



**Bafang Electric (Suzhou) Co., Ltd.**

## **BESST Pro Instructions for Use**

Revision	Date	Description	Modified by
V1.0	2022.10.15	First edition	Liu Jianmin
V1.1	2022.10.17	Add registration interface	Liu Jianmin
V1.2	2023.6.25	New user registration and automatic upgrade	Liu Jianmin
V1.3	2023.9.15	Add batch update, one-click update, parameter setting function, and HMI setting function	Liu Jianmin
V1.4	2023.10.26	Modify contents in Parameter Setting	Liu Jianmin
V1.5	2023.12.8	Modify speed limit rules and add registration prompts	Liu Jianmin

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# 1 Software Installation

## 1.1 Background

In order to better meet the market demand and better serve the dealers, Bafang has launched the stronger software BESST Pro on the basis of updating the existing BESST software. After streamlining part of functions, BESST Pro has added a large amount of new functions to provide accurate fault diagnosis and professional technical support, contributing to a comfortable riding experience for customers. Hence, we have been committed to developing innovative products to set a new standard for the EPAC industry.

## 1.2 System environment requirements

Windows 8 and above

MacOS High Sierra 10.13 and above

BESST Pro only supports the products are compatible with the compatibility matching standards of Bafang in a list of matching system, which is kept up-to-date constantly. If the product is not listed, it will be incompatible with BESST Pro. Additionally, note that Bafang products released prior to the implementation of EN 15194:2017 regulations are not supported by BESST pro as well.

## 1.3 Installation

Download address : <https://bafang-e.com/en/oem-area/service/besst-pro/>

Unzip the software installation package, double click to enter the software installation program, and follow the prompts to complete the installation.

## 1.4 Hardware connection

The hardware connection is shown as the Fig. 1-1 (The hardware version of the BESST Tool needs to be 3.0 and above).



Fig. 1-1 Hardware connection



## 2 Login Function

### 2.1 Offline login

Offline login is not required to enter account and password. You can select "Offline Login" to enter the interface of part inspection directly (Fig. 2-1). There is an icon to the left of the "Local Update" icon and click on it to view the updating steps (Fig. 2-2). The current firmware version of the system part is displayed and the latest firmware file is obtained locally. The firmware file for offline updating should be obtained by contacting Bafang after-sales personnel.

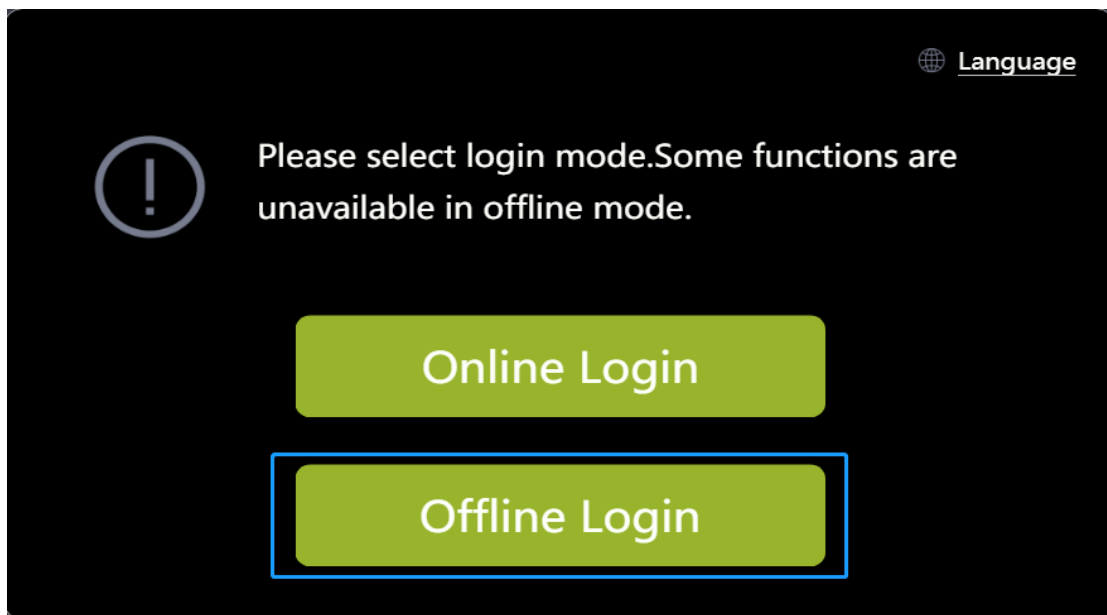


Fig. 2-1 Offline login

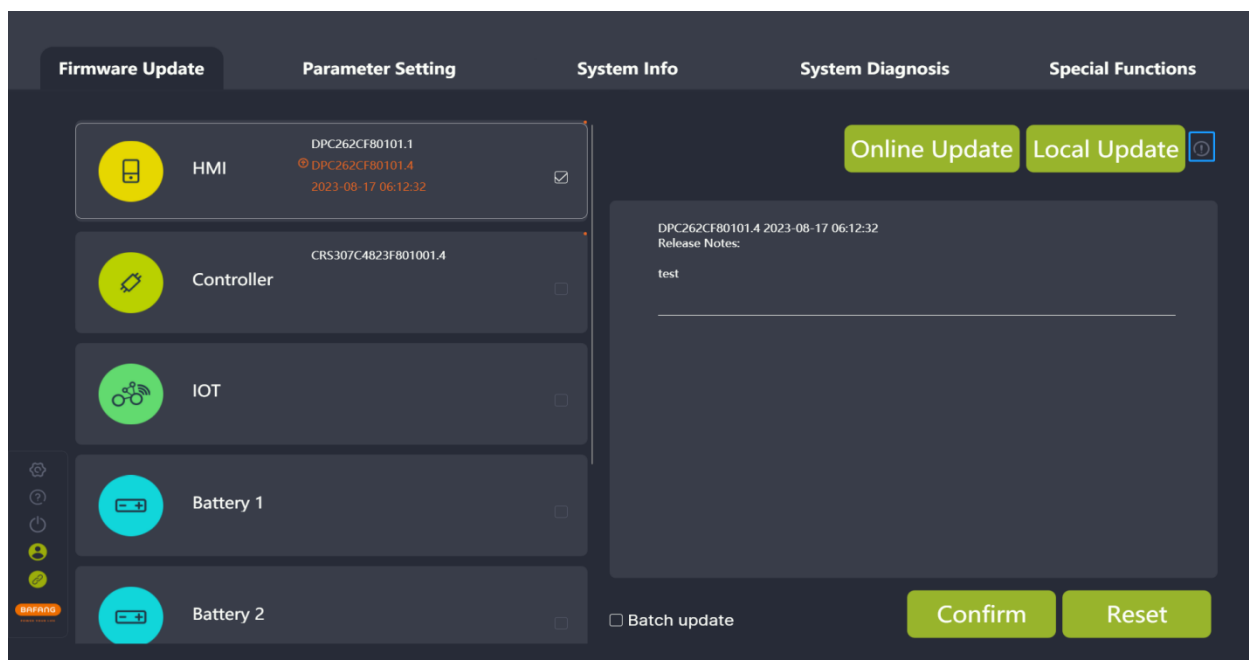


Fig. 2-2 Tips for updating steps

## 2.2 Online login

Online login requires the account and password (of BESST). You must check the box to agree to the "User Agreement" to login. You can choose whether to check the "Remember me" icon or not. If any update of system parts, the latest firmware version will be displayed and the latest firmware can be obtained directly from the cloud (Fig.2-5).

The steps are as follows:

- (1) Select the "Online Login";
- (2) Enter the "UserName";
- (3) Enter the "Password";
- (4) Check the box to agree to the "User Agreement";
- (5) Click the "Login".

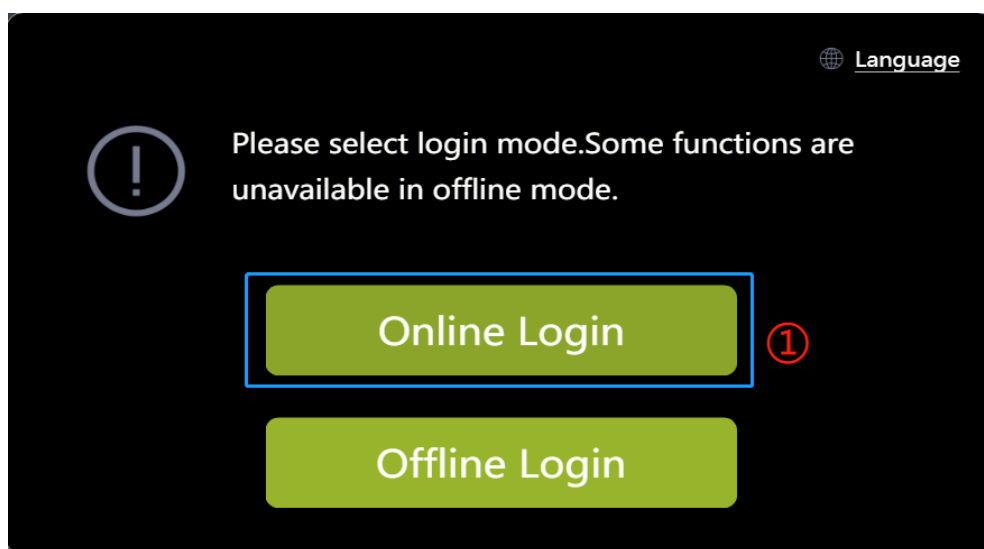


Fig. 2-3 Online login

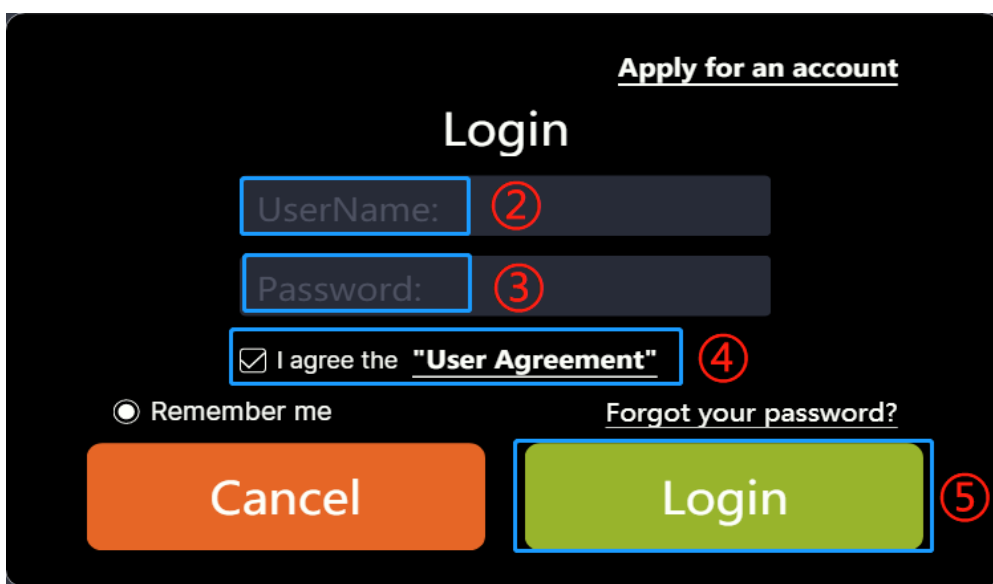


Fig. 2-4 Online login

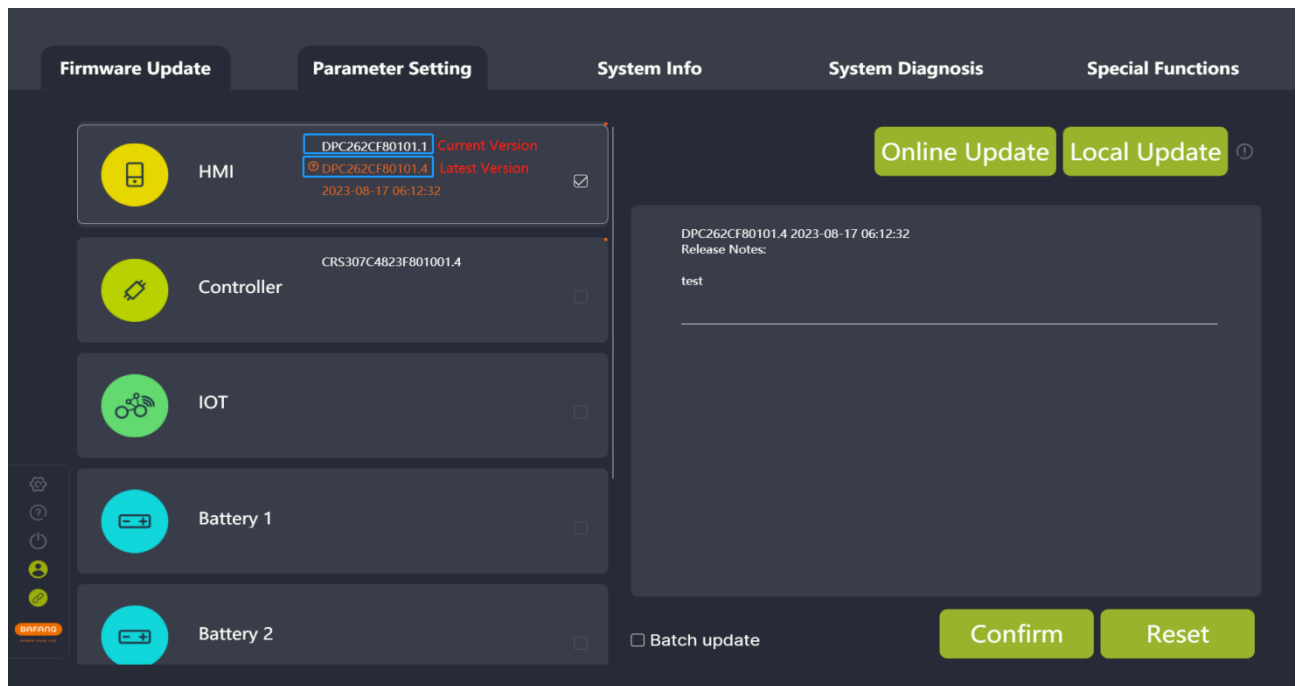


Fig. 2-5 Online login page

## 2.3 Account Registration

- (1) If you don't have the login account, click "Apply for an account" in the login interface;

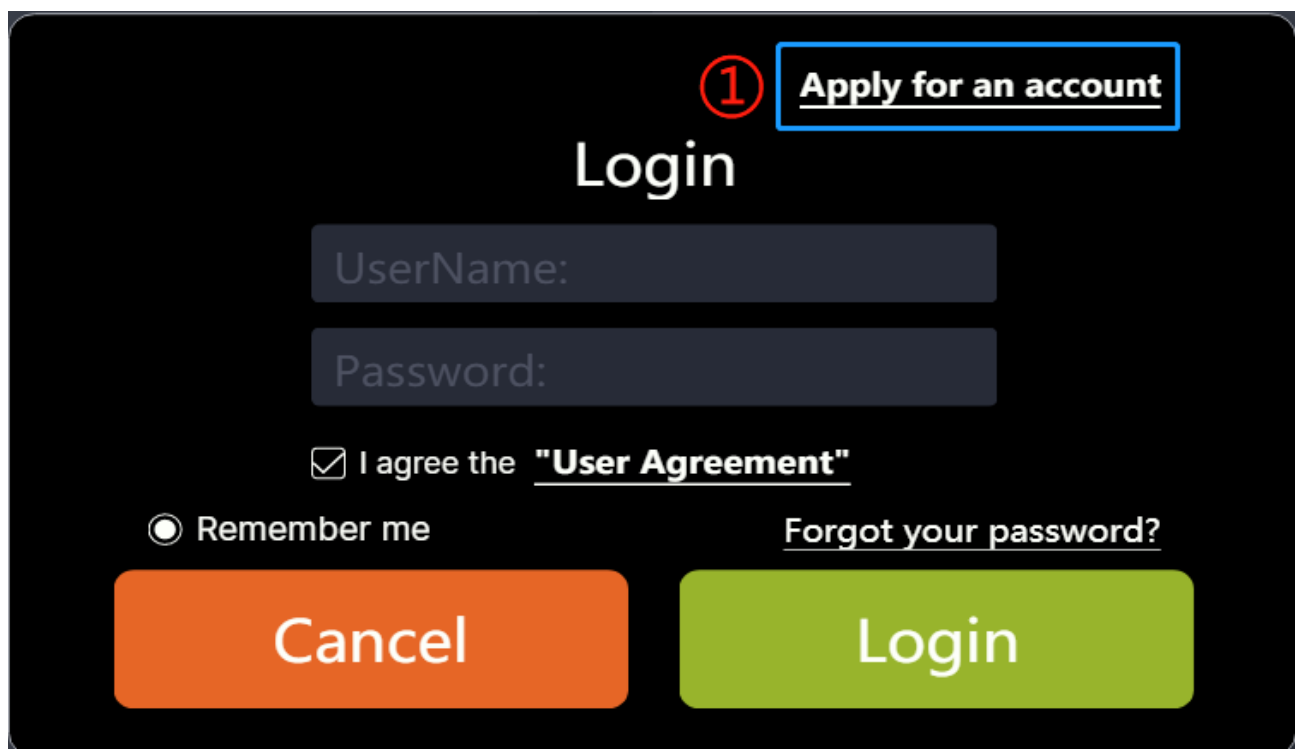
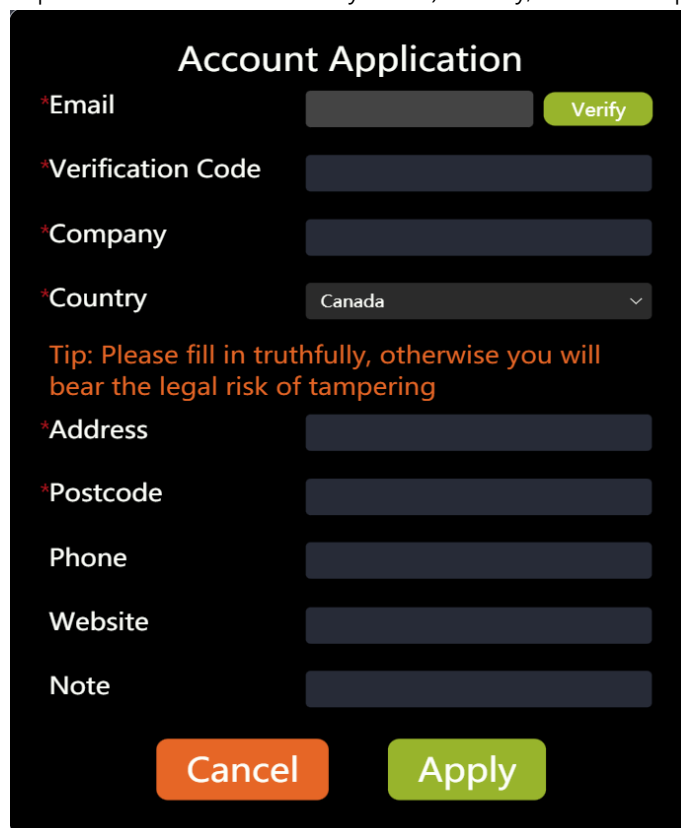


Fig. 2-6 Apply for an account

- (2) Fill in your email address in the interface and click "Verify". Enter the verification code you've received in your mailbox. Then, fill in the required information (company name, country, address, and postal code are mandatory fields) .Finally, click the "Apply" button.



The image shows a dark-themed 'Account Application' form. It includes input fields for Email, Verification Code, Company, Country (a dropdown menu currently showing 'Canada'), Address, Postcode, Phone, Website, and a Note. A green 'Verify' button is next to the Email field. A tip message in orange text reads: 'Tip: Please fill in truthfully, otherwise you will bear the legal risk of tampering'. At the bottom are orange 'Cancel' and green 'Apply' buttons.

Fig. 2-7 Fill in registration information

- (3) After registering, it will prompt "Application has been submitted and the review result will be notified by e-mail".

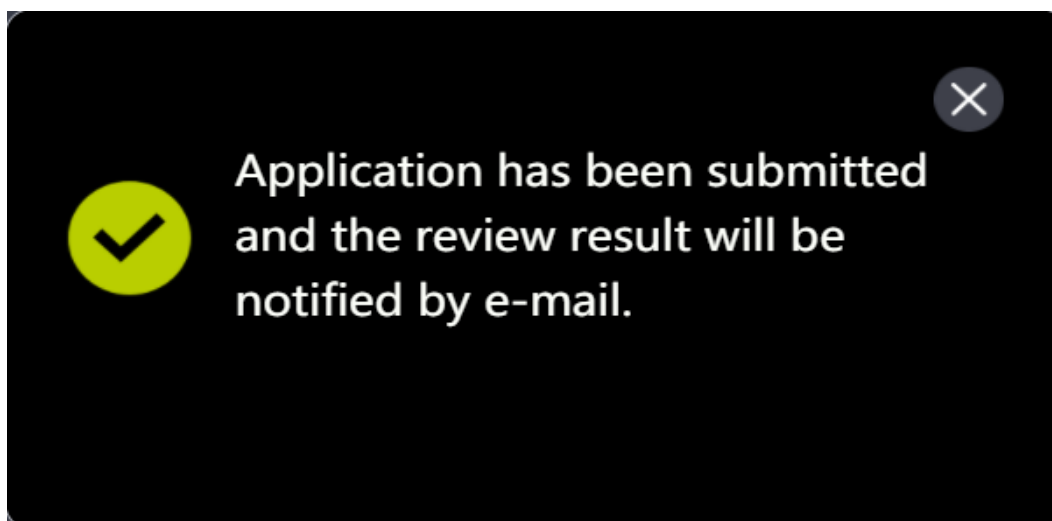


Fig. 2-8 Tips for successful registration

## 2.4 Forgot password

If you forgot your login password, BESST Pro supports reset password. The steps are as follows:

- (1) Click the "Forgot your Password?" icon on the login pop-up window;

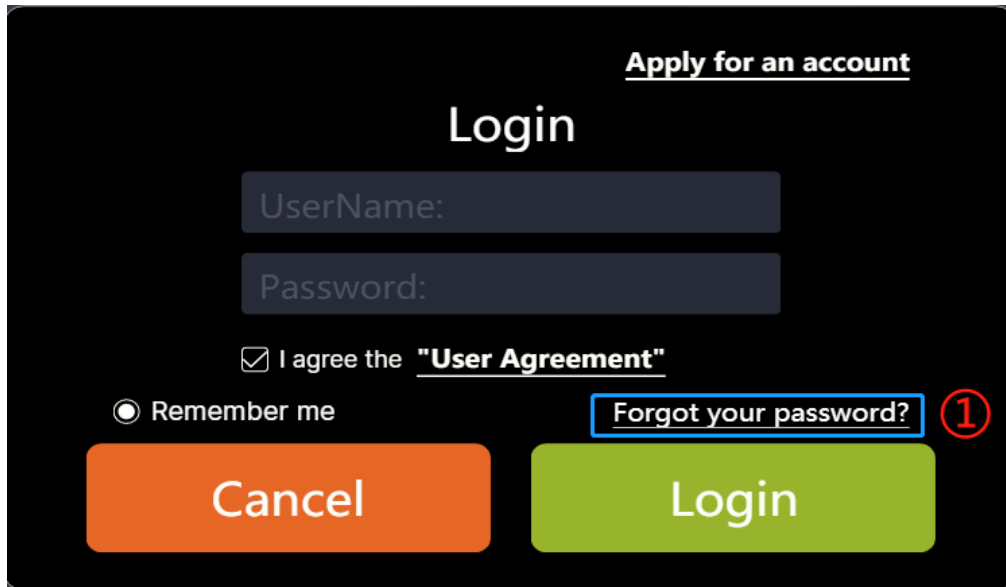


Fig. 2-9 Forgot your password?

- (2) If you have logged in before, you will get the email address automatically; If you have never logged in, you need to enter the email address manually;
- (3) Click on the "Verify" icon;
- (4) Enter the "Verification Code" received by email;
- (5) Enter the "New Password";
- (6) Enter the "New Password" again;
- (7) Click on the "Reset".

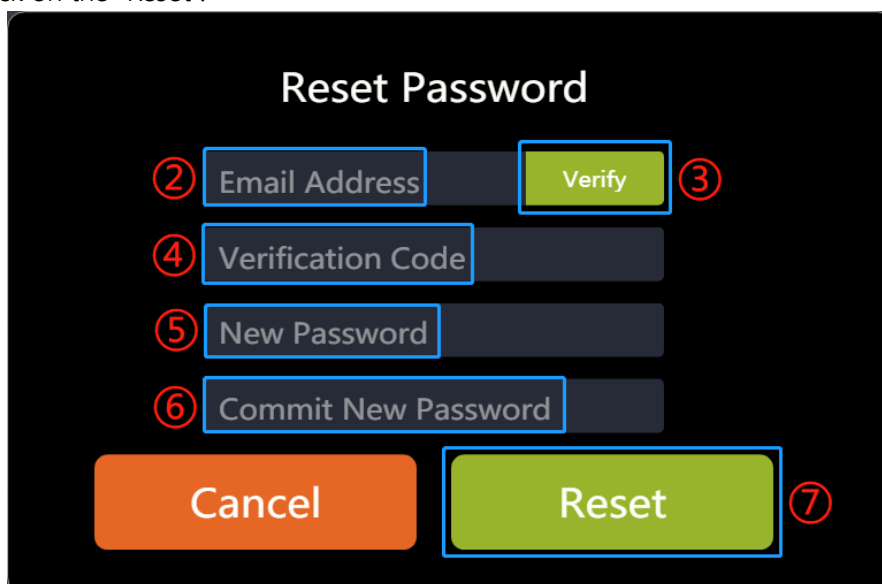


Fig. 2-10 Reset password

## 2.5 Reset password

If you want to reset the password after logging in, you can follow the steps as below:

- (1) Click the "Login" icon;

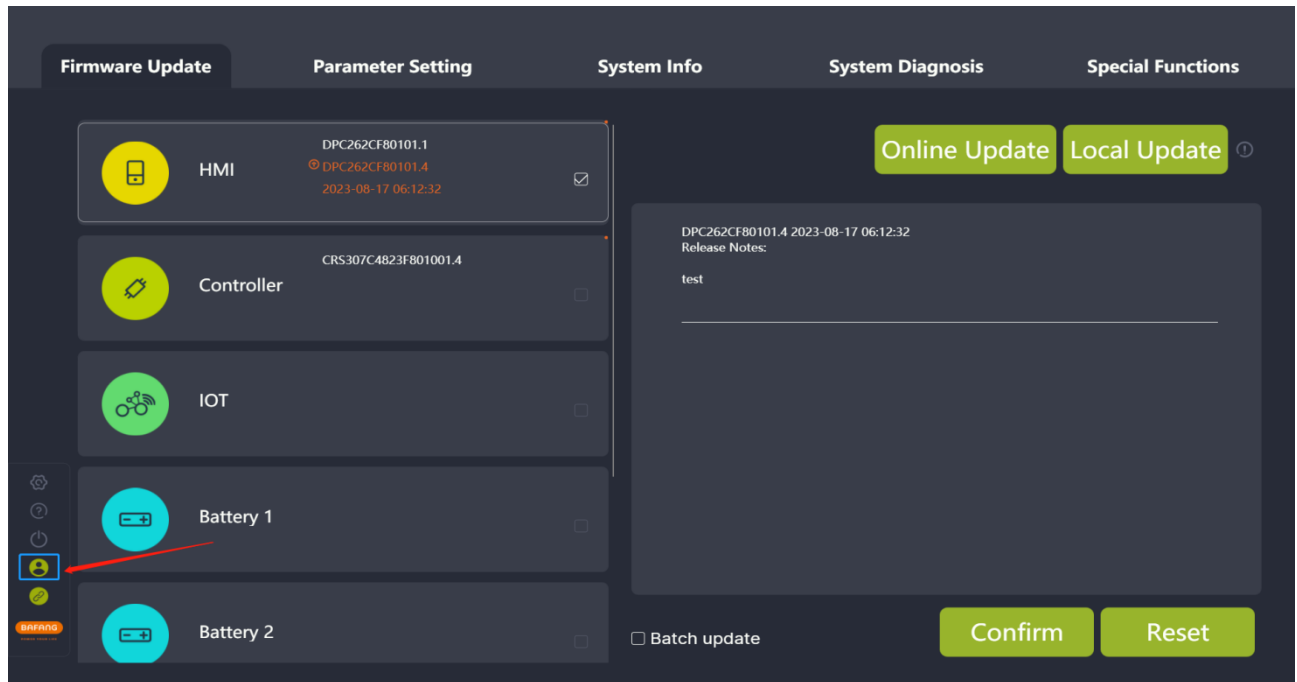


Fig. 2-11 Click the "Login" icon

- (2) Click the "Reset Password" in the pop-up window;

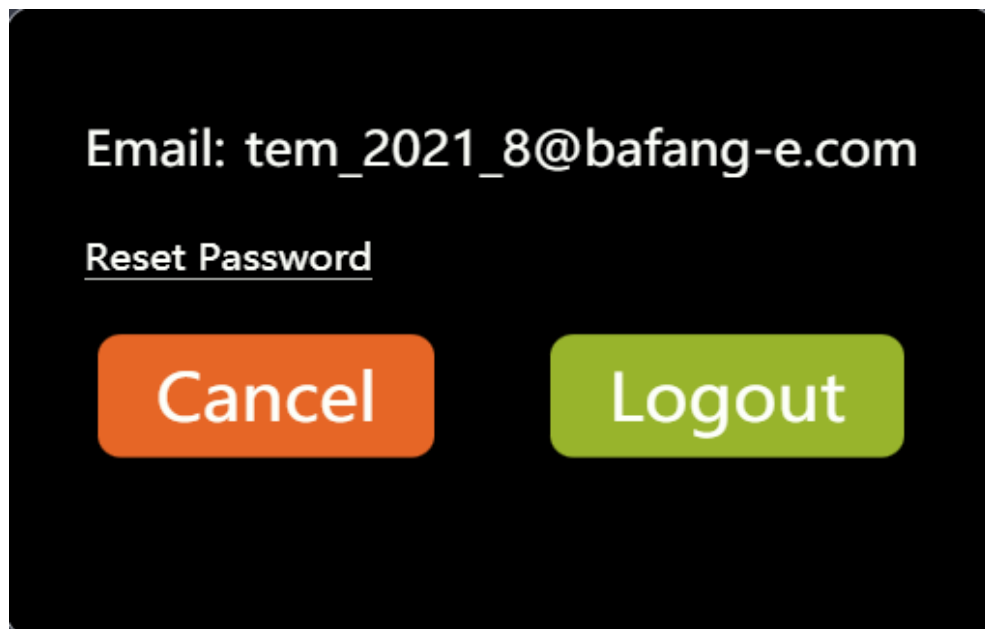


Fig. 2-12 Reset Password

- (3) The system will get the email address automatically and click the "Verify";
- (4) Enter the "Verification Code" received by Email;
- (5) Enter the "New Password";

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Any disposal such as copying and passing on to third parties is forbidden.

