ANANDA LINK Operation Manual

1. Attention

- When connecting the Ananda link toolkit to a PC, do not use intermediate devices such as USB hubs.
- When using the Ananda link platform, please avoid the PC entering the sleep state, which leads to the suspension of data sending and receiving

2. System Introduction

The Ananda link provides intelligent online diagnosis services for the motor, battery, meter and other devices of Ananda. Customers can perform intelligent diagnosis and data analysis on related devices online through the platform, so as to understand the current status of the devices and repair the device faults through firmware upgrades and other means. The following table shows its main functions:

Function	Instruction	Status
Information read	The system software and hardware version information and parameter Settings are used to check whether the system status meets batch requirements.	open
Defect history	Historical fault information is used to trace all system faults and help determine the causes of system faults.	open
System self-inspection	Read all the fault content of real-time status, solve the problem that the meter can only display a single fault at a time, and help users understand the system status.	open
Dynamic diagnosis	Users are required to perform operations to assist in diagnosis and deeply diagnose system faults.	open
Real time data	Users can obtain system-related data in real time, such as torque, current, and battery information,	open
Common Faults	This manual describes common system faults, including non-electrical faults that cannot be identified, such as noise and jitter,	open
Software upgrading	Used to upgrade controller firmware and parameters and instrument firmware.	open
Diagnosis and upgrade report	Review historical diagnostic content and historical upgrade data	open
Parameter modification	Review historical diagnostic content and historical upgrade data.	Pending

3. Preparing

Supported operating systems

Currently, the Ananda link web platform only supports Microsoft operating systems, and the Windows operating system version should be at least Windows 7.

1) Supported browsers

- Google Chrome
- Microsoft Edge
- IE

2) Tools needed

Ananda link toolkit provided by Ananda (Figure 1)

Fig1

3) Plug-in installation

The plug-in is mainly used for device connection and cloud communication. The plug-in needs to be installed before using the system. Upon the first login, the system will automatically detect whether plug-ins have been installed on the computer. If plug-ins have not been installed, the system will prompt you to download and install them. Click to download the driver and install it as prompted(Figure2).

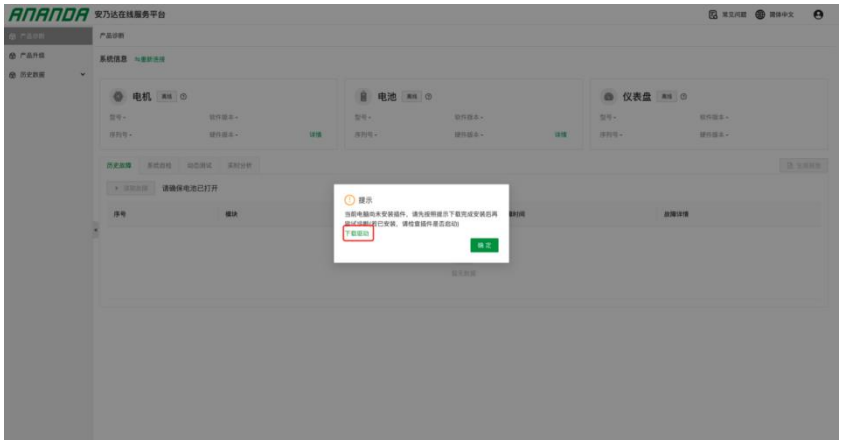

Fig2

4) Precautions for different systems

- In the CAN system, the Ananda link platform CAN simultaneously connect the controller, battery and meter for data reading and diagnosis. After connecting all devices, you are advised to turn on the battery and meter and wait for connection.
- In the Uart system, the Ananda link platform can connect the controller and battery at the same time, or connect the meter separately, for data reading and diagnosis. When connecting the controller to the battery, you are advised to turn on the battery directly. Turn on the meter directly when connecting it.

