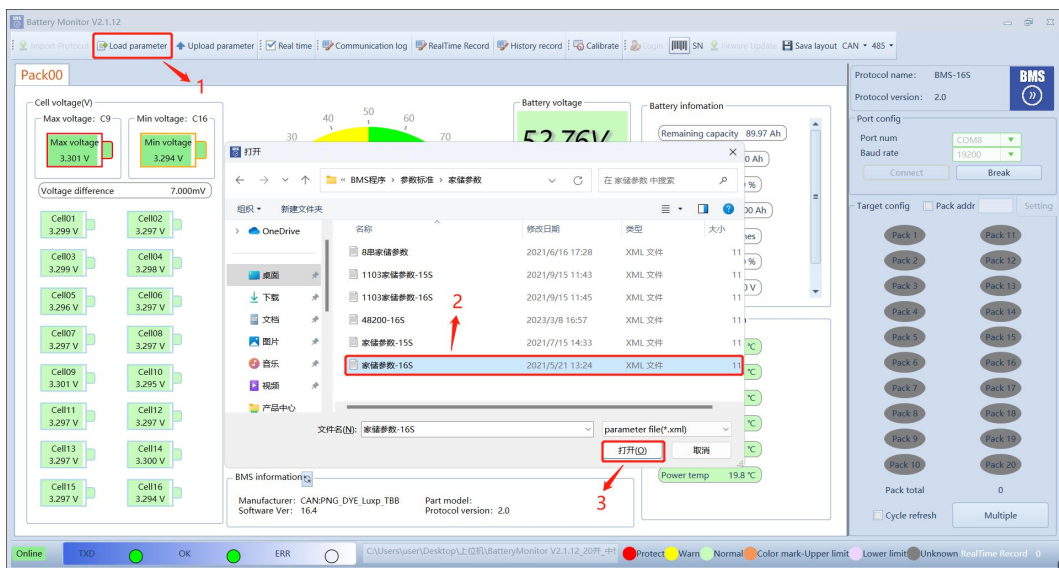
Figure 6-2

3) Click "Set All", the prompt box pop up, and then click "Close" to complete the configuration,Figure 6-3
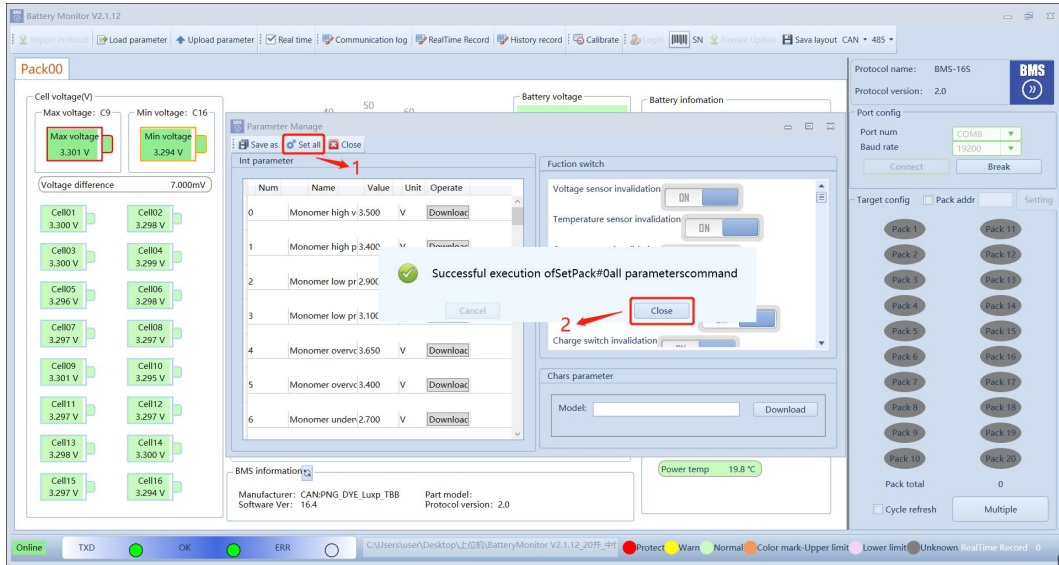
Figure 6-3

