

E-BOX-12100

BMSQt User manual



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1.BMSQt 2.8.5-T2-12V Introduction

1.1 Basic Information

Firmware Version	BMSQt 2.8.5-T2-12V
Release Date	2025-02-18
Function	1、 Update E-BOX 12100 firmware 2、 Set 12V/24V Closed loop communication mode with Victron 12V/24V inverter

1.2 Recommended operating environment:

Operating system	Microsoft Windows
Monitor resolution	1920*1080
Scale	100% or 125%
*Install the serial port driver before using this program.	

2. Battery types for which the BMSQt is adapted

NO.	Item	Product Picture
1	E-BOX 12100	

3.Console cable

NO.	Material Number	Product Name
1	161412101050	USB to M12 console cable



Pic.3.1

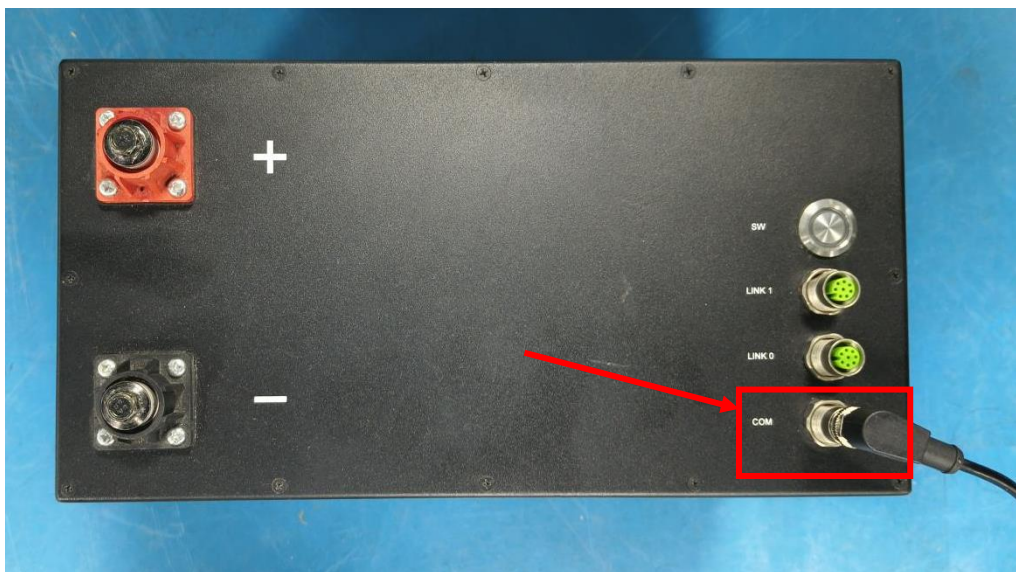
4. Connection and start BMSQt

4.1 Connect console cable

Prepare the USB to M12 console cable. Insert the USB end into the USB port of your computer (as shown in Pic 4.1) , and insert the aviation M12 end into the COM port of the battery (as shown in Pic 4.2).



Pic 4.1



Pic 4.2

4.2 Stat the battery system

Turn on the batteries; if the system has more than one battery in system, must wait for all batteries to start.

4.3 Starting BMSQt.exe

Locate the firmware zip BMSQt 2.8.5-T2-12V (as shown in Pic 4.3.2)



BMStest2.8.5-12V

Pic 4.3.1

Extract the upper firmware zip BMStest2.8.5-12V, the extracted file

is shown in Pic 4.3.2.



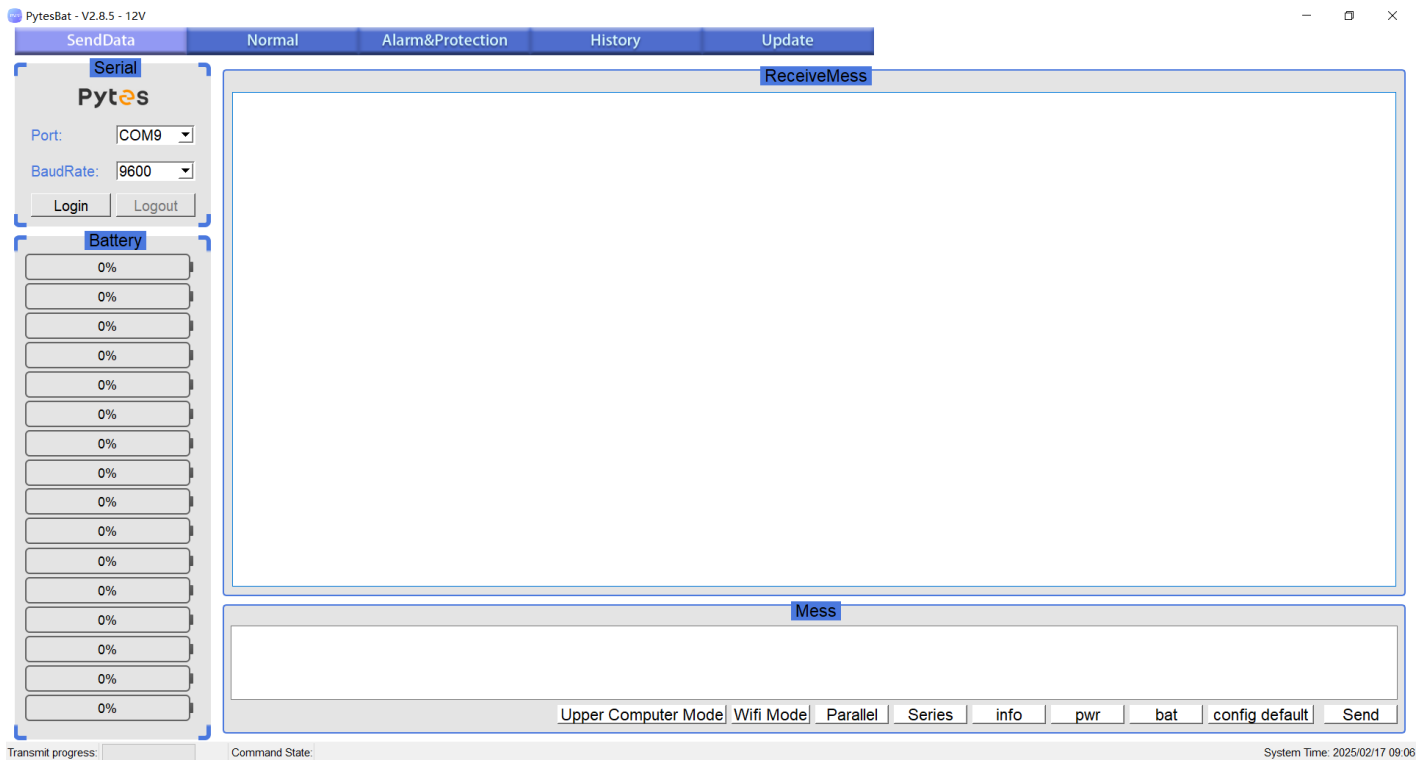
Pic 4.3.2

Open the BMStest2.8.5-12V folder, as in Pic 4.3.3, and double-click “BMSQt.exe” to start the program.

bearer	2024-05-15 8:53	文件夹	
iconengines	2024-05-15 8:53	文件夹	
imageformats	2024-05-15 8:53	文件夹	
log	2024-05-16 0:00	文件夹	
platforms	2024-05-15 8:53	文件夹	
styles	2024-05-15 8:53	文件夹	
translations	2024-05-15 8:53	文件夹	
BMSQt.exe	2024-05-08 9:43	应用程序	1,946 KB
D3Dcompiler_47.dll	2014-03-11 18:54	应用程序扩展	3,386 KB
libEGL.dll	2020-03-28 3:04	应用程序扩展	66 KB
libgcc_s_dw2-1.dll	2018-03-19 21:12	应用程序扩展	112 KB
libGLESv2.dll	2020-03-28 3:04	应用程序扩展	7,607 KB
libstdc++-6.dll	2018-03-19 21:12	应用程序扩展	1,507 KB
libwinpthread-1.dll	2018-03-19 21:12	应用程序扩展	46 KB
opengl32sw.dll	2016-06-14 21:08	应用程序扩展	15,621 KB
Qt5Charts.dll	2020-03-28 4:07	应用程序扩展	2,472 KB
Qt5Core.dll	2020-03-28 3:04	应用程序扩展	8,263 KB
Qt5Gui.dll	2020-03-28 3:04	应用程序扩展	9,627 KB
Qt5Network.dll	2020-03-28 3:04	应用程序扩展	2,634 KB
Qt5SerialPort.dll	2020-03-28 3:18	应用程序扩展	156 KB
Qt5Svg.dll	2020-03-28 3:21	应用程序扩展	576 KB
Qt5Widgets.dll	2020-03-28 3:04	应用程序扩展	8,918 KB

Pic 4.3.3

After starting, the program interface is shown in Pic 4.3.4.



Pic 4.3.4

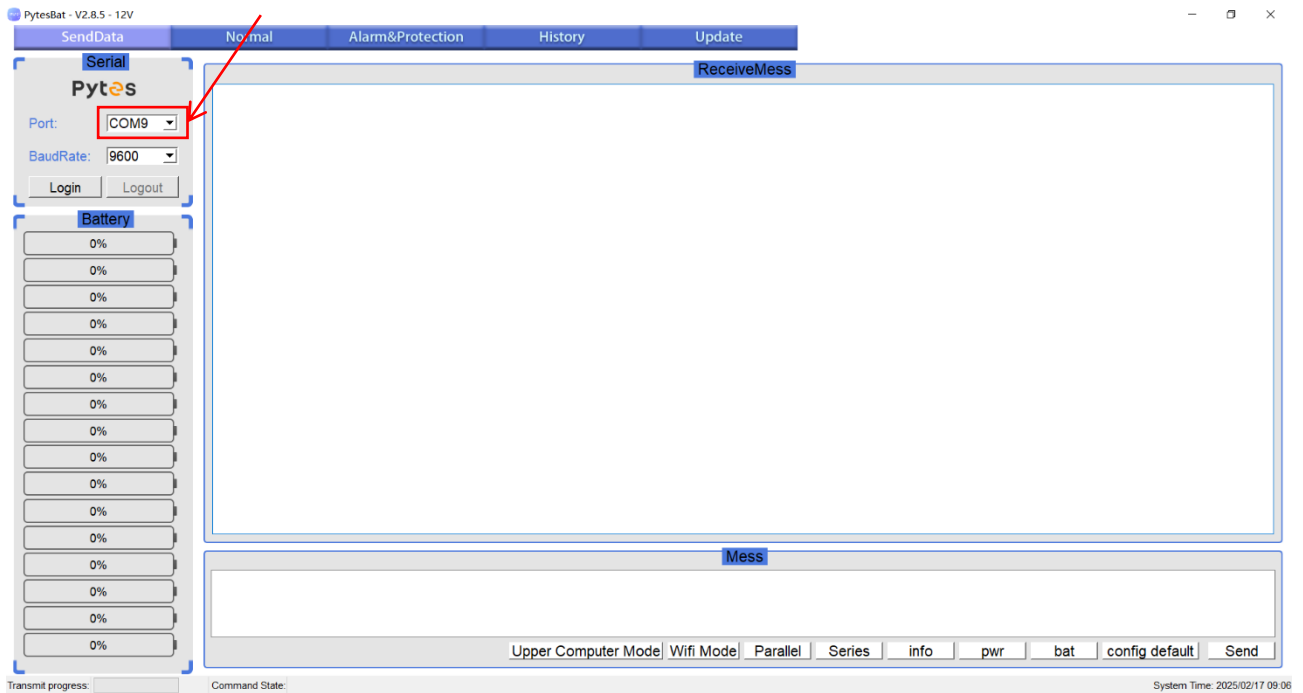
4.4 Build new connection between the battery and host computer, switch to the host computer mode

1) When the battery software version is V1.24 or higher:

The user should select the correct “COM” port. Pls follow the steps, click on “Upper Computer Mode” button, click on “Yes” button, Click on “Logout” button.

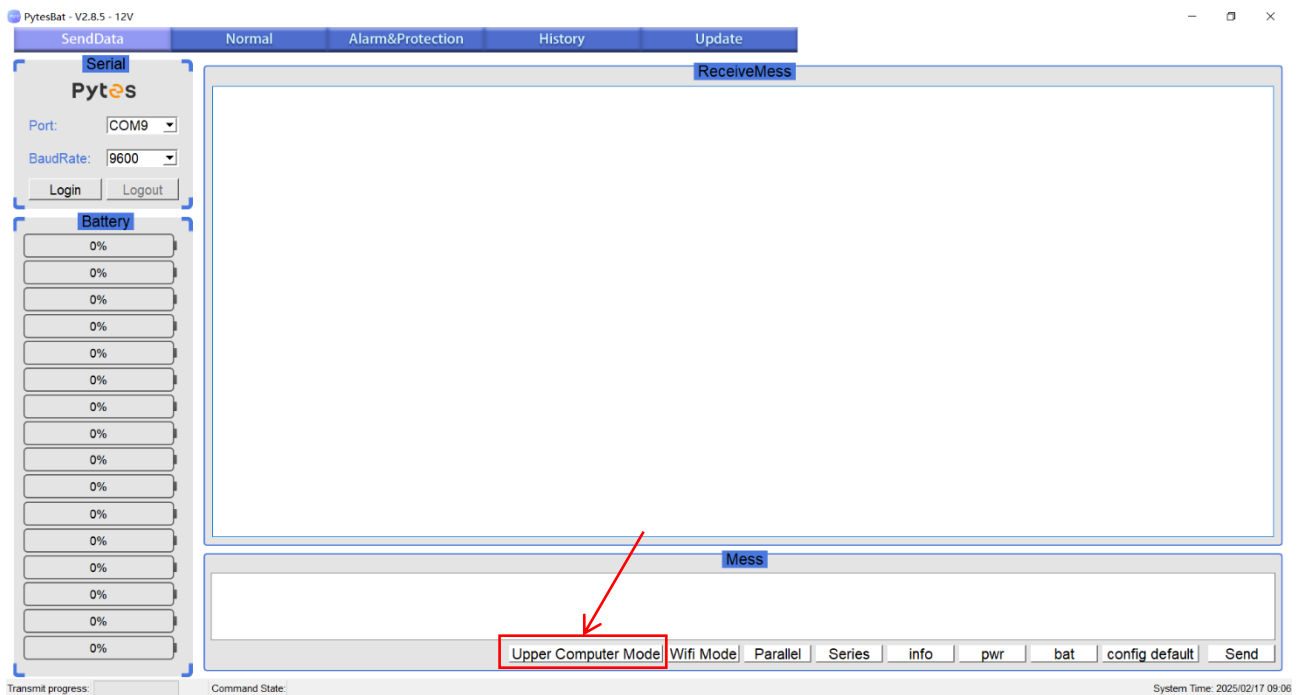
After the operation, the BMSQt program will start to retrieve the battery information in real time and display it on the BMSQt interface;