4. Operation instructions

1) Device connection

Connect the two ends of the Ananda link toolkit to the communication cables of the PC and the device to be diagnosed. Ensure that the port used is not occupied by other programs. For example, NetCenter software or Controller Debugging System software of Ananda is not opened at the same time.

Login website

Chinese：https://cn.ananda-service.com/

European：https://eu.ananda-service.com/

Please apply to Ananda for the account password.

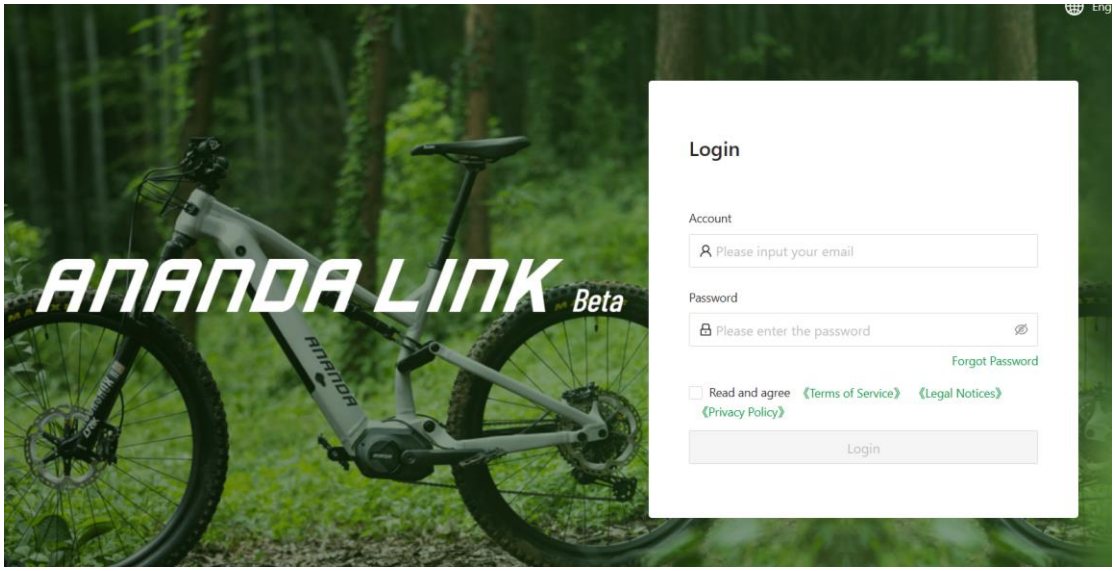

Fig3

1) Connect

After logging in, you will enter the connection page, and the status of the three devices on the top of the page will change to 'Connecting' (Figure 4). The Ananda link platform will automatically identify and attempt to connect all devices, which may last for 30 seconds. If there is still a device that is not successfully connected 30 seconds later, the status of the device will be 'Offline' (Figure 5), and the status of the successfully connected device will be 'Online' (Figure 5). Users can click 'Reconnect' (Figure 6) above to try to Reconnect. If this fails for many times, please consult the FAQ for troubleshooting (Figure 7).