6.2、Modify parameters

1) Click "Upload parameters" to upload the parameters from BMS

2) Change the BMS parameters and functional switches as required

3) Click "Set all" to complete the modification,Figure 6-4

Note: Follow the order of the red font in the figure
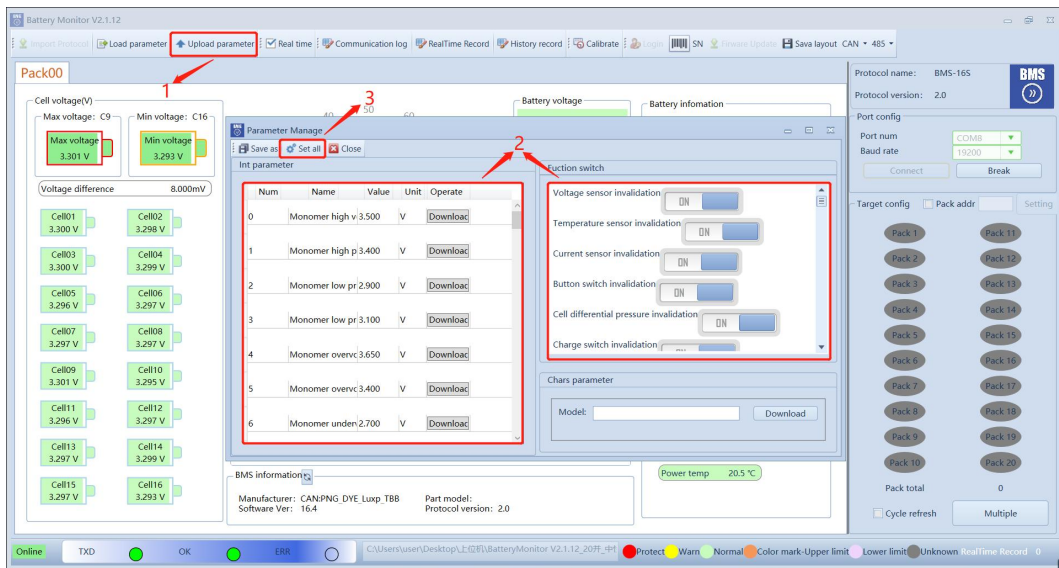
Figure6-4

7、 Configuration of the communication protocol

1) Click the "CAN" drop-down box and select the corresponding CAN protocol

according to the inverter type,Figure 7-1

Note: The 485 protocol is self-adapted and does not require manual selection

For CAN, the protocol has 6 options:

protocol type	Supported inverter brand
PN-GDLT	派能 PYLON、固德威 GOODWE、德业 Deye、鹏城 LUXPOWER、TBB
GRWT	古瑞瓦特 Growatt---SPF、SPH
VCTR	Victron
SMA-SF	SMA、首航 SOFAR
GINL	锦浪 Solis
STUD	Studer
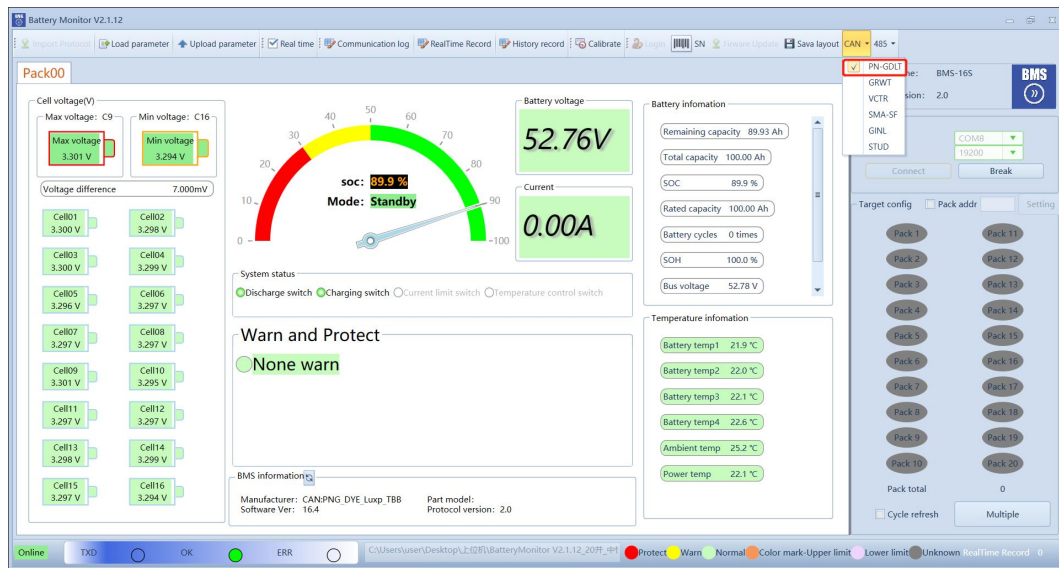
Figure 7-1