1.The user should select the correct “COM” port;



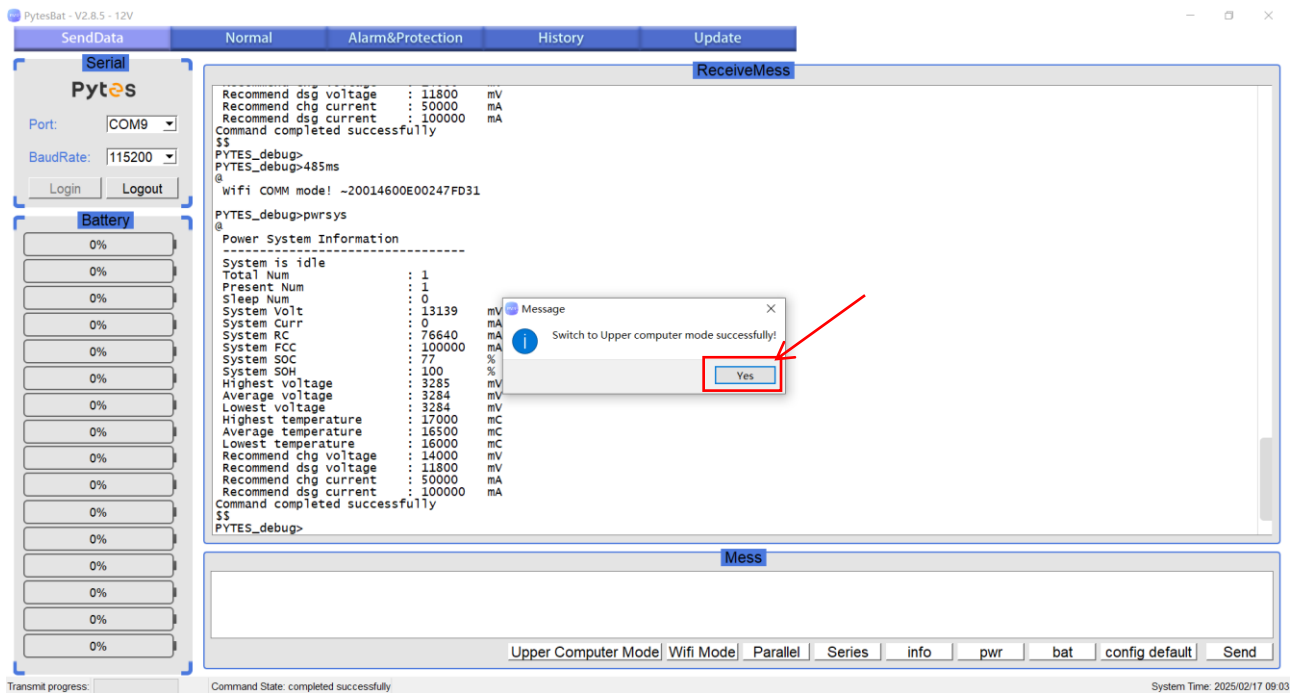
Pic 4.4.1

2.Click on “Upper Computer Mode” button;



Pic 4.4.2

3.Click on “Yes” button;



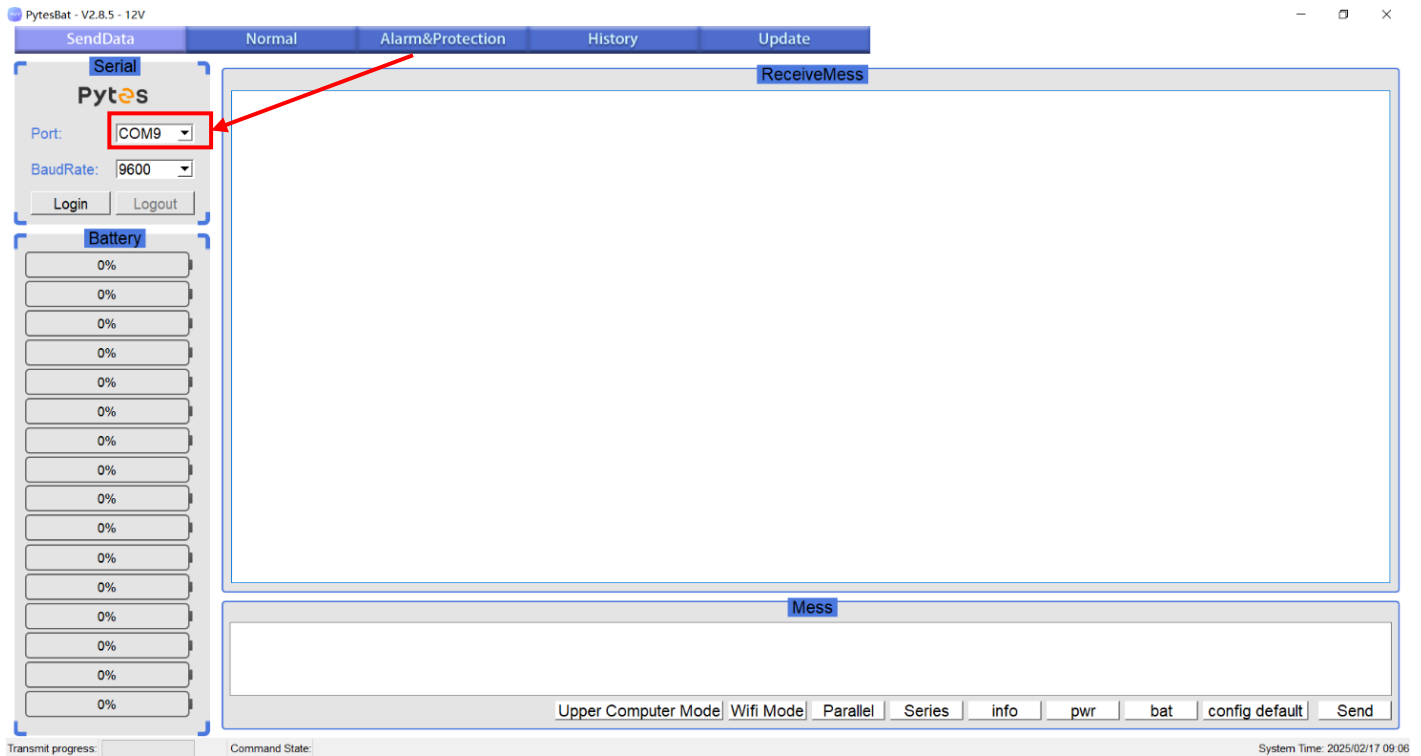
Pic 4.4.3

2) When the battery software version is below V1.24

The user should select the correct "COM" port and the baud rate of "115200". Pls follow the steps, click on the "Login" button, click on the "Logout" button.

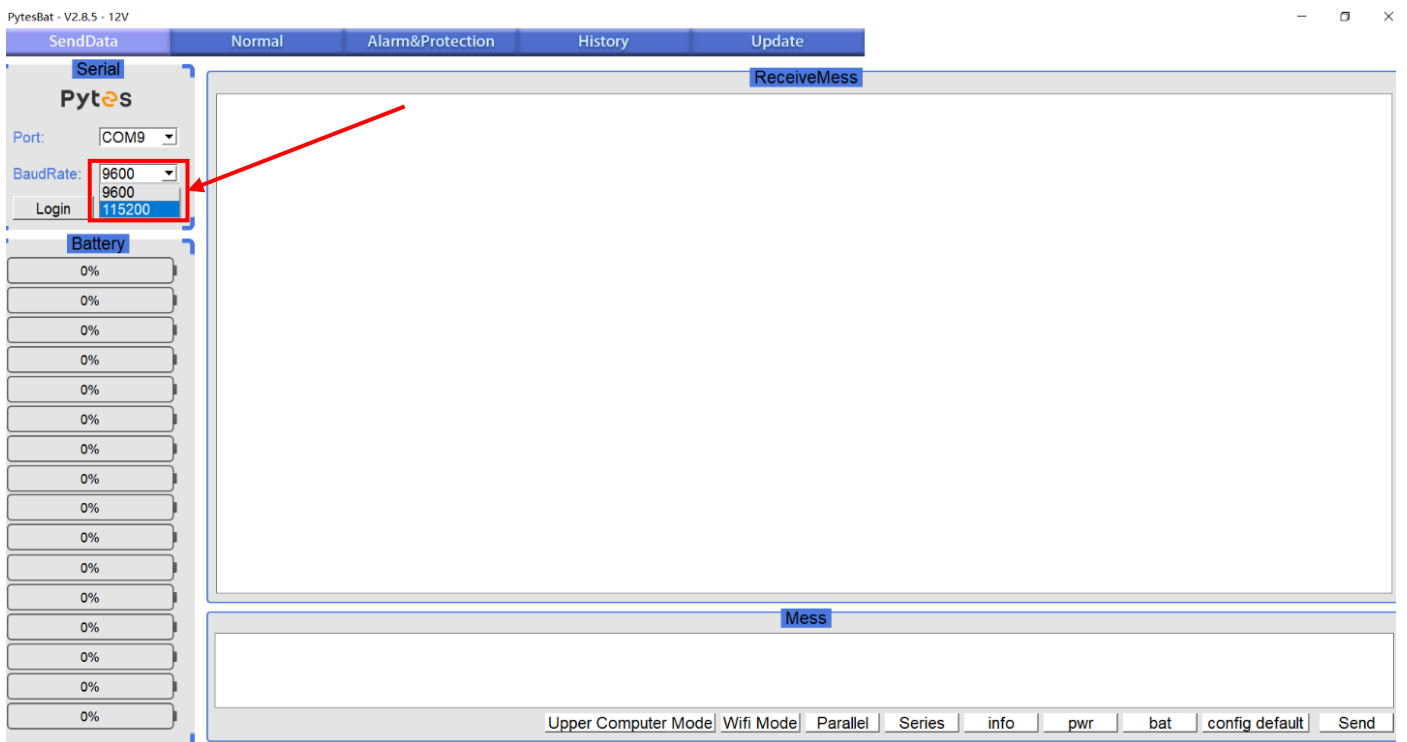
After the operation, the BMSQt program will start to retrieve the battery information in real time and display it on the BMSQt interface.