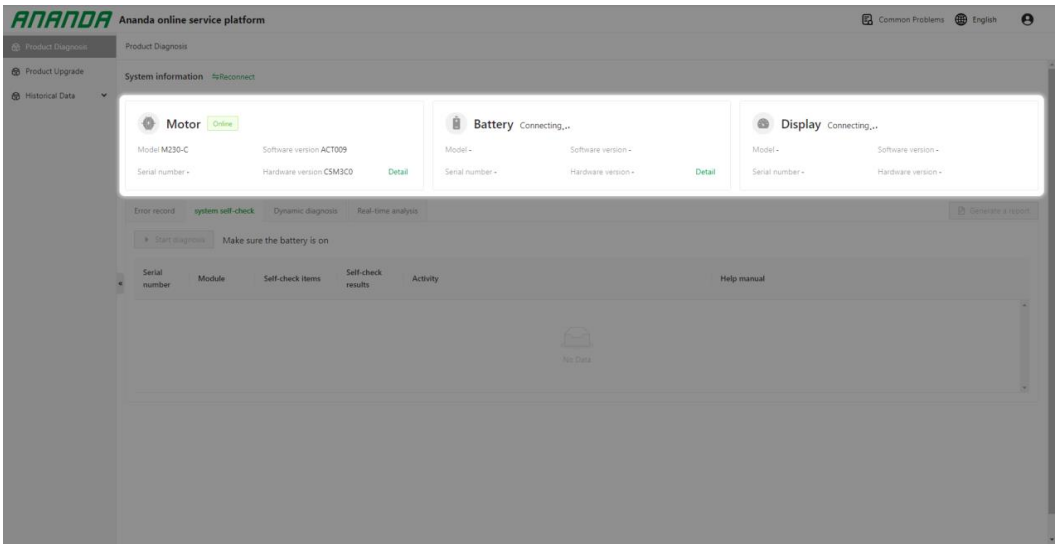

Fig4

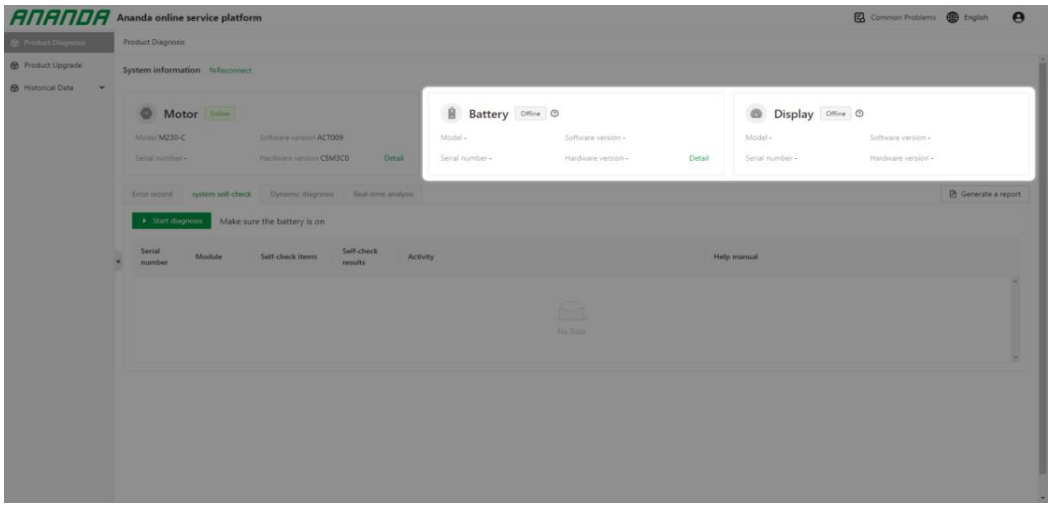

Fig5

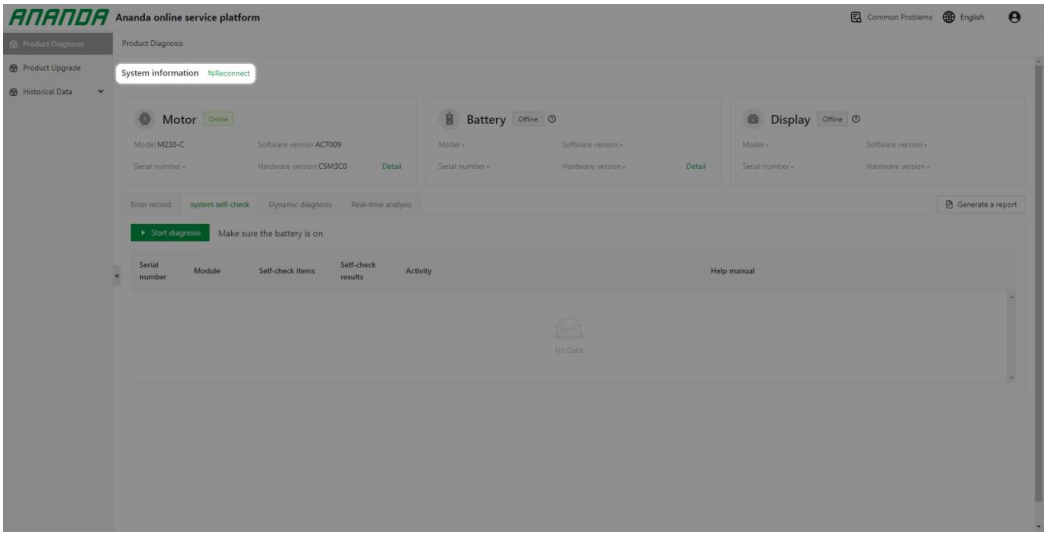

Fig6

2) Product diagnosis

- System Information

The controller, motor, and meter support product model, hardware version, software version, and SN (Figure 8). Click 'Detail' in the controller or battery module (Figure 8) to view more information. The following table shows the information currently supported.

Module	Data	Instruction
Controller	Model	产品型号
	Serial number	SN 码
	Software version	固件版本
	Hardware version	硬件版本
	ODO	总里程
	Circumference	车轮周长
	Maximum Level	设定最大档位数
	Current level1 ~ 5（Take the number of gears 5 as an example）	1~5 档的电流限制
	Level1~5 maximum speed（Take the number of gears 5 as an example）	1~5 档的速度限制
	Sensors	已勾选的设备或传感器
Battery	Model	产品型号
	Serial number	SN 码
	Software version	固件版本
	Hardware version	硬件版本
	Voltage	当前电压
	Current	当前电流
	Full Capacity	满充容量
	Charge-Discharge number	充放电次数
	SOC	容量状态
	Residual capacity	剩余容量
	SOH	健康状态
Instrument	Model	产品型号
	Serial number	SN 码
	Software version	固件版本
	Hardware version	硬件版本

Fig7

Attention：

Due to the missing of some battery data, the following may occur: model is not displayed or inaccurate, software and hardware versions are not displayed or inaccurate, SN is not displayed or inaccurate.

If a sample controller or meter is used, the SN will not be displayed.