2)　Click "Close" to complete the configuration,Figure 7-2

Figure 7-2

3)　Click "Refresh", the manufacturer information will display the corresponding

inverter manufacturer information,Figure 7-3

BMS information ↻

Manufacturer:　CAN:Growatt_SPF_SPH　　Part model:
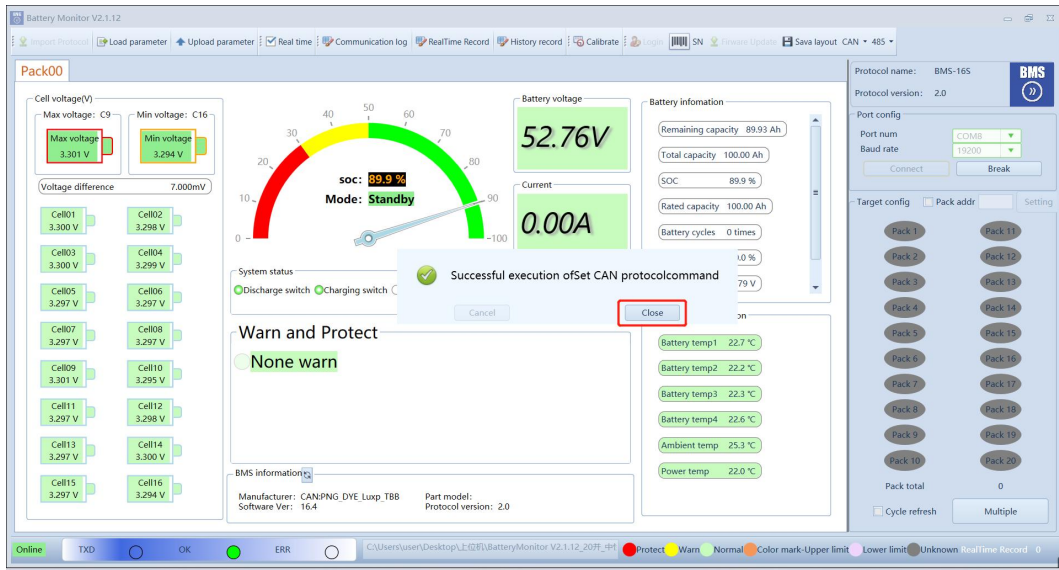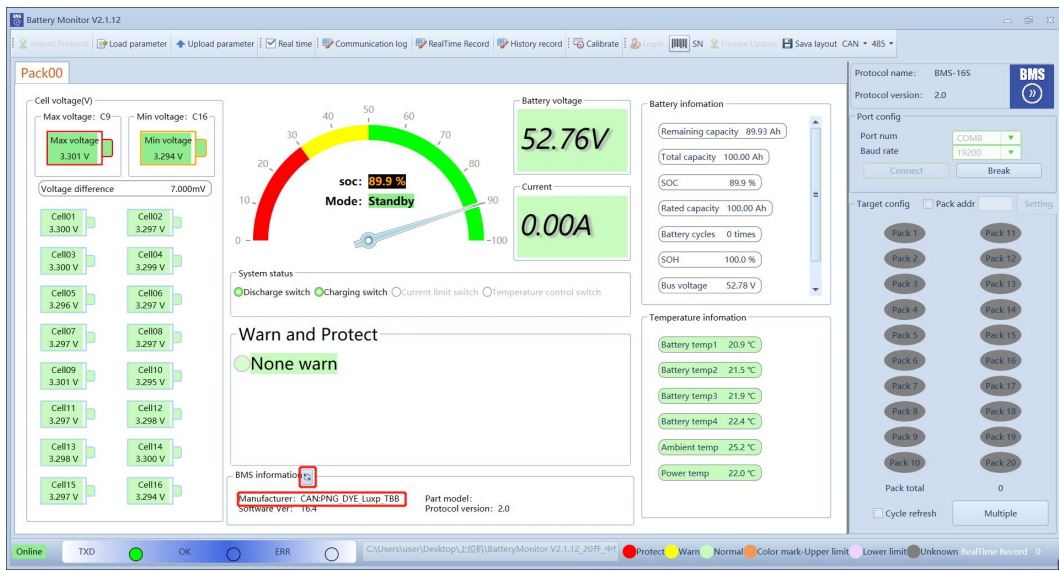Software Ver:　16.4　　　　　　　　　　　Protocol version: 2.0

BMS information ↻

Manufacturer:　CAN:Victron　　　　　　　Part model:
Software Ver:　16.4　　　　　　　　　　　Protocol version: 2.0

BMS information

Manufacturer: CAN:SMA_SOFAR   Part model:
Software Ver: 16.4   Protocol version: 2.0

BMS information

Manufacturer: CAN:GINLONG   Part model:
Software Ver: 16.4   Protocol version: 2.0