1. Select the correct "COM" port;



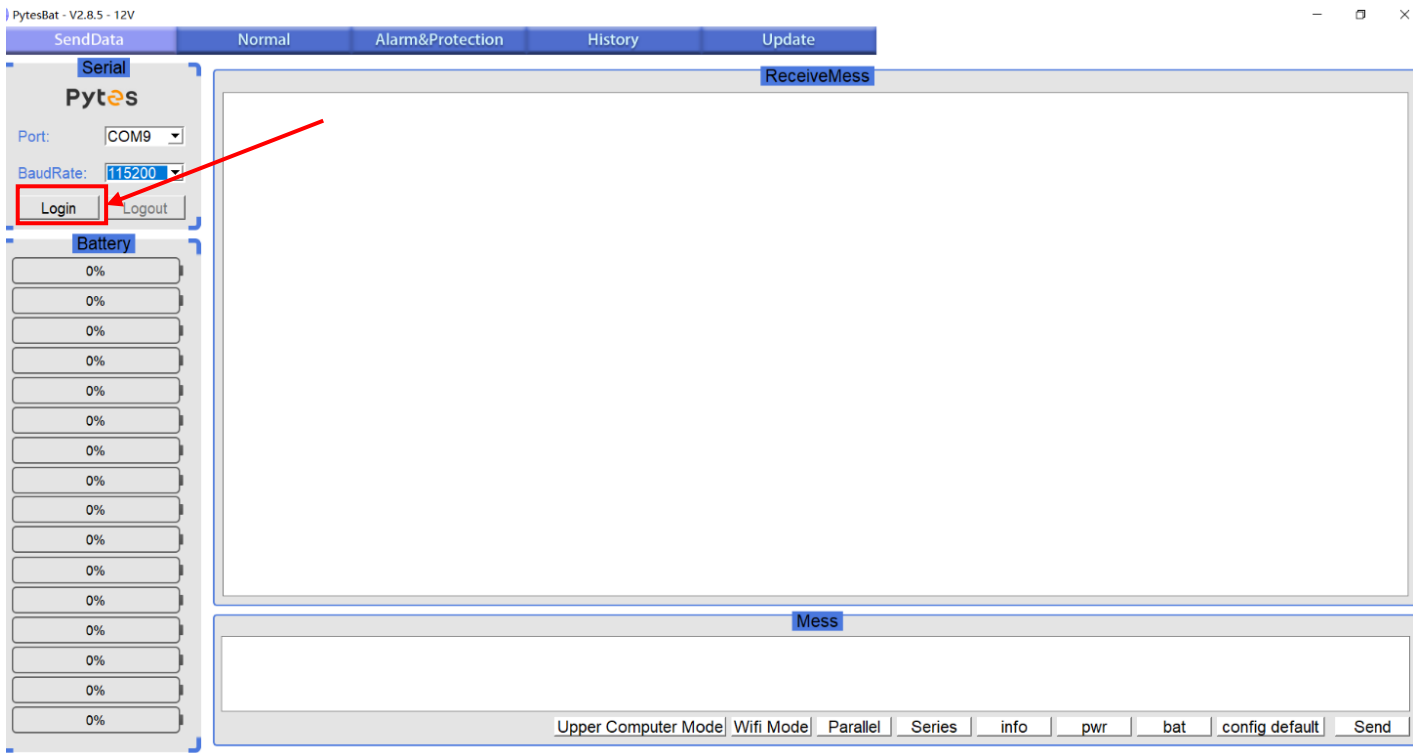
Pic 4.4.5

2. Select the baud rate of "115200" ;



Pic 4.4.6

3. Click on the "Login" button;

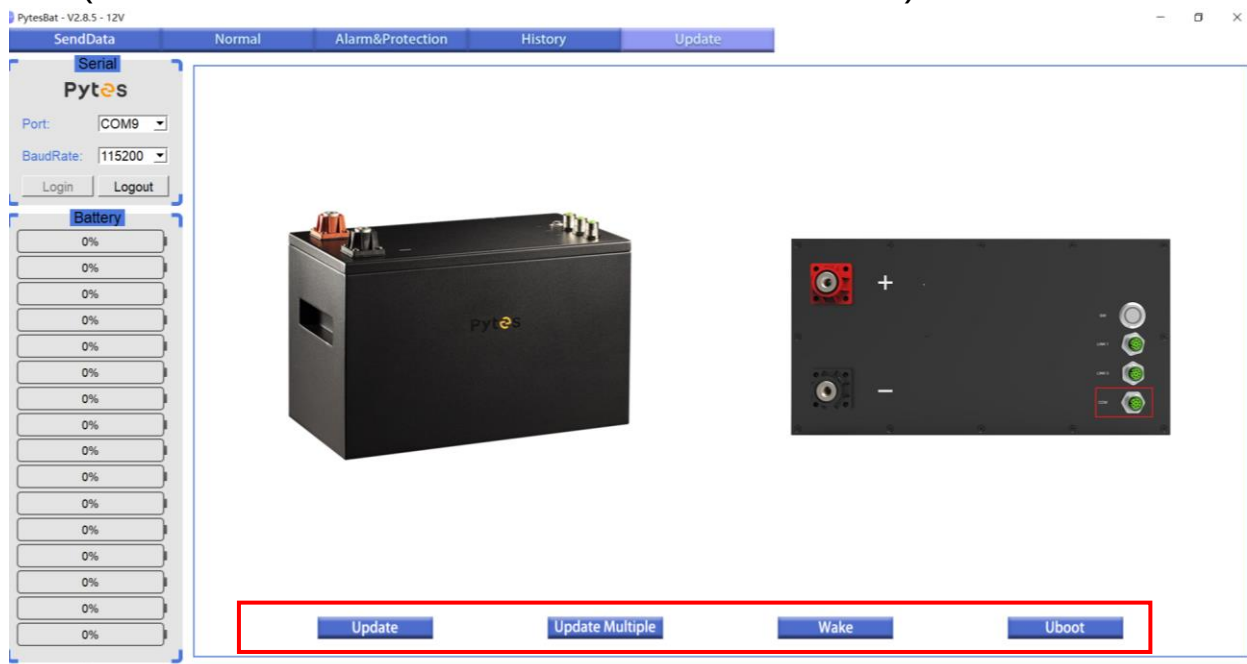


Pic 4.4.7

5. Firmware update

In Pic 5.1, there are four function buttons on this page, including "Update" , "Update Multiple" , "Wake" and "Uboot" .

(Wake function is not available at the moment).



Pic 5.1

5.1 Firmware Upgrade

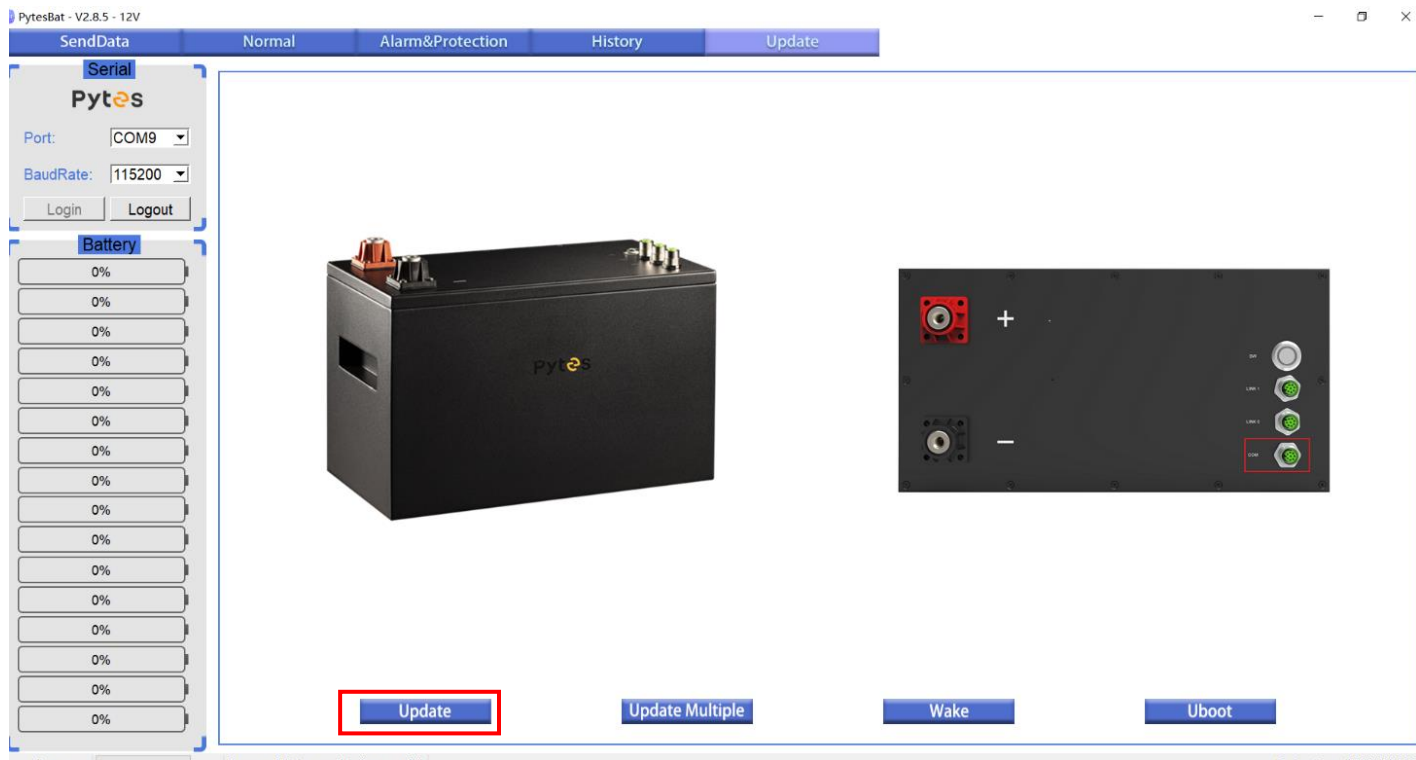
Steps of Upgrade firmware

Click the "Update" button, Enter the password "123456" , Upload the correct firmware.

Wait for the initial configuration until Update successfully.

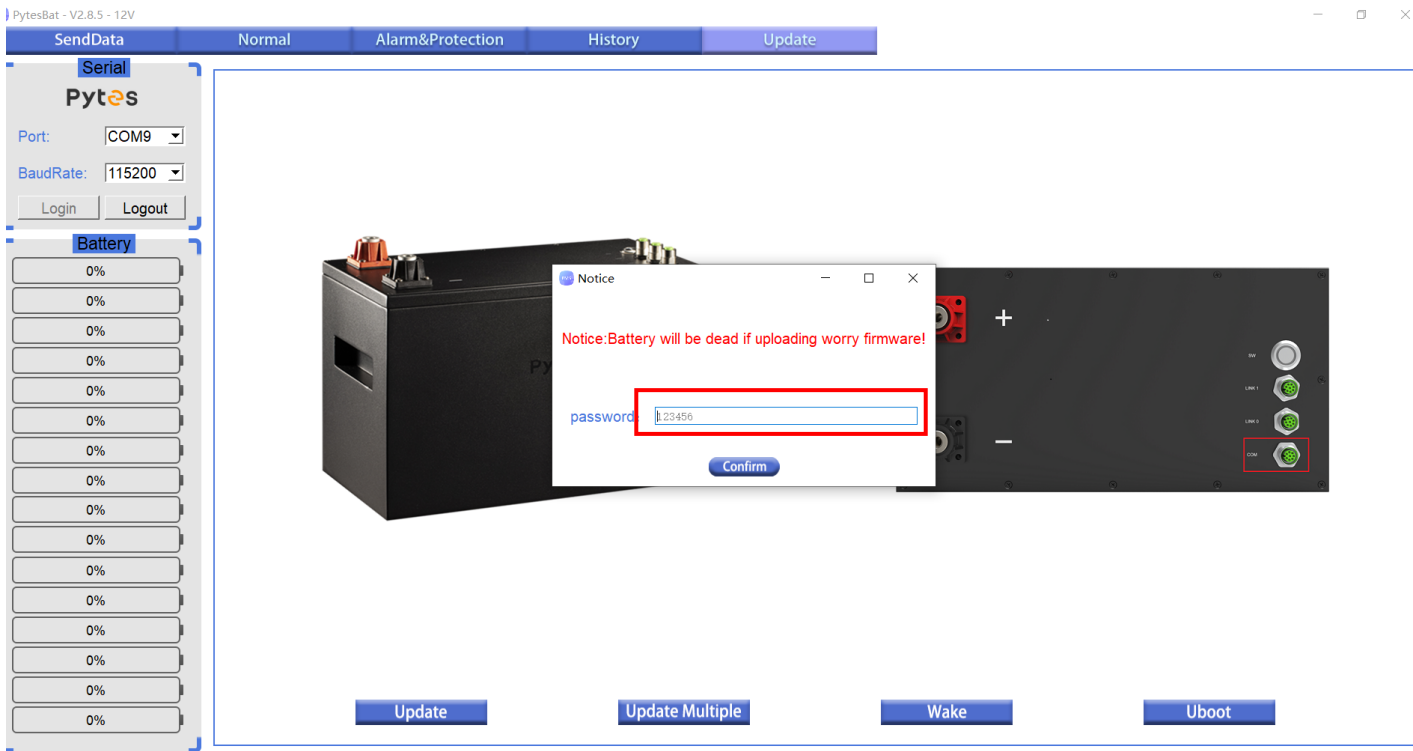
Back to the upper "Normal" menu. Check the version to check whether the update is successful.

1.Click the "Update" button;



Pic 5.1.1

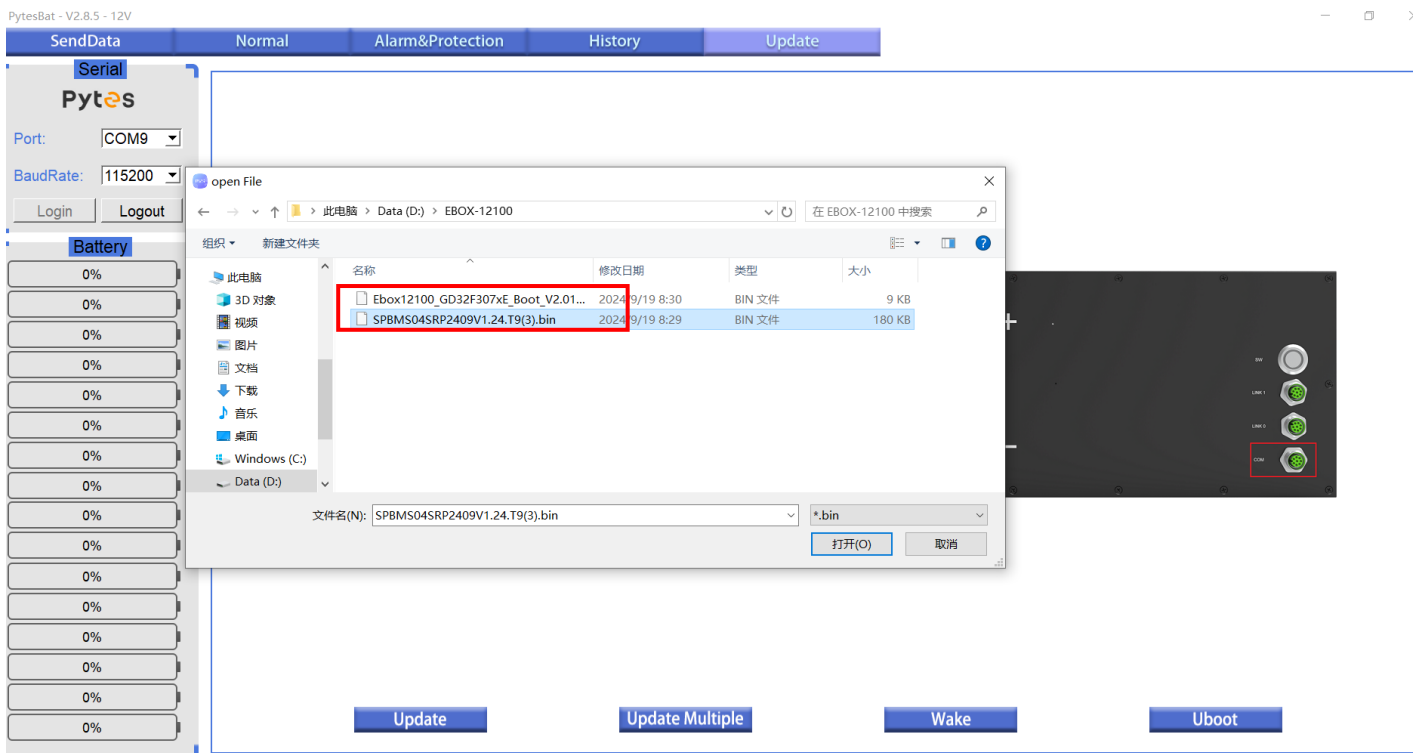
2.Enter the password "123456" ;



