



# PROCEDURE

Reference:	PR20220401-01		
Version:	01.1	Category:	E

MODEL(S)	GOAL	
All new type lithium battery pack	Quality improvement	
	Performance	√
	Upgrade	√
PARTS INFO	Down time	
Data transfer cable for Lithium battery interface software	Maintenance	√
	Work around	√
	<u>Others:</u>	

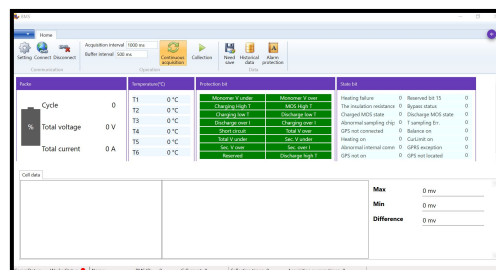
## VERSION CONTROL:

Author:	Version:	Date:	Change/update:
Arvin	01.1	2022/04/16	update

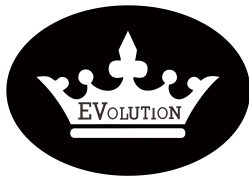
## TITLE

How to reflash the BMS board by RS485 communications

## TOOLS REQUIRED



- Laptop (Win 7 or up)
- Data transfer cable for Lithium battery interface software
- Lithium battery interface software



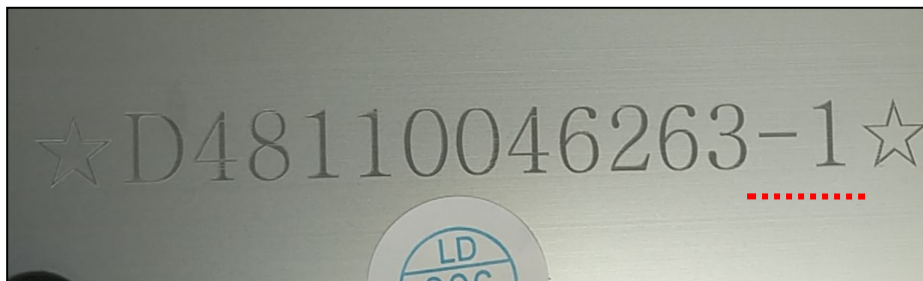
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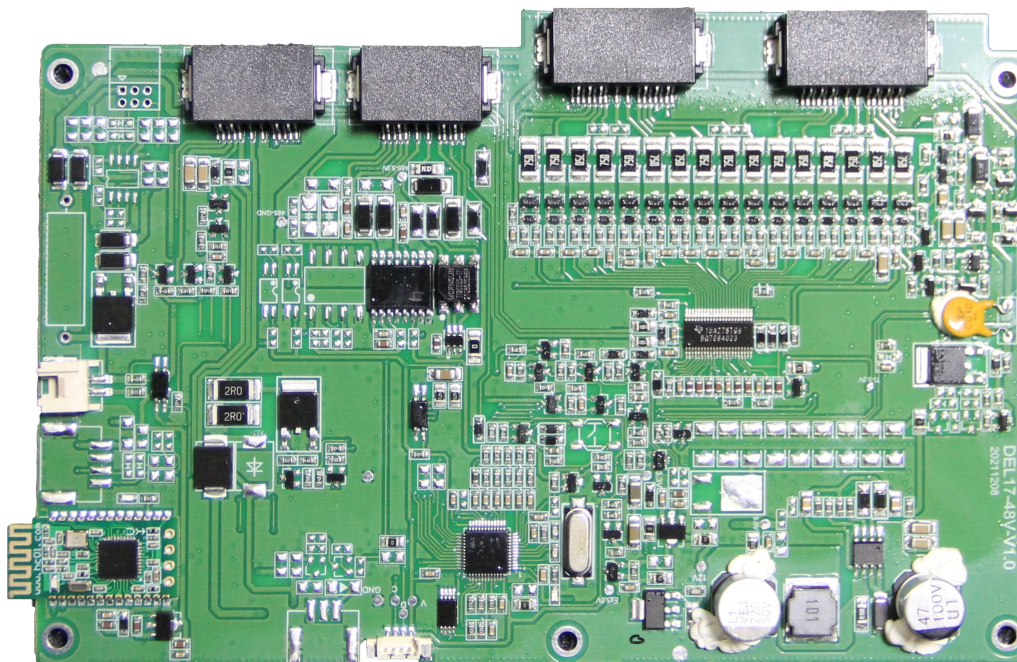
**Note: Please read the information before conducting the procedures below**