- (6) Enter the "New Password" again;
- (7) Click the "Reset";

The image shows a 'Reset Password' form with a black background and white text. The title 'Reset Password' is at the top. Below it are four input fields: 'Email Address', 'Verification Code', 'New Password', and 'Commit New Password'. Each input field is preceded by a red circle with a white number: 2, 4, 5, and 6 respectively. To the right of the 'Email Address' field is a green 'Verify' button with a red circle containing the number 3. At the bottom are two buttons: an orange 'Cancel' button and a green 'Reset' button. The 'Reset' button is followed by a red circle containing the number 7.

Fig. 2-13 Reset Password

### 3 Part Inspection

BESST Pro supports automatic detection of the connection of parts in the current system. This operation takes some time, please wait patiently. The steps are as follows:

- (1) After logging in, the system will detect the connection of the whole bicycle parts and prompt the user to check whether the system is correctly connected ( Fig.3-1);

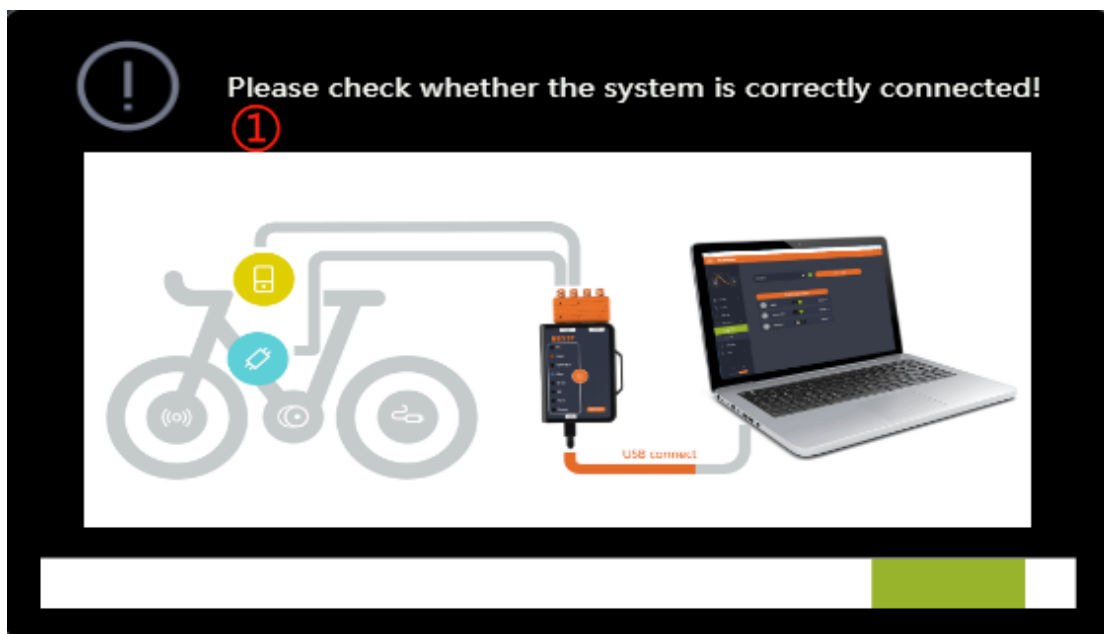


Fig. 3-1 Part inspection

- (2) Read each part's information at the same time, and then display the information of connected parts (Fig.3-2);

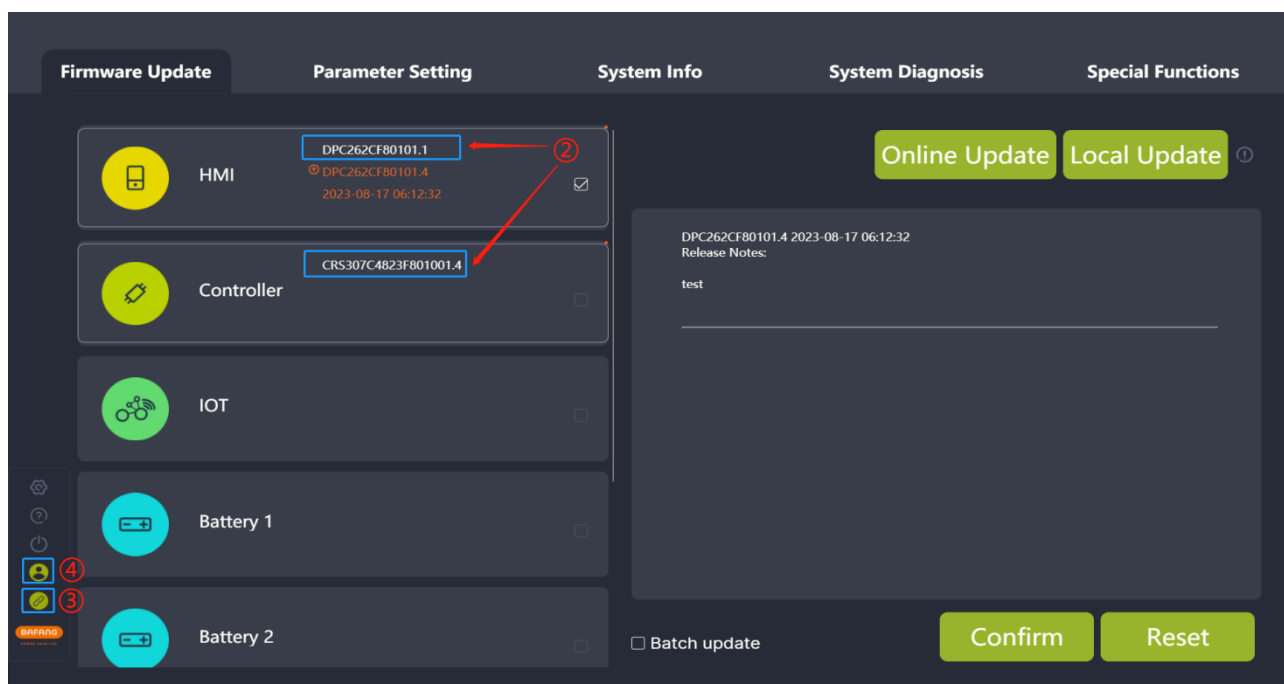


Fig. 3-2 Part Inspection



- (3) BESST Tool and computer connection status icon:

Green: successful connection

Orange: disconnection

- (4) Login status icon:

Orange: offline login

Green: online login

- (5) Compatibility matching status:

The orange dot in the upper right corner of the component indicates that the product is not certified and BESST PRO software is not guaranteed to be fully compatible. The absence of the orange dot indicates that the product is certified and can be used normally on BESST Pro (Fig. 3-3). If the product is not certified, the tip will pop up.

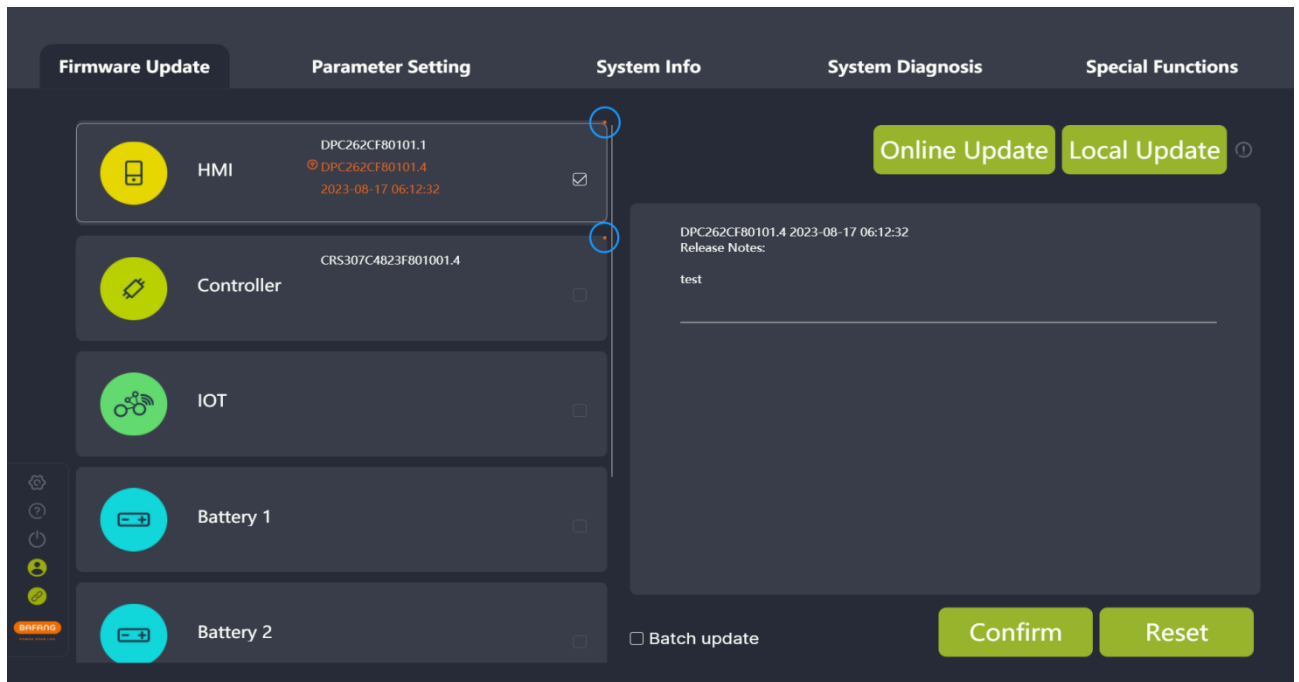


Fig. 3-3 Part inspection

## 4 Firmware Update

The firmware update module supports local update and online update of HMI, battery, controller, IOT, and BESST Tool.

### 4.1 Local update

Before updating the firmware, connect one end of the BESST Tool to the computer and the other end to the system parts (The controller needs to be connected to the battery in the meantime).

The steps are as follows:

- (1) Select the parts to be updated.
- (2) Click the “Local Update” icon and select the firmware to be updated.

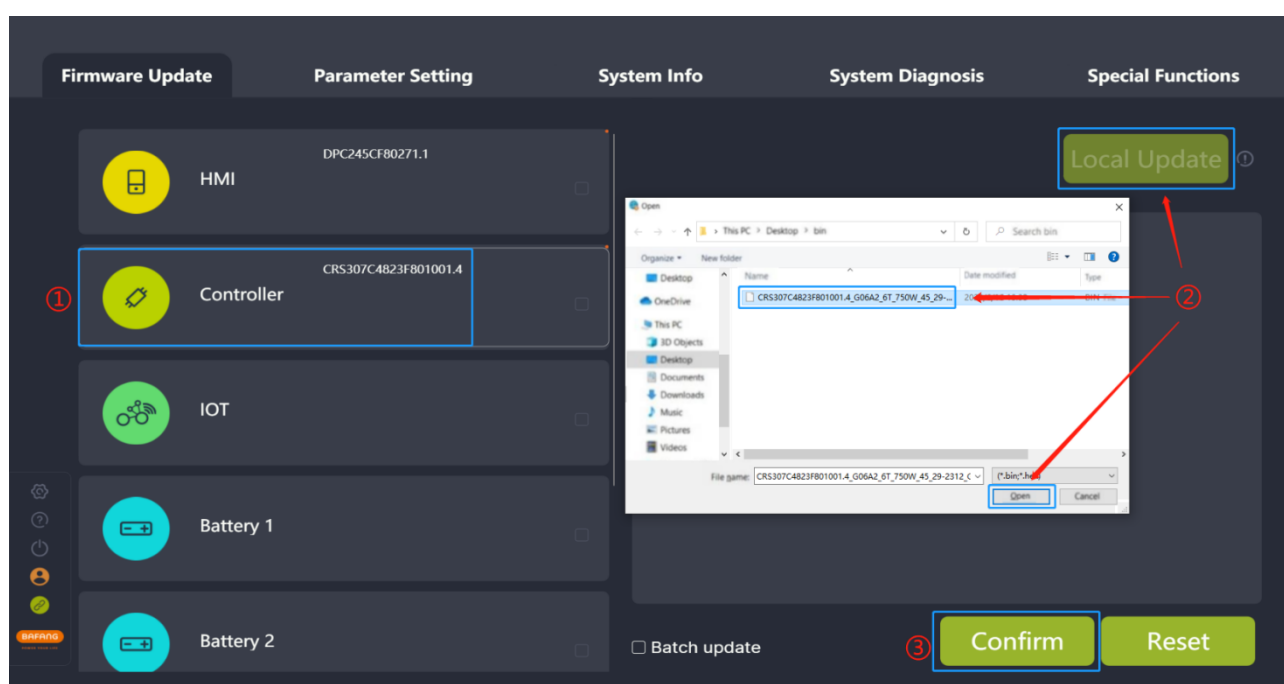


Fig. 4-1 Local update

- (3) Click the “Confirm” icon, the pop-up window will be displayed. If you confirm the upgrade, click “Confirm” again. Once clicked, the firmware be downloaded to the BESST Tool. You will hear a short beep from the BESST Tool after a successful download. If the buzzer sounds for a long time, it means the update has failed. Please click the “Reset” icon to update again.

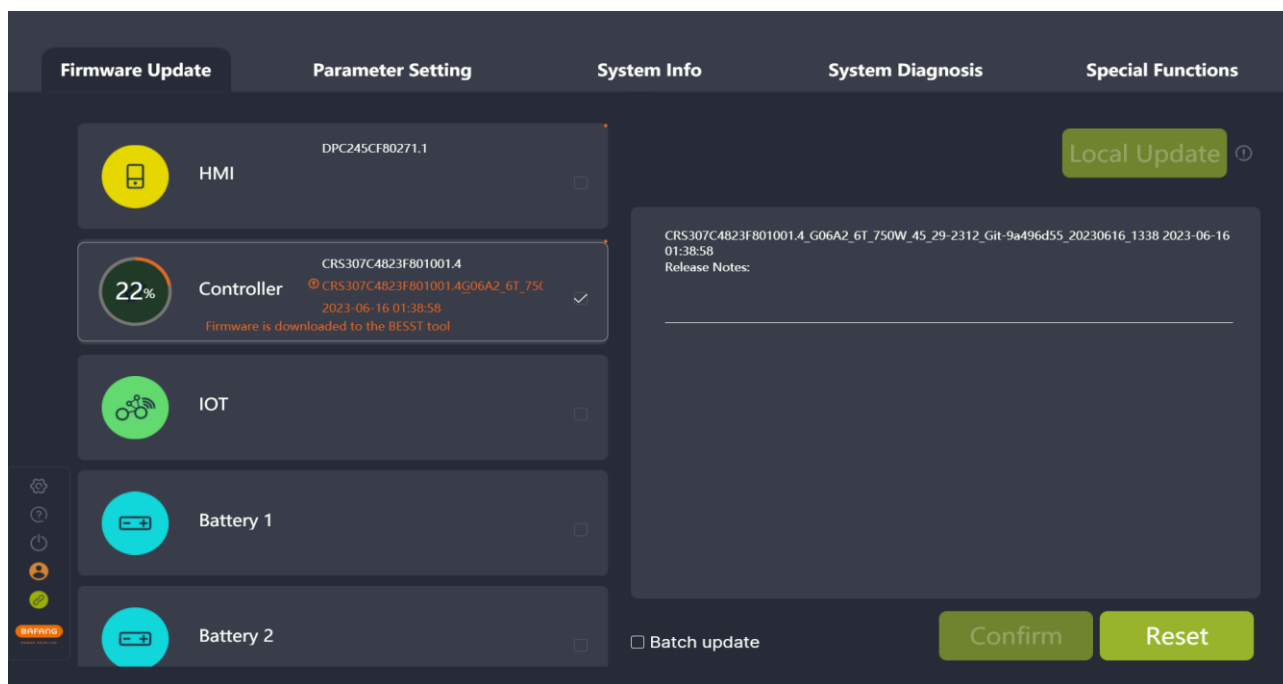


Fig. 4-2 Firmware is downloading to BESST Tool

- (4) After the firmware is successfully updated to the BESST Tool, the firmware will automatically download to the parts and update the parts. (If the updating progress bar does not start within 10 seconds, please try to reconnect the BESST Tool and the parts to be updated.)

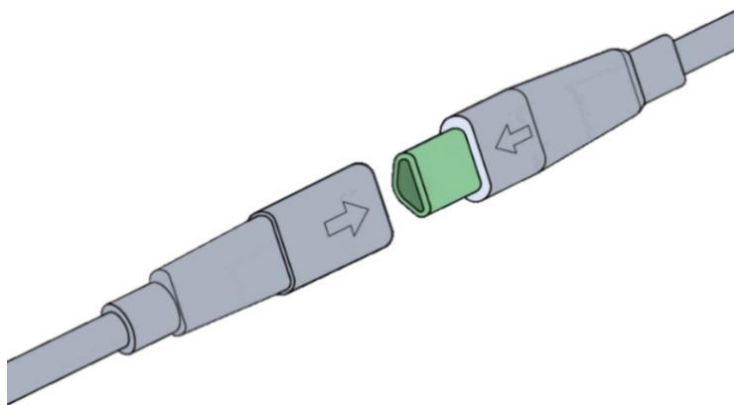


Fig. 4-3 Prompt for plugging and unplugging

- (5) In the process of BESST Tool updating, the buzzer will sound a short beep after a successful update. If the buzzer sounds for a long time, it means the update has failed. Please click the central reset button to cancel the updating state, and repeat the upgrade steps above after once connection of parts and BESST Tool.

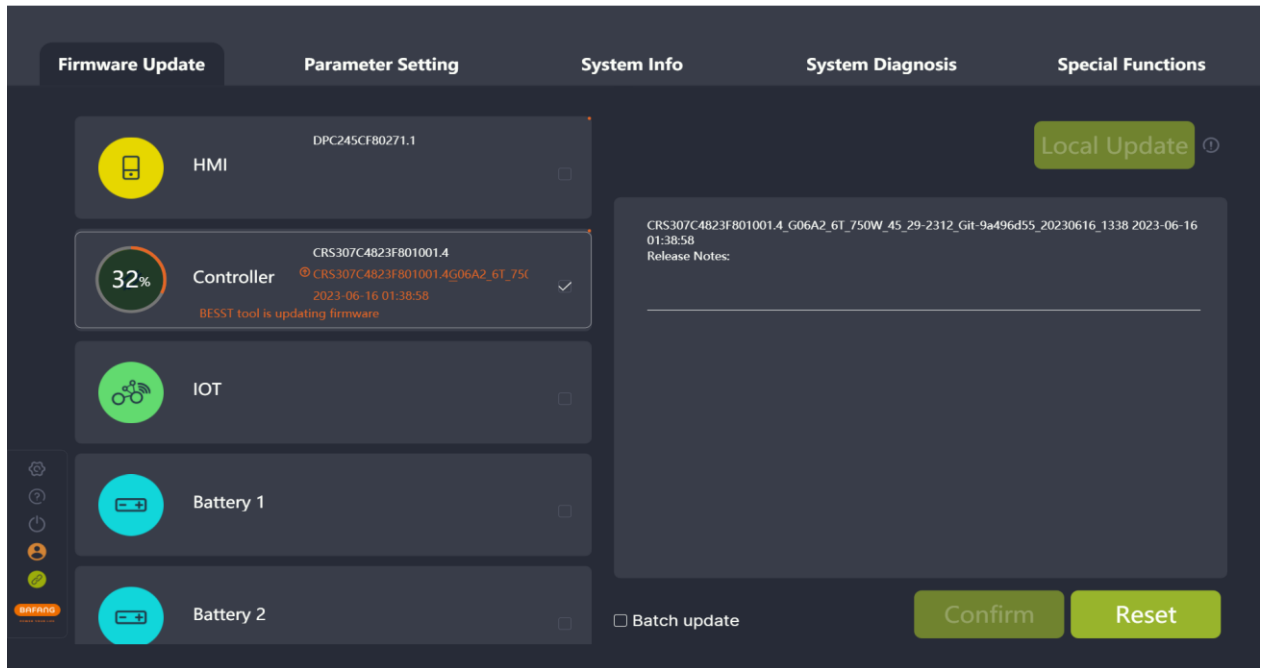


Fig. 4-4 Firmware update

- (6) After the firmware updates successfully, if the information cannot be read, you need to plug and unplug to give the part a restart and reconnect again.

## 4.2 Online update

Users need to be logged in before the online update. Before updating the firmware, connect one end of the BESST Tool to the computer and the other end to the system parts (The controller needs to be connected to the battery in the meantime). The system will automatically detect the latest firmware information. The steps are as follows:

- (1) Select the parts to be updated.

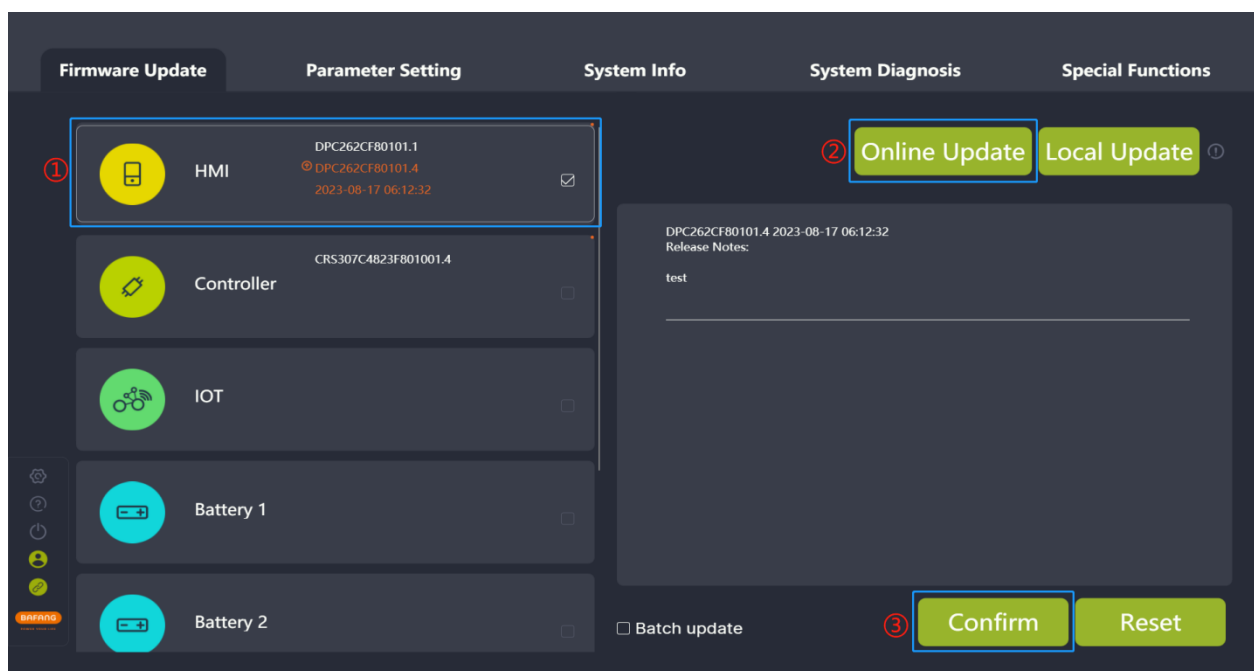


Fig. 4-5 Online update

(2) Click "Online Update" to download the program locally.

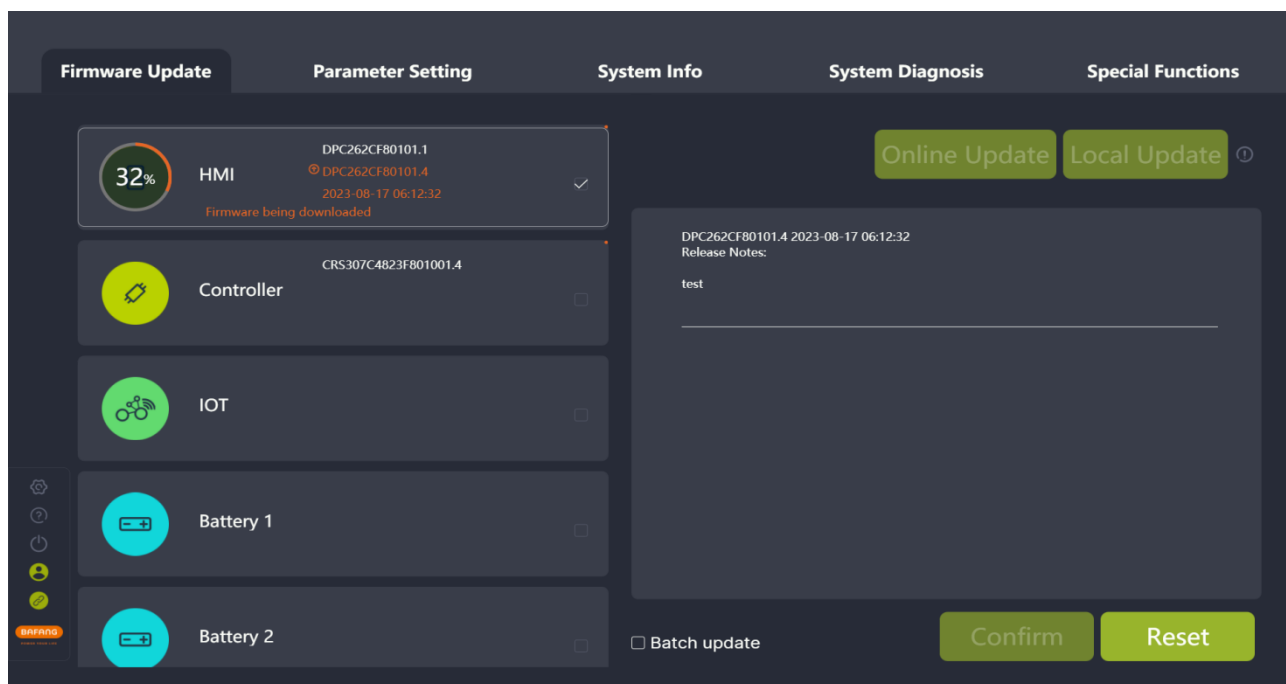


Fig. 4-6 Online update

(3) Click "Confirm", and a pop-up window will appear asking whether to confirm the update. If you confirm the update, you need to click "Confirm" again. After clicking "Confirm", the firmware will start to download to the BESST Tool, and the BESST Tool will emit a short beep after a successful download. If the BESST Tool beeps, it means that the update is faulty. Please click "Reset" and then update again.