Pic 5.1.2

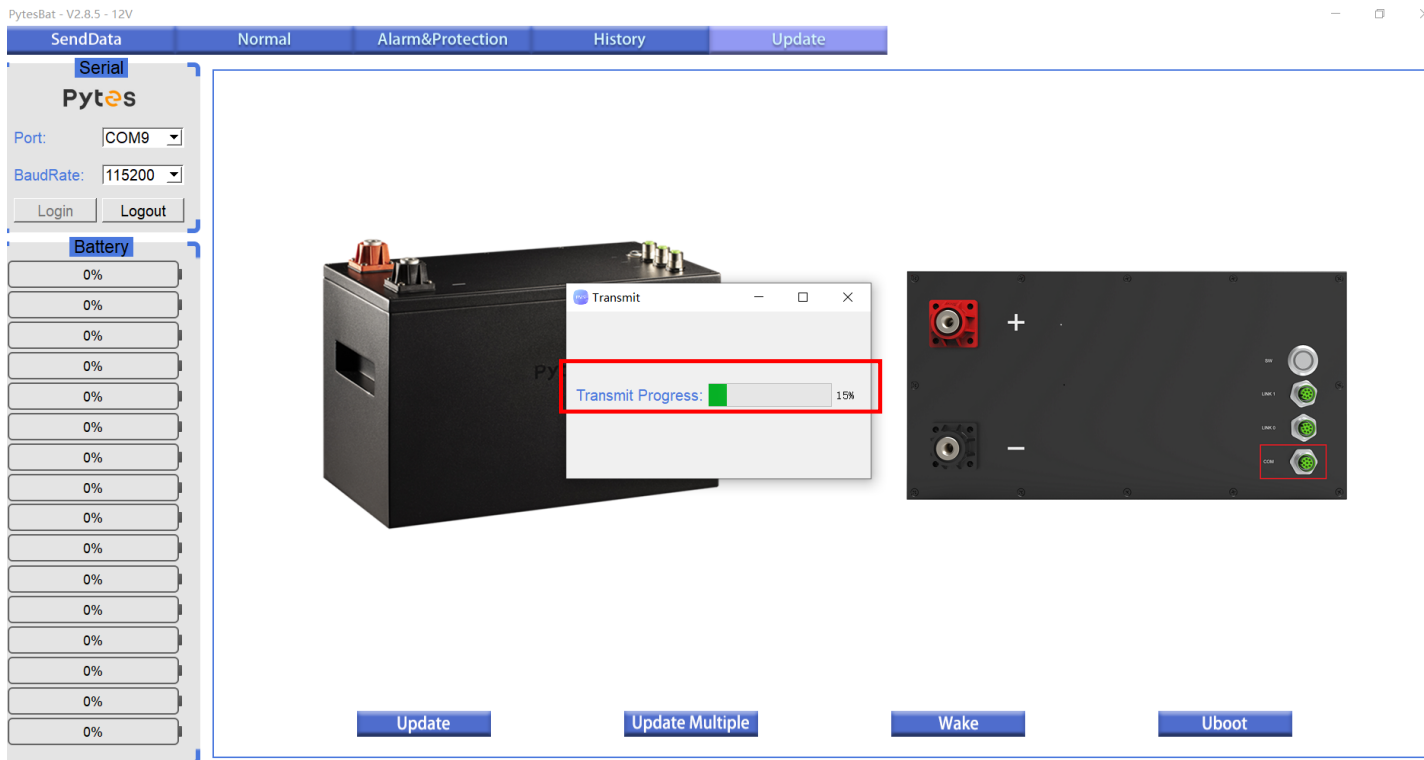
3.Upload the correct firmware;

Bin version: SPBMS04SRP2409V1.24.T9.bin



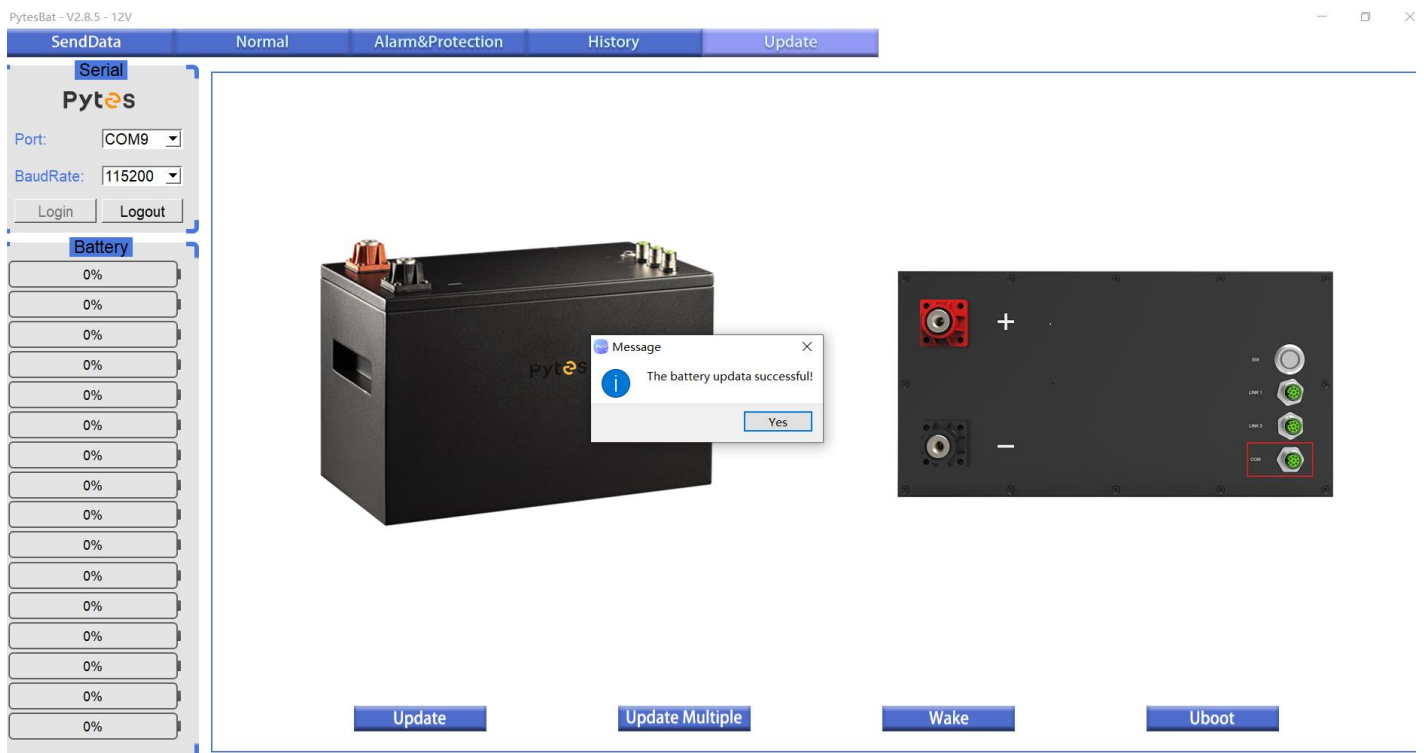
Pic 5.1.3

4.Wait for the upgrade process to complete;



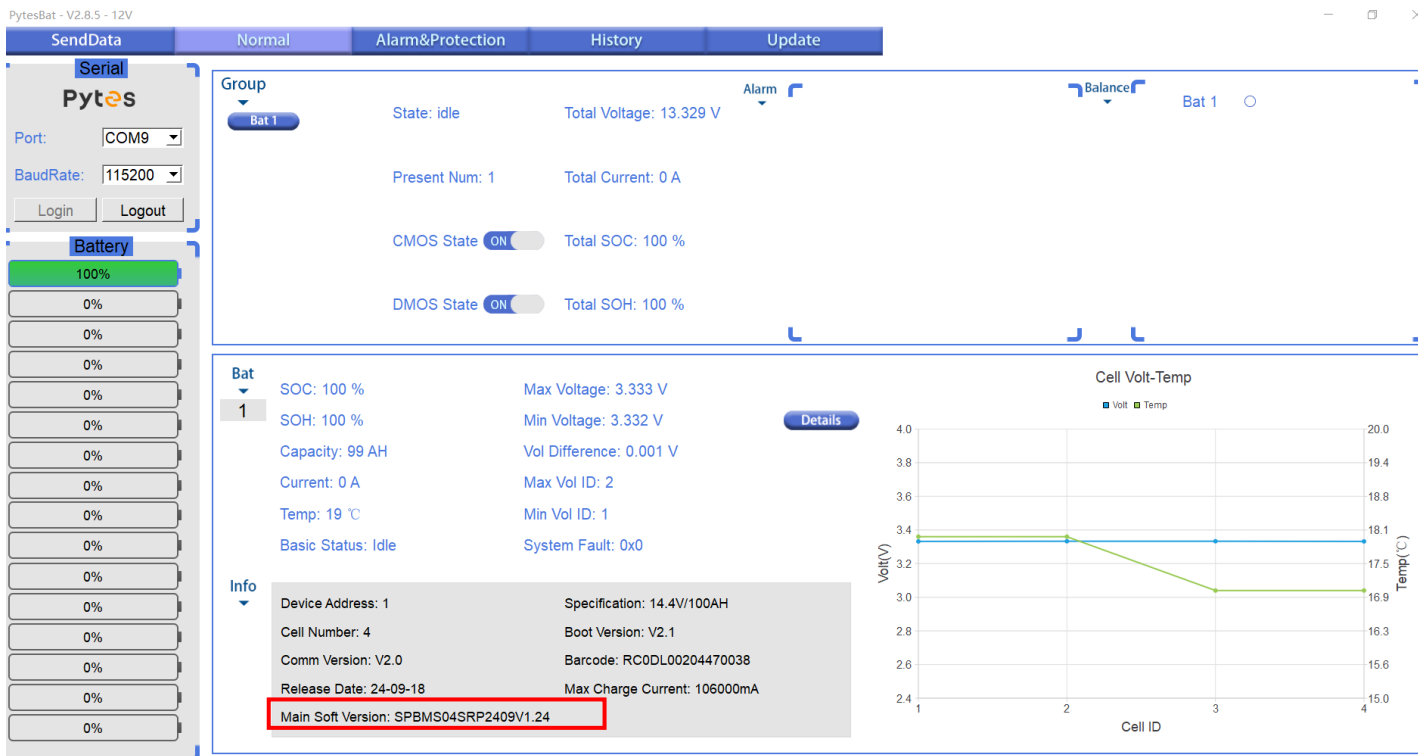
Pic 5.1.4

5.Wait for the initial configuration;



Pic 5.1.5

6. Check the firmware version.



Pic 5.1.6

5.2 Upgrade bootloader "Uboot"

Steps of update uboot:

Click on the "Uboot" button, Enter the password "123456" , Upload the correct boot file.

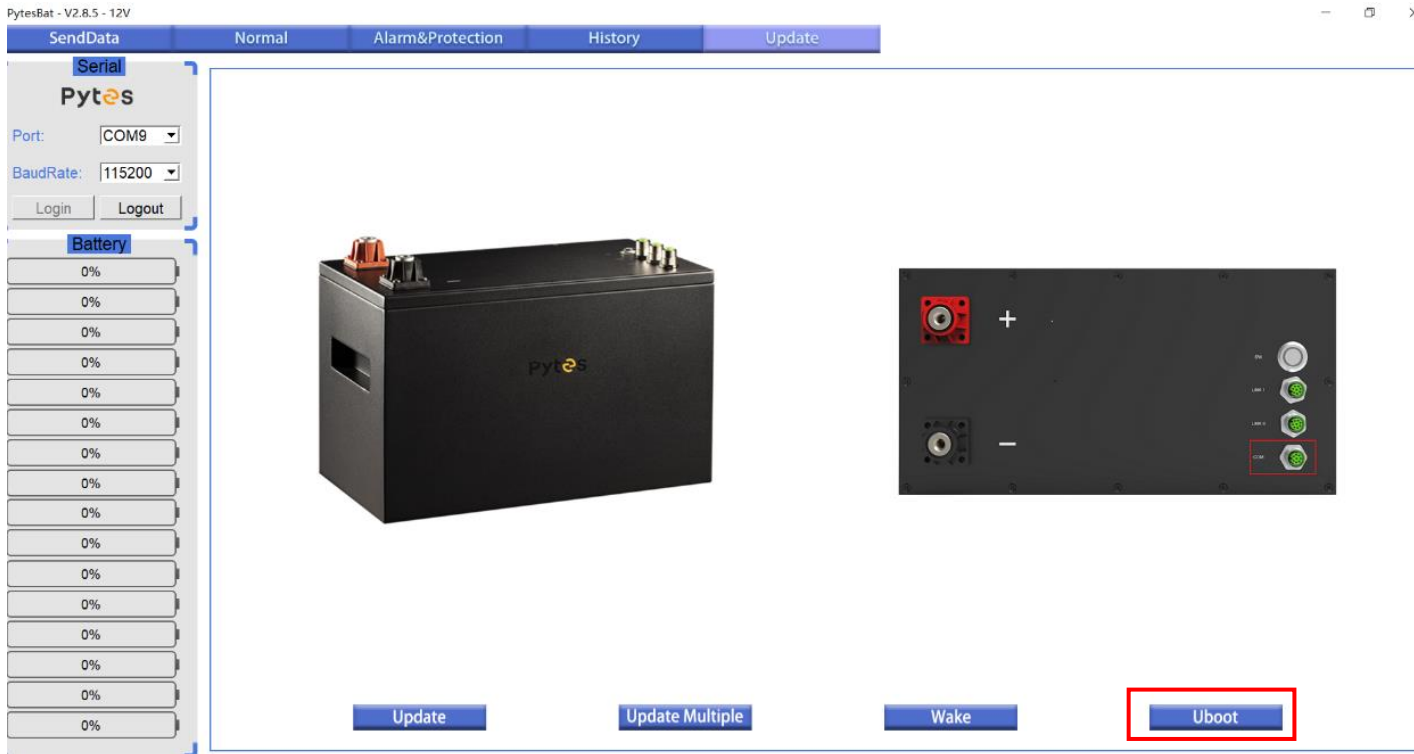
Wait for the initial configuration, and then completed the update.

NOTE:

Currently, Uboot update function only support V1.24 and do not support other versions.