BMS information

Manufacturer: CAN:Studer   Part model:
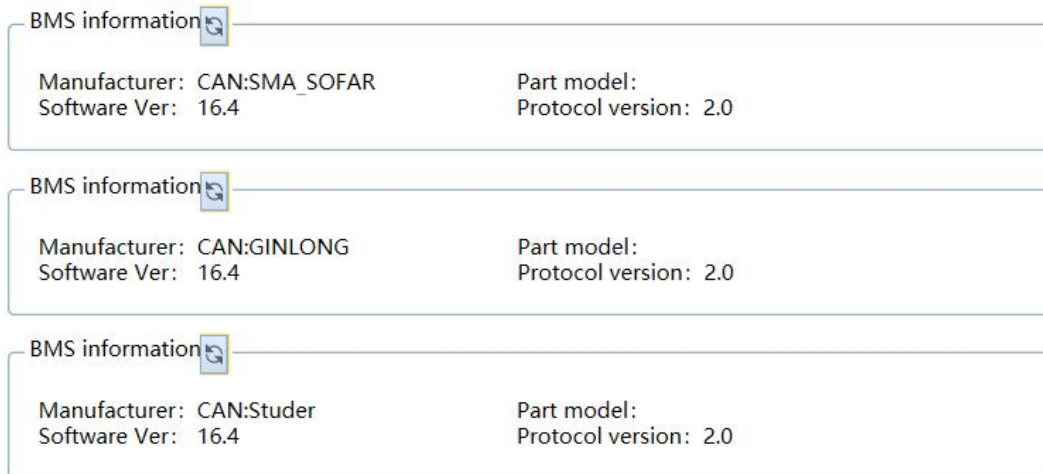Software Ver: 16.4   Protocol version: 2.0

Figure 7-3

8、Show page introduction

After the successful connection, the following red box refers to the display interface,Figure 8-1 and Table 8.1
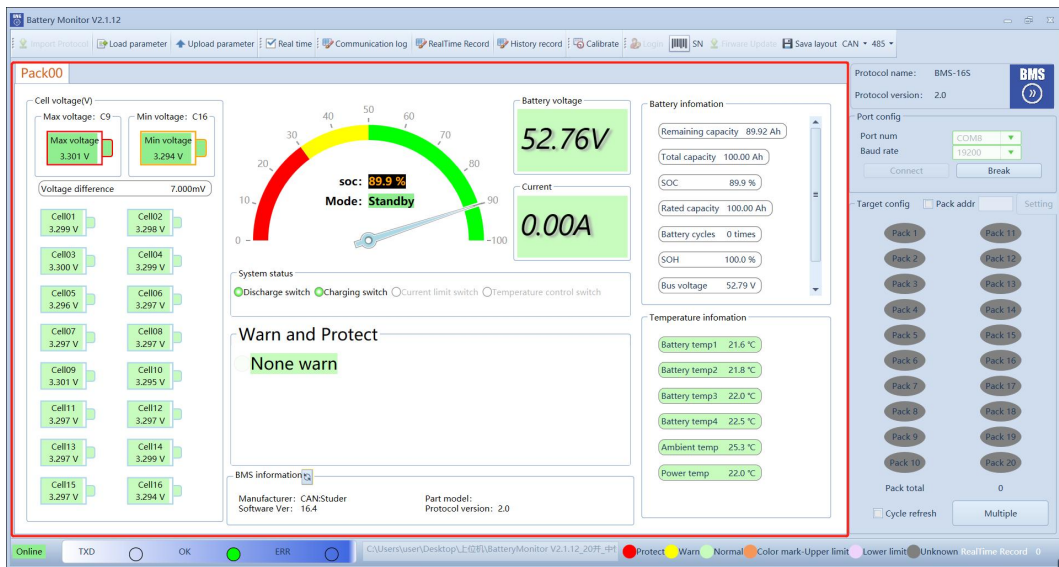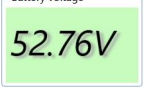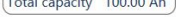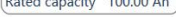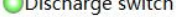
Figure 8-1

definition	instruction	prompt	expression
Max voltage	Maximum voltage value and battery cell number		Max voltage: C9 / Max voltage 3.301 V
Min voltage	Minimum voltage value and battery cell number		Min voltage: C16 / Min voltage 3.293 V