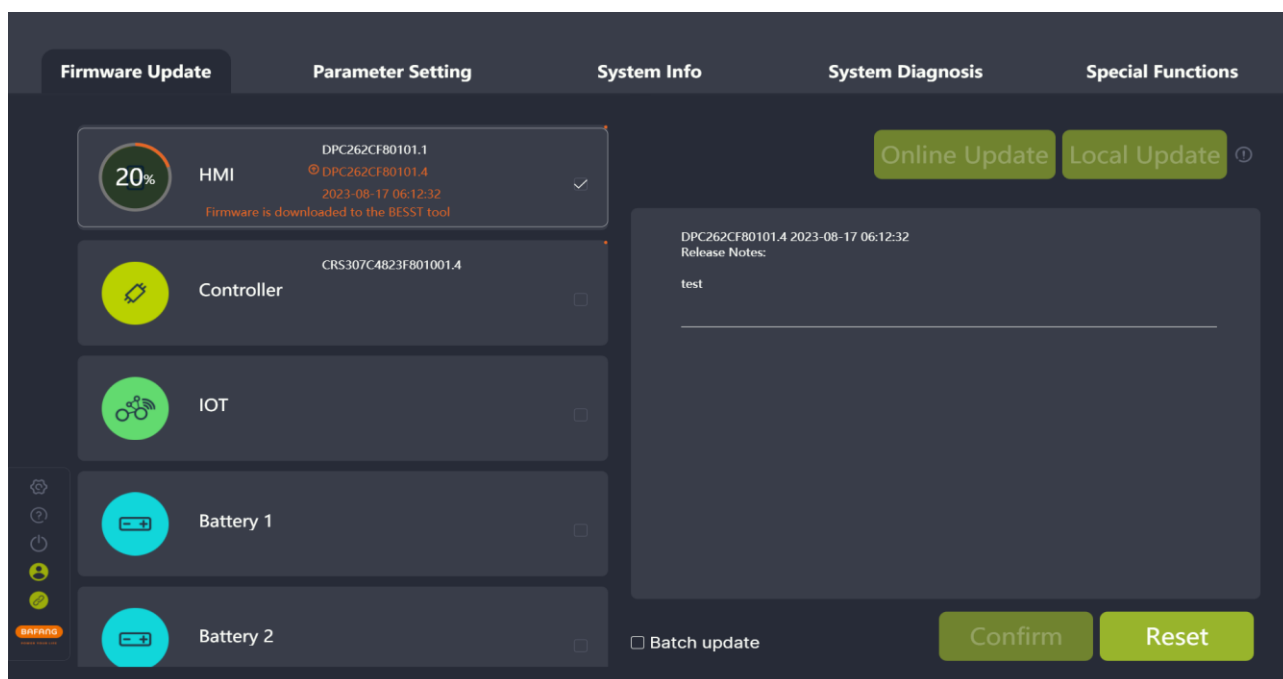


Fig. 4-7 Firmware is downloading to BESST Tool

- (4) After the firmware is successfully updated to the BESST Tool, the firmware will automatically download to the parts and update the parts. (If the updating progress bar does not start within 10 seconds, please try to reconnect the BESST Tool and the parts to be updated.)

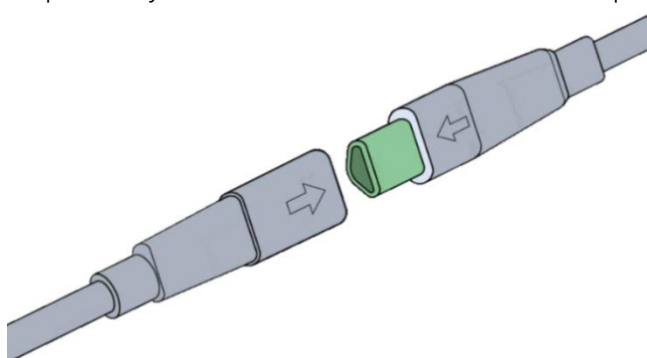


Fig. 4-8 Prompt for plugging and unplugging

- (5) In the process of BESST Tool updating, the buzzer will sound a short beep after a successful update. If the buzzer sounds for a long time, it means the update has failed. Please click the orange button on the BESST Tool to cancel the updating state, and repeat the upgrade steps above after once connection of parts and BESST Tool.

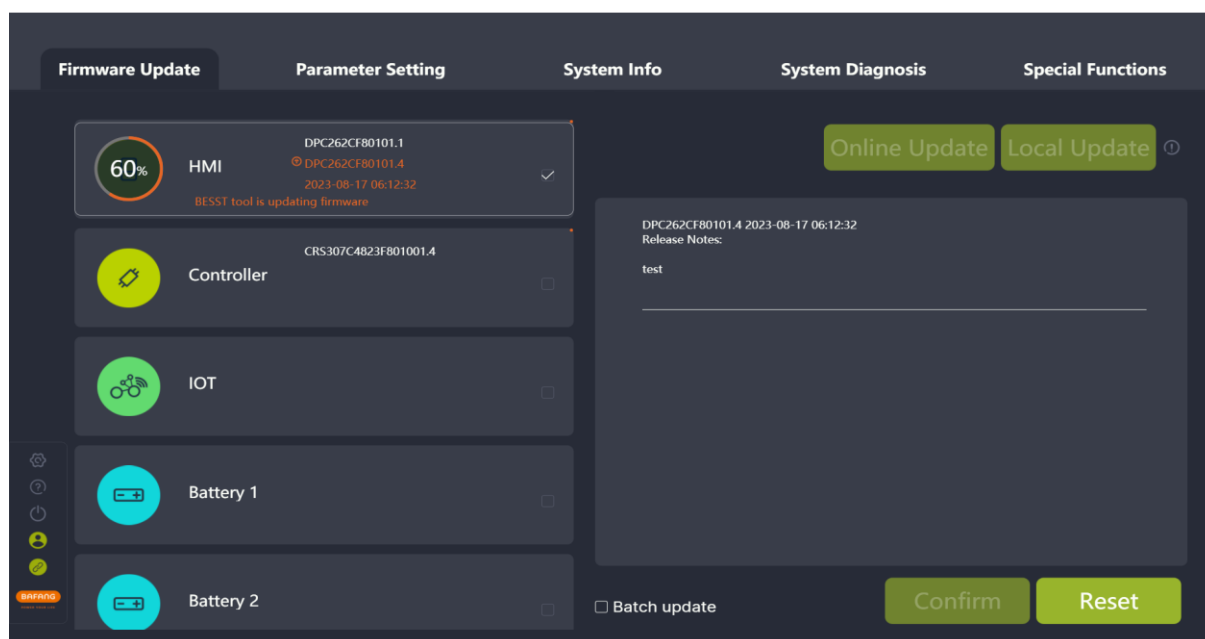


Fig. 4-9 Firmware update

- (6) After the firmware updates successfully, if the information cannot be read, you need to plug and unplug to give the part a restart and reconnect again.

### 4.3 Batch update

Support local updates and online updates, for products using the same update firmware, you can check the "Batch update" for continuous updating. There is no need to select firmware needing updating again. The specific operation steps are as follows:

- (1) Local update: Click "Local Update" to select the firmware to be updated locally (Fig.4-10).  
Online update: Click "Online Update" to download the firmware locally (Fig.4-11).

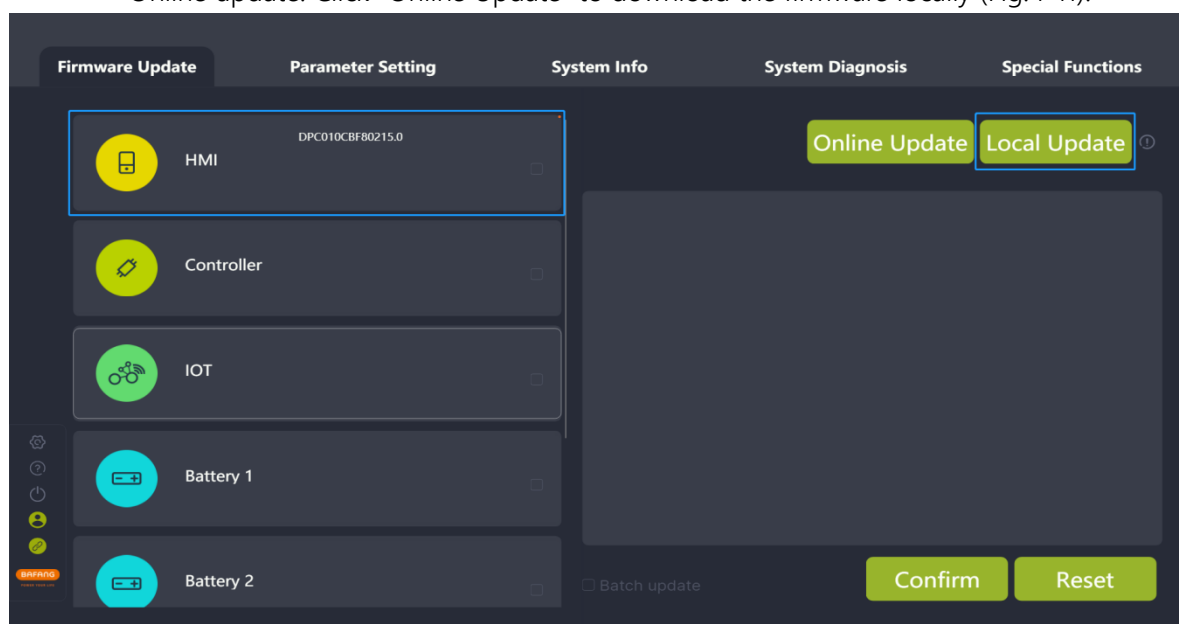


Fig. 4-10 Local update

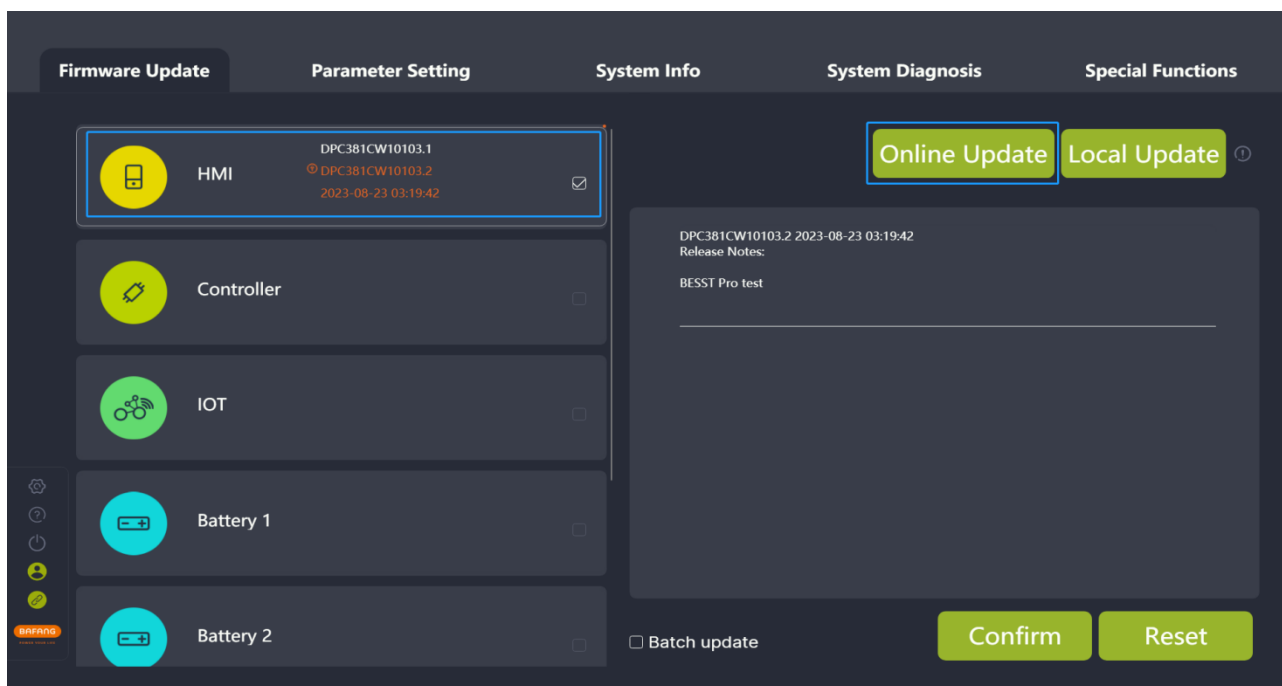


Fig. 4-11 Online update

- (2) Check "Batch update".
- (3) Click "Confirm" to update.
- (4) After updating, unplug the current connected parts and connect the same model parts again to update.

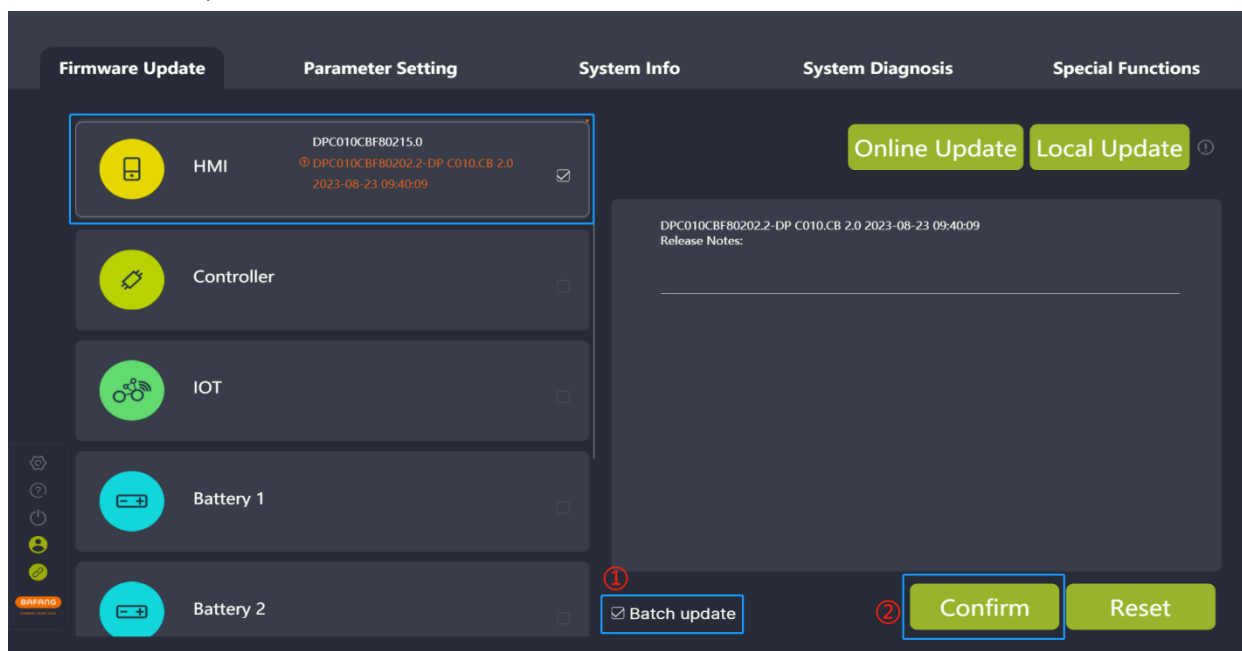


Fig. 4-12 Batch update

## 4.4 One-click update

Local update and online update are both supported. After selecting the update firmwares of



multiple components, you can update the components sequentially in order. The specific operation steps are:

- (1) Local update: Click "Local Update". After selecting multiple firmwares to be updated from the local area, check the parts to be updated (Fig.4-13).  
Online update: Check the parts that can be updated online and click "Update Online" to download the firmware locally(Fig.4-14).
- (2) Click "Confirm" and the updates will be performed in order.



Fig. 4-13 Local update

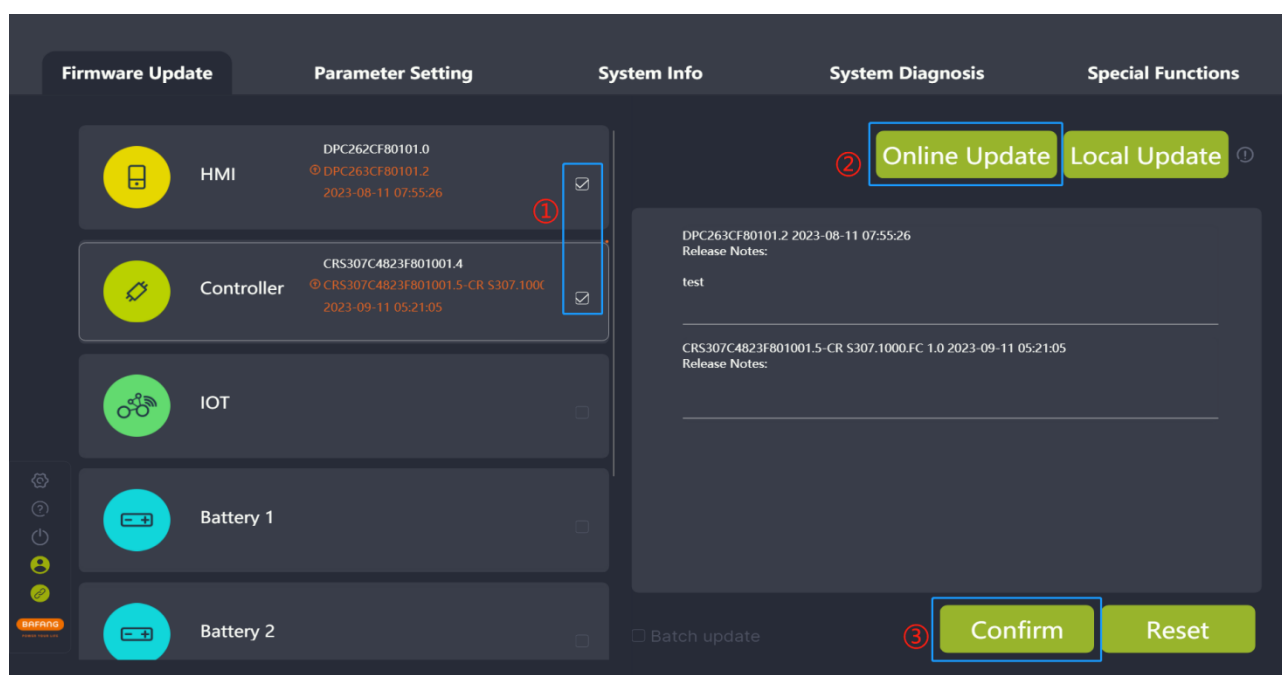


Fig. 4-14 Online update

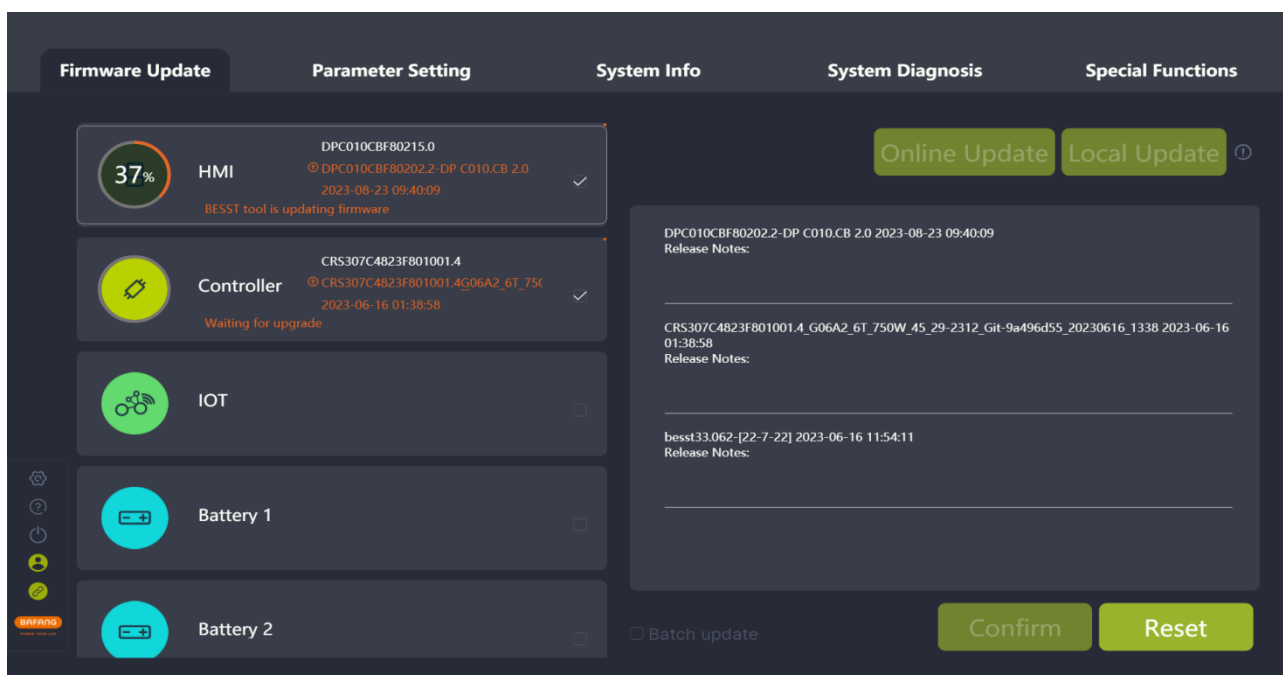


Fig. 4-15 One-click update process

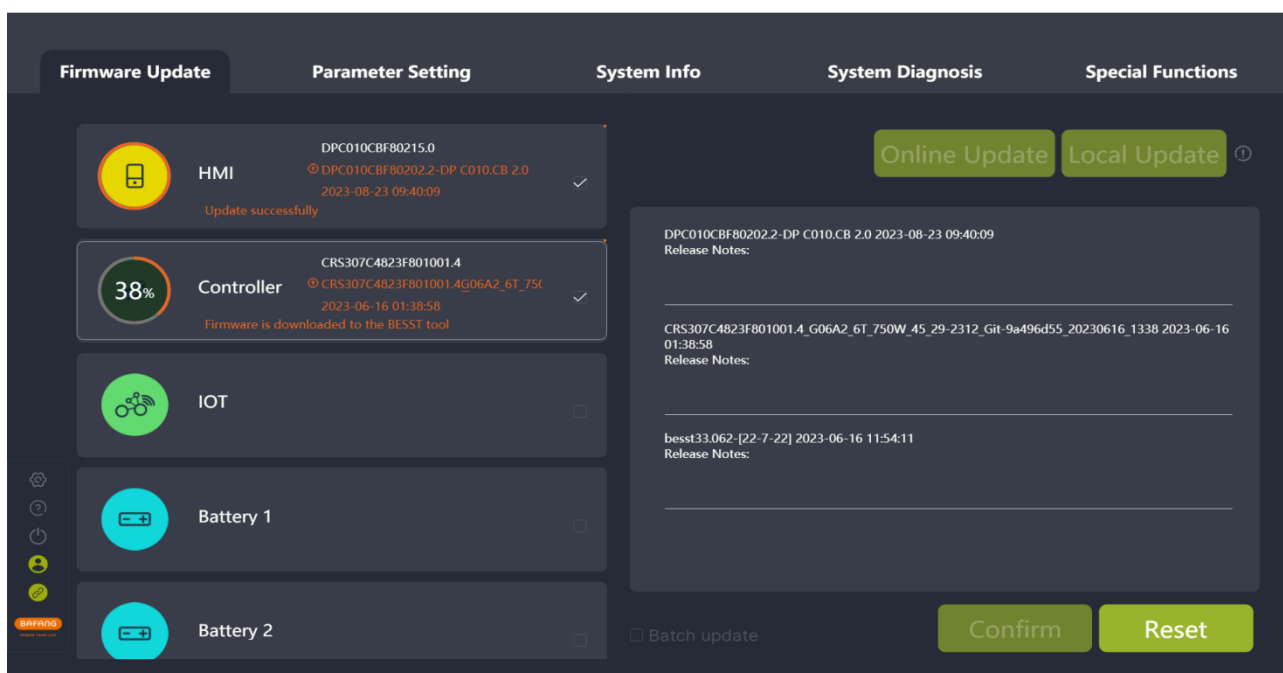


Fig. 4-16 One-click update process

## 5 Parameter Setting

The parameter setting module mainly consists of parameters reading and setting, parameters resetting and parameter configuration files importing and exporting.

BESST Pro displays different interfaces depending on the actual connected products.

Connect a general product: You can read, set, import, and export the basic information (Speed Limit, Wheel Diameter, Circumference), Speed Limit %, Max. Power, Acceleration, and Startup Angle of the product (Fig. 5-1).

Connect an interactive product: You can read, set, reset, import, and export the basic information (Speed Limit, Wheel Diameter, Circumference), Speed Limit %, Assistance %, Max. Power, Acceleration, Startup Angle, PAS Curves, and Start Ramp of the product (Fig. 5-2).

The upper limit of the speed limit is automatically changed according to the country of the account.