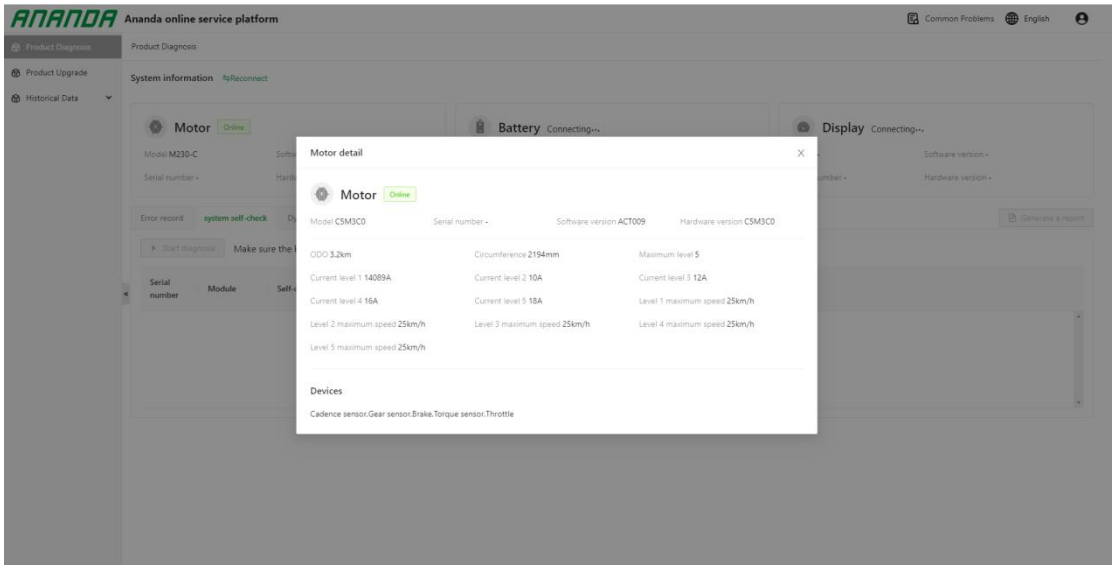

Fig8

- History fault case

This command is used to view historical faults of the device. Click Read Faults to read the historical faults stored in the device. Support to read 10 motor history faults and 10 dashboard history faults. The specific fault name and fault time will be displayed in the list (Figure 9). Click the fault details to view the specific data when the fault occurs, such as key information such as gear position and speed . The following table explains the detailed data of the fault:

Error code	Error code
Level	Gear value at the time of failure
SOC	Battery power at the time of failure
Bike speed	Speed at time of failure
Date	Date at time of failure such as year,month,day,hour,minute,second.
Total number	Count of times faults occurred times
ODO	Total mileage at the time of failure
BMS temperature	BMS temperature at the time of failure
Cell temperature	Battery cell temperature at the time of failure
Controller temperature	Controller temperature at the time of the fault
Motor temperature	Motor temperature at the time of failure
Motor rpm	Motor rpm at the time of failure
IDC	Bus current value at the time of failure
IPH	phase current value at the time of fault

Attention:

The time information is provided by the battery. Therefore, if the battery matched by the system does not have an RTC module, the date and time when the fault occurred cannot

be recorded in the historical fault.

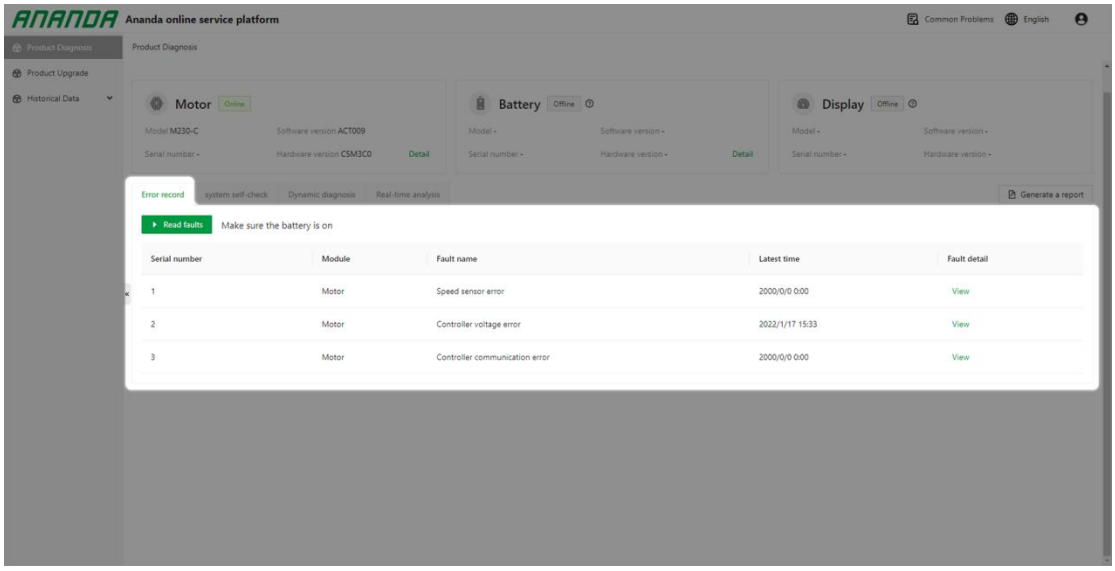

Fig9

- Self-inspection system

Used by the system to automatically detect the current status and fault of the device. Click Start diagnosis, and the system will automatically diagnose the device. After the diagnosis is complete, the corresponding content and results will be displayed on the list. If there is an exception in the self-test, the troubleshooting method and help manual are displayed. Click the link to view the troubleshooting method. (figure 10)