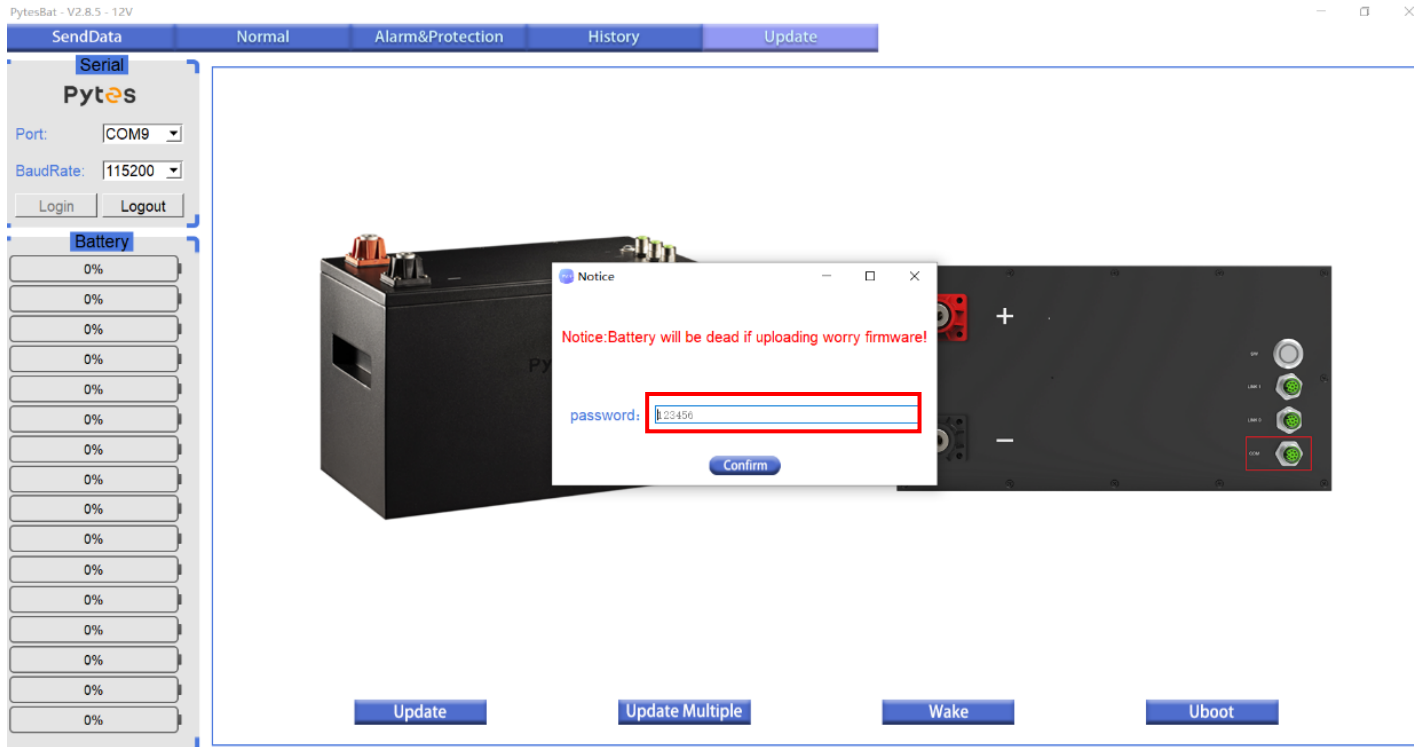
Please confirm your batteries' software version before using the "Uboot" function.

1. Click on the "Uboot" button;



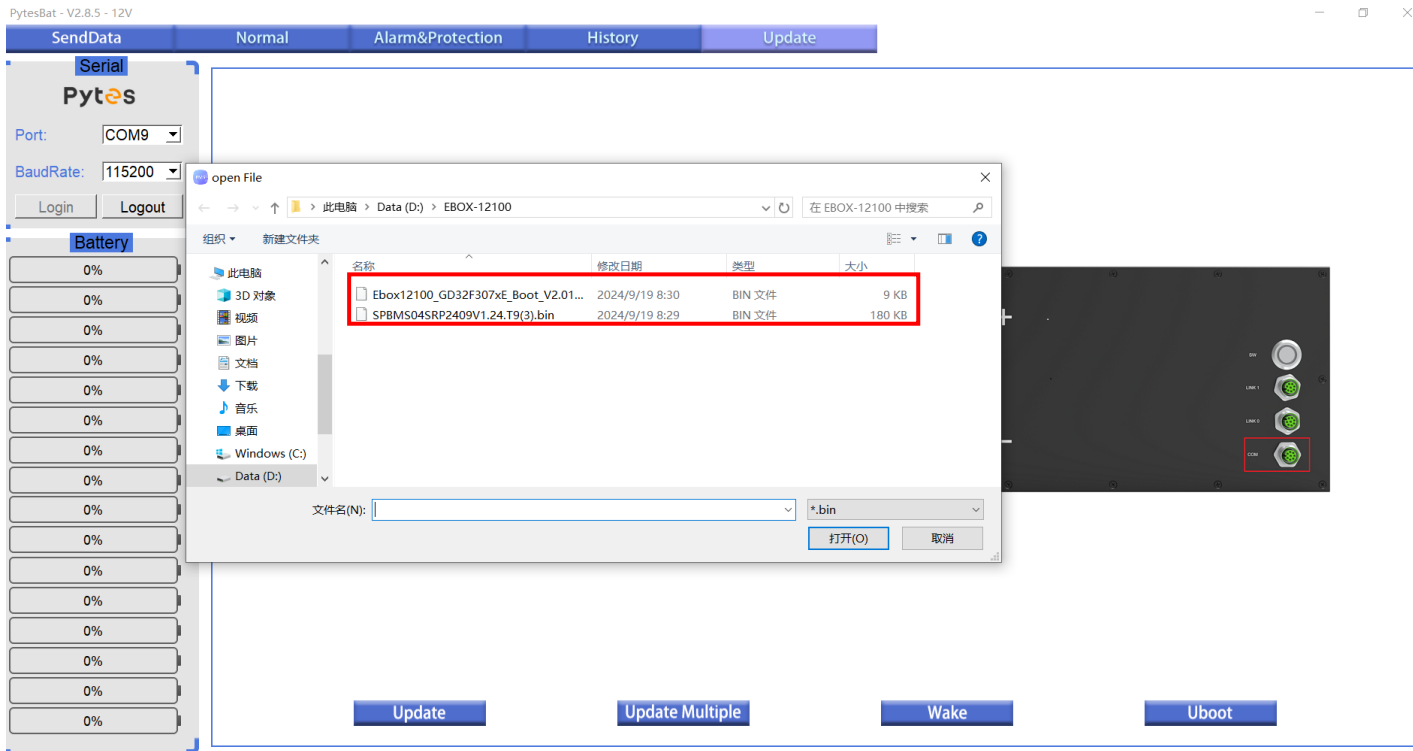
Pic 5.2.1

2. Enter the password "123456" ;



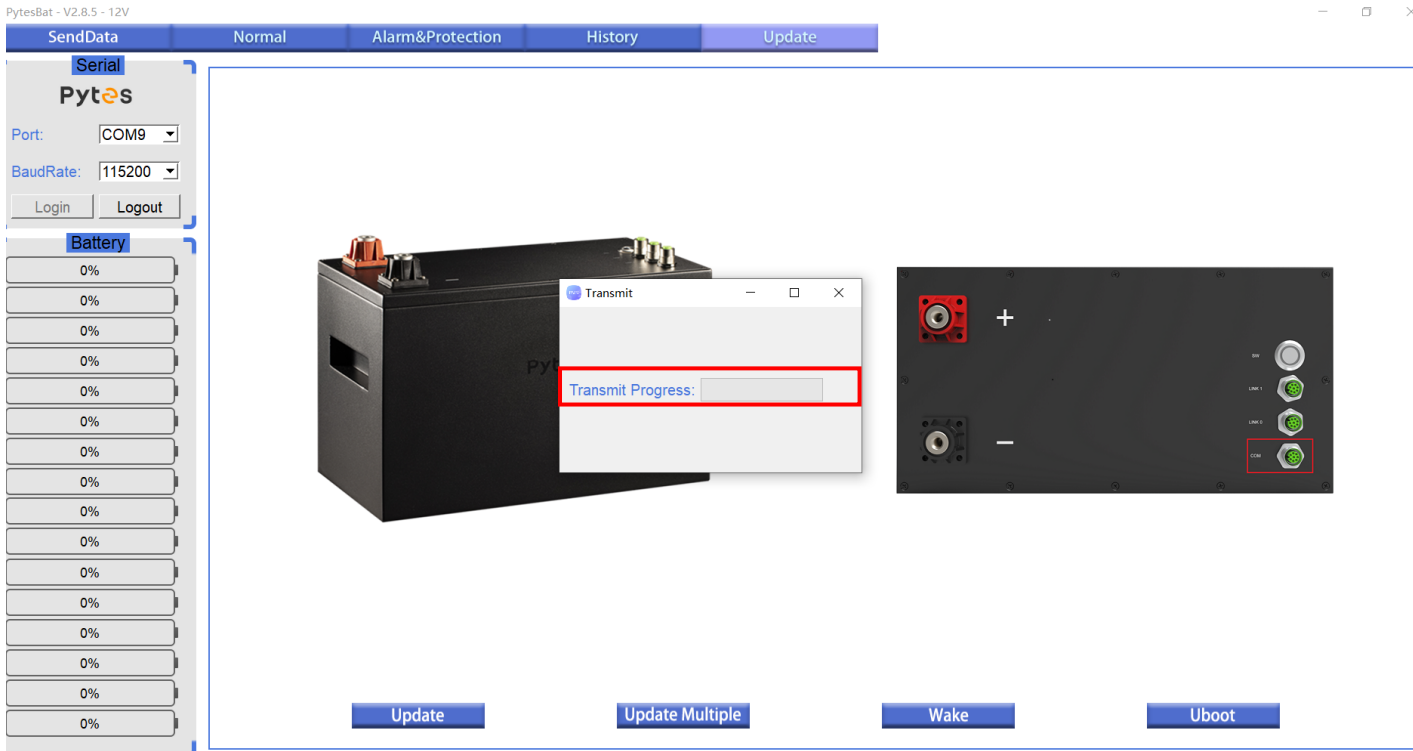
Pic 5.2.2

3. Select and upload the correct boot file;
 Boot version : Ebox12100_GD32F307xE_Boot_V2.1.bin



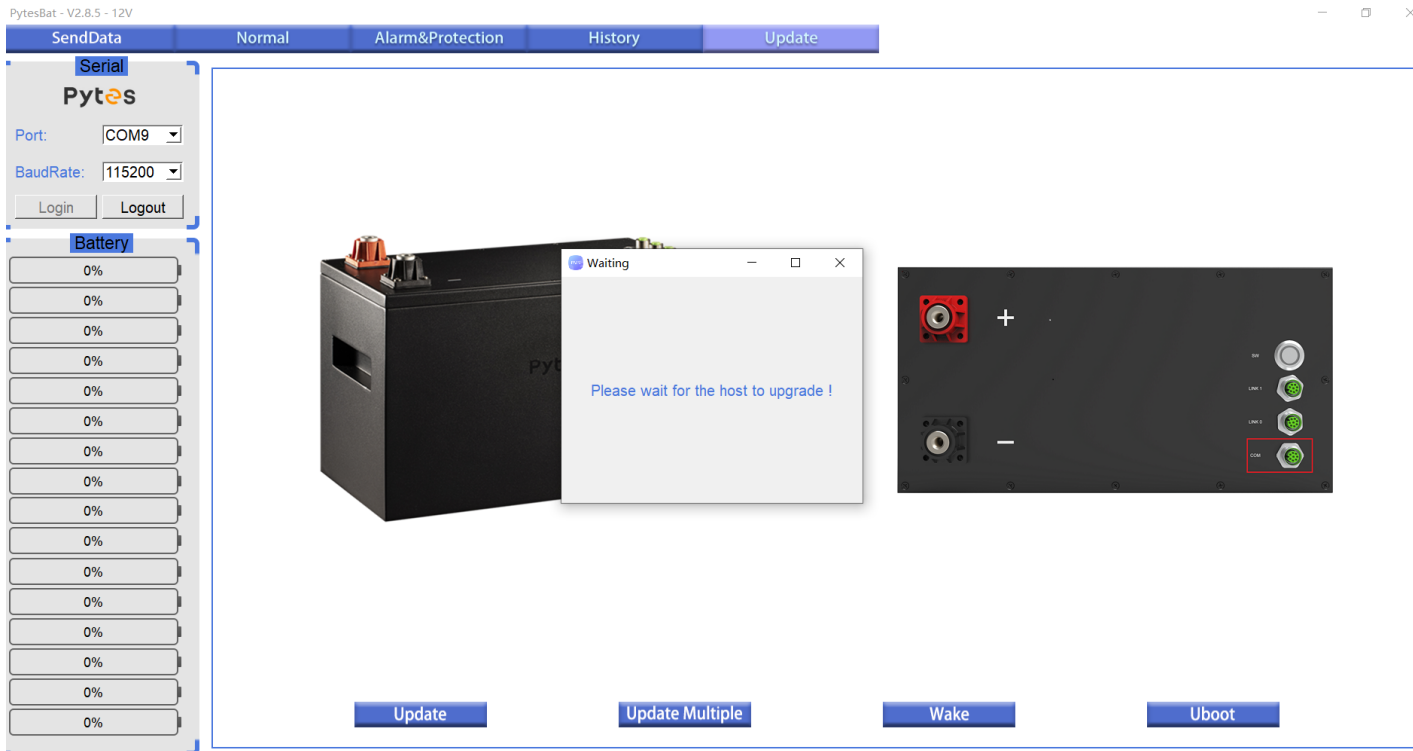
Pic 5.2.3

4.Wait for the upgrade process to complete;



Pic 5.2.4

5.Wait for the initial configuration;



Pic 5.2.5

**Then you can upgrade higher firmware version right now, like
SPBMS04SRP2412V1.25.T4.bin**

5.3 Upgrade Multiple

NOTE:

The multiple upgrade function requires that the battery software version higher than or equal to V1.24, and the boot version is higher than or equal to V2.0.