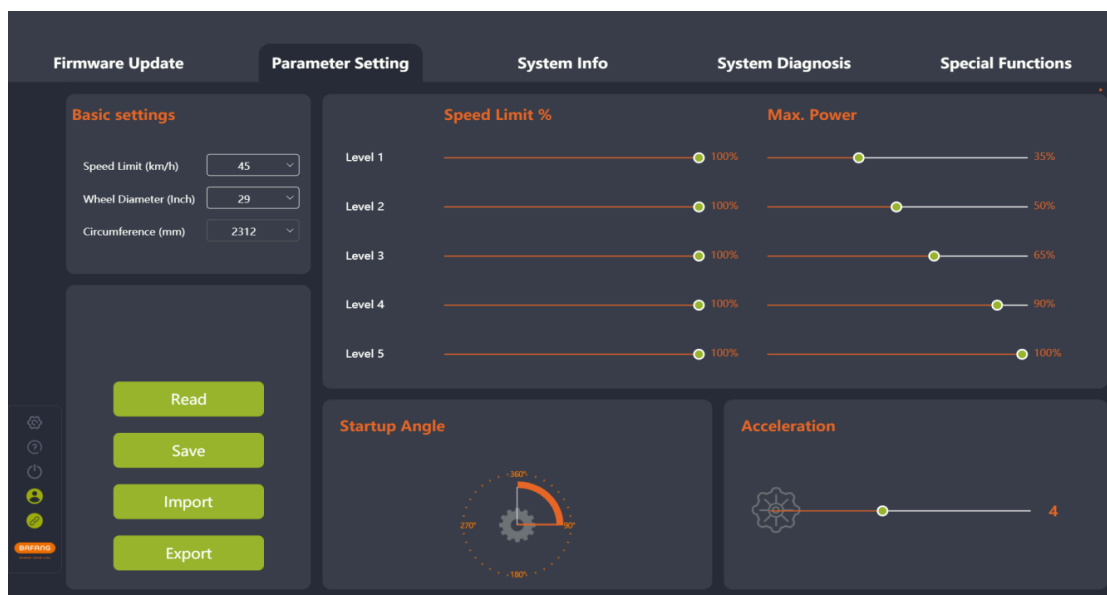


Fig. 5-1 General product parameter setting

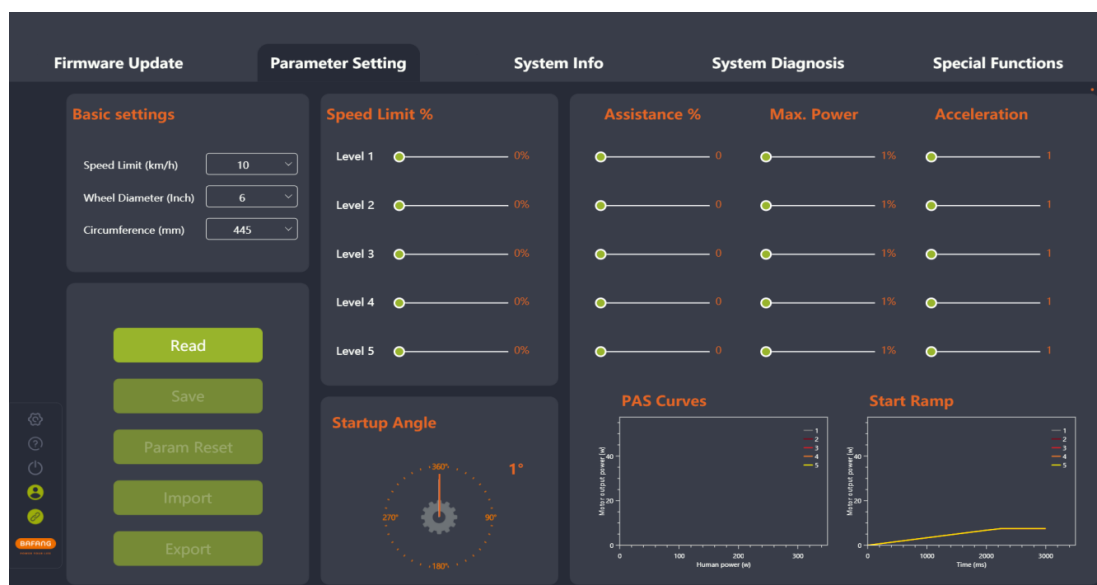


Fig. 5-2 Interactive product parameter setting

## 5.1 General product parameters

This interface displays four parameters, Speed Limit %, Max. Power, Startup Angle, and Acceleration, which can be adjusted by pulling the slider or rotating the pointer.

The support level (sliders) displayed by the BESST Pro software is the same as the HMI's support level.

Speed Limit % is used to adjust the power-assisted speed of different levels to enrich the feeling of riding. The smaller the percentage, the slower the speed limit of that support level.

Max. Power indicates the maximum power output of the motor. The slider on the left means slow; the slider on the right means high. It requires high-level value  $\geq$  low-level value.

Startup Angle indicates the crank rotation angle before the motor starts the power assisting. It can adjust the angle of rotation of the pedal from zero speed until the power assist is turned on. The minimum starting angle varies with different products. Adjust the minimum startup angle based on the actual product.

Acceleration indicates the time before the system reaches the maximum booster. The greater the acceleration, the shorter the time. The slider on the left means slow; the slider on the right means fast.



Fig. 5-3 General product

### 5.1.1 Read parameters

- (1) Confirm that the BESST Tool is connected properly to the controller. Click the "Read" icon.
- (2) Each parameter in the interface is displayed as a number and slider (Fig.5-4).

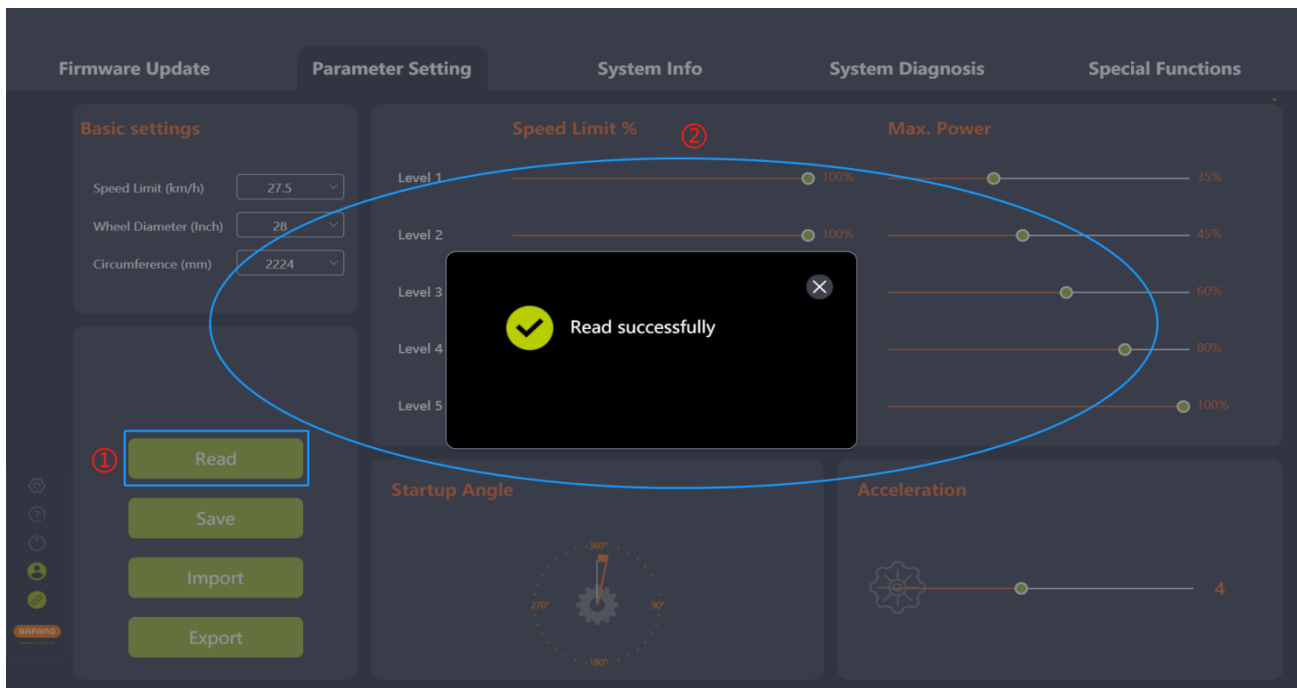


Fig. 5-4 Read

### 5.1.2 Set parameters

You can adjust the parameters of the controller only when the controller supports it.

- (1) After reading successfully, adjust the parameters on the right side by pulling the slider.
  - (2) After adjusting, click the "Save" icon to save the new parameters to the controller.
  - (3) If you are not logged in, the "Login" interface will pop up, prompting you to log in (Fig.5-5).
- Note: Parameter setting is not possible without logging in.
- (4) After logging in, you can set parameters.

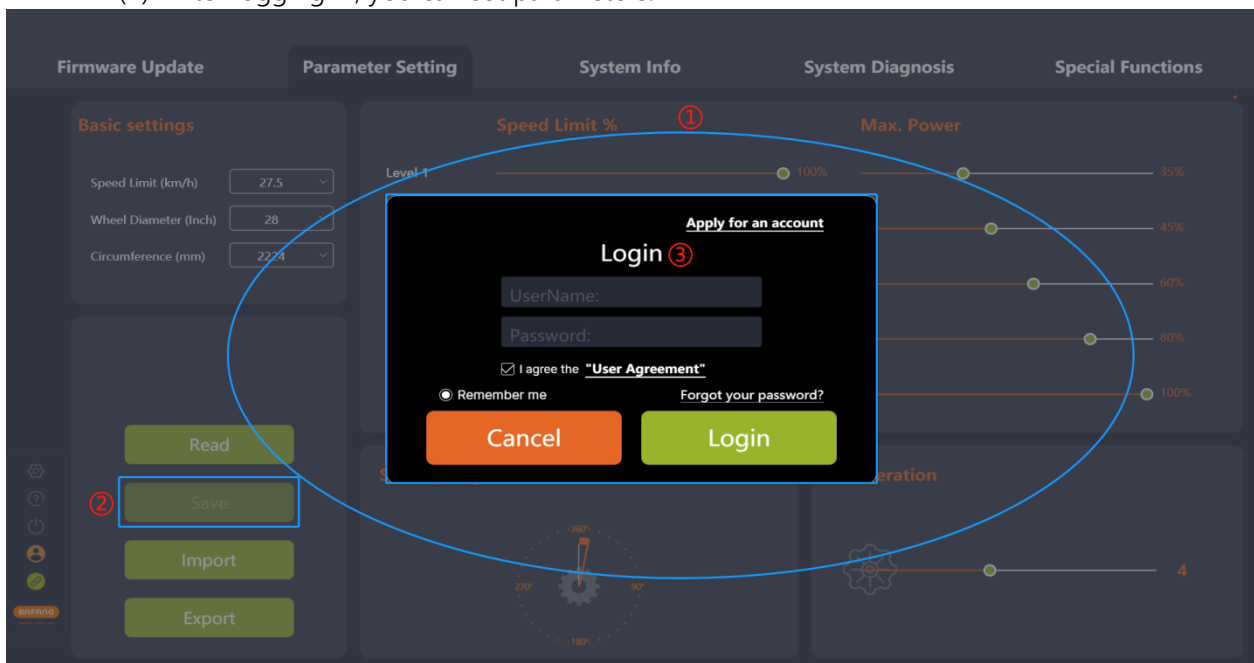


Fig. 5-5 Login

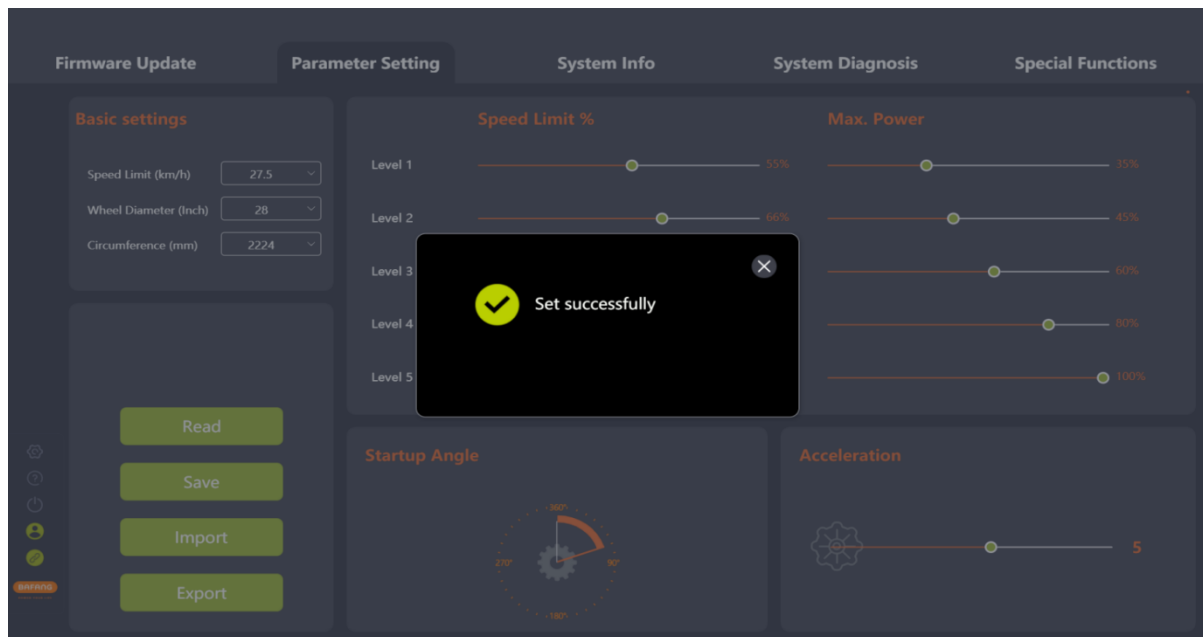


Fig. 5-6 Set parameters

### 5.1.3 Import configuration files

- (1) If you want to import the previously generated configuration file (in XML format) to the controller, click the "Import" icon. If you are not logged in, the login interface will pop up, prompting the user to log in (Fig.5-8).
- (2) Validation rules: The hardware version of the imported controller and the hardware version of the controller in the parameter file are consistent. If not consistent, a prompt should be given and the import should be rejected.
- (3) Select the local parameter configuration file.
- (4) Click the "Open" icon.

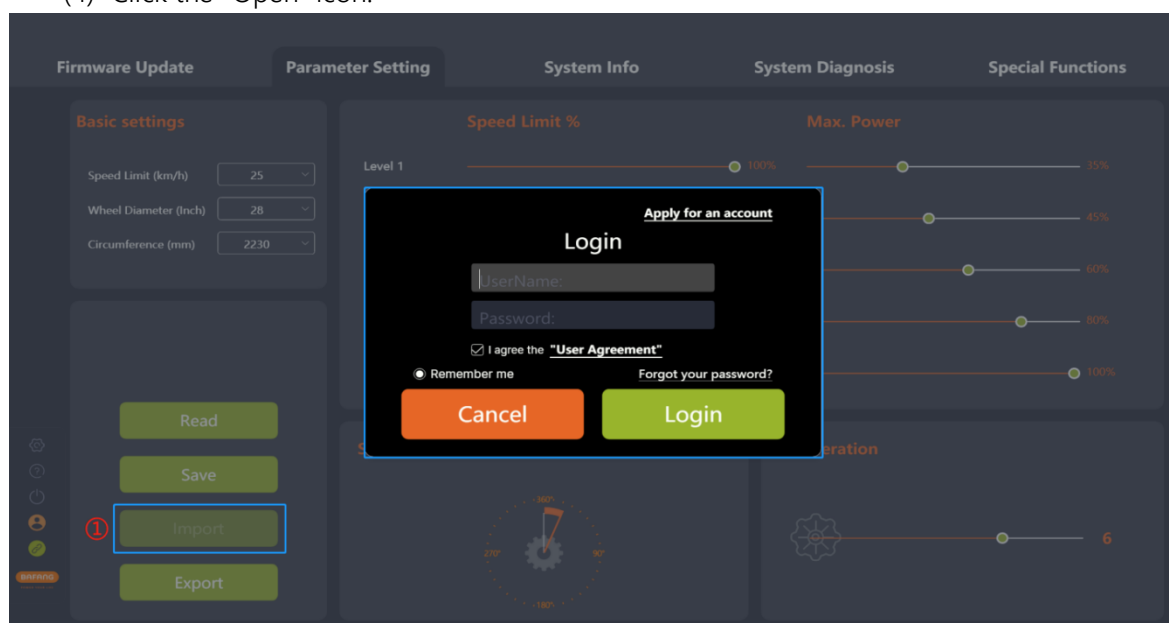


Fig. 5-7 Import

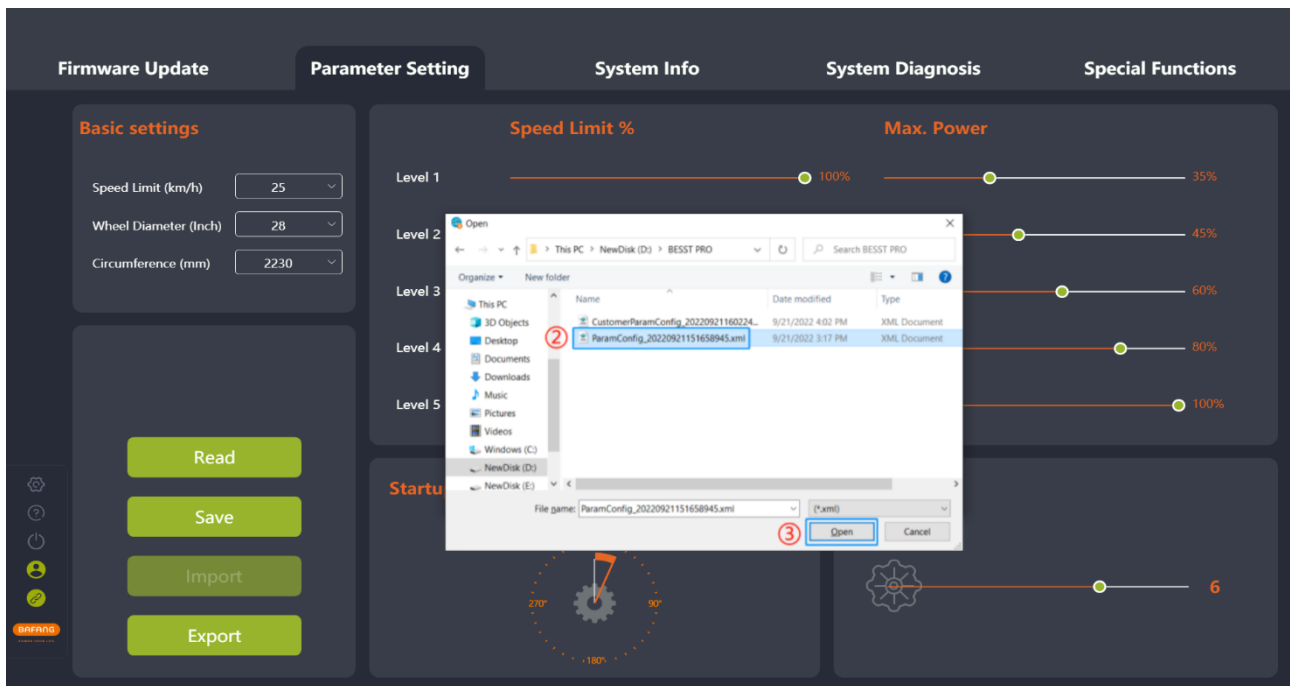


Fig. 5-8 Import

### 5.1.4 Export configuration files

- (1) Click the "Export" icon. If you are not logged in, the login interface will pop up, prompting you to log in (Fig.5-9).
- (2) Export the configuration information of the parameter interface and the controller hardware version (for import verification) to a file and save it locally. The path can be chosen independently and the file name can be edited, for example: ParamConfig\_20220922094143245.xml (Fig. 5-10).

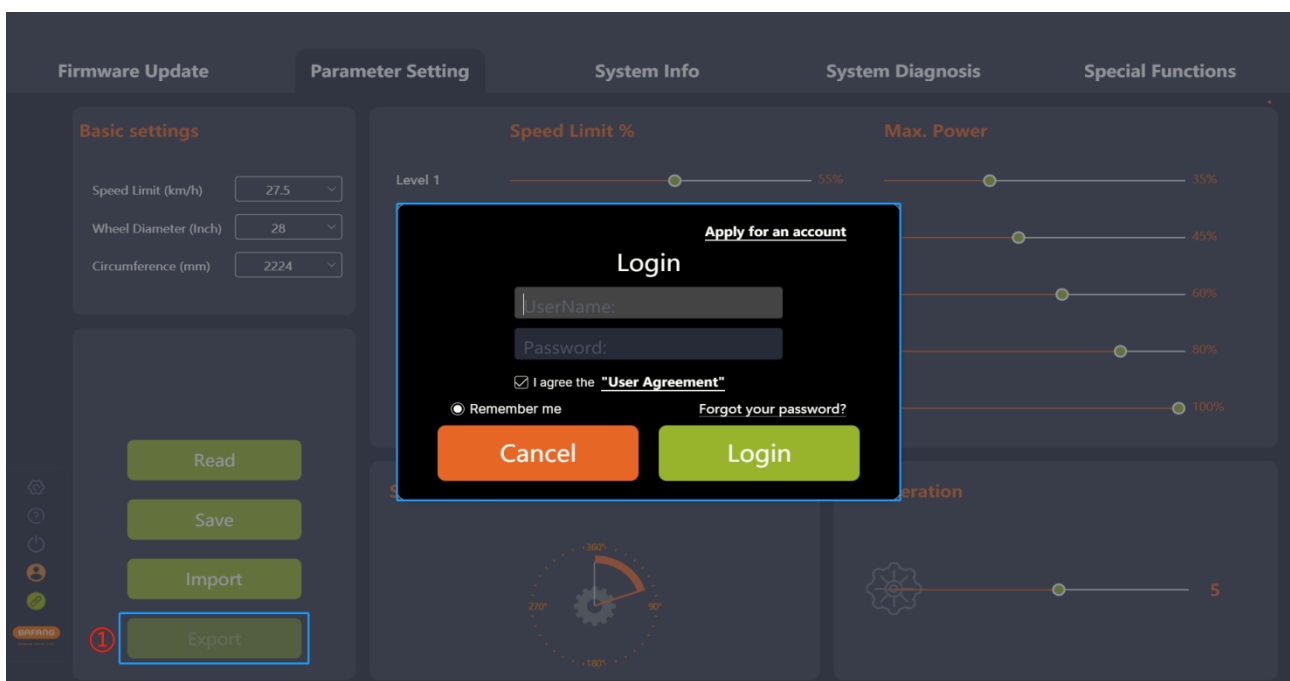


Fig. 5-9 Export

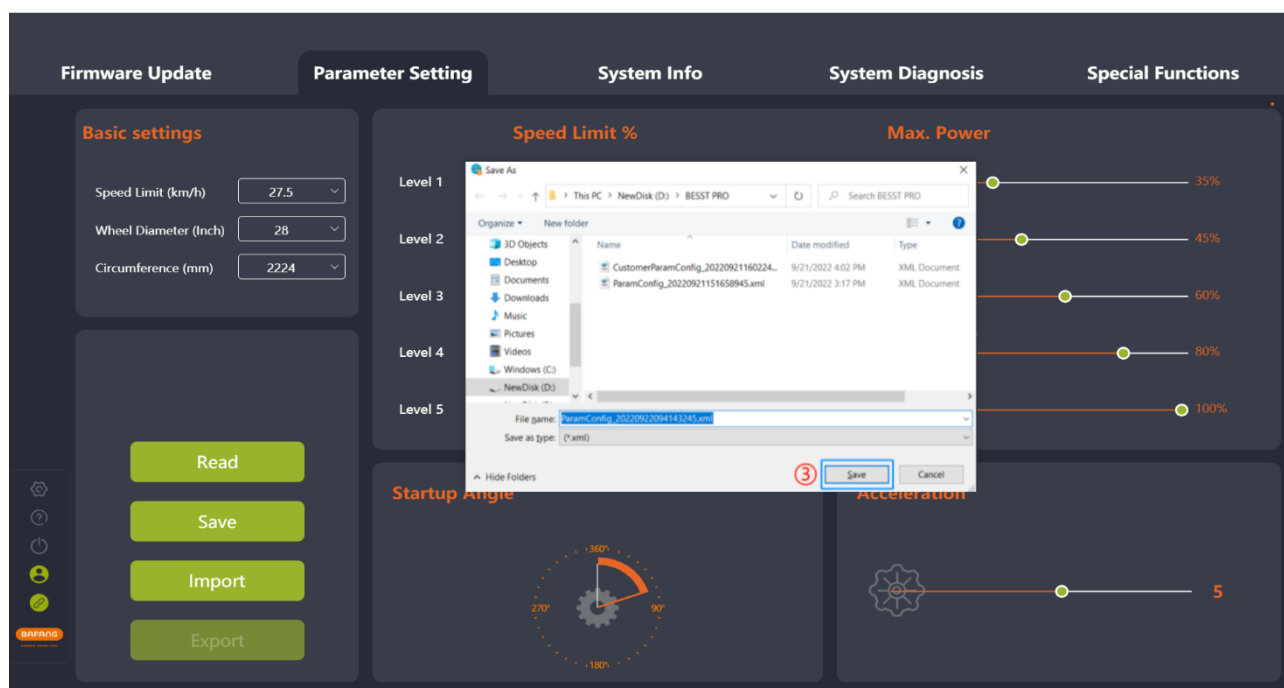


Fig. 5-10 Export

## 5.2 Interactive product

Basic parameters (Speed Limit, Wheel Diameter, Circumference), Speed Limit %, Assistance %, Max. Power and Startup Angle can be adjusted by pulling sliders. PAS Curves can be generated by adjusting the Assistance % and Max. Power. Start Ramp can be generated by adjusting the Max. Power and Acceleration.

The levels (sliders) displayed by the BESST Pro program correspond to the levels on the HMI.

Speed Limit % is used to adjust the power-assisted speed of different levels to enrich the feeling of riding. The smaller the percentage, the slower the speed limit of that support level. It requires high-level value  $\geq$  low-level value.

Assistance % is equal to the motor output power / human power. The larger the Assistance %, the stronger the assist ability.

Max. Power is used to adjust the percentage of current limiting for different levels. The smaller the percentage of current limiting, the weaker the power in the current level and the more power efficient. It requires high-level value  $\geq$  low-level value.

Acceleration indicates the time before the system reaches the maximum booster. The greater the acceleration, the shorter the time. The slider on the left means slow; the slider on the right means fast. It requires high-level value  $\geq$  low-level value.

Startup Angle indicates the crank rotation angle before the motor starts the power assisting. It can adjust the angle of rotation of the pedal from zero speed until the power assist is turned on. The minimum starting angle varies with different products. Adjust the minimum startup angle based on the actual product.



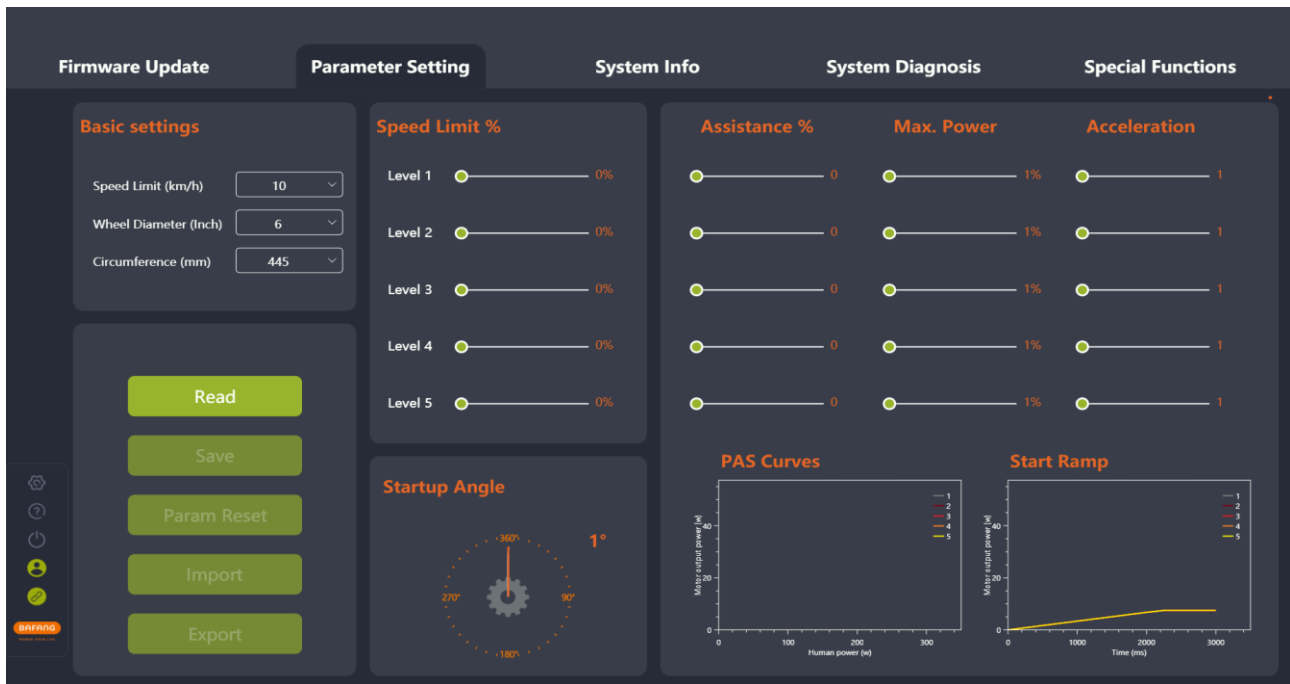


Fig. 5-11 Interactive product

## 5.2.1 Read parameters

- (1) Confirm that the BESST Tool is connected to the controller and click the "Read" icon;
- (2) Each parameter in the interface is displayed as a number and slider (Fig. 5-12).