Differential pressure	The voltage difference between the maximum voltage and the minimum voltage		Voltage difference 7.000mV
Battery voltage	Total battery voltage		Battery voltage 52.76V
Current	Charging current or discharge current (negative value)		Current 0.00A
Remaining capacity	Present battery capacity	Upload parameters Num59 can set the current capacity	Remaining capacity 89.99 Ah
Total capacity	Actual capacity after full charge		Total capacity 100.00 Ah
SOC	% Residual capacity	Remaining capacity / total capacity of * 100%	SOC 89.9 %
Rated capacity	Rated capacity	Upload parameters Num58 sets the capacity	Rated capacity 100.00 Ah
Battery cycle	Cycle index	When the cumulative discharge capacity reaches 80% of the full capacity, the cycle number will be increased once	Battery cycles 0 times
SOH	Health condition		SOH 100.0 %
Bus voltage	Port voltage. External voltage detection	When there is no external connection, the bus voltage is equal to the total battery voltage	Bus voltage 52.78 V
Discharge switch	Discharge switch indicator lamp	Green: Switch is connected Grey: the switch is off	⬤Discharge switch
Charge switch	Charging switch indicator lamp	Green: Switch is connected Grey: the switch is off	⬤Charging switch
Current limit switch	Current-limiting switch indicator light	Green: Switch is connected Grey: the switch is off	○Current limit switch

Temperature control switch	Temperature control switch indicator lamp	Green: Switch is connected Grey: the switch is off	◯Temperature control switch
Warning and protection	BMS warning and protection display areas		Warn and Protect None warn
Battery temperature	The 4 battery temperature values		Battery temp1　20.8 ℃ Battery temp2　21.5 ℃ Battery temp3　21.7 ℃ Battery temp4　22.4 ℃
Ambient temperature	Ambient temperature value		Ambient temp　25.1 ℃
Power temperature	Power temperature value		Power temp　21.8 ℃

Table 8.1

8.2、　**Parallel mode**

1)　Parallel selection

When multiple batteries (up to 20 groups) are connected in parallel, ensure that the BMS dial address (optional auto dial) is consistent with the address set by the upper monitor (pack x) (click the upper computer pack x icon to light up or turn gray),Figure 8-2
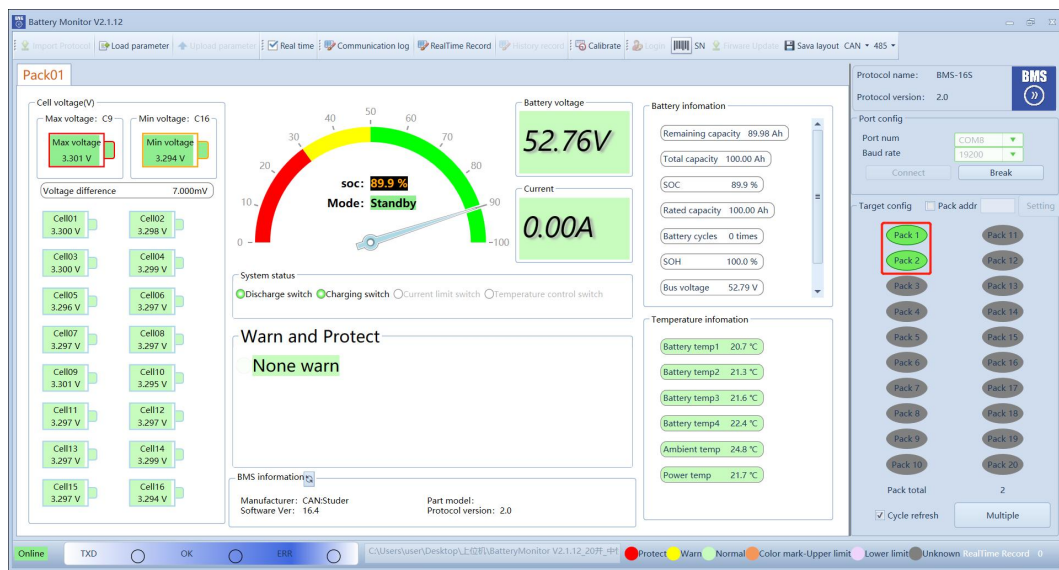