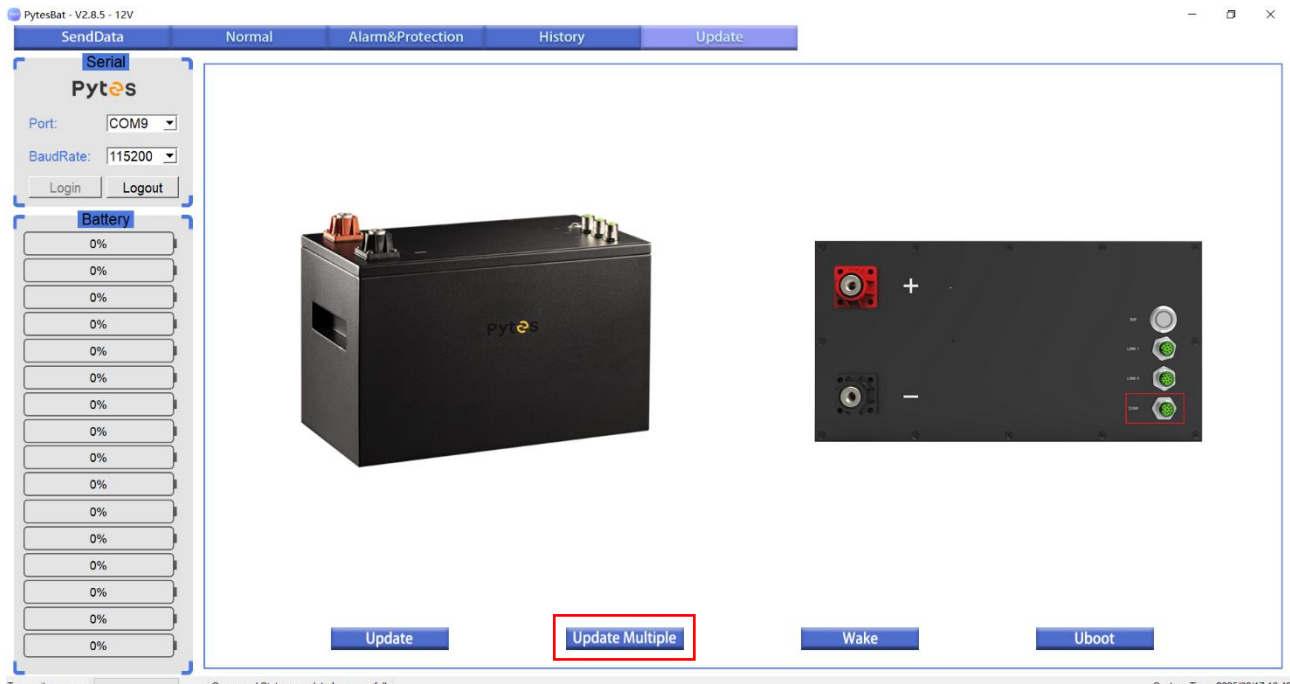
Steps of Upgrade firmware

Click the "Update Multiple" button, Enter the password "123456" , Upload the correct firmware.

Wait for the initial configuration until Update successfully.

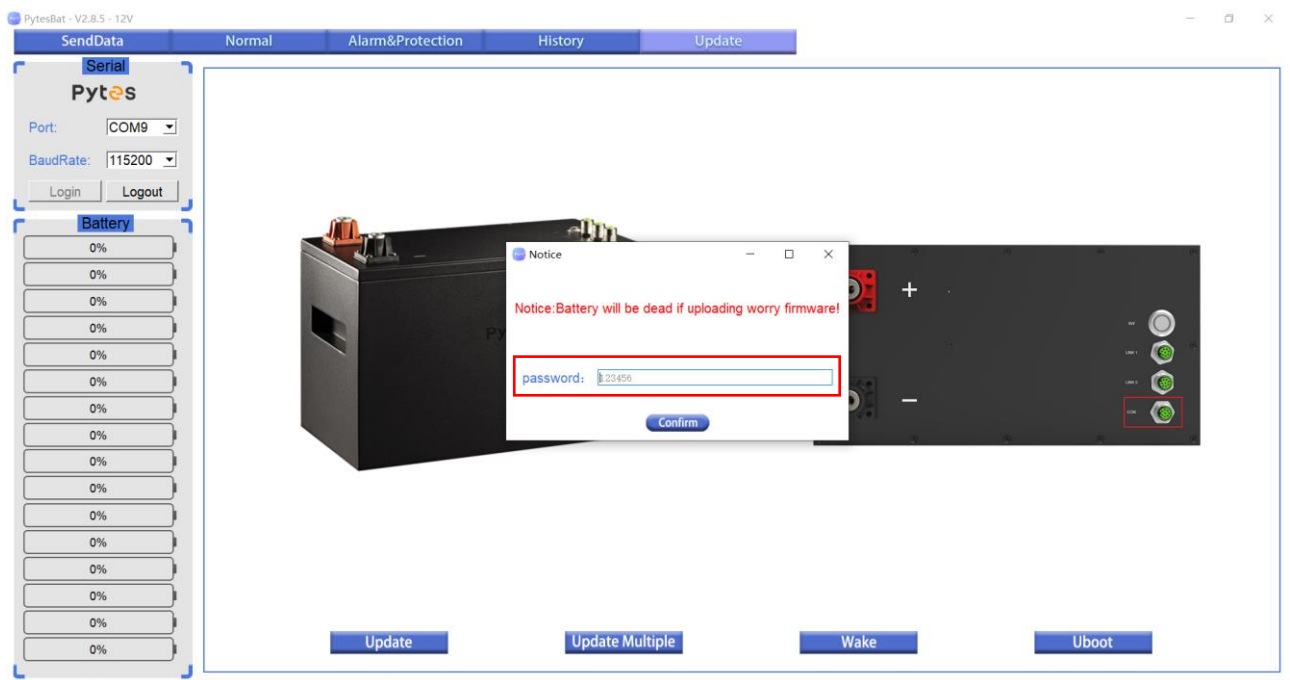
Back to the upper "Normal" menu. Check the version to check whether the update is successful.

1. Click the "Update Multiple" button;



Pic 5.2.7

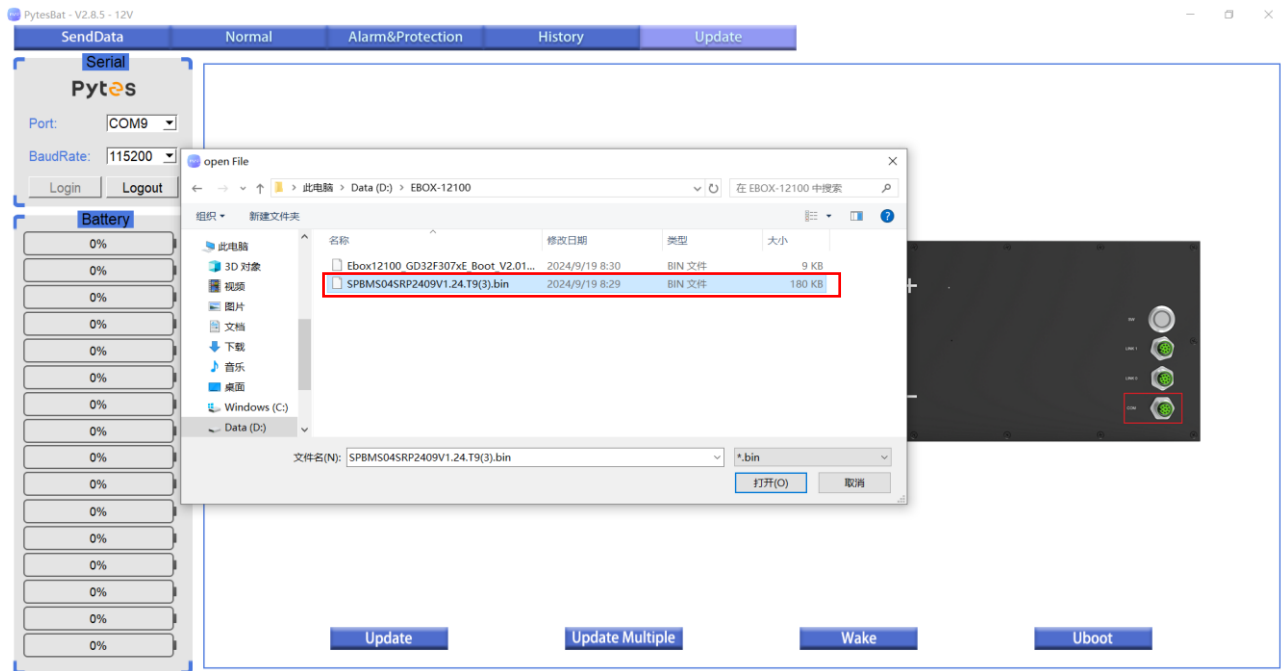
2. Enter the password "123456" ;



Pic 5.2.8

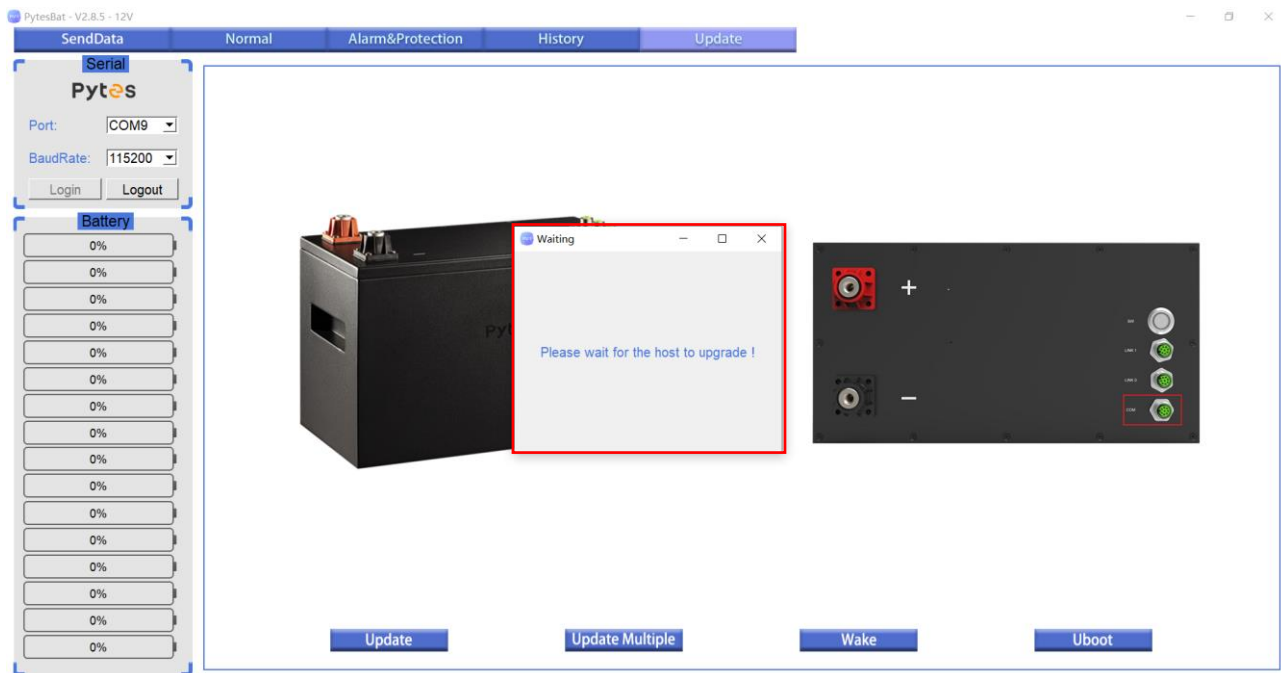
3. Upload the correct firmware;

Bin version: SPBMS04SRP2409V1.24.T9.bin



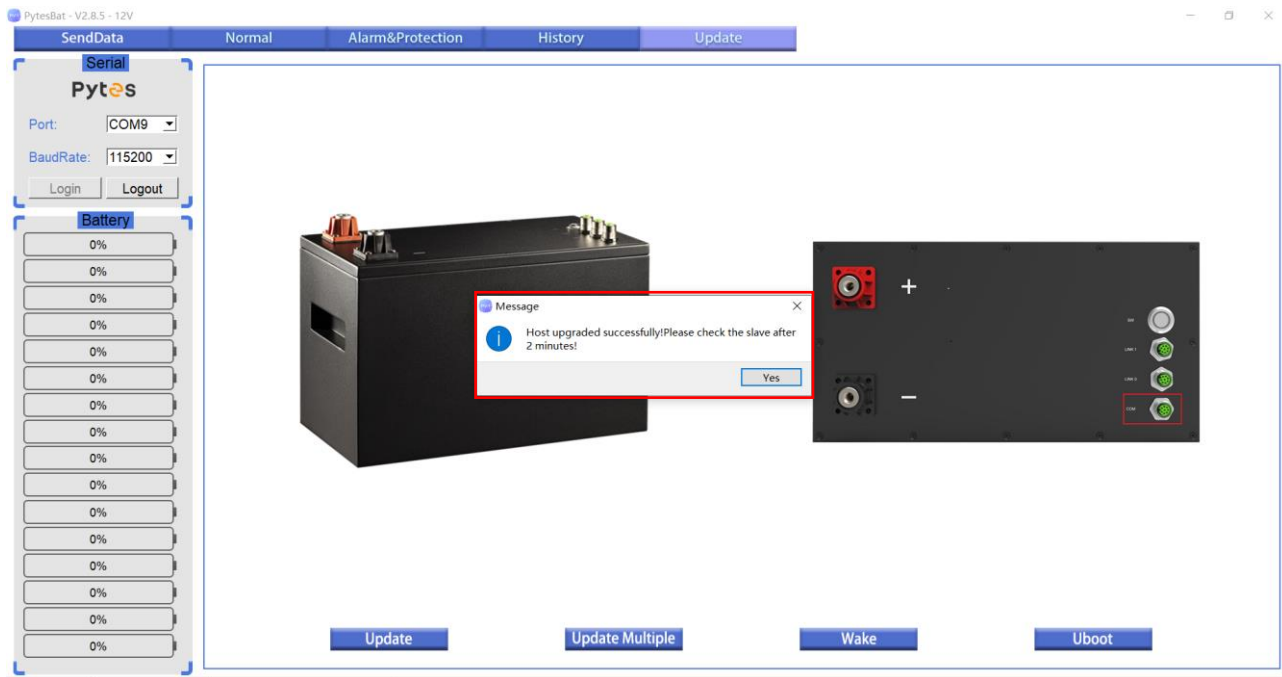
Pic 5.2.9

4.Wait for the upgrade process to complete;