- These procedures only apply to the new type BMS board.
- How to distinguish the new type BMS board:

**1. Check the battery serial number. The serial number of the lithium batteries which have new type BMS board will be ending with “-1”.**



**2. Inspect the BMS board connectors, see the image for new type BMS board.**



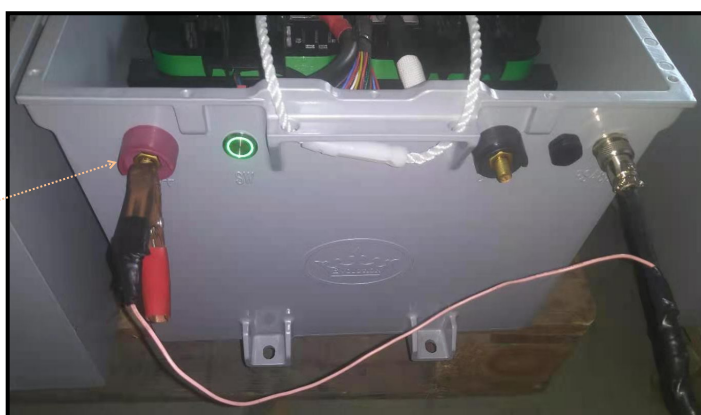
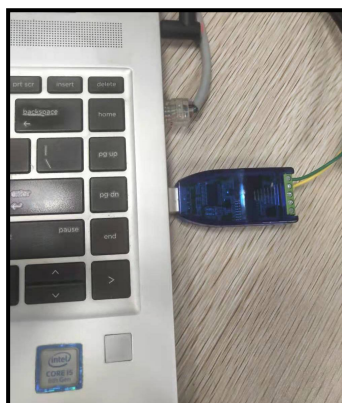


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## HOW TO DO?

1. Connect the “Data transfer cable” to the laptop and lithium battery.

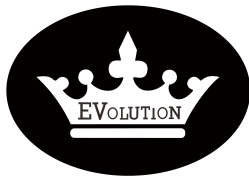


Connect it to  
battery positive  
terminal

Connect it to  
battery RS485 port

2. Run the battery interface software **GBMS** by following the Procedures “**PR20211006-How to use Interface software for lithium battery-v02.0-EN-[E]**”





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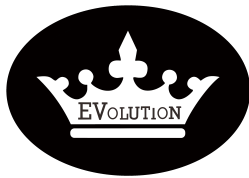
The screenshot displays the BMS (Battery Management System) software interface. The top menu bar includes 'Home', 'Setting', 'Connect', 'Disconnect', 'Continuous acquisition', 'Collection', 'Need save', 'Historical data', and 'Alarm protection'. The main display area is divided into several sections: 'Packs' showing Cycle, Total voltage, and Total current; 'Temperature(°C)' with a list of temperatures (T1-T6); 'Protection bit' with a table of protection bits; and 'State bit' with a table of state bits. A 'Cell data' section is also visible. The bottom status bar shows 'CommStatus: WorkerStatus: Name: BMS ID: 0 Cell count: 0 Collection times: 0 Acquisition success times: 0'.

### 3. Set the COM /BMSID/Cell Num/Length

- **COM:** The COM # depends on the laptop you are using.
- **BMSID: 1**
- **Cell Num: 16**
- **Length: 80**

The screenshot shows the BMS software interface with the 'Communication configuration' dialog box open. The dialog box has tabs for 'COM' and 'CAN'. The 'COM' tab is selected, showing a dropdown menu for 'COM6' and a text field for '9600'. Below the dialog box, the 'BMSID: 1', 'Cell Num: 16', and 'Length: 80' are displayed. The 'Refresh', 'OK', and 'Cancel' buttons are at the bottom of the dialog box. The background shows the same BMS software interface as the previous screenshot.