Figure 8-2

2) When confirming the number of connected machines, click Connect the upper monitor and select "Cycle Refresh". The upper monitor can see the number of parallel machines and package the refresh data,Figure 8-3
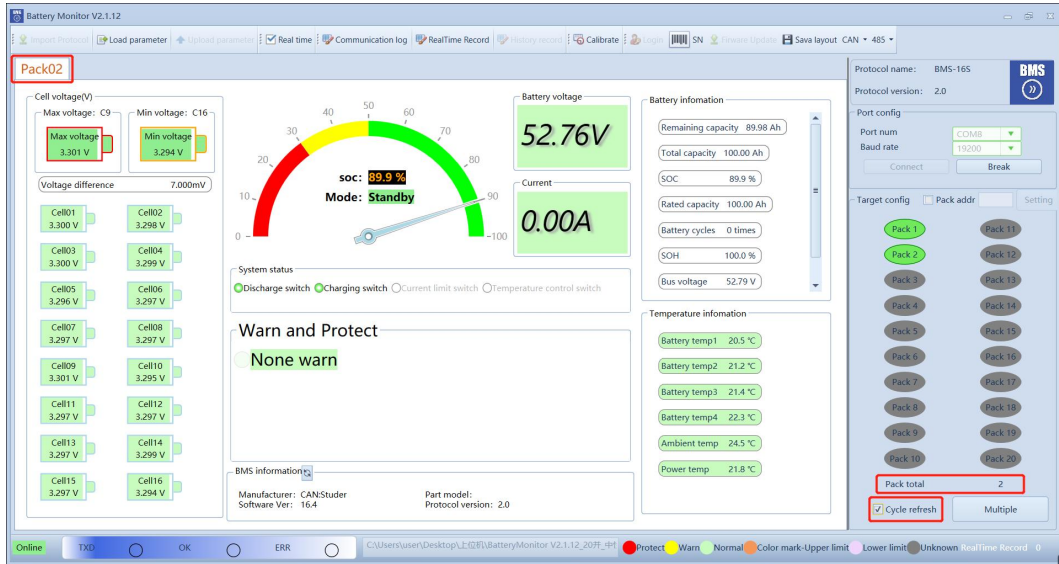

Figure 8-3

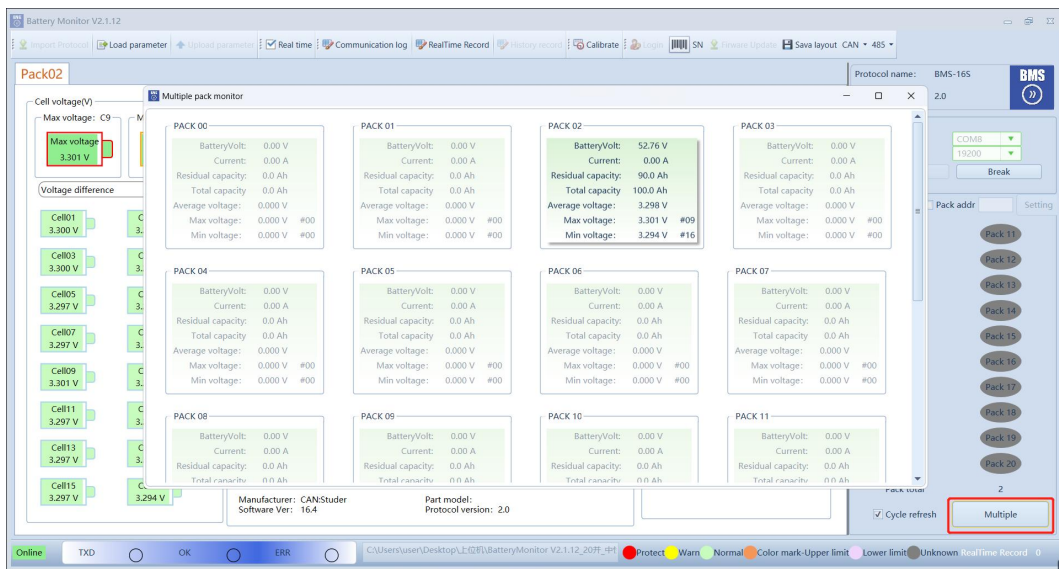3) On the upper monitor interface, you can click "Multiple" to view each group of package data,Figure 8-4

Figure 8-4

9、 Firmware Update

1) The upper monitor is disconnected, click "firmware update", select the corresponding port number, and the port rate to select 19200, and click "Open",Figure 9-1
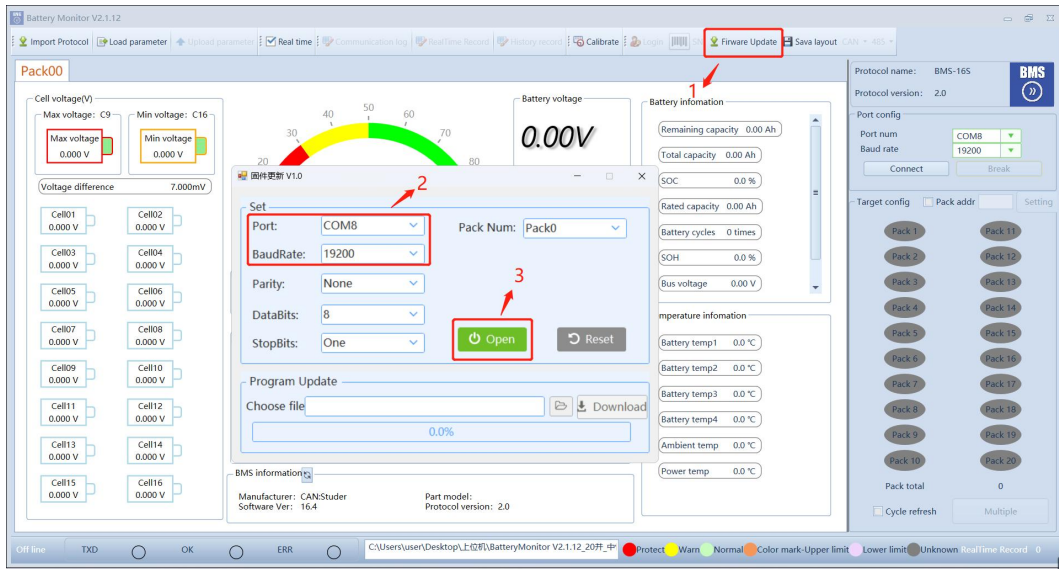