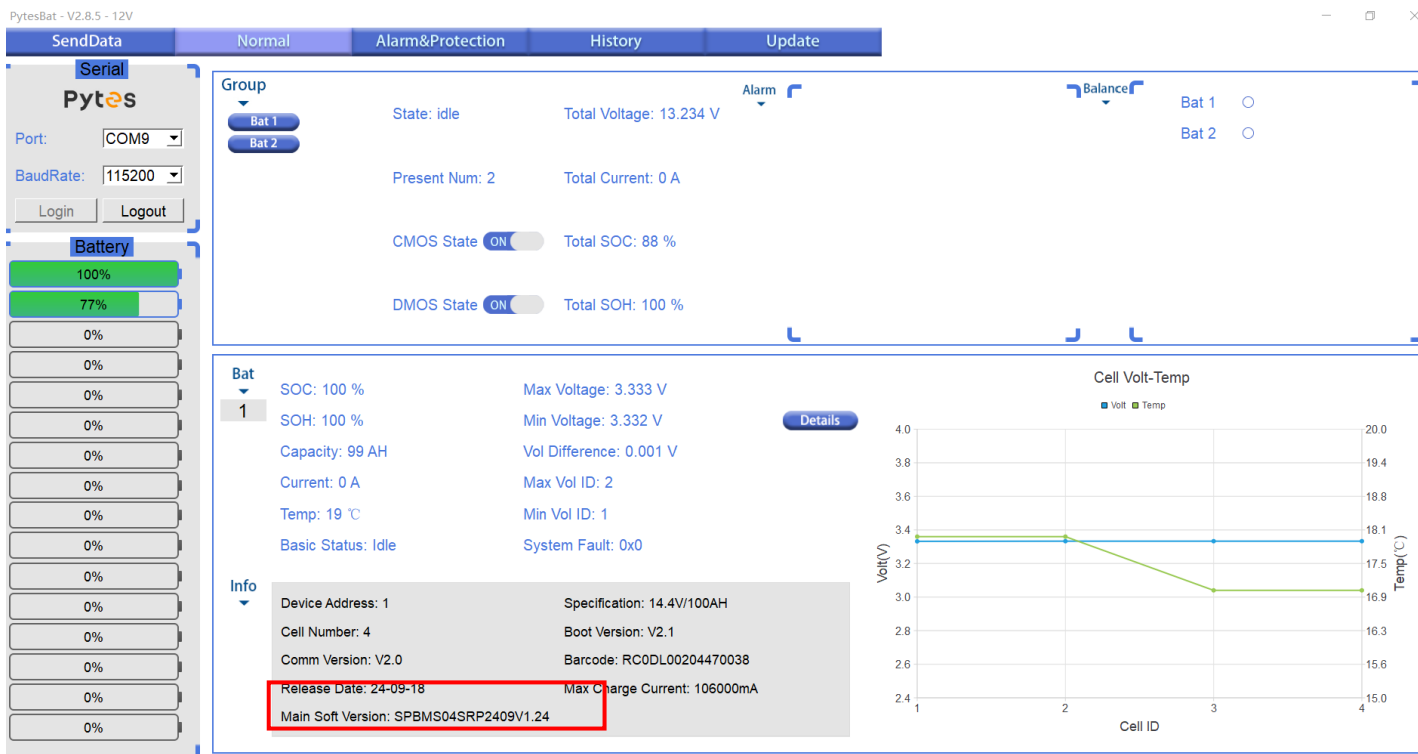
Pic 5.2.10

5.Wait for the initial configuration;



Pic 5.2.11

6. Check the firmware version.



Pic 5.2.12

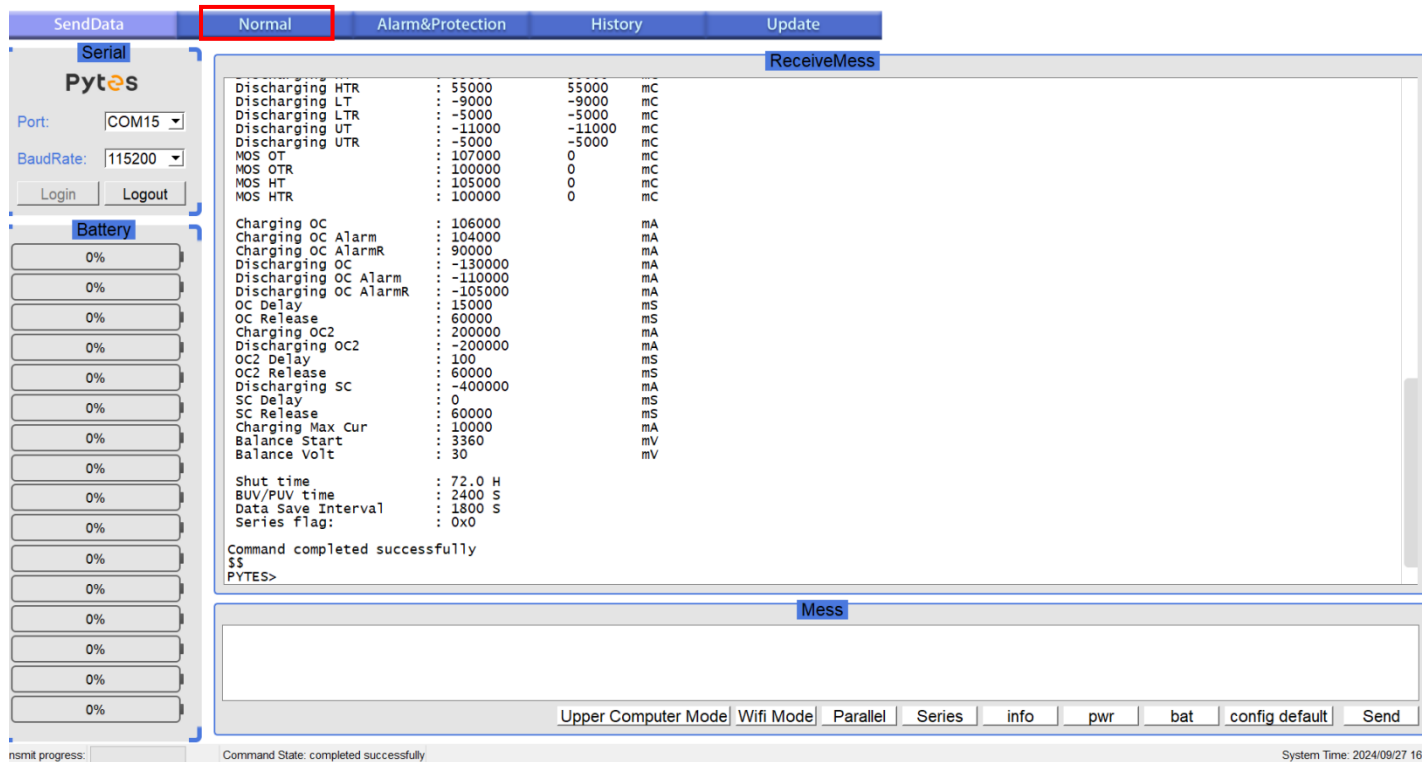
6.12V/24V mode switching(Only used when you want to have communication with Victron 12/24V inverter)

NOTE:

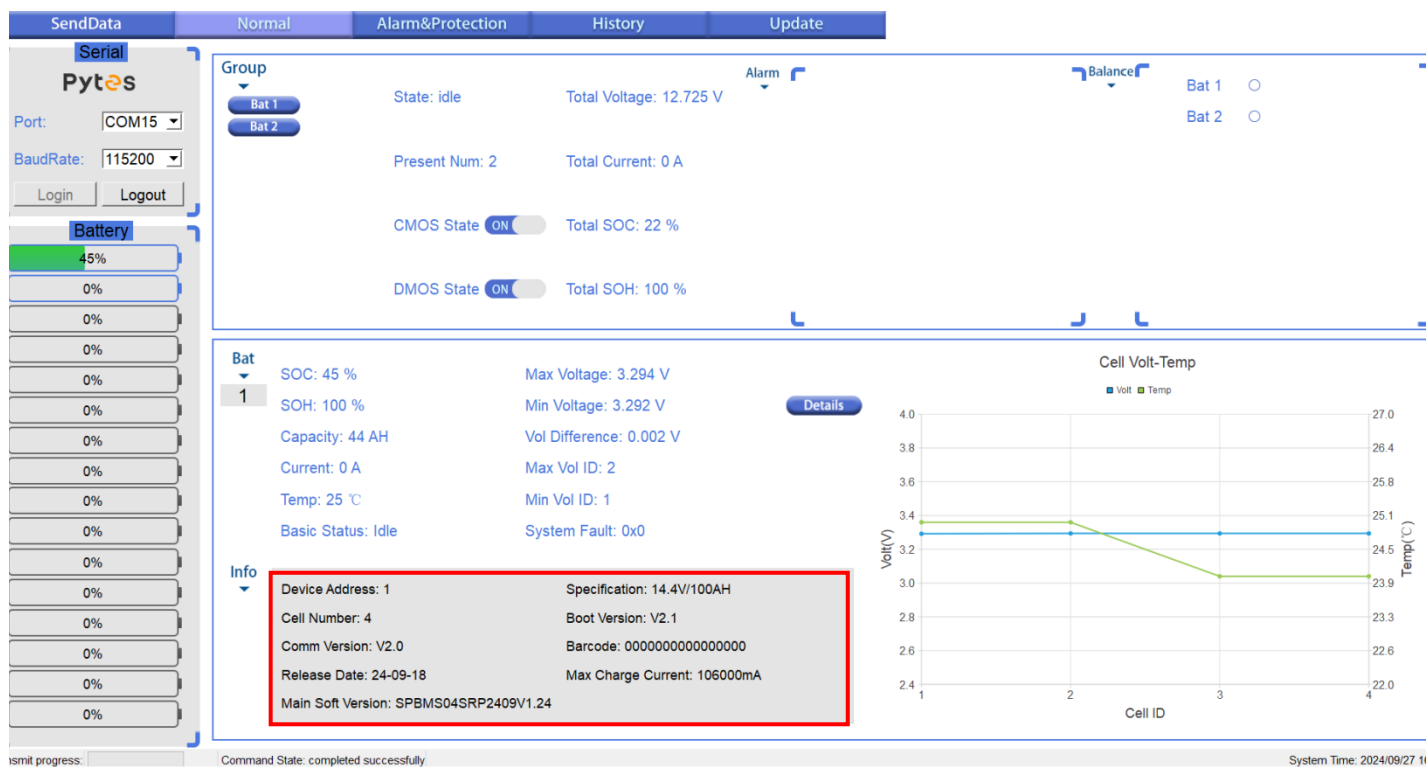
- 1.The function is used for communication with victron 12v/24v.
- 2.Before using this function, you must disconnect power cable between the battery and the inverter .
- 3.If you switch the battery series/parallel mode, which will lead to a change in the output voltage of the cascade battery pack (12V in parallel, 24V in series), please make sure that the rated voltage of your Victron inverter or other electrical equipment matches the voltage range of the output of the battery pack to avoid electrical equipment damage or danger.
- 4.Before switching mode, please make sure that the firmware version of your battery is not lower than V1.24 and the boot vision is not lower than V2.1.
- 5.Before connecting to inverter, check battery voltage mode, to confirm whether is 12V/24V. "0X0" means 12V parallel mode, "0Xaa" means series 24V mode.
- 6.Before the host computer can be operated, it needs to be connected successfully, see section 4 for the connection method.

6.1 Check the firmware version and boot version.

Select "Normal" in the upper menu bar and check the battery firmware version information in the interface, pls refer to pic 6.1 and 6.2.