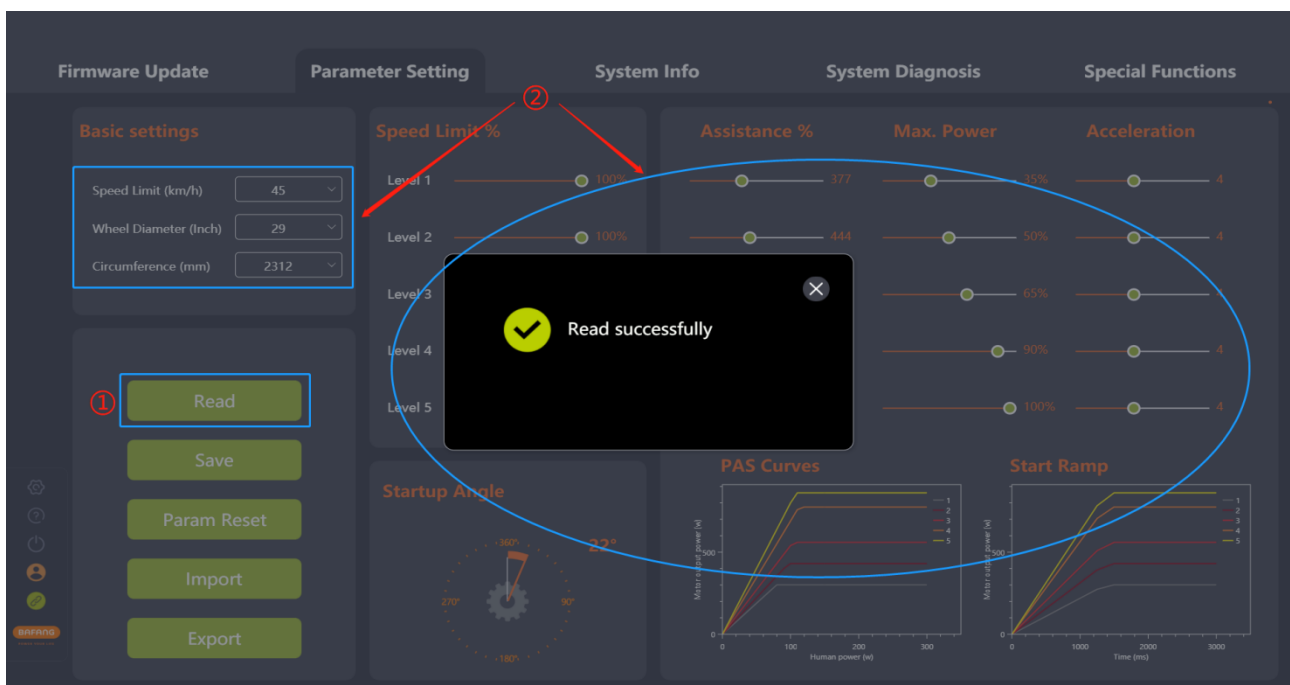


Fig. 5-12 Read

## 5.2.2 Set parameters

You can adjust the parameters of the controller only when the controller supports it.

- (1) After reading successfully, adjust the parameters on the right side by pulling the slider.
  - (2) Click the "Save" icon, and current parameters are saved to the controller.
  - (5) If you are not logged in, the "Login" interface will pop up, prompting you to log in (Fig. 5-13).
- Note: Parameter setting is not possible without logging in.
- (3) Parameters can be set after login account verification is approved (Fig. 5-14).

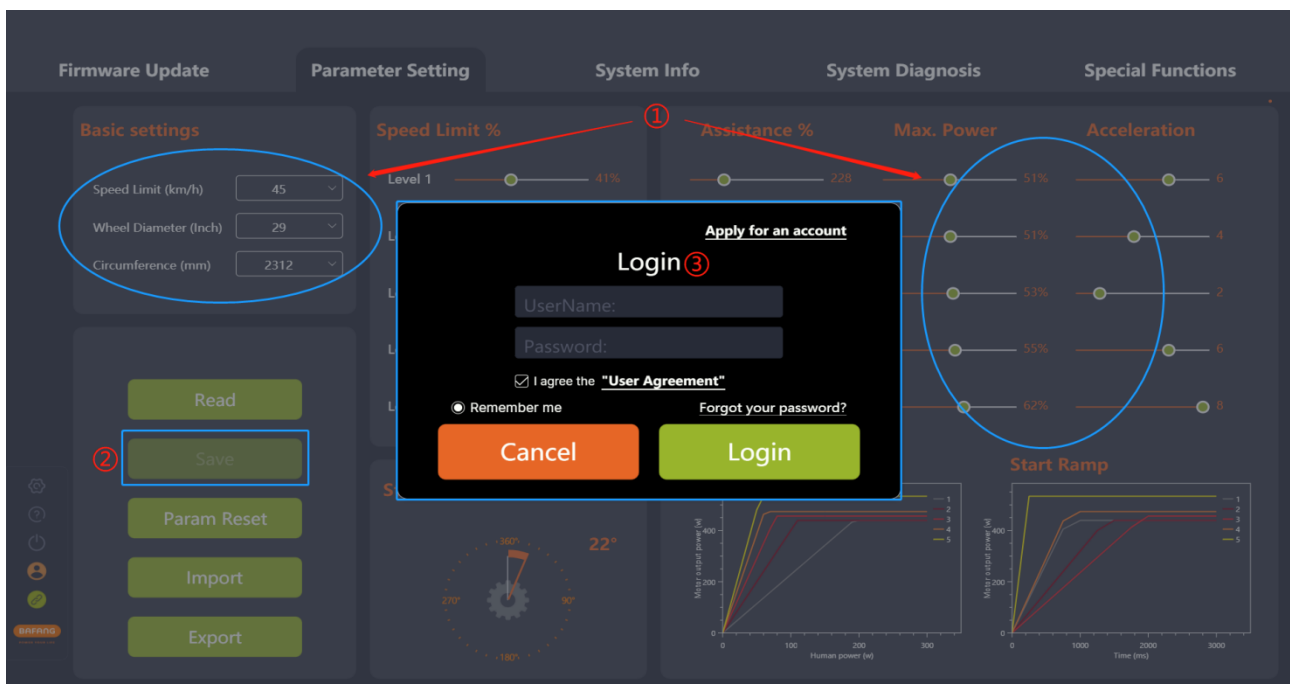


Fig. 5-13 Login

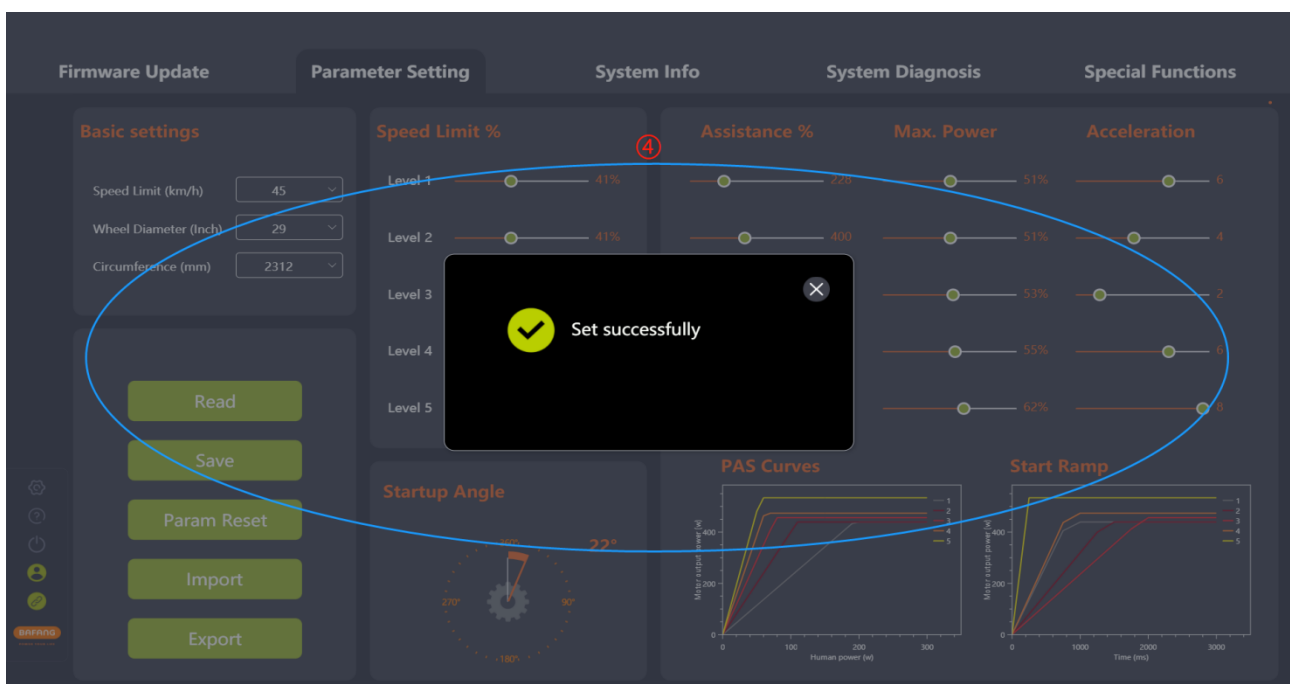


Fig. 5-14 Set parameter

### 5.2.3 Param reset

- (1) Confirm the connection between the BESST Tool and the controller and click the “Param Reset” . Note: If not logged in will pop up the login interface, will prompt the user to log in (Fig.5-15).
- (2) The parameters are reset to default values.

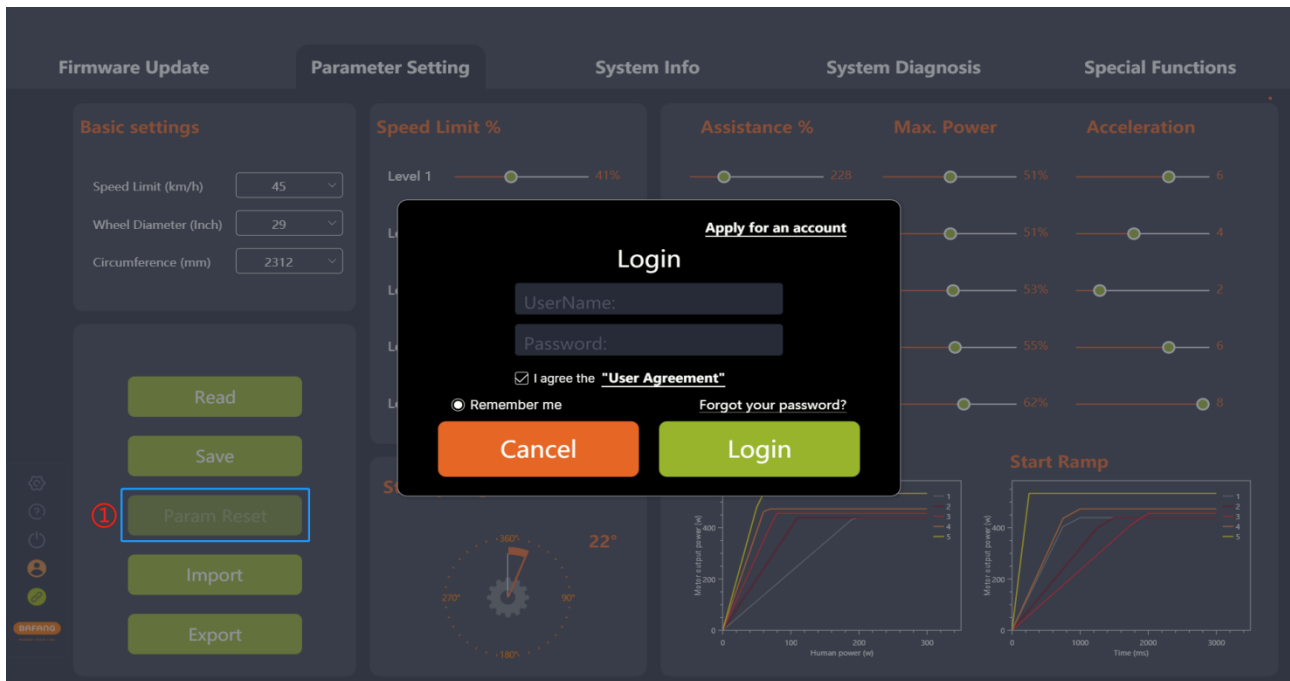


Fig. 5-15 Param reset

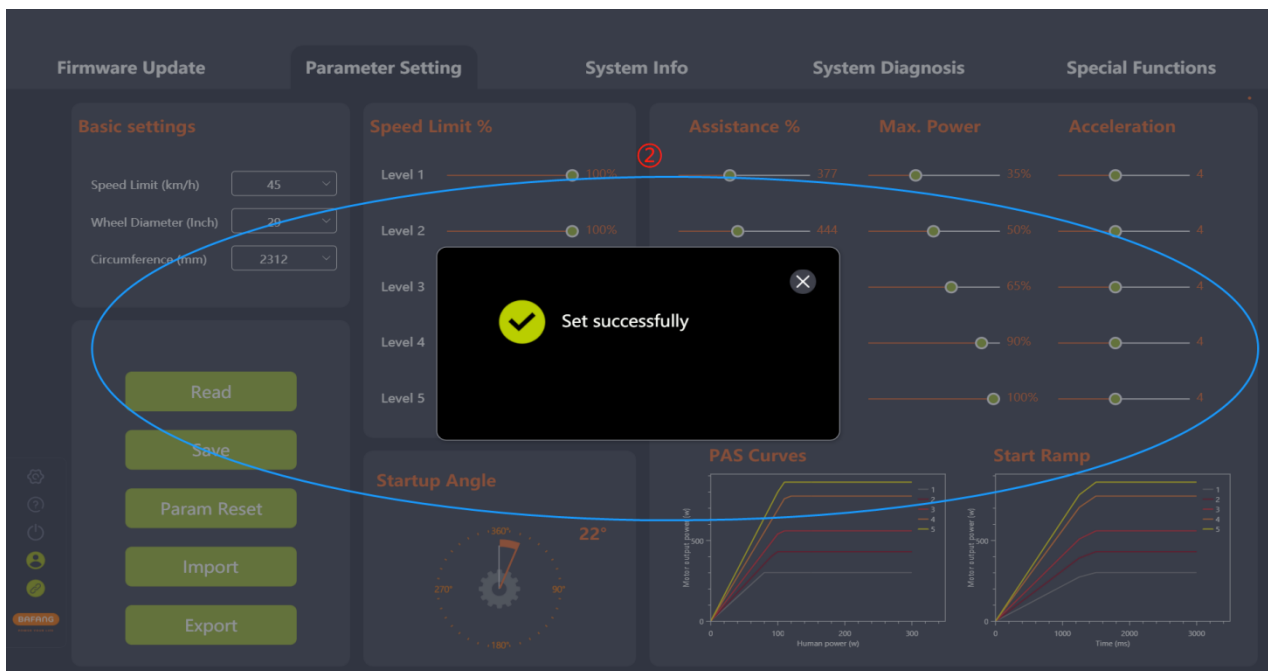


Fig. 5-16 Param reset

## 5.2.4 Import configuration files

- (1) If you want to import the previously generated configuration file (in XML format) to the controller, click the "Import" icon. Note: If not logged in will pop up the login interface, will prompt the user to log in (Fig.5-17).
- (2) Validation rules: The hardware version of the imported controller and the hardware version of the controller in the parameter file are consistent. If not consistent, a prompt should be given and the import should be rejected.
- (3) Select the local parameter configuration file.
- (4) Click the "Open" icon.

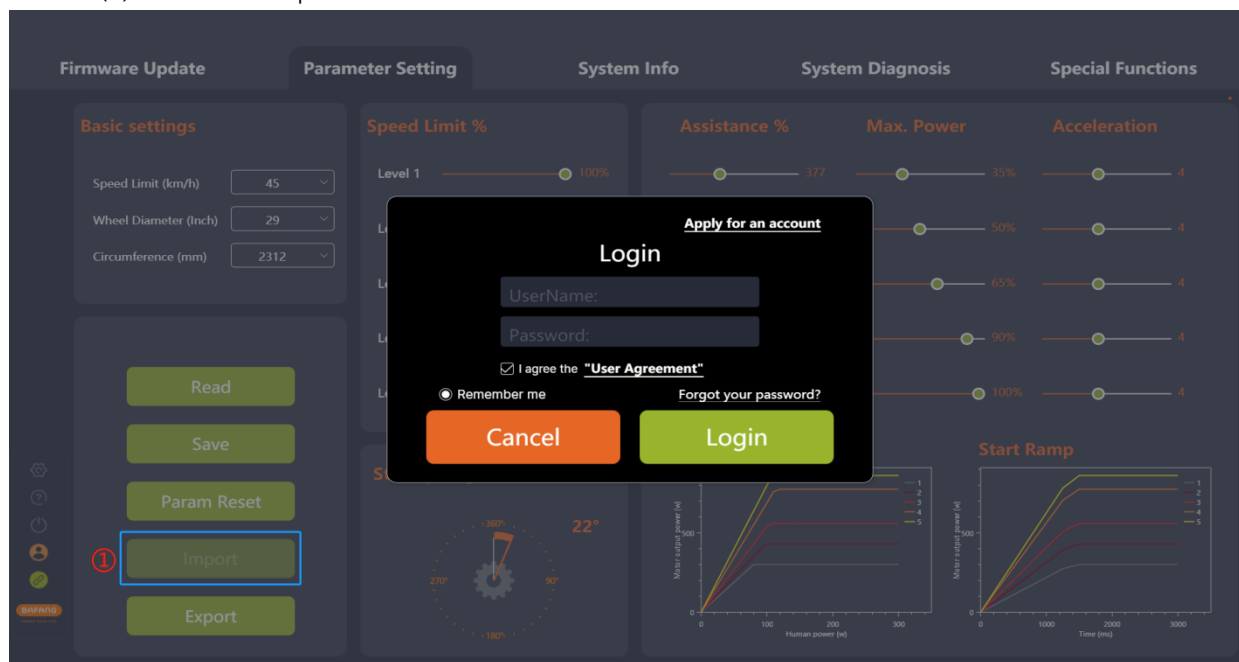


Fig. 5-17 Param reset

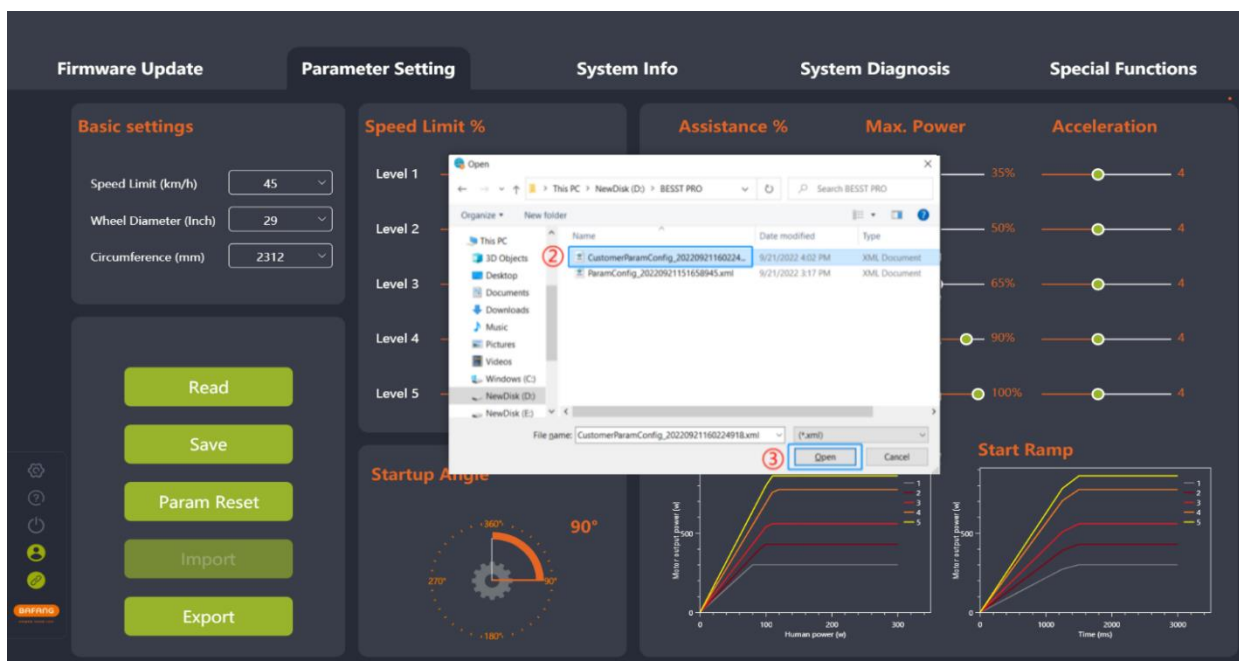


Fig. 5-18 Import

## 5.2.5 Export Configuration Files

- (1) Set the parameters;
- (2) Click the “Export” icon. Note: If not logged in will pop up the login interface, will prompt the user to log in (Fig.5-19).
- (3) Export the configuration information of the parameter interface and the controller hardware version (for import verification) to a file and save it locally. The path can be chosen independently and the file name can be edited, for example, CustomerParamConfig\_20220922095254112.xml (Fig.5-20).

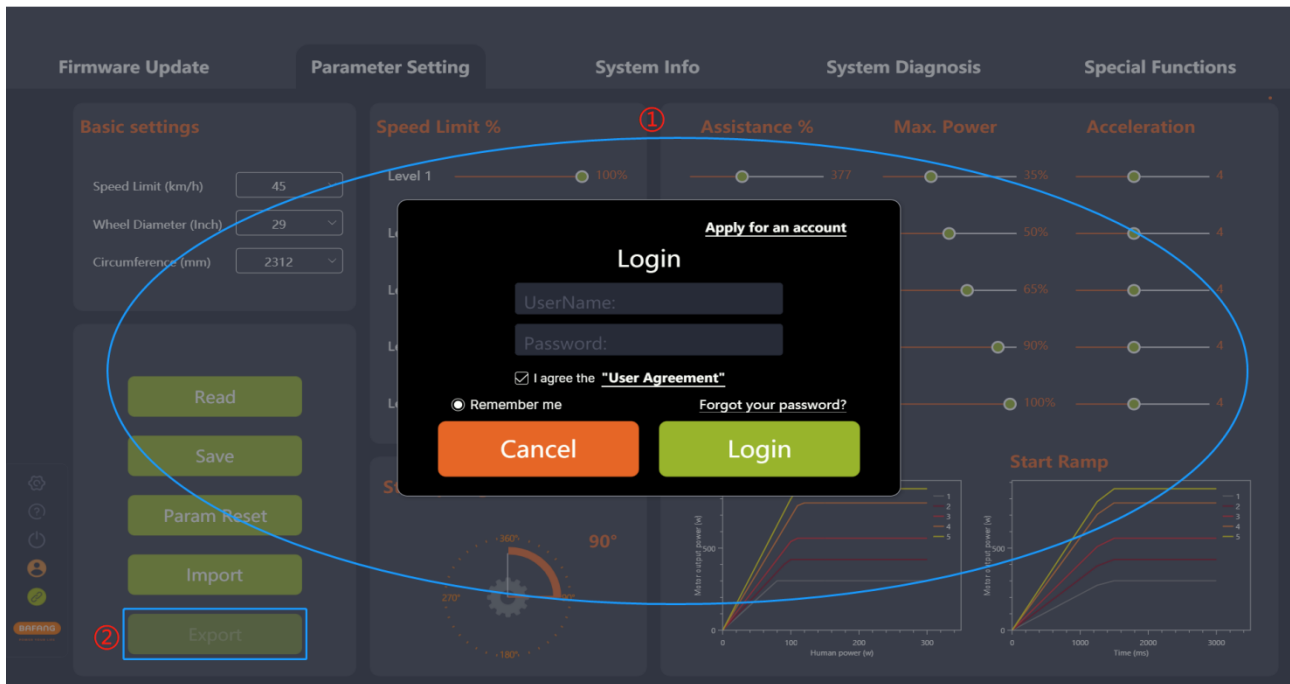


Fig. 5-19 Export

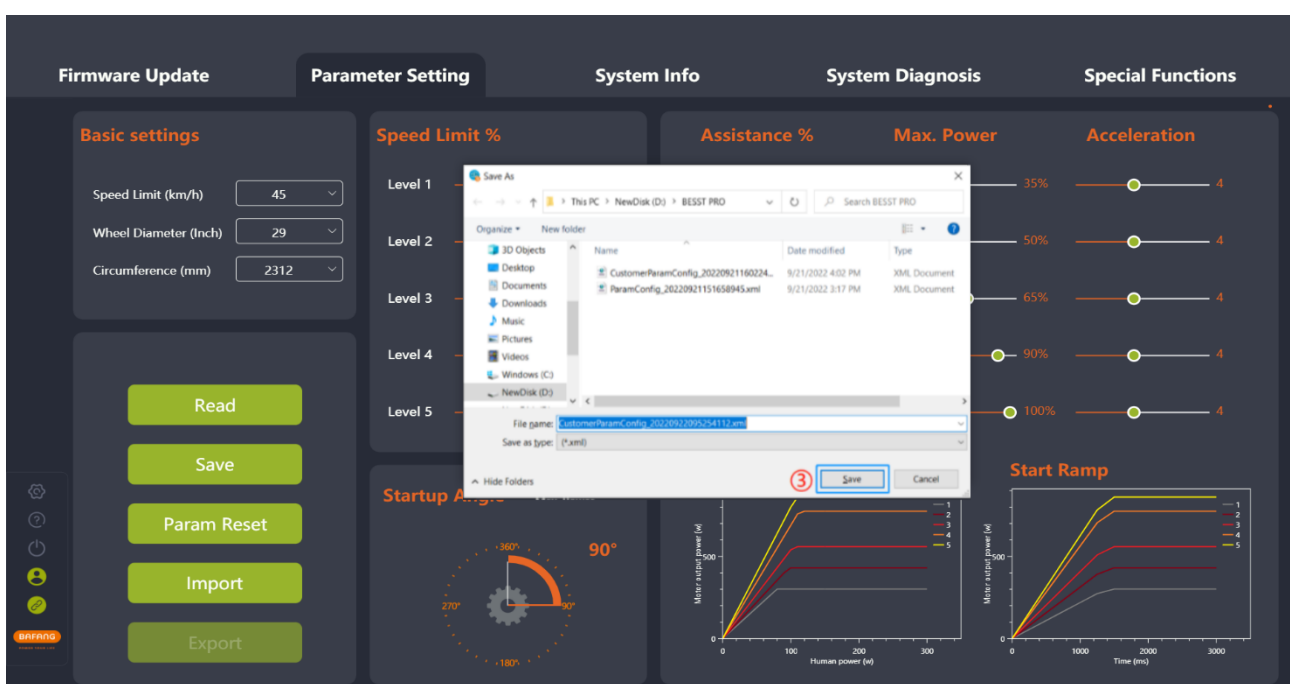


Fig. 5-20 Export

## 6 System Info

The system info module mainly includes reading component system info, generating riding records, and creating diagnostics reports, and the readable components include HMIs, controllers, batteries, and IOT.

### 6.1 Component info

- (1) Select "System Info" to enter the interface to read information about the component.
- (2) Select the parts needing to be read.
- (3) Click the "Read" icon to read the information (including SN, model, software version, and hardware version) of the selected parts.
- (4) Read result status determination:
  - a. Success: Display "Success" when all information such as model, software version, hardware version, etc. is not null.