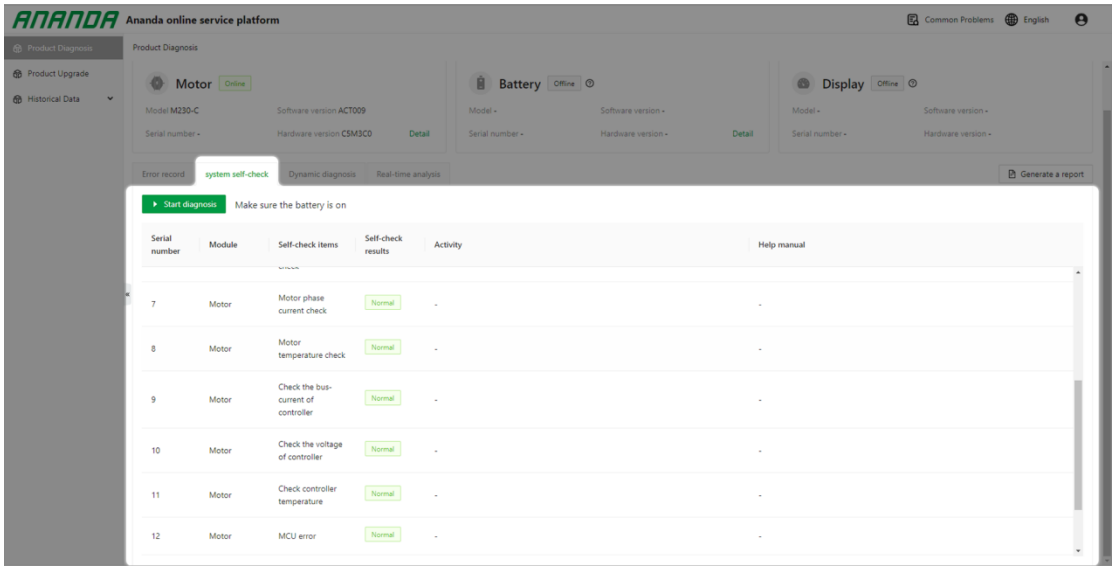

Fig10

- Dynamic testing

Used to dynamically test the device to diagnose more exceptions. After the device is connected, click Start Test to enter the test, and the system will automatically display the existing peripheral sensors (Figure 11). After entering the second step, you can select the dynamic test items you want to carry out (Figure 12). After the selection, you can start the test according to the prompts on the page. In each test page, the left side will prompt the user how to perform the operation and the current test steps (Figure 13, Figure 14),

and the right side will show the remaining time (Figure 15). The user only needs to complete the corresponding operation within the specified time. In the middle of the page, the name of the test item and the text operation guide are displayed, and the data and results obtained from the test can be displayed (Figure 16).