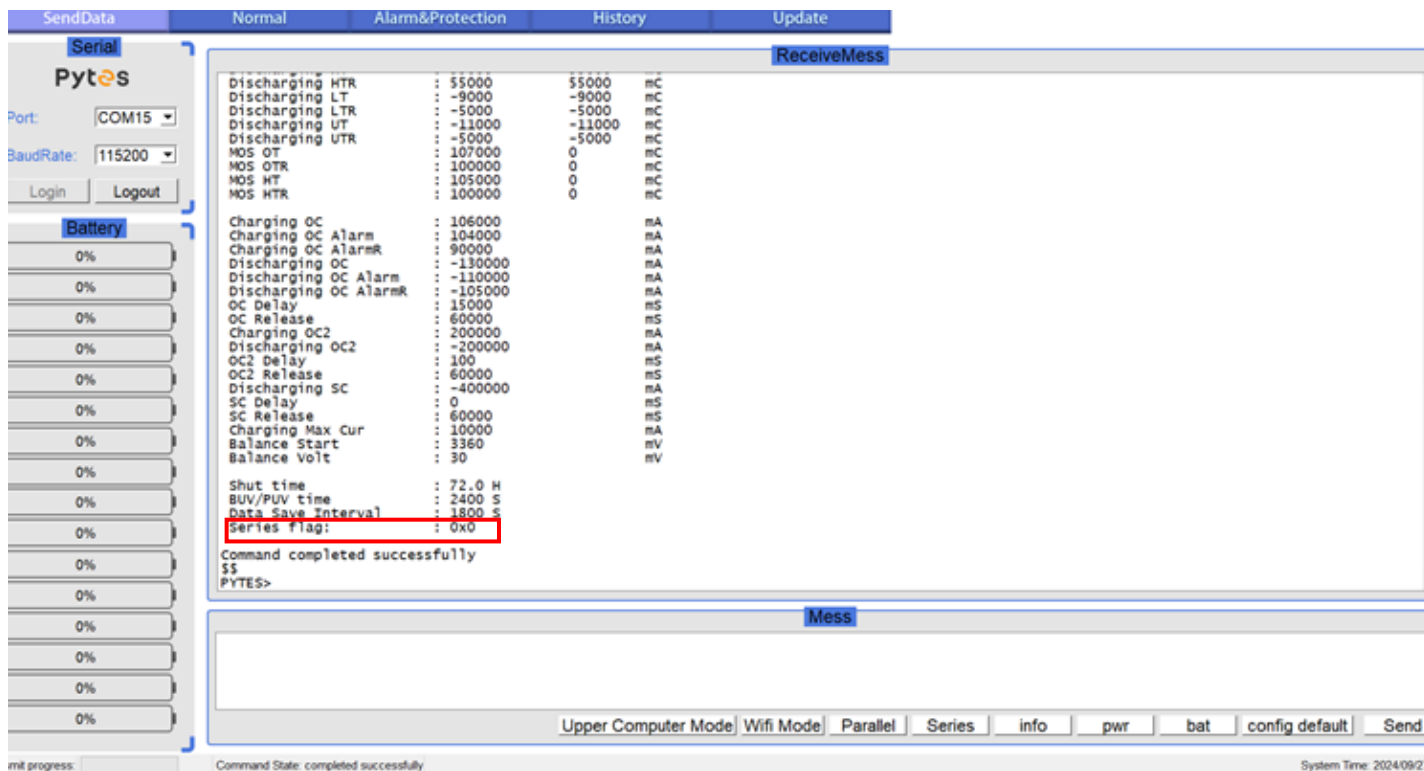


Pic 6.1



Pic 6.2

6.2 Check the battery voltage mode



Pic 6.3

Select "Alarm & Production" in the upper menu bar, go to the right hand side and find the "Series flag" .

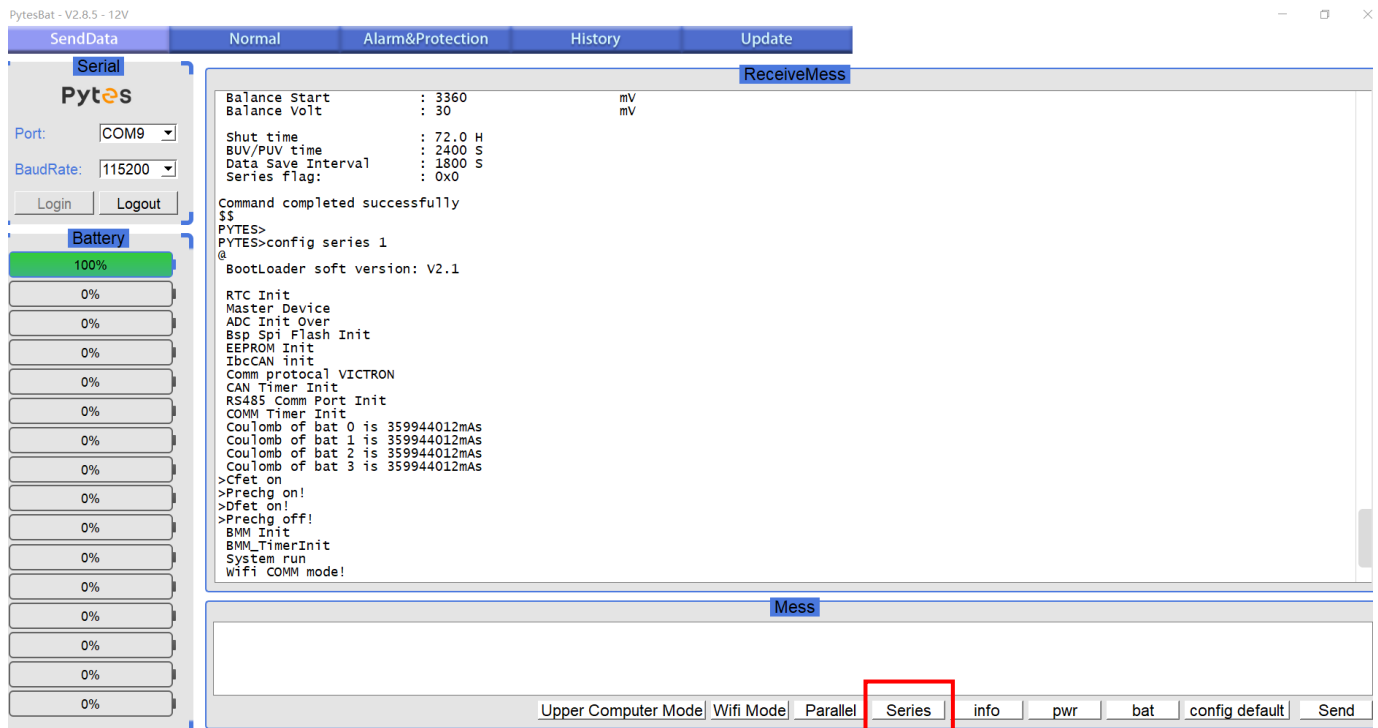
If the displayed value is "0X0" which means battery is 12V mode. If the battery is communicated with the Victron inverter, the battery should be connected in parallel and adapted with Victron 12V inverter.

If the displayed value is "0Xaa" which means is 24V mode. If the battery is communicated with the Victron inverter, the battery should be connected in series and adapted with Victron 24V inverter.

6.3 Switching 12V/24V mode

1) Switch to 24V mode

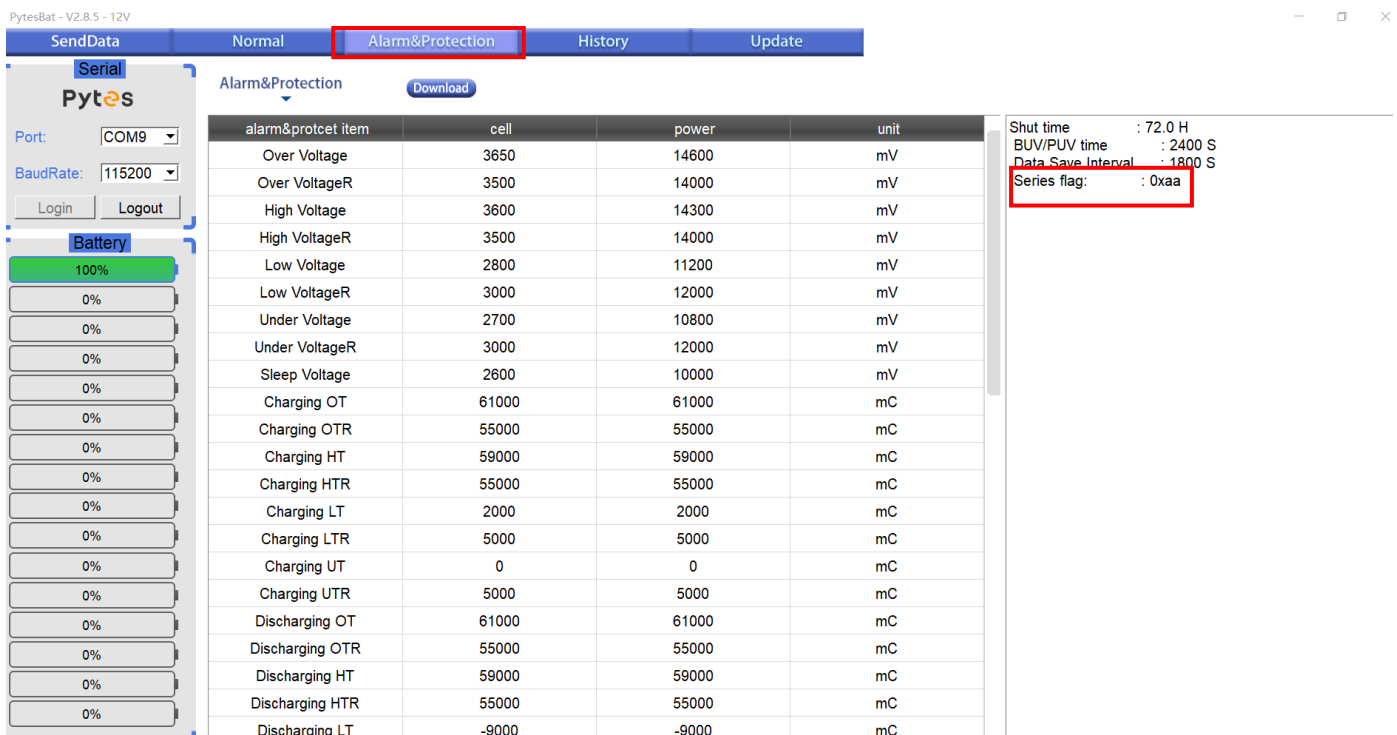
1. Click on "series" button.



Pic 6.4

2. Check the battery status.

If series flag' s value is 0xaa, it means that you have switched to 24V mode successful.

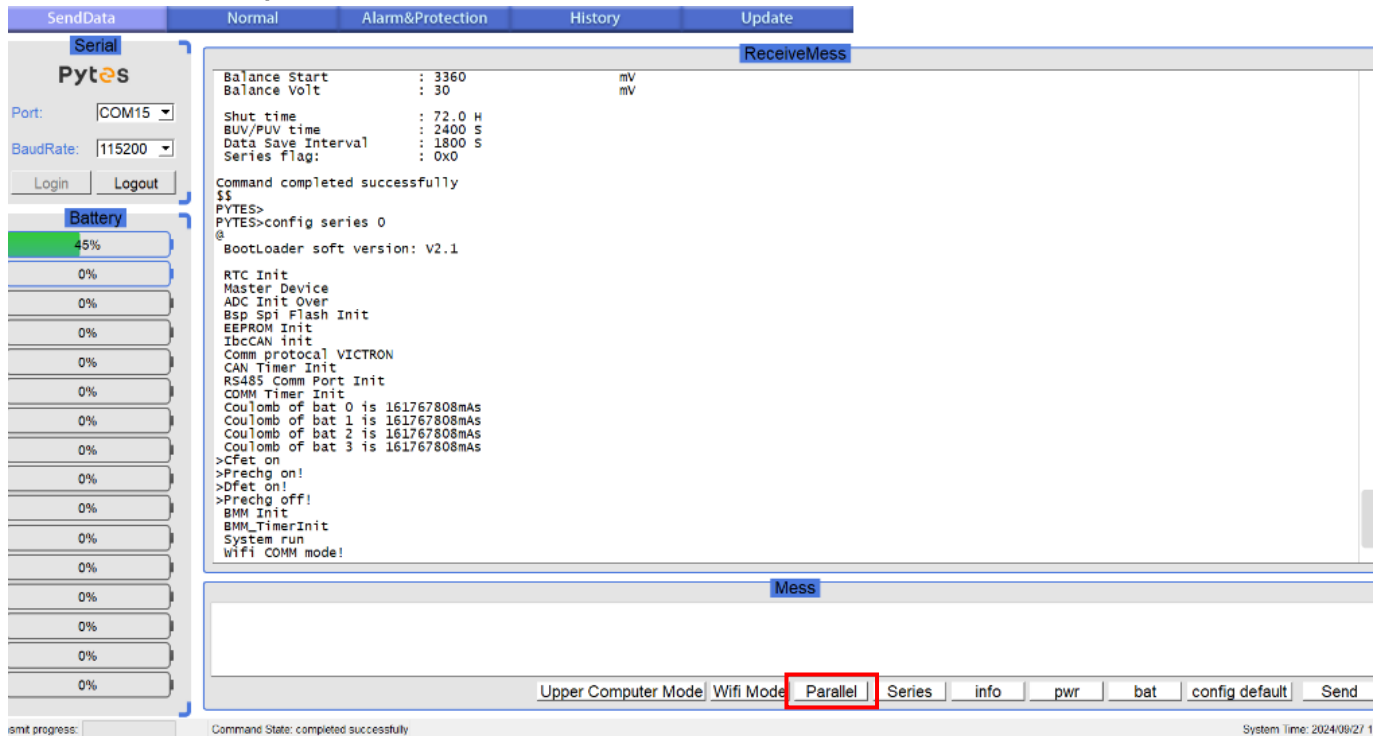


Pic 6.5

If you want to switch back to 12V mode, pls follow the next steps.

2)Switch to 12V mode

1.Click on “parallel” button.



Pic 6.6

2.If series flag' s value is 0x0, it means that you have switched to 12V mode successful.

PytesSet - V2.8.4 - 12V

SendData Normal **Alarm&Protection** History Update

Serial
Port: COM15
BaudRate: 115200
Login Logout

Battery
45%
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%
0%

Alarm&Protection
Download

alarm&protcet item	cell	power	unit
Over Voltage	3650	14800	mV
Over VoltageR	3500	14000	mV
High Voltage	3600	14300	mV
High VoltageR	3500	14000	mV
Low Voltage	2800	11200	mV
Low VoltageR	3000	12000	mV
Under Voltage	2700	10800	mV
Under VoltageR	3000	12000	mV
Sleep Voltage	2600	10000	mV
Charging OT	61000	61000	mC
Charging OTR	55000	55000	mC
Charging HT	59000	59000	mC
Charging HTR	55000	55000	mC
Charging LT	2000	2000	mC
Charging LTR	5000	5000	mC
Charging UT	0	0	mC
Charging UTR	5000	5000	mC
Discharging OT	61000	61000	mC
Discharging OTR	55000	55000	mC
Discharging HT	59000	59000	mC
Discharging HTR	55000	55000	mC
Discharging LT	-9000	-9000	mC

Shut time : 72.0 H
BUV/PUV time : 2400 S
Data Save Interval : 1800 S
Series flag: 0x0

Transmit progress: Command State: completed successfully System Time: 2024/09/27 16:47

When the battery is cascade communication state, if you switch the master battery voltage mode and all slavers will also be switched to the same mode. Therefore, you must disconnect the inverter and confirm the battery connection status when you switch master battery 12V/24V mode.