Figure 9-1

2) Click "Folder" to select the program to be upgraded in the prompt box (ehex),Figure 9-2
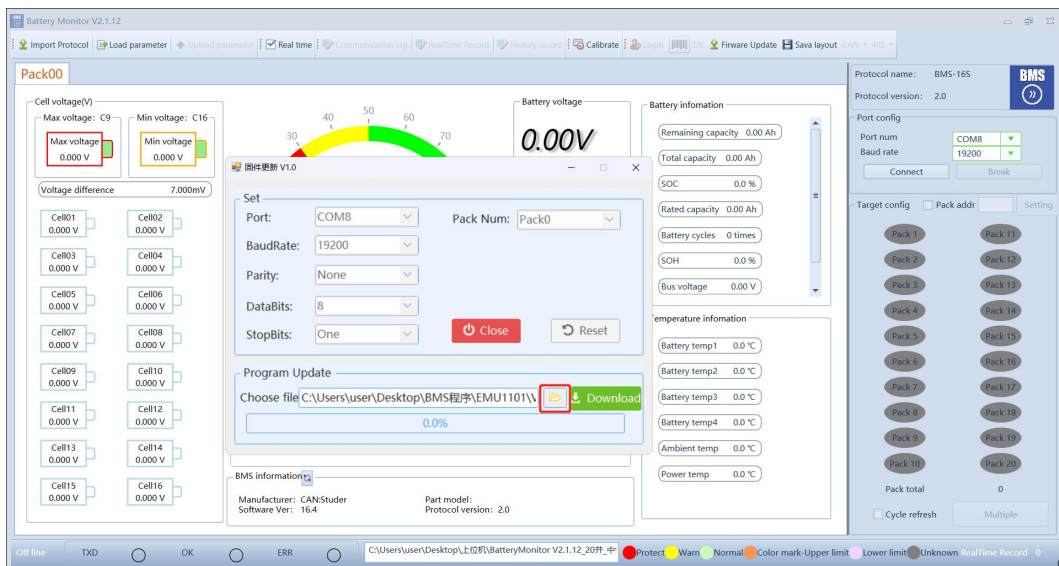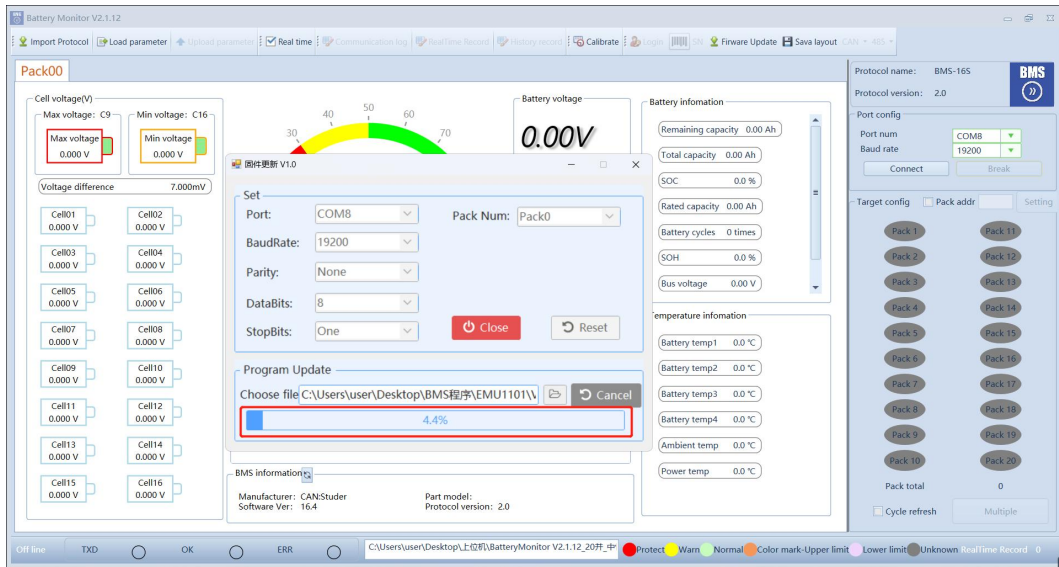