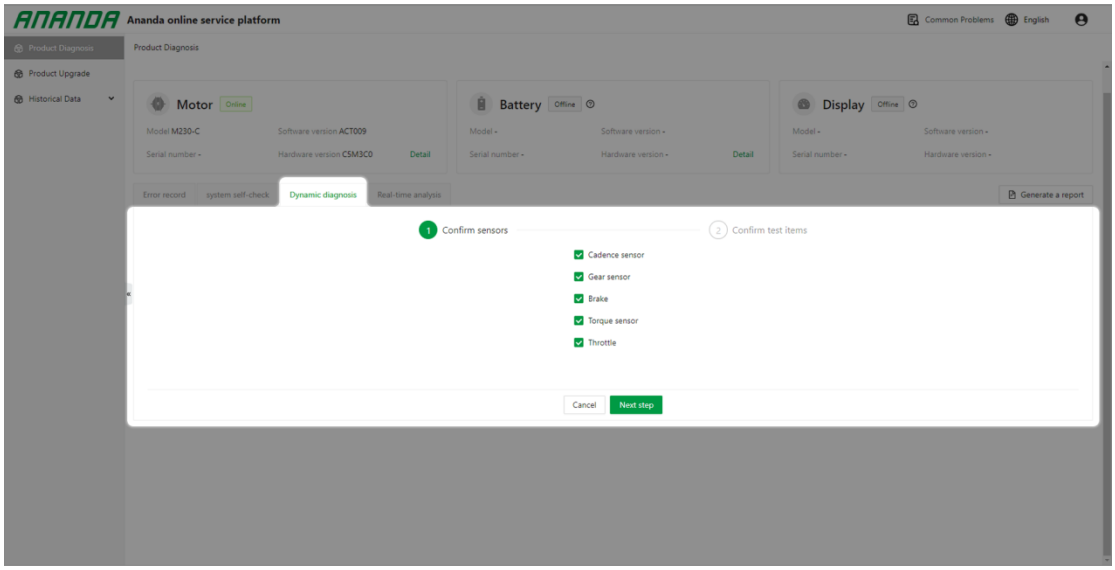

Fig11

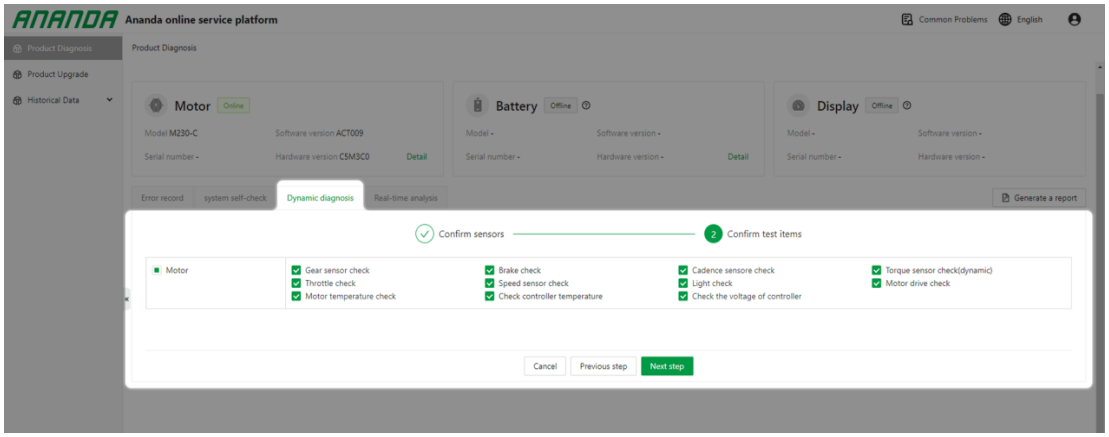

Fig12

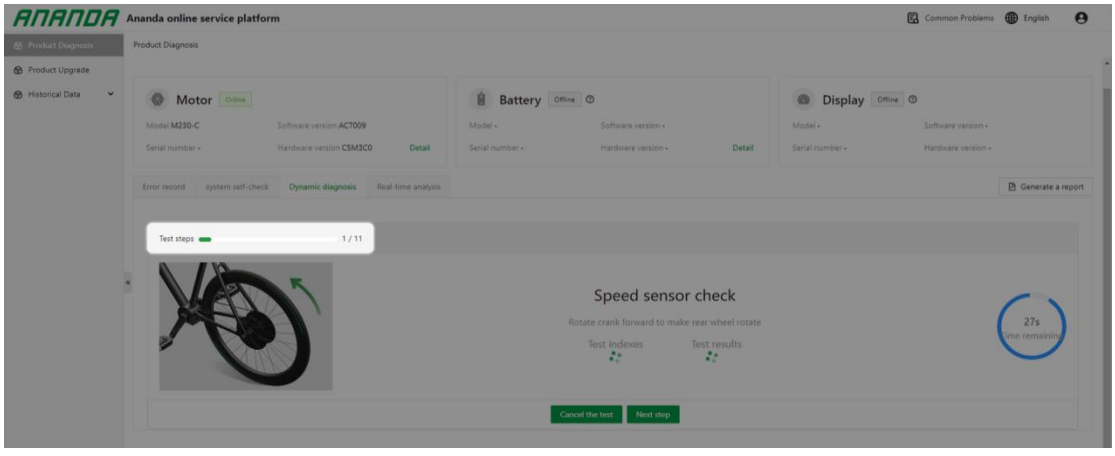