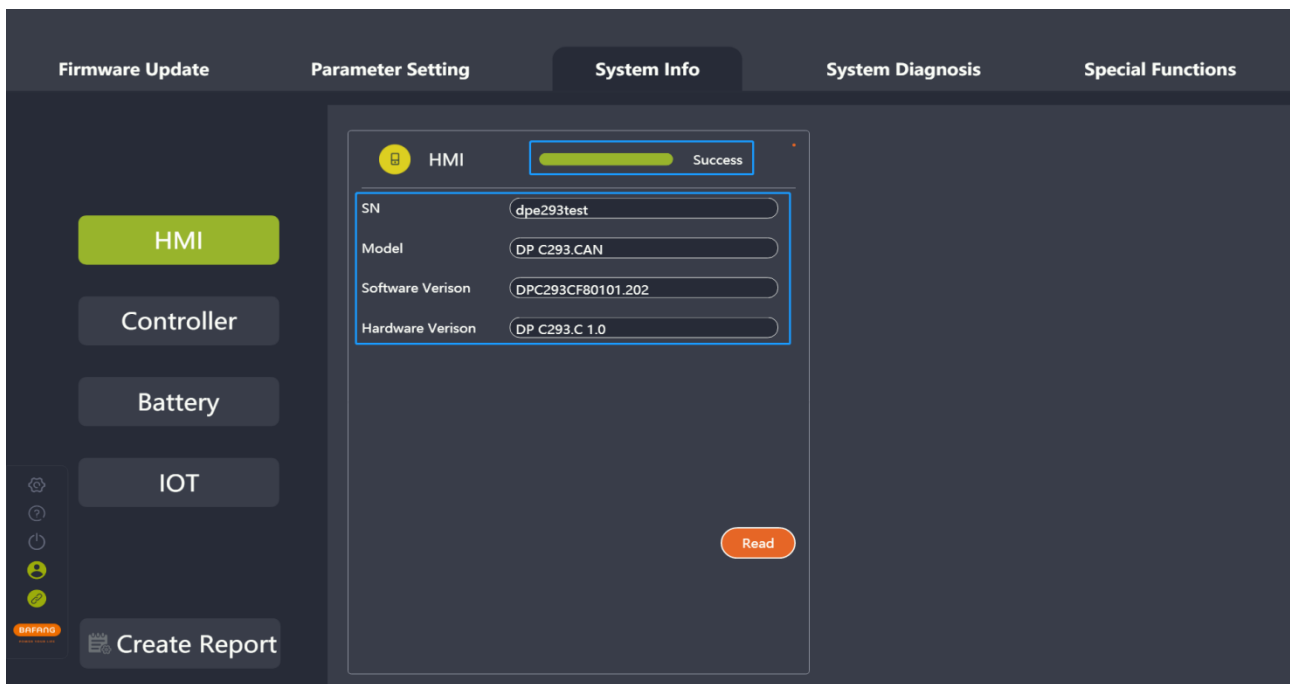


Fig.6-1 Read successfully

- b. N/A: If the SN, model, software version, and hardware version are null, the "Result" displays "N/A" and the "Cause" displays "System connection failed". In this case, the current component may be damaged or connected abnormally, please replace the component, reconnect, and read.

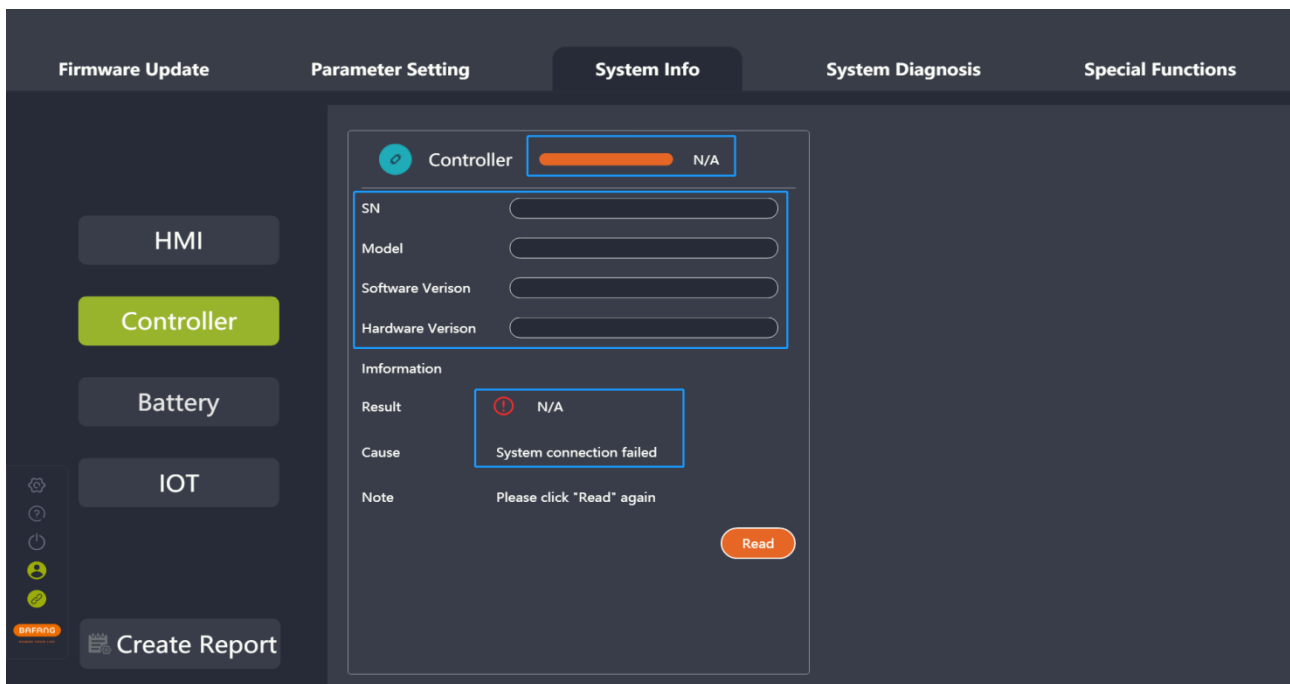


Fig.6-2 N/A

c. Lost: If one or more of the model, software version, or hardware version is null (not all), "Result" will display "Lost", and "Cause" will display "No information was read". In this case, try to reconnect the component to the system and read it again.

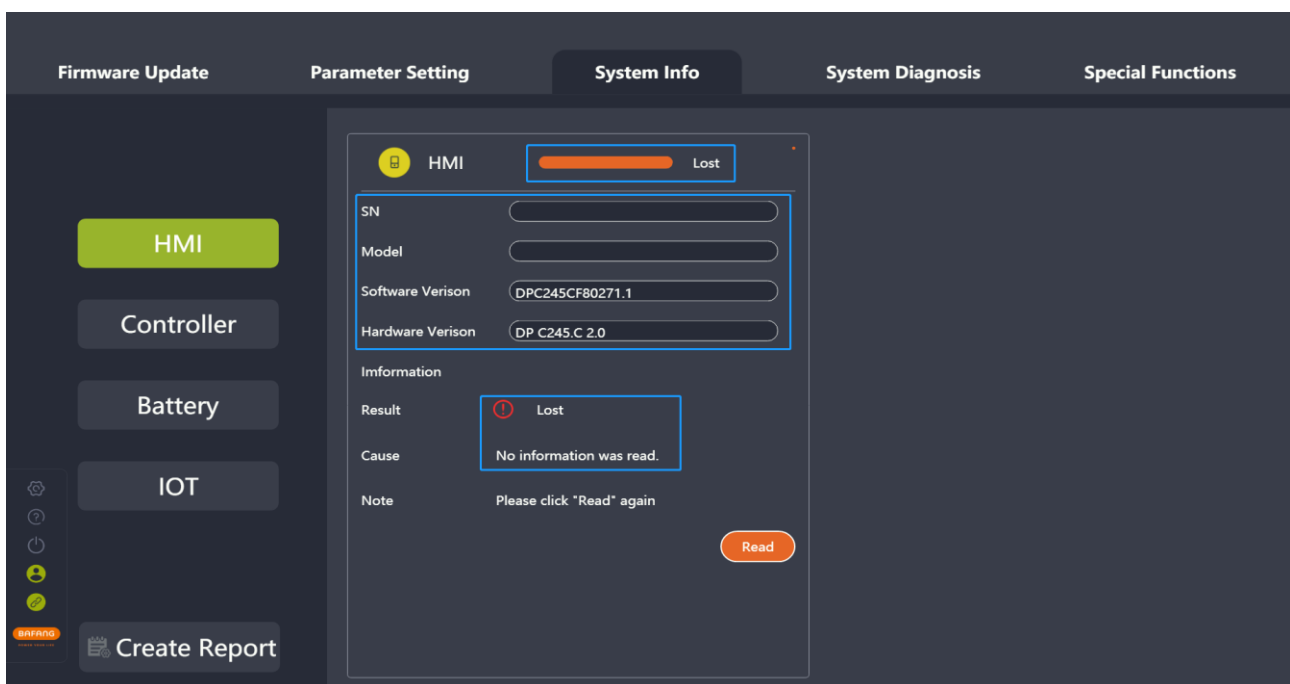


Fig.6-3 Lost

(5) Click on the "Create Report" icon to generate a report and save it locally.



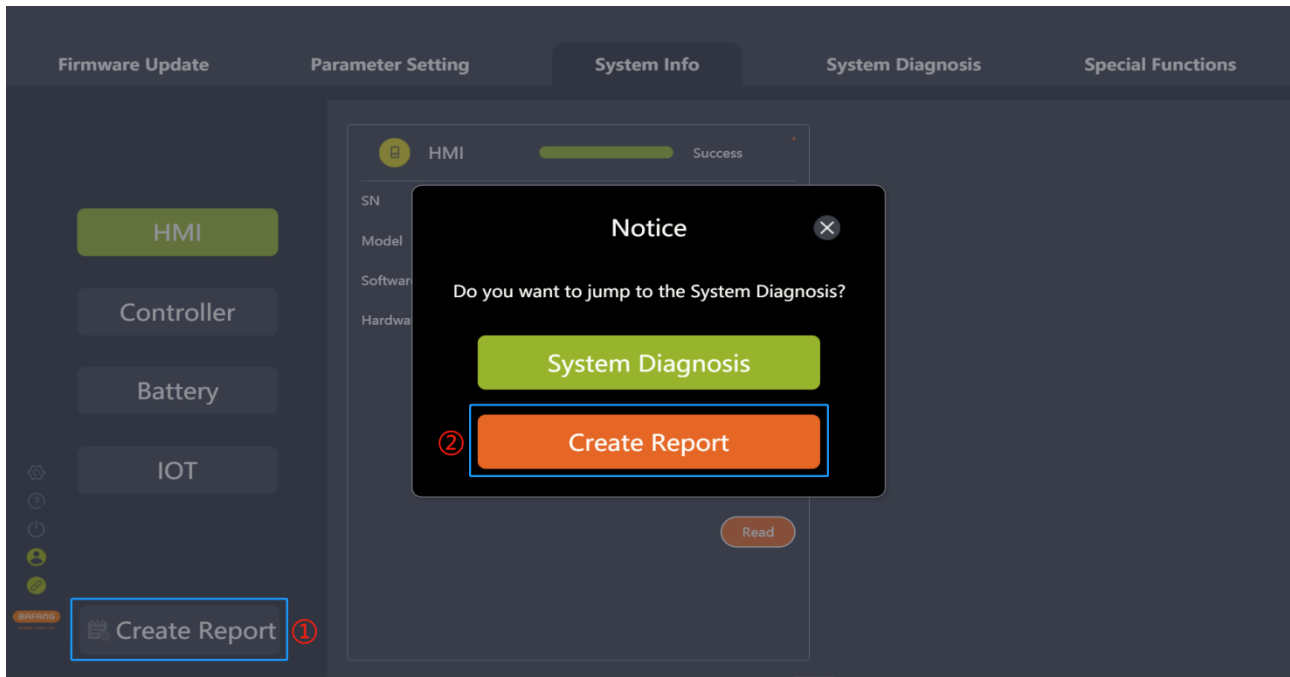


Fig. 6-4 System Diagnosis

## 6.2 Create Report

Both System Info and System Diagnostics have function keys that provide the ability to create a report. Creating a System Info or System Diagnostics report prompts whether or not you want to jump to another item. The generated PDF report can be exported and saved after selecting the save path. The generated report displays the filled-in problem description, inserted pictures, read or written component SNs, and selected faults for each component.

### 6.2.1 Create report in the System info

- (1) Click the “Create Report” icon, and a pop-up window will prompt “Do you want to jump to System Diagnostics?” (Fig.6-5).
- (2) For system diagnosis, click the "System Diagnosis" icon to jump to the system diagnosis interface.
- (3) Click the “Create Report” icon.
- (4) Select the local save path.
- (5) Click the “Save” icon to generate a PDF report.

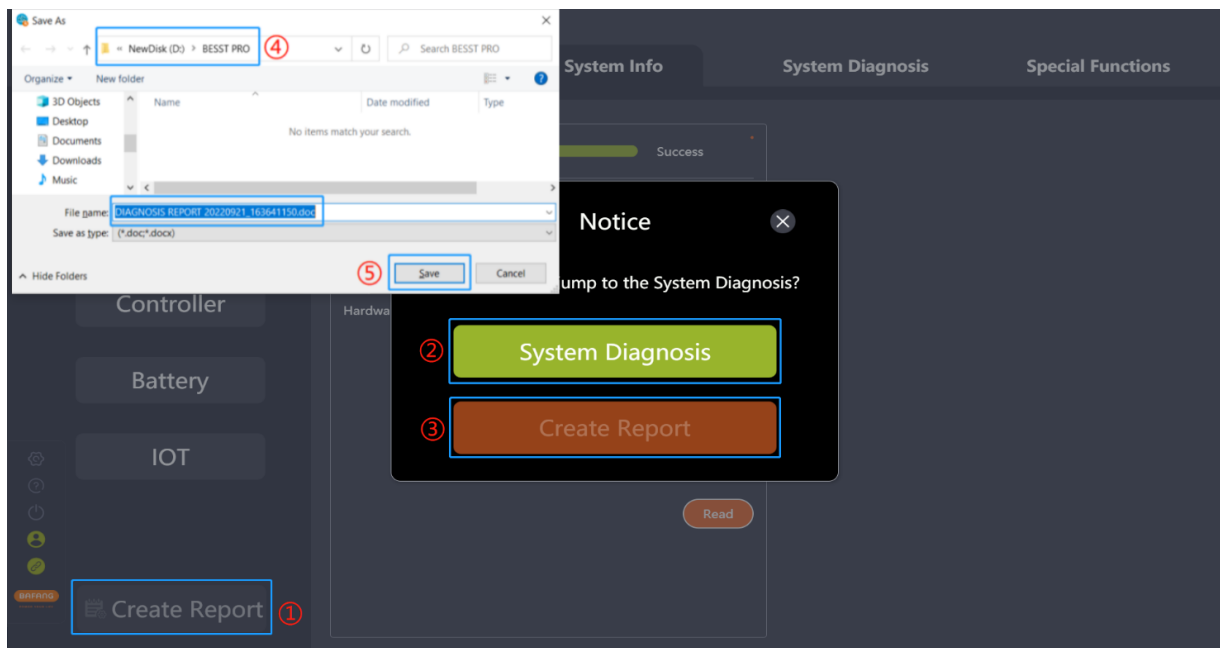


Fig. 6-5 System info interface reports creation

### 6.2.2 Create report in System diagnostics

- (1) Click "Create Report", and a pop-up window will prompt "Do you want to jump to System Diagnostics?" (Fig.6-6).
- (2) For system information reading, click the "System Info" icon to jump to the system diagnosis interface.
- (3) Click the "Create Report" icon.
- (4) Select the local save path.
- (5) Click the "Save" icon to generate a PDF report.

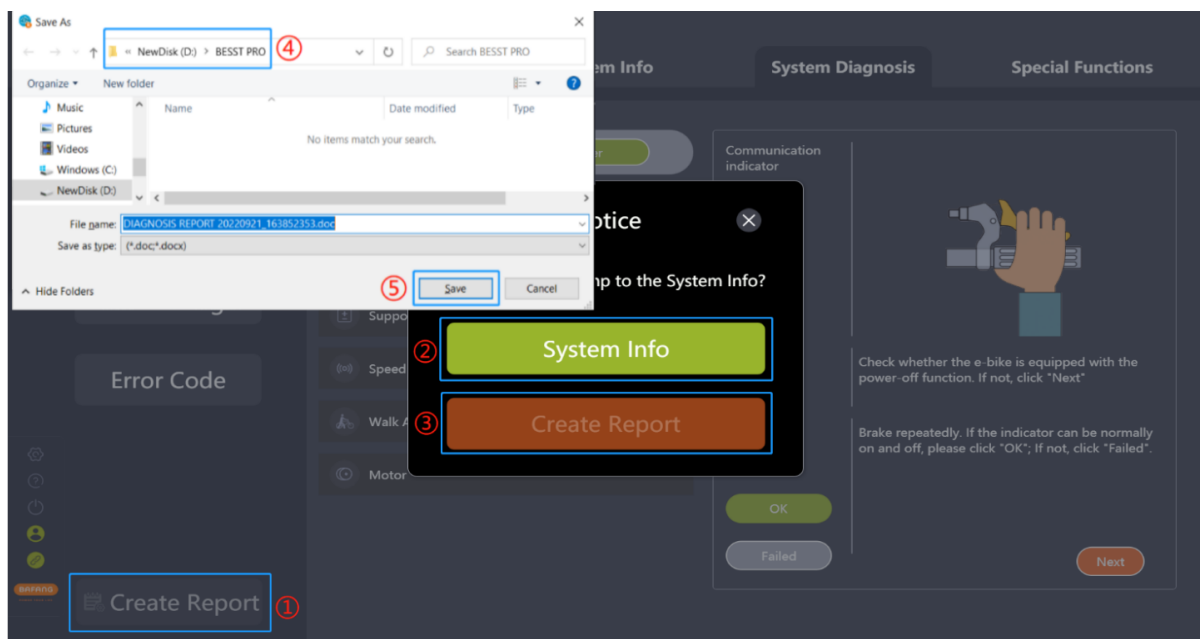


Fig. 6-6 System diagnostics interface reports creation

## 7 System Diagnosis

The system diagnosis module can be divided into the System test, Mechanical diagnosis, FAQs and Create report.

### 7.1 System test

The system test is used to detect whether the current system parts have functional errors. It can be used as a reference for maintenance personnel. The steps are as follows:

- (1) Select the "System Test" icon to enter the interface of the system test.
- (2) Click the "Select" icon to select the parts to be tested in the pop-up window and click the "Confirm" icon.
- (3) Click the "Enter" icon and the interface prompts the boot animation and the HMI will shut down. It will start testing after restarting by manually pressing the on/off button for more than 3 seconds.
- (4) Select the part in the parts list and follow the instructions on the right-hand interface.
- (5) Click the "Create Report" icon to generate a report and save it locally.

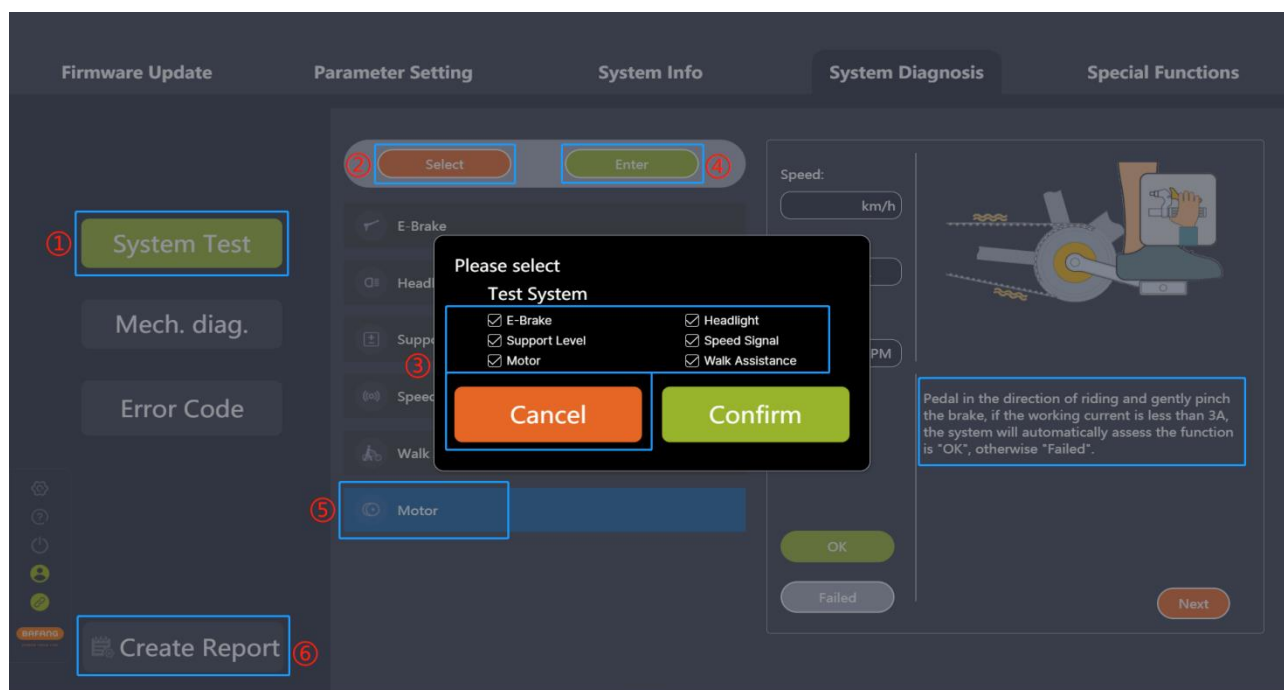


Fig. 7-1 System Test

After entering the test mode, if the HMI is switched off, you need to press and hold the HMI On/Off button for more than 3 seconds until the HMI is turned on again for testing. The boot animation prompts as shown in the figure:



Fig. 7-2 HMI boot animation

If the test is interrupted, please wait 3 seconds and click "Enter" again to enter the test state. (Fig. 7-3)

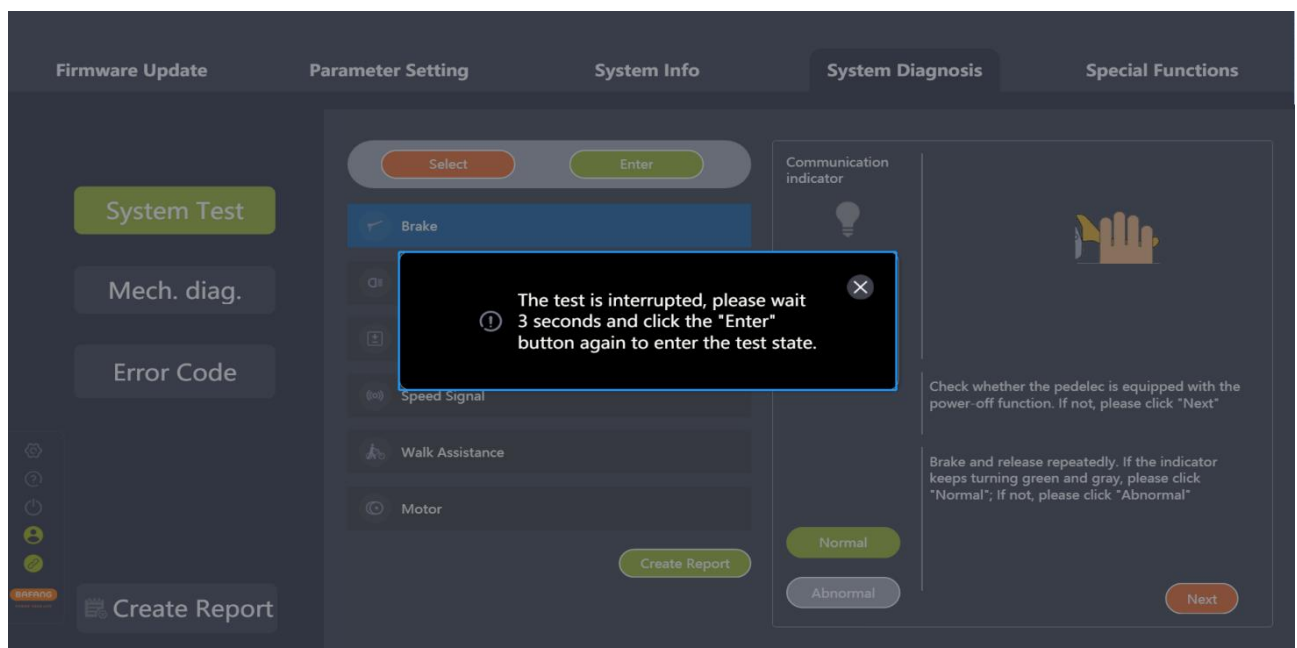


Fig. 7-3 The test is interrupted

## 7.2 Mechanical diagnosis

When mechanical failure occurs in the system, it can be described in words and pictures, and a diagnosis report can be created for the demander to handle or seek technical support. The steps are as follows:

- (1) Select the "Mech. Diag." icon and enter the interface of mechanical diagnosis;
- (2) A problem description of the faulty function can be provided. A maximum of 600 characters including Spaces can be entered;

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Any disposal such as copying and passing on to third parties is forbidden.

- (3) Pictures can be uploaded. A maximum of 5 images can be added;
- (4) Problems and error codes of each part can be selected. The part read successfully in the "System Info" interface can be read SN automatically in the "Mech. diag." interface.
- (5) Click the "Create Report" icon to generate a report and save it locally.

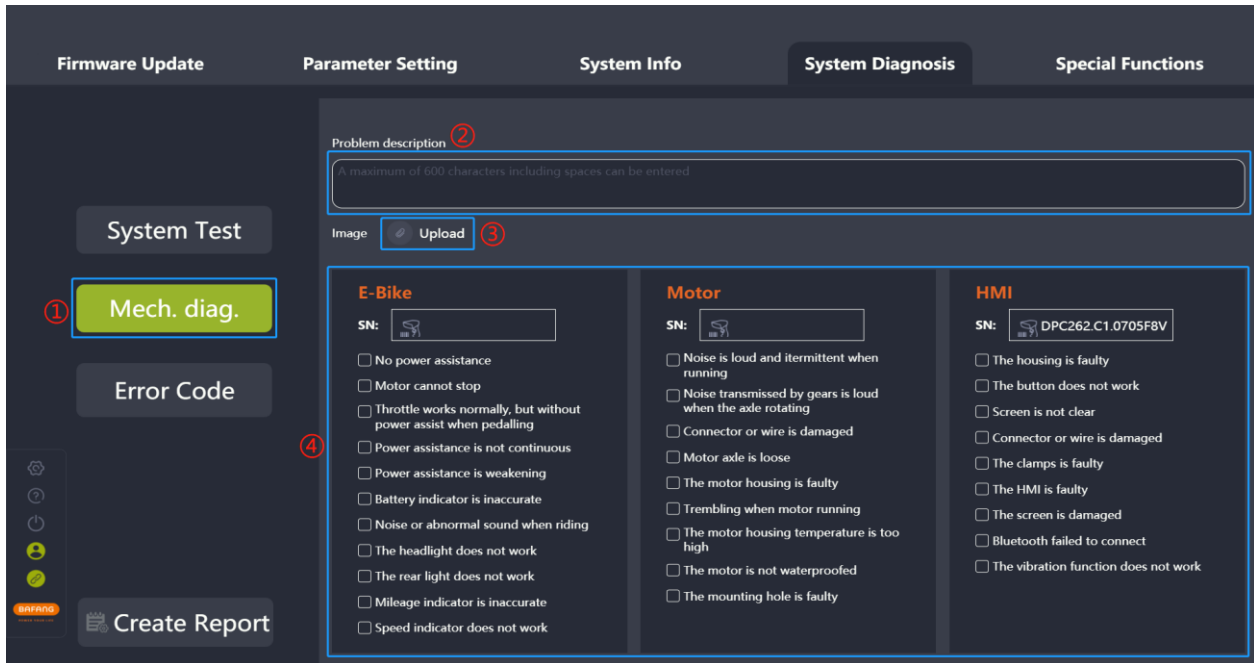


Fig. 7-4 Mechanical Diagnosis

## 7.3 FAQ

This module is used to display current errors, and historical errors, as well as descriptions and troubleshooting of common error codes.

### 7.3.1 Current error

The current error will be displayed.