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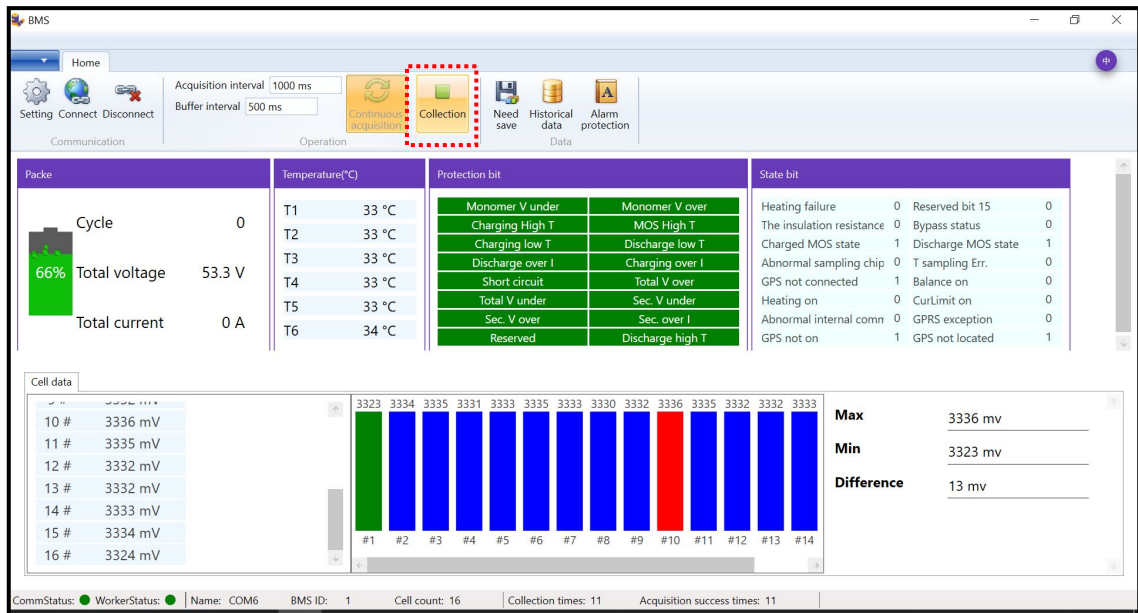
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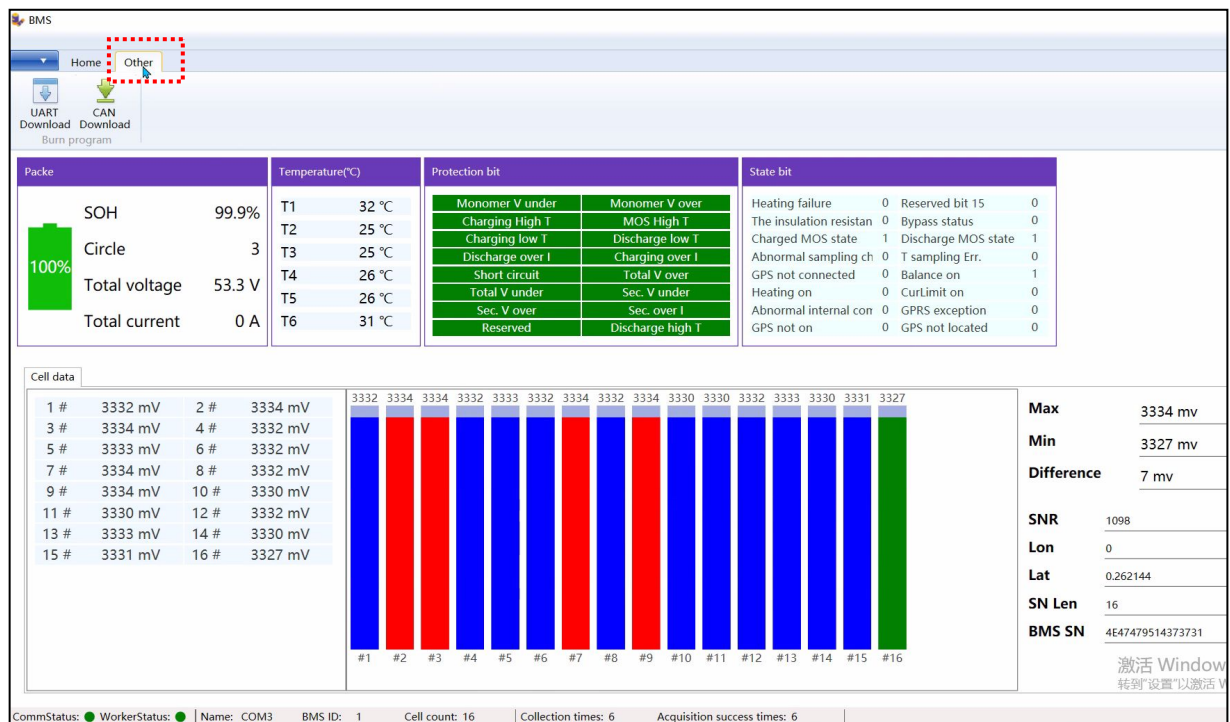
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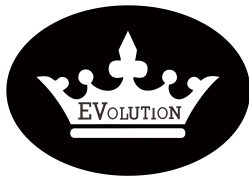
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## 4. Click on the “Collection” icon to start reading the data from lithium battery BMS.