Figure 9-2

3) Click "Download" to show the download progress. If the error is reported, please try several times,Figure 9-3

4) After the program is downloaded, the prompt download is successful, and click "OK" to complete the upgrade，Figure 9-4
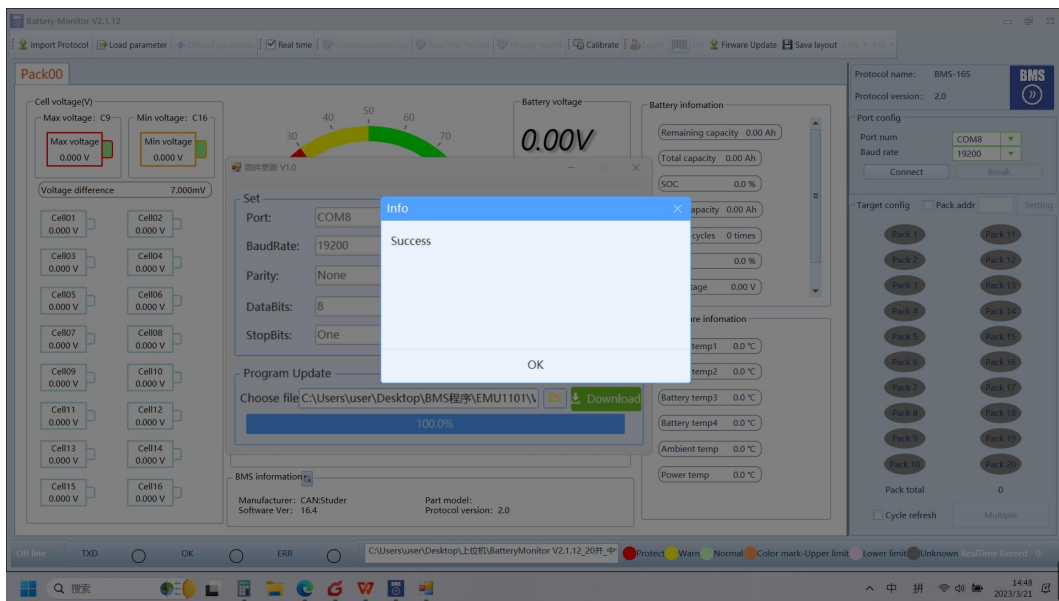

Figure 9-4

Note: This upgrade software can also be upgraded according to the corresponding address. If the BMS address matches the address of the package number, you can upgrade,Figure 9-5
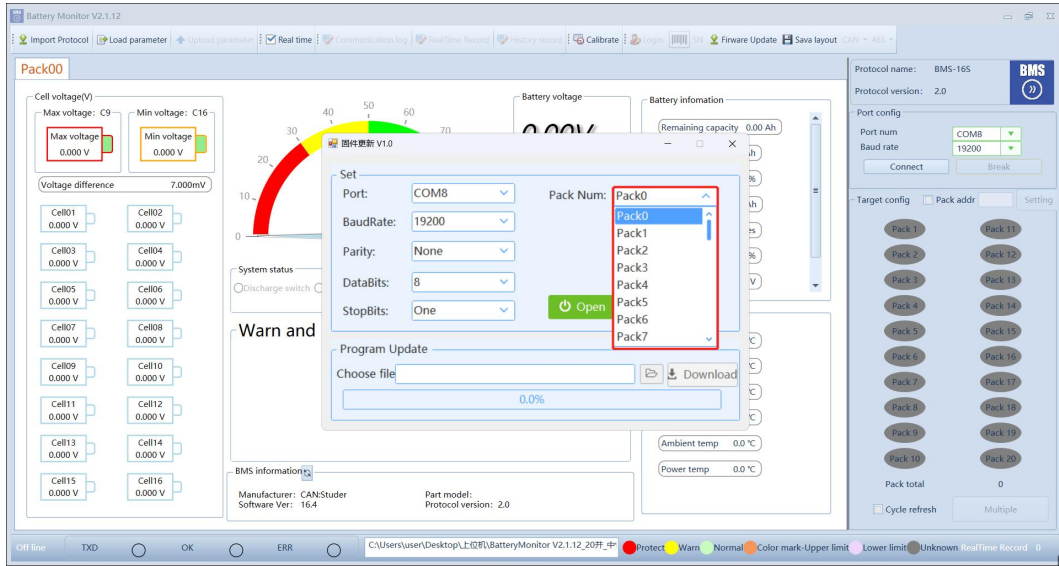

Figure 9-5