- (1) Click the "Error Code".
- (2) Click the "Current error".
- (3) The current error code and the corresponding troubleshooting will be shown.

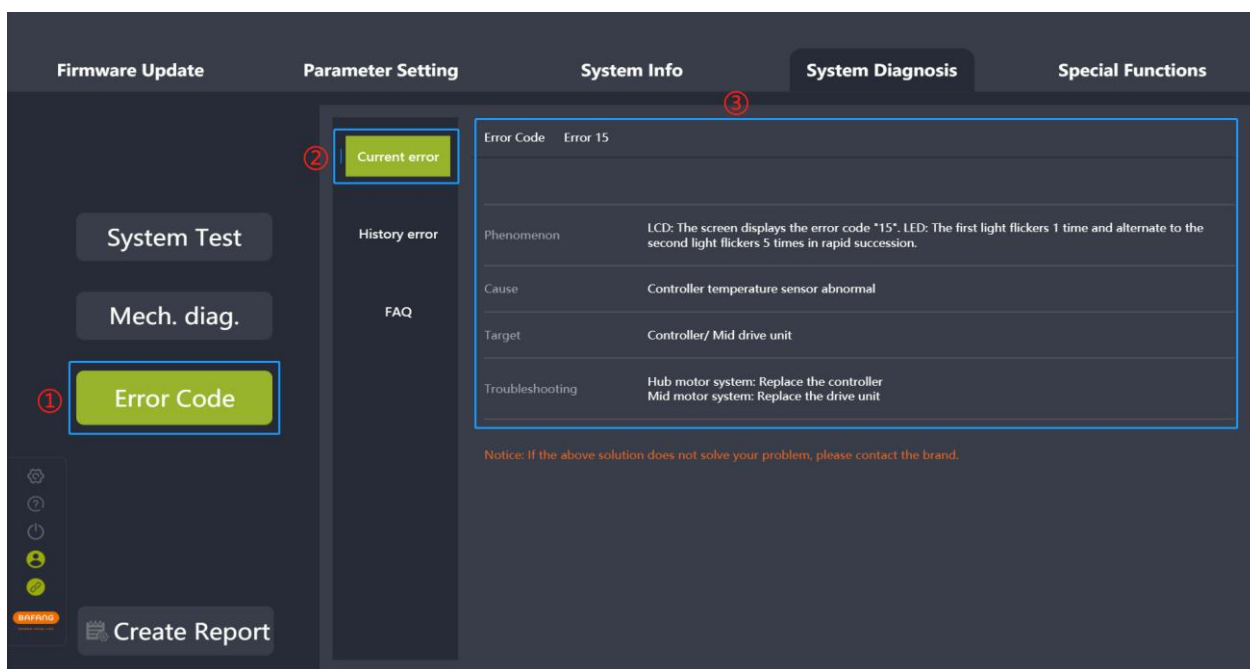


Fig. 7-5 Current error

### 7.3.2 History error

Errors that have previously occurred and are stored in the display will be displayed, and you can perform cleanup operations.

- (1) Click the "Error Code".
- (2) Click the "History error".
- (3) If there are history errors, the error codes and troubleshooting will be displayed. You can also click "Clear history" to clear the history errors.

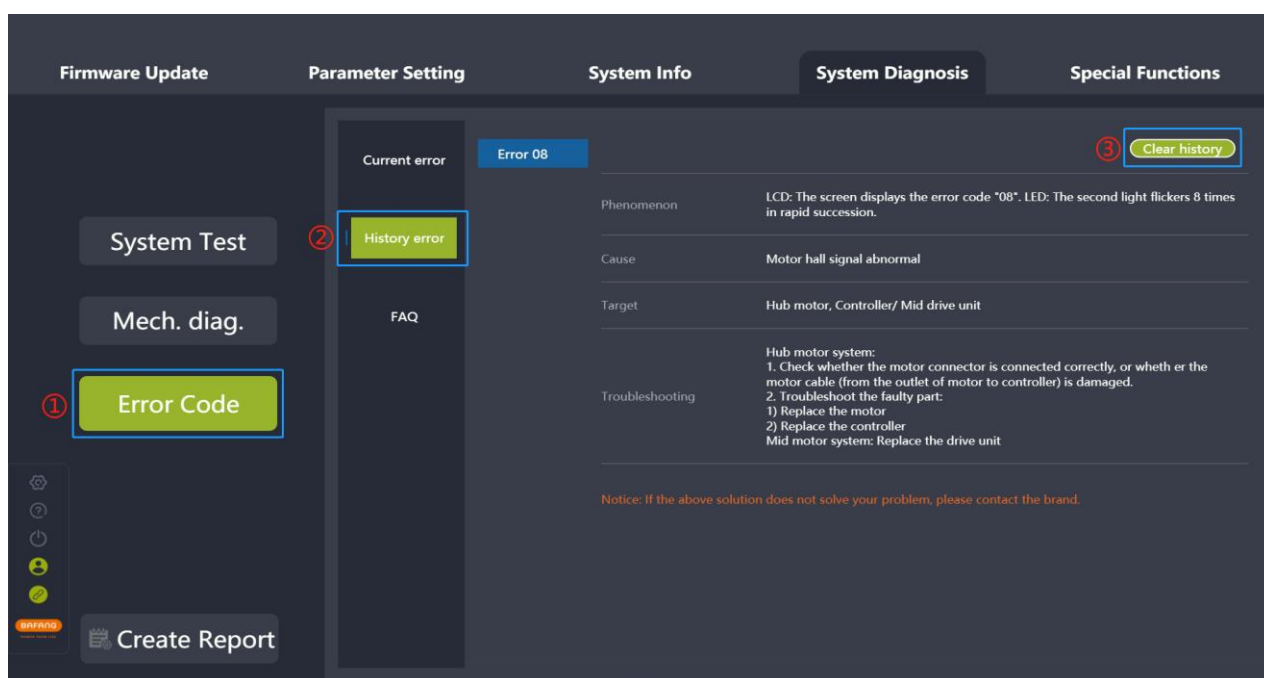


Fig. 7-6 History error

### 7.3.3 FAQ

Errors with a high number of occurrences with descriptions will be displayed.

- (1) Click the “Error Code” .
- (2) Click the “FAQ”.
- (3) Select the error code to be interpreted in the drop-down list.
- (4) The information and corresponding troubleshooting will be displayed.

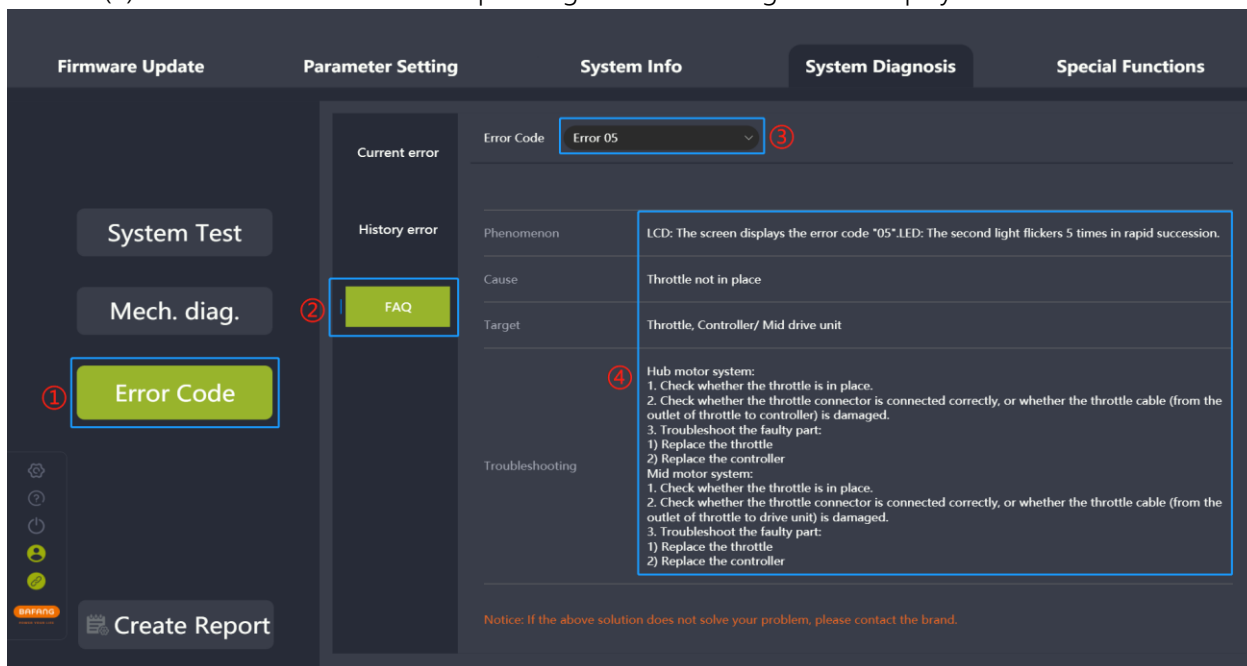


Fig. 7-7 FAQ

## 7.4 Create report

Both the system info and system diagnosis have the function of creating a report. Creating a system info and system diagnosis report will prompt you if you want to jump to another one. The generated report can be exported in PDF, and the save path can be selected. The generated report will display the filled-in problem description, inserted images, SN of the read or written part ,and selected error information, etc.

### 7.4.1 Create report in System Diagnosis

- (1) Click on the "Create Report" icon and a pop-up will prompt "Do you want to jump to the System Info?" (Fig.7-8).
- (2) To read system information, click "System Info" to jump to the system information interface.
- (3) Click on the "Create Report" icon.
- (4) Select the local save path.
- (5) Click the "Save" icon to generate a PDF report.

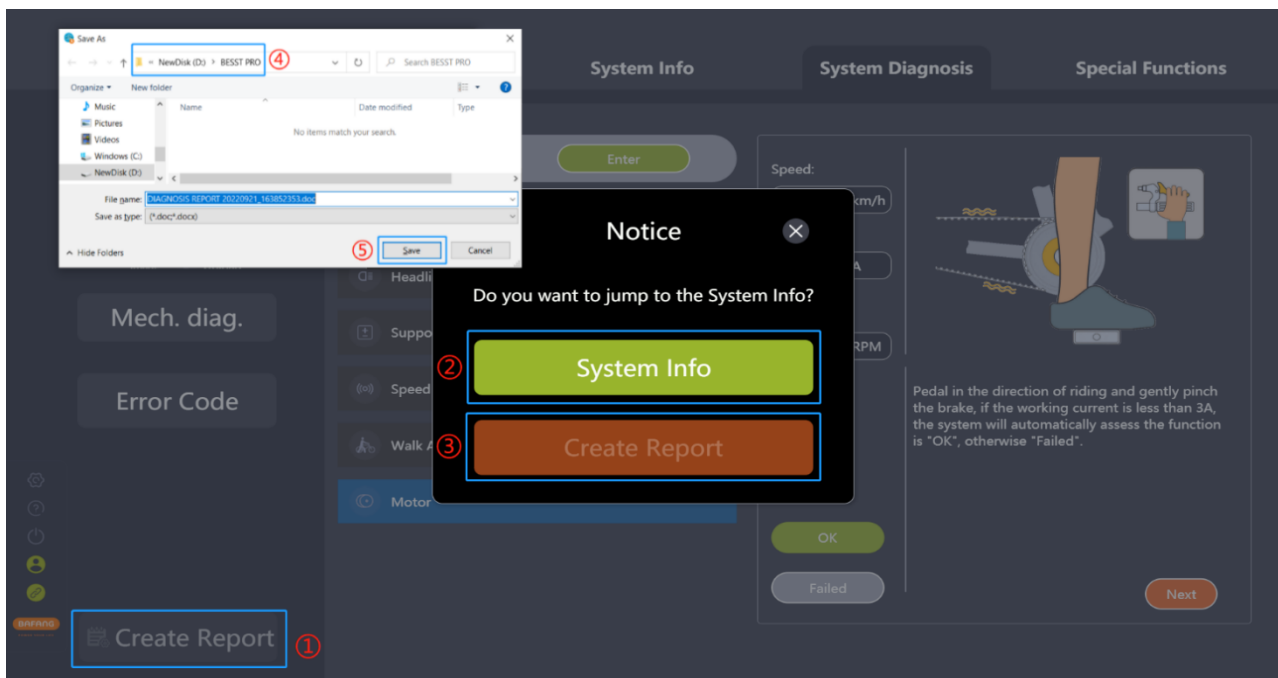


Fig. 7-8 Create report in System Diagnosis

## 7.4.2 Create report in System Info

- (1) Click on the "Create Report" icon and a pop-up will prompt "Do you want to jump to the System Diagnosis?" (Fig.7-9).
- (2) For system diagnosis, select "System Diagnosis" to jump to the system diagnosis interface.
- (3) If not, click on the "Create Report" icon.
- (4) Select the local save path.
- (5) Click on the "Save" icon to generate a PDF report.

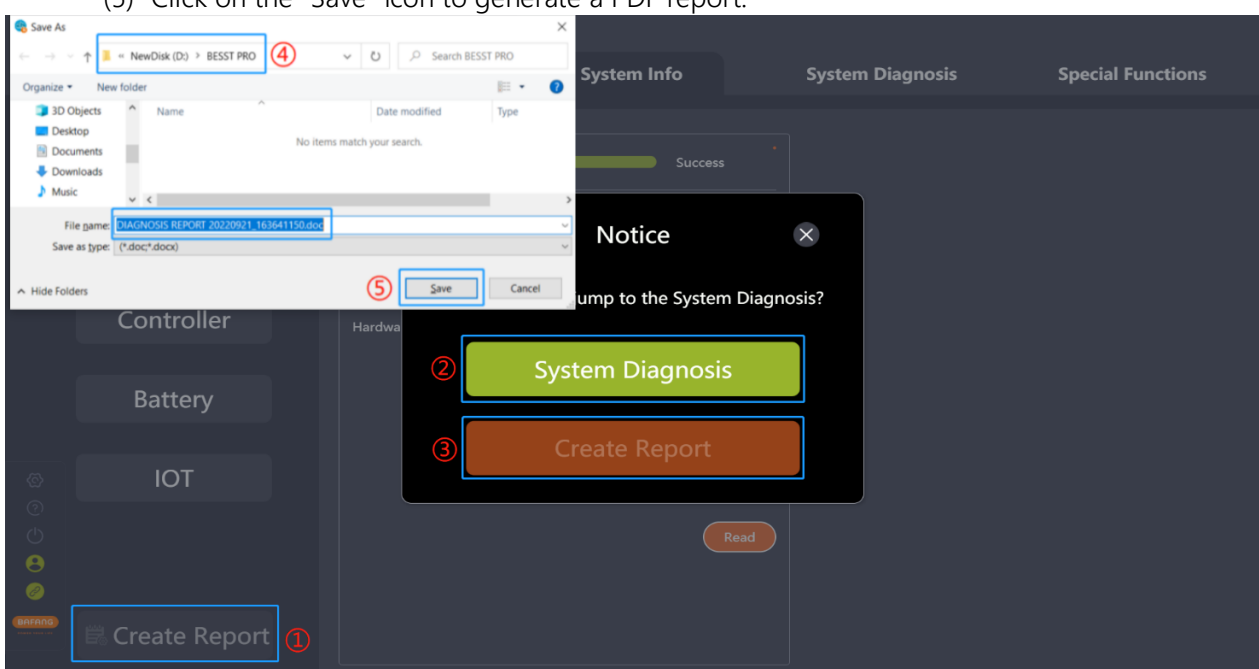




Fig. 7-9 Create report in system information interface

## 8 Special Functions

The special function module mainly includes service setting, HMI setting, and calibration.

### 8.1 Set Service km

The HMI will prompt for maintenance service when the riding mileage reaches the set value of service mileage. The "Service km" can be set to 1000~5000km.

- (1) Connect the BESST Tool to the HMI and select the "Set Service km" icon;
- (2) Make sure whether the HMI supports this function. If it supports, enter the service mileage in the input box.
- (3) Click the "Save" icon (Fig.8-1).

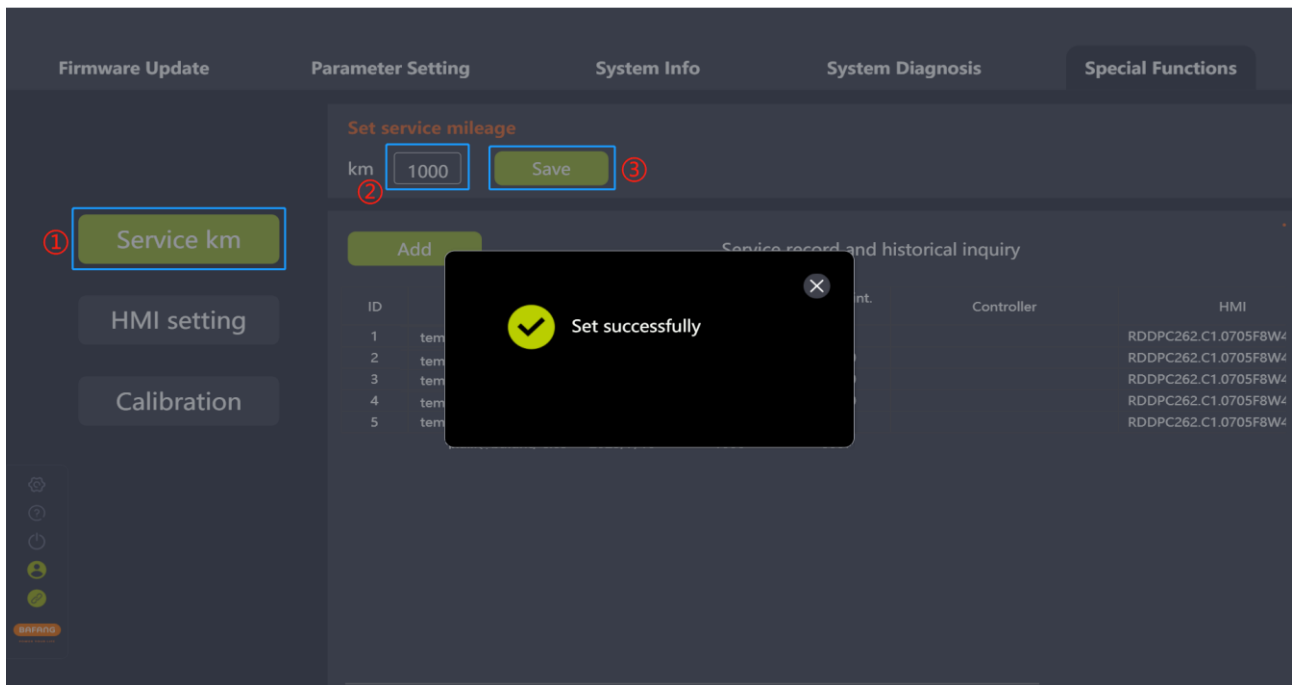


Fig. 8-1 Set service mileage

- (4) To add the record to the maintenance record, click "Add" after saving successfully. The record information includes maintenance personnel, maintenance time, next maintenance mileage, controller SN, HMI SN, and battery SN.

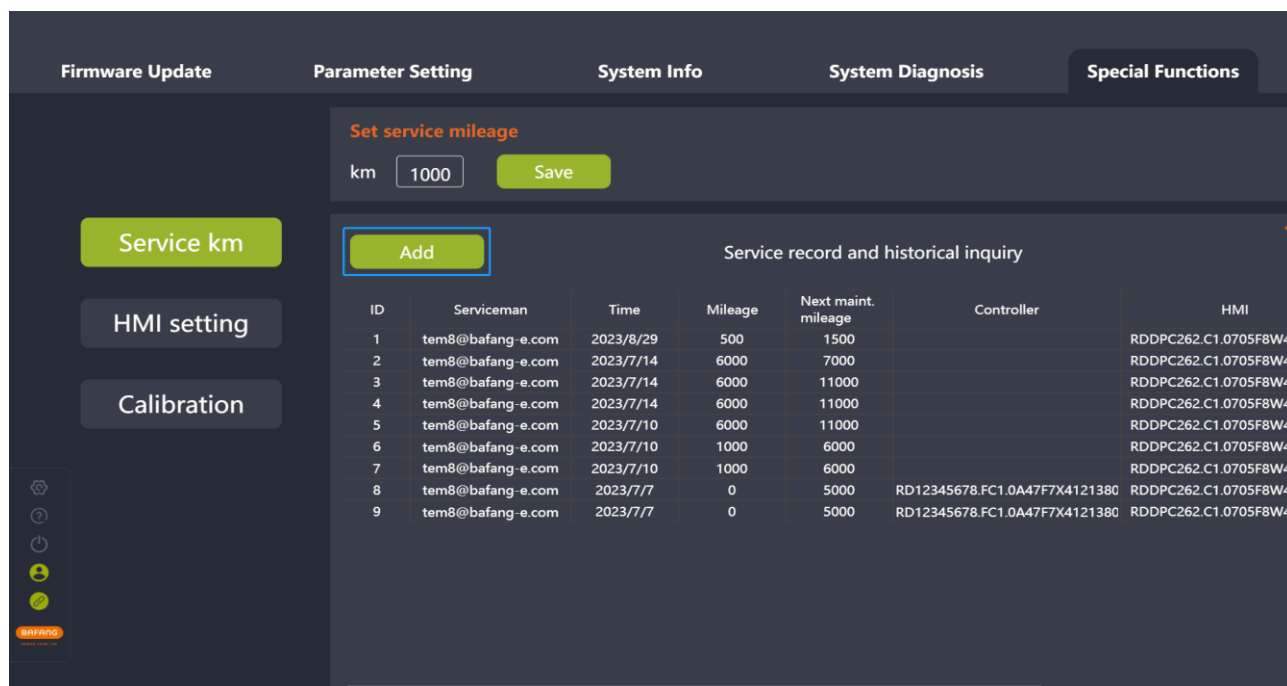


Fig. 8-2 Set service km

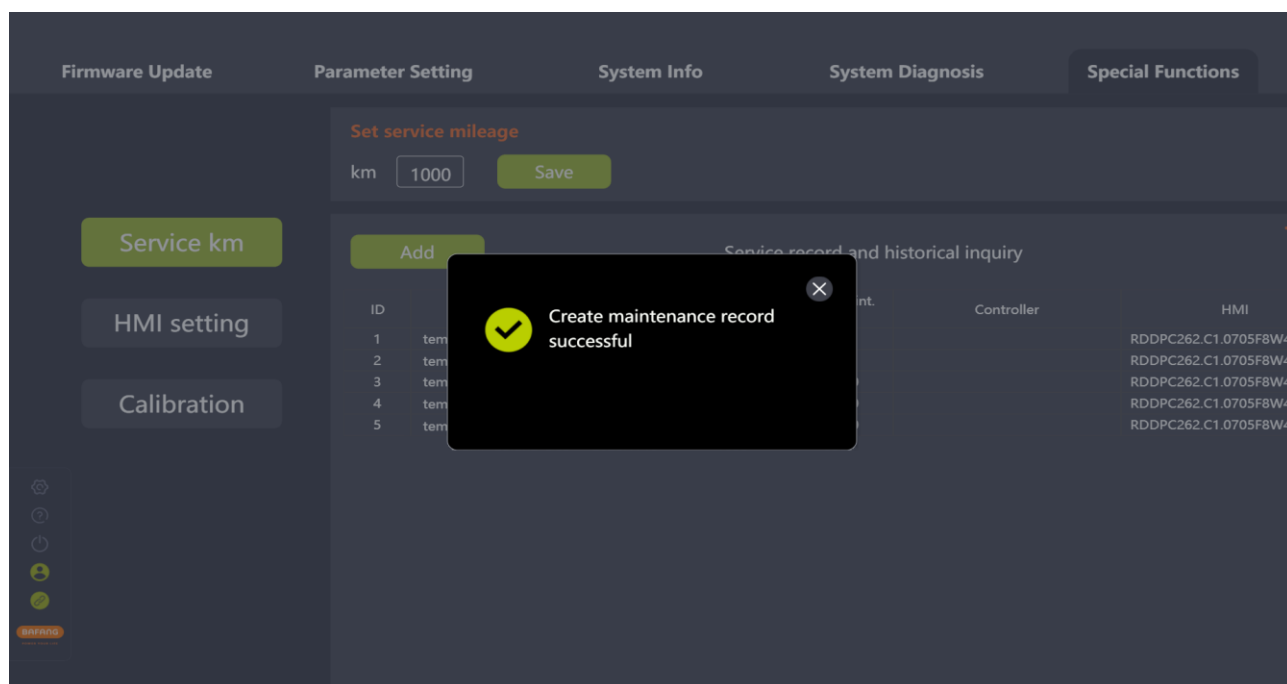


Fig. 8-3 Set service km

## 8.2 HMI setting

### 8.2.1 Set ODO

If the user wants to transmit the total mileage data of the old HMI to the new HMI after replacing

the new one, they can use this function. The steps are as follows:

- (1) Connect the BESST Tool to the HMI and select the "HMI setting" icon;
- (2) Enter the total mileage (ODO) in the "Set ODO(km)" input box and the value is an integer from 0 to 9999;
- (3) Click the "Save" icon (Fig.8-4).

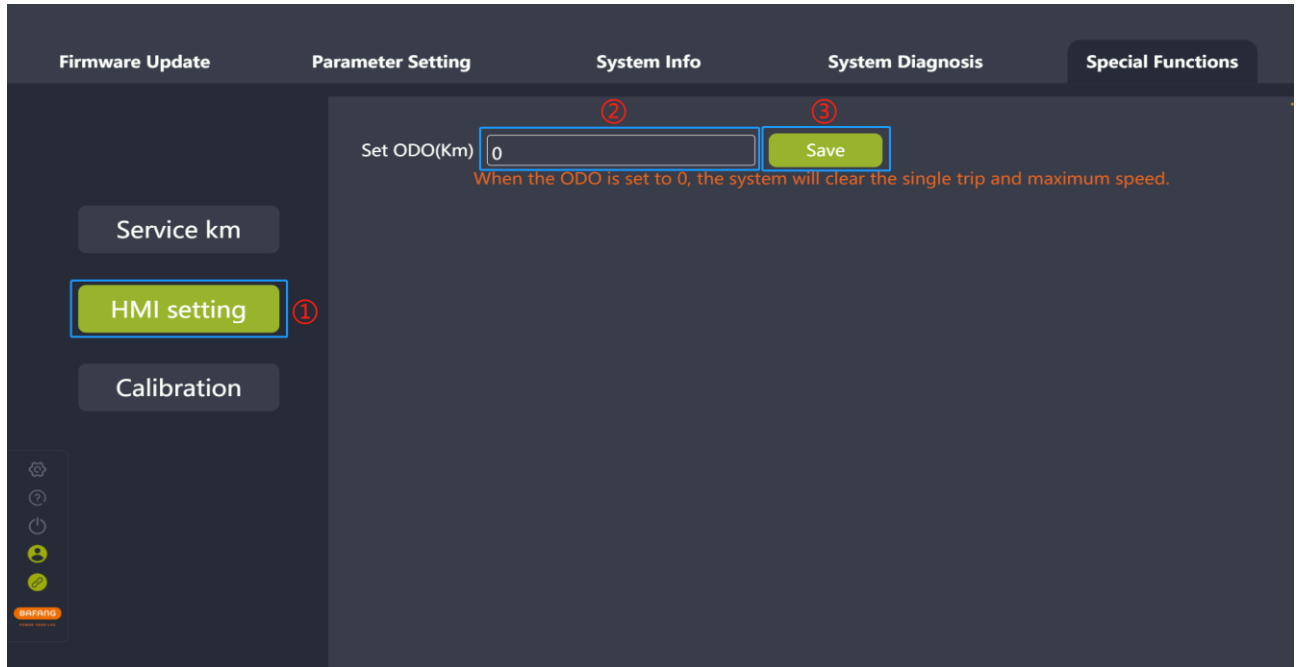


Fig. 8-4 Set ODO

## 8.3 Calibration

### 8.3.1 Position sensor calibration

- (1) Connect the BESST Tool to the controller and select the "Calibration" icon.
- (2) Click the "Start" icon next to the tag "Position sensor calibration" to start the position sensor calibration (Fig.8-5).
- (3) Click the icon next to the icon "Start" to view the tips for position sensor calibration (Fig.8-6).