## 5 Click “other” menu on the top left corner of interface.





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## 6. Click "UART Download" button and then select "Yes" on the pop-up dialogs.

The screenshot shows the BMS software interface. The 'UART Download' button is highlighted with a red dashed box. A pop-up dialog asks 'Confirm to enter the upgrade program?' with 'Yes' and 'No' buttons. The 'Yes' button is also highlighted with a red dashed box.

Package	SOH	Circle	Total voltage	Total current
	99.9%	3	53.3 V	0 A

Temperature(°C)	T1	T2	T3	T4	T5	T6
	32 °C	25 °C	25 °C	26 °C	26 °C	31 °C

Protection bit	Monomer V under	Monomer V over	Charging High T	MOS High T	Charging low T	Discharge low T	Discharge over I	Charging over I	Short circuit	Total V u	Sec. V c	Reserv

State bit	Heating failure	The insulation resistan	Charged MOS state	Abnormal sampling ch	GPS not connected	Balance on	CurLimit on	GPRS exception	GPS not located
	0	0	1	0	0	1	0	0	0

Cell data	1 #	2 #	3 #	4 #	5 #	6 #	7 #	8 #	9 #	10 #	11 #	12 #	13 #	14 #	15 #	16 #
	3332 mV	3334 mV	3334 mV	3332 mV	3332 mV	3332 mV	3332 mV	3332 mV	3332 mV	3330 mV	3332 mV	3332 mV	3333 mV	3330 mV	3331 mV	3327 mV

Max	Min	Difference	SNR	Lon	Lat	SN Len	BMS SN
3334 mv	3327 mv	7 mv	1098	0	0.262144	16	4E47479514373731

CommStatus: WorkerStatus: Name: COM3 BMS ID: 1 Cell count: 16 Collection times: 10 Acquisition success times: 9

The screenshot shows the BMS software interface with the 'COM Download' dialog box open. A yellow note says 'Note: Make sure select "115200" on BaudRate'. The 'BaudRate' dropdown is set to '115200'. The 'Burn' button is highlighted.

Note: Make sure select "115200" on BaudRate

BaudRate: 115200

File: 0 / 0

Burn

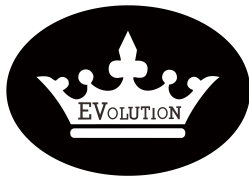
0 %

Rest Enter BOOT Run APP Aborted Ready to download

Cell data	1 #	2 #	3 #	4 #	5 #	6 #	7 #	8 #	9 #	10 #	11 #	12 #	13 #	14 #	15 #	16 #
	3332 mV	3334 mV	3334 mV	3332 mV	3332 mV	3332 mV	3332 mV	3332 mV	3332 mV	3330 mV	3332 mV	3332 mV	3333 mV	3330 mV	3331 mV	3328 mV

Max	Min	Difference	SNR	Lon	Lat	SN Len	BMS SN
3334 mv	3328 mv	6 mv	1098	0	0.262144	16	4E47479514373731

CommStatus: WorkerStatus: Name: COM3 BMS ID: 1 Cell count: 16 Collection times: 14 Acquisition success times: 14