Fig13

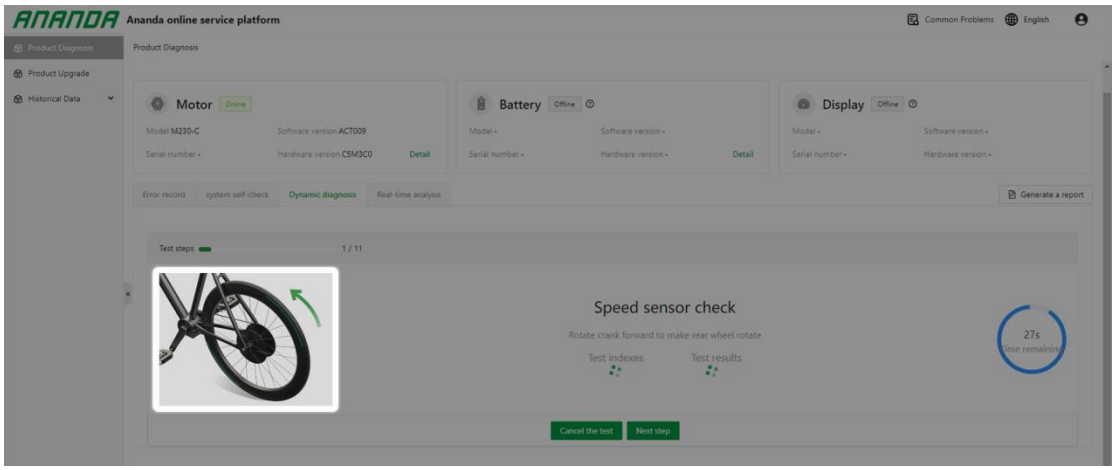

Fig14

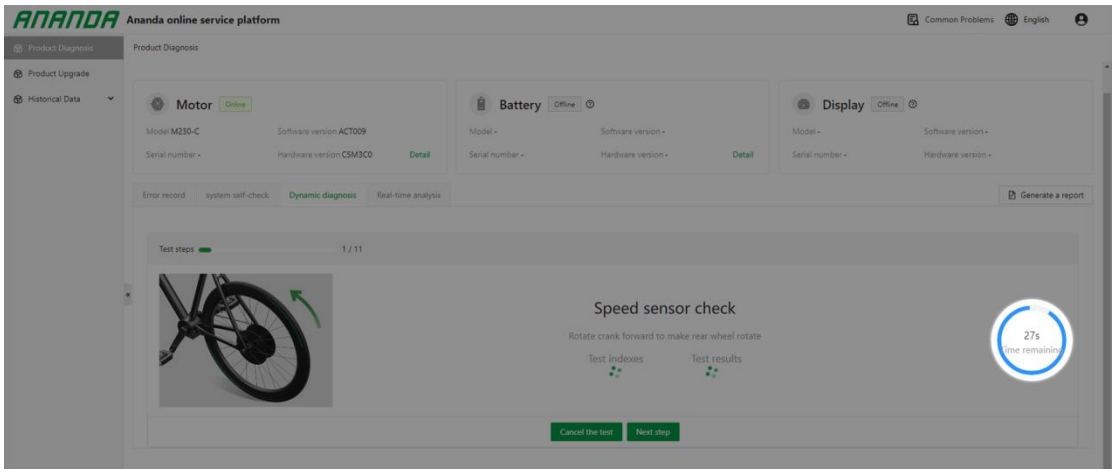

Fig15