Tips: Position sensor calibration function should be used under the guidance of professionals, otherwise it may lead to the whole bicycle failure.

- Only supports mid motors.
- Please ensure that the whole bicycle is fully charged, more than 20% necessary.
- Please ensure that the driving wheel and the pedals are suspended.
- After calibrating, the driving wheel will rotate automatically. Please take care of your safety and prevent personal injury.

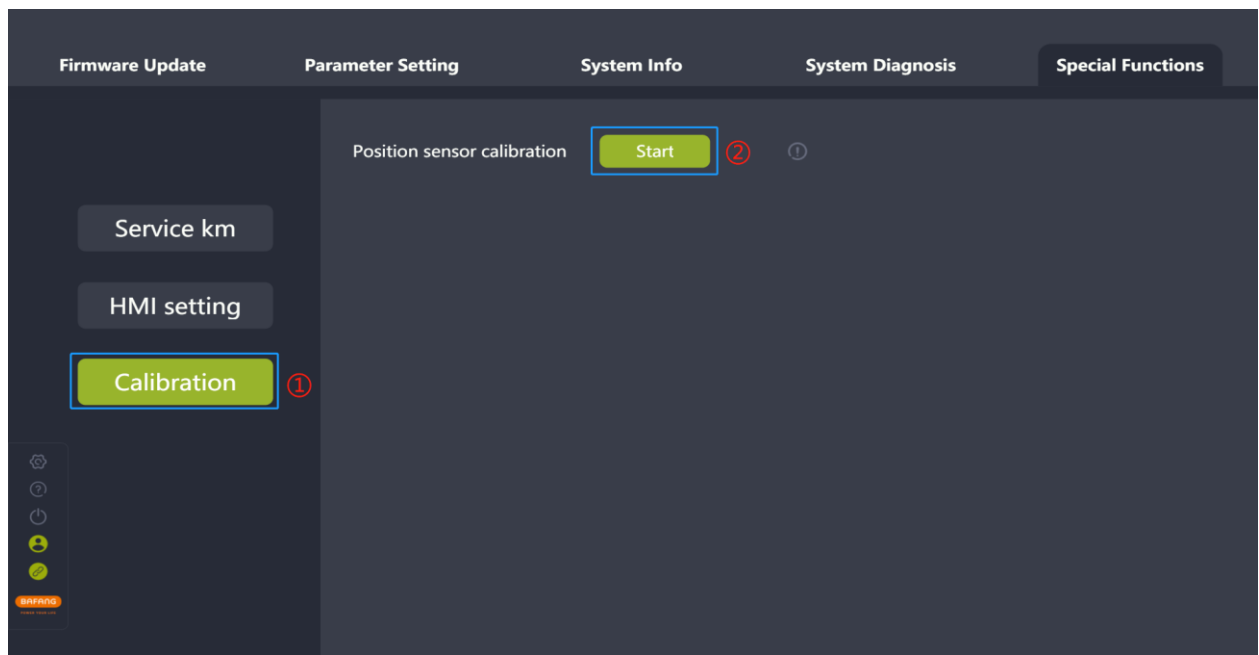


Fig. 8-5 Position sensor calibration

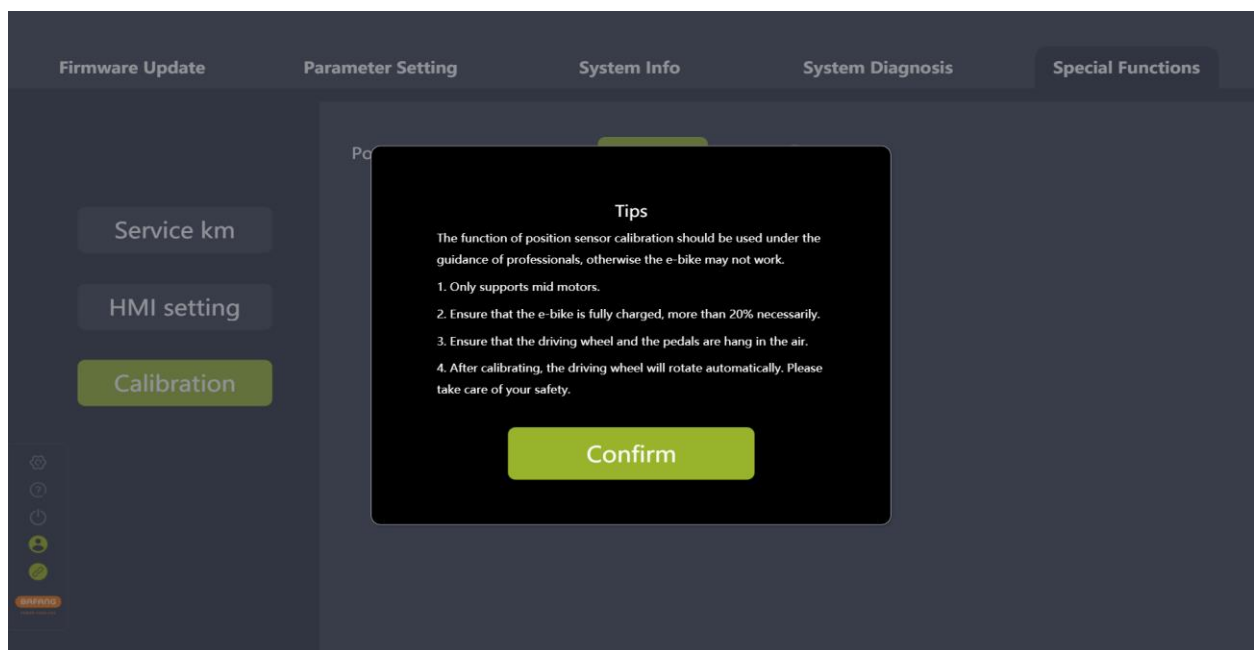


Fig. 8-6 Tips for position sensor calibration

## 9 System Environment

### 9.1 Language

Seven languages can be set, respectively Chinese, Czech, Dutch, English, German, Italian, and French, which takes effect after restarting the BESST Pro software.

- (1) Set the language in the right corner of the Login interface (as shown in Fig.9-1) or select the "Settings" icon on the left interface (as shown in Fig.9-2).
- (2) Select the desired language in the drop-down list.
- (3) Click the "Restart" icon. Restart the software and the selected language will take effect.

Tip: For the MAC version, you need to click "Close" and start the software manually for the selected language to take effect.

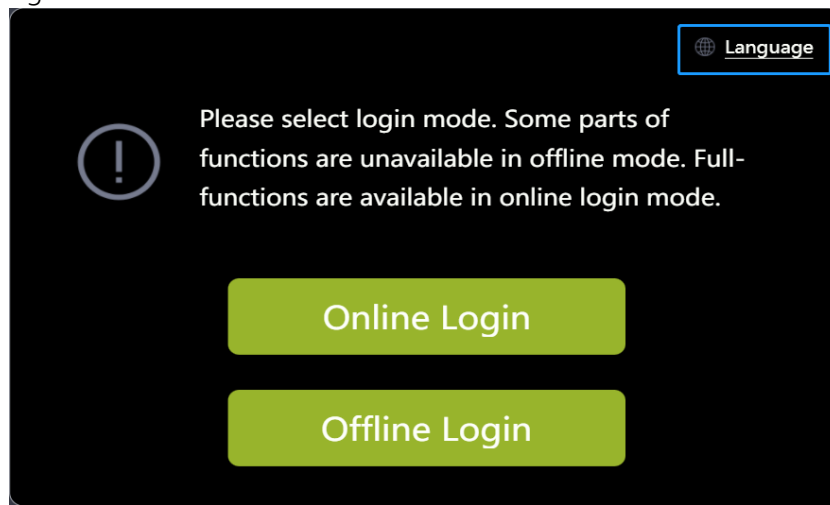


Fig. 9-1 Language

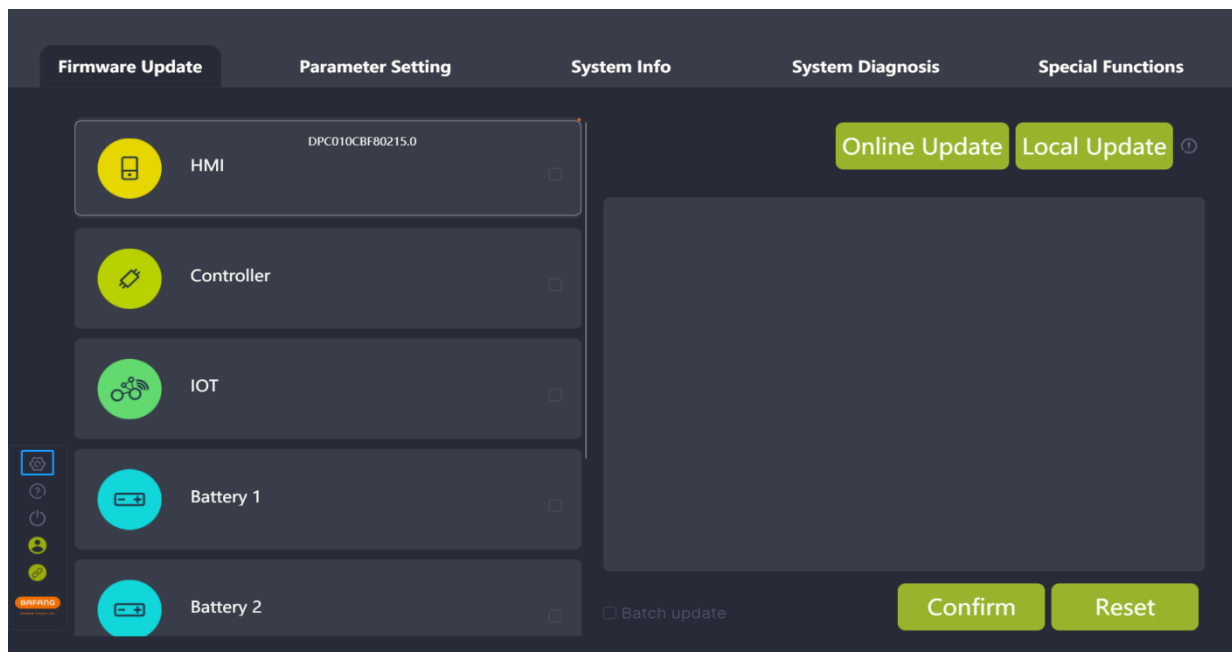


Fig. 9-2 Language

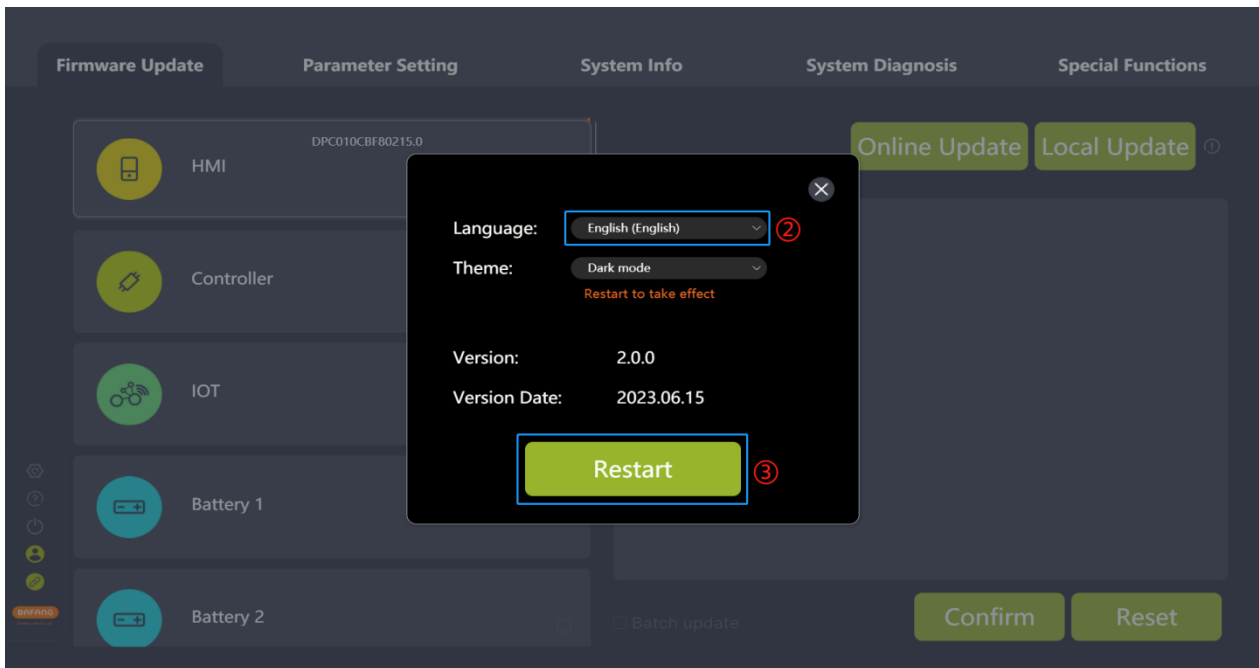


Fig. 9-3 Language

## 9.2 Theme

The theme can be set to dark or light, which takes effect after restarting the BESST Pro software.

- (1) Select the "Settings" icon.
- (2) Select the desired theme in the drop-down list (Fig.9-4).
- (3) Click the "Confirm" icon.
- (4) Click the "Restart" icon. Restart the software and the selected theme will take effect.

Tip: For the MAC version, you need to click "Close" and start the software manually for the selected language to take effect.

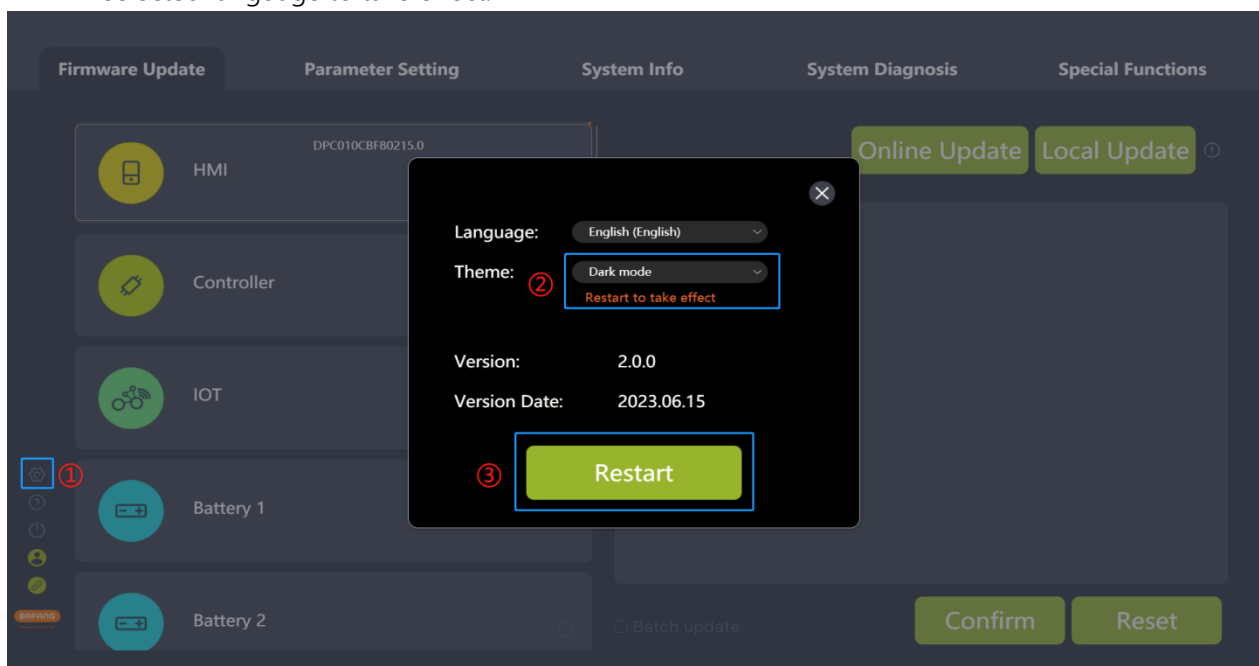


Fig. 9-4 Theme

## 9.3 Version

It displays the version number of the BESST Pro software.

## 9.4 Version date

It displays the version release date of the BESST Pro software.

## 9.5 New version automatic upgrade

When the user opens BESST PRO the first time, the current version will be compared with the cloud version. If it is not the latest version, it will prompt you to download the latest version of BESST Pro (Fig. 9-5).

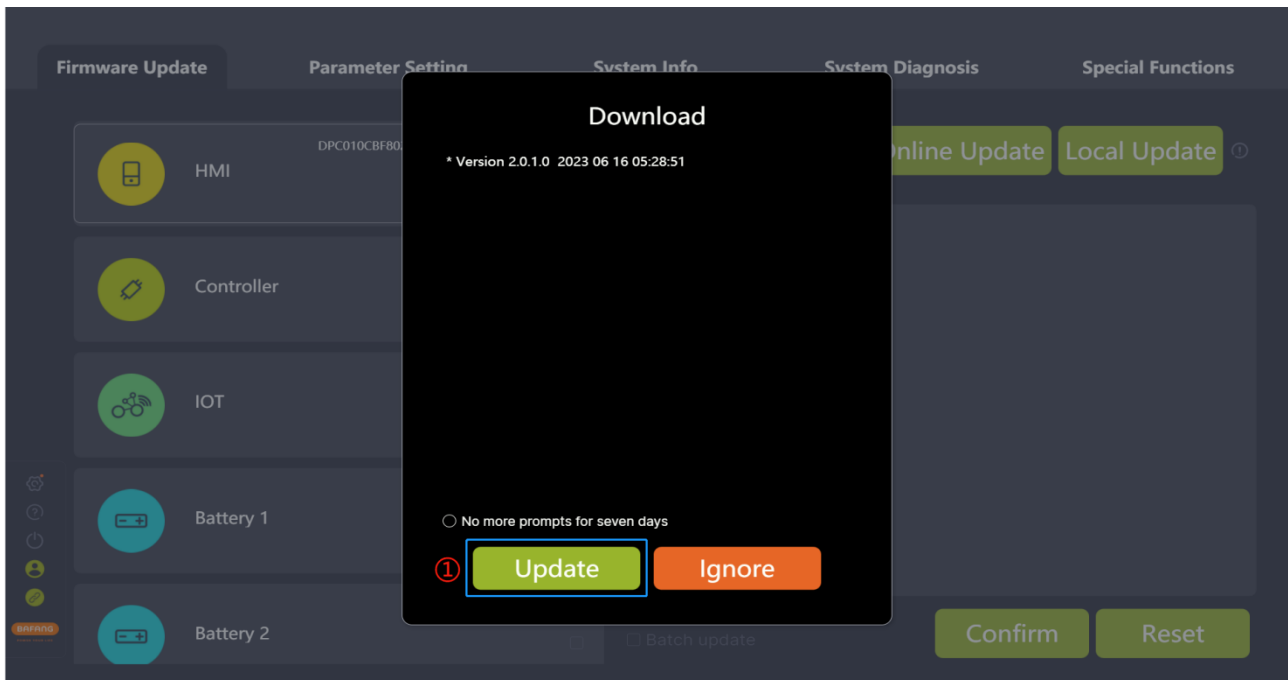


Fig. 9-5 The latest downloadable version

If the user clicks "Ignore," a small orange dot will appear on the settings icon in the bottom left corner of the main page. You can click on this icon to display the latest version for future upgrade requirements. (Fig. 9-6)



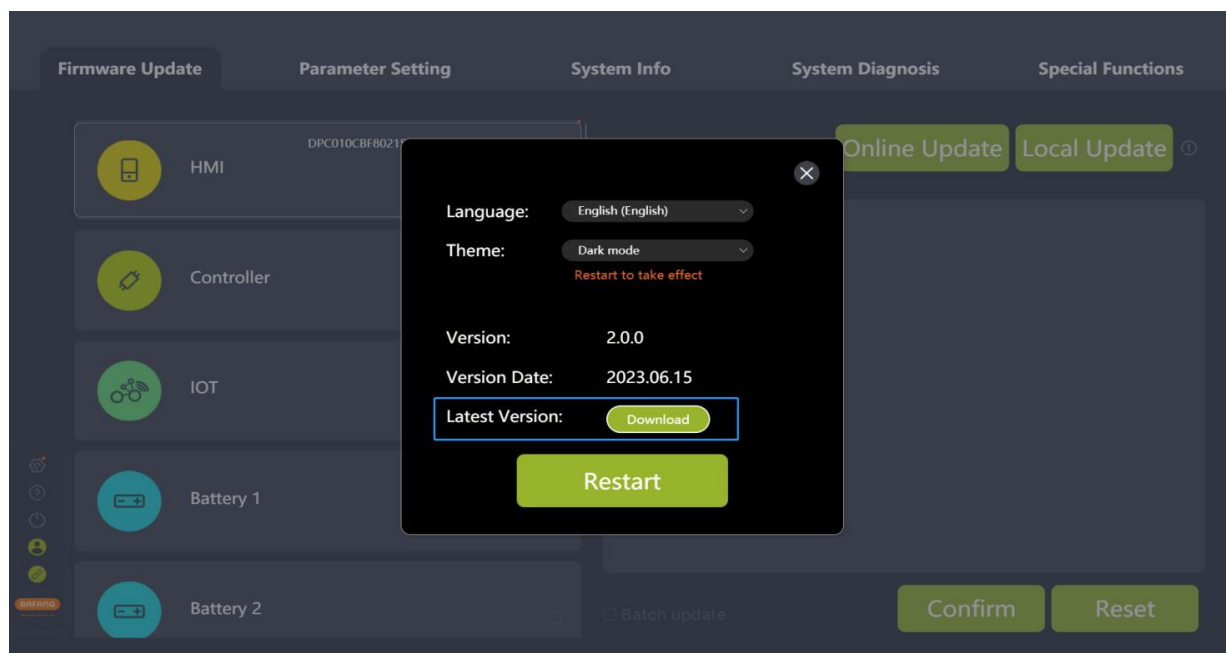


Fig. 9-6 The latest downloadable version

After clicking the “Download” button, the release date and update log of the latest version will be displayed. Upon clicking “Update Now,” a progress bar for downloading the upgrade package will be shown (Fig. 9-7)

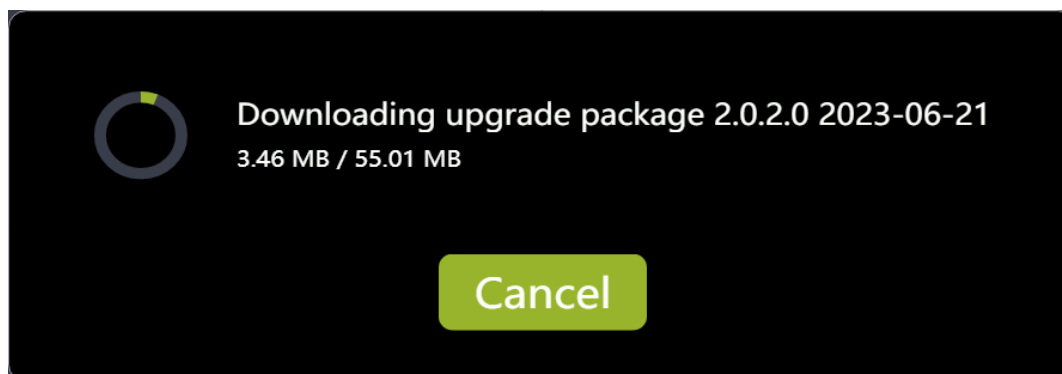


Fig. 9-7 The latest downloadable version

When “Upgrade package download complete” is displayed, wait for automatic installation to complete the upgrade (Fig. 9-8) .

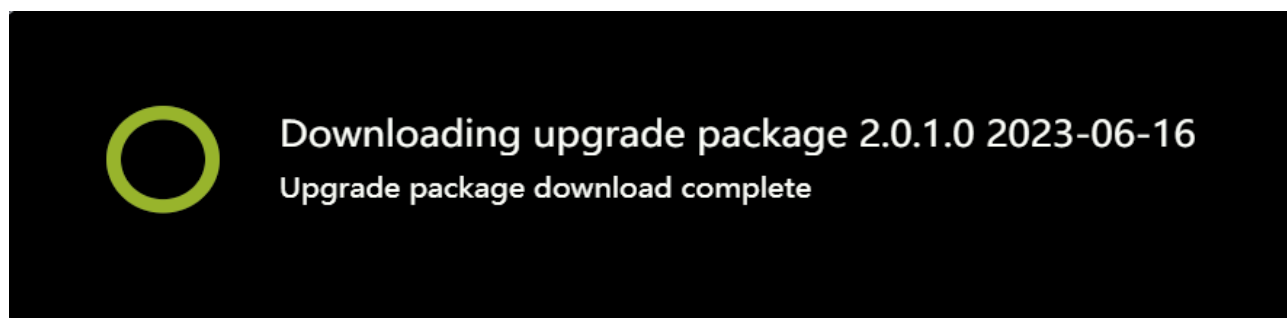


Fig. 9-8 The latest downloadable version

If it is the latest version, no notification will appear (Fig. 9-9).

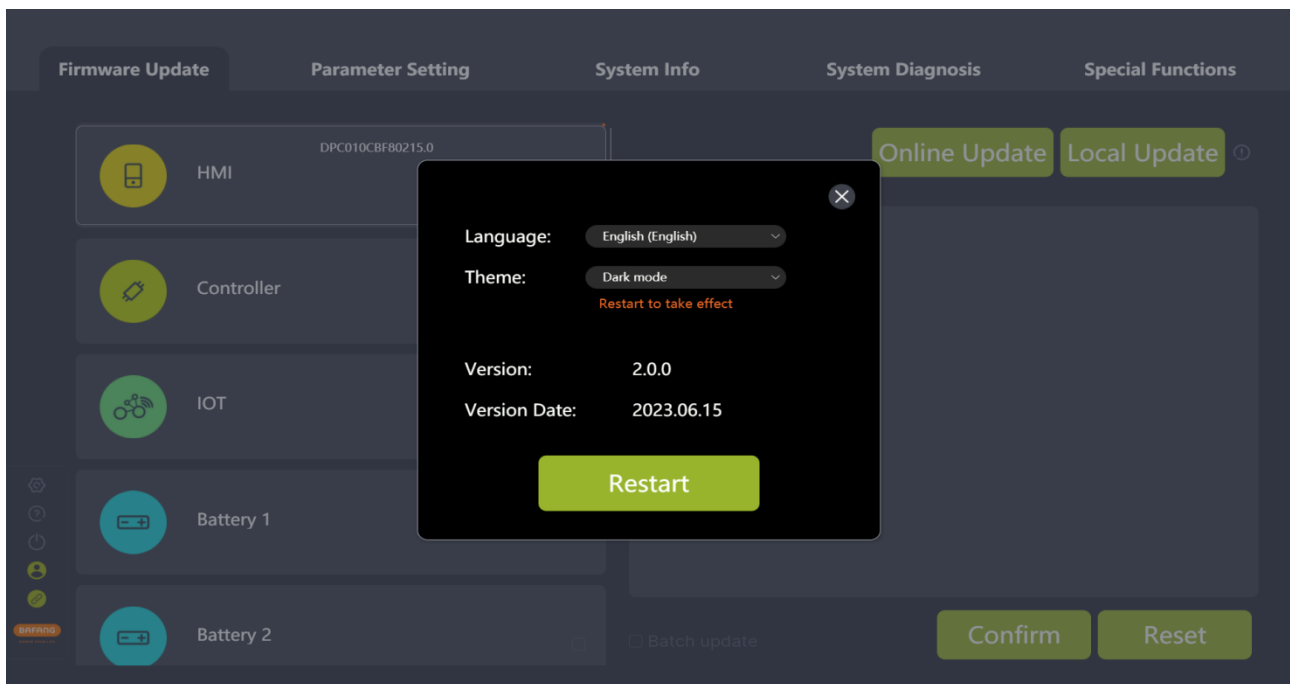


Fig. 9-9 Version information