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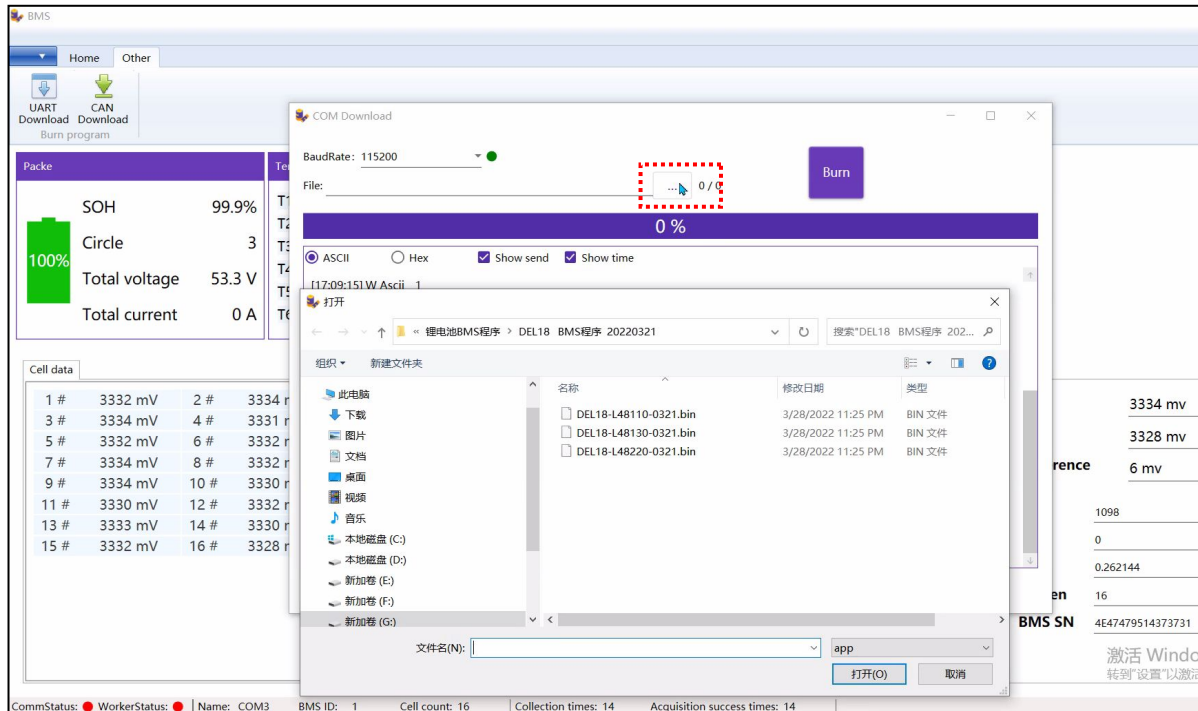
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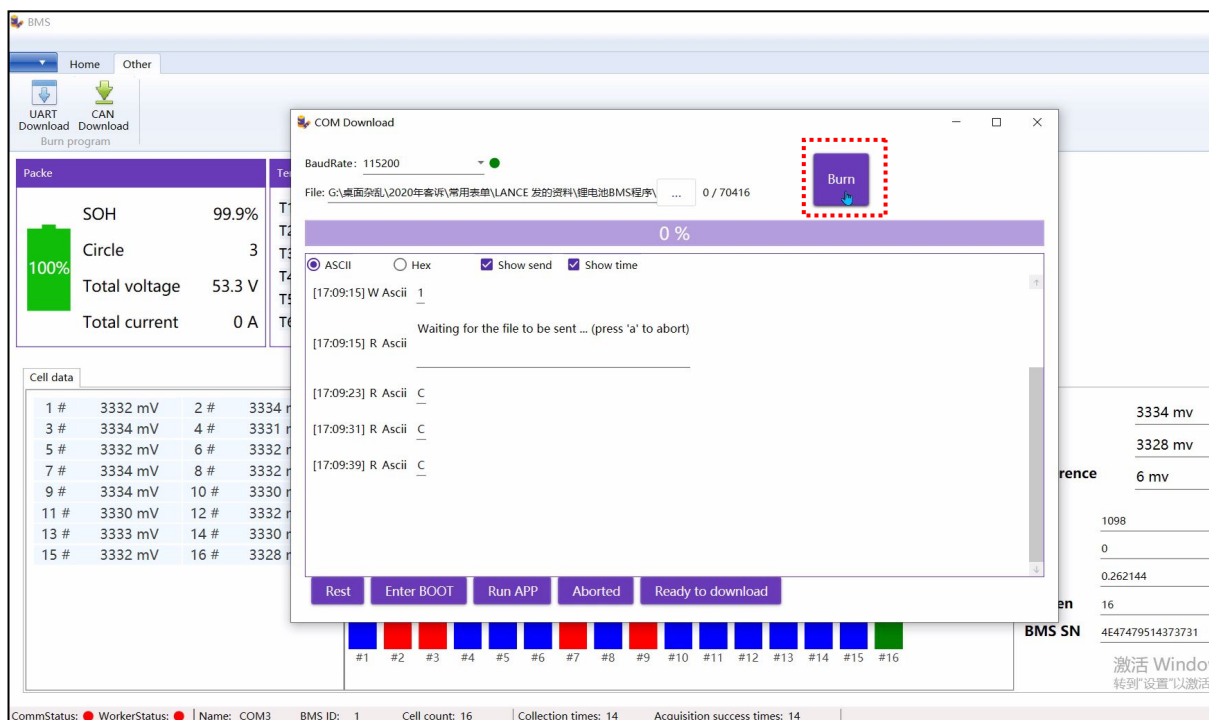
Category:

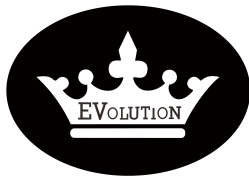
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## 7 Click the file “...” button to select the proper firmware for your lithium battery.



## 8 Click the “Burn” button to download the firmware to the BMS board.





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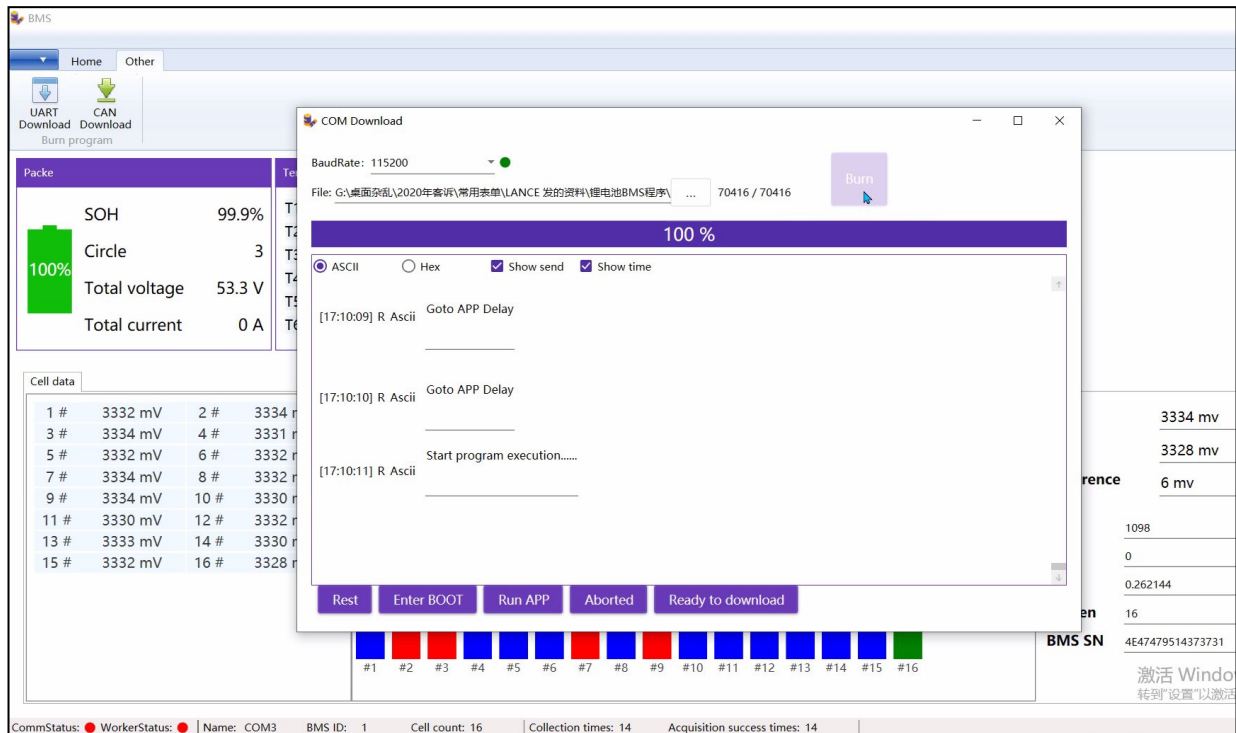
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**9. When the progress bar shows 100%, the reflashing progress is completed. Turn off the interface software.**



**10. Cycle the key switch and then charge the lithium battery fully.**

**Note: Must fully charge the lithium battery after re-programming/reflashing the BMS.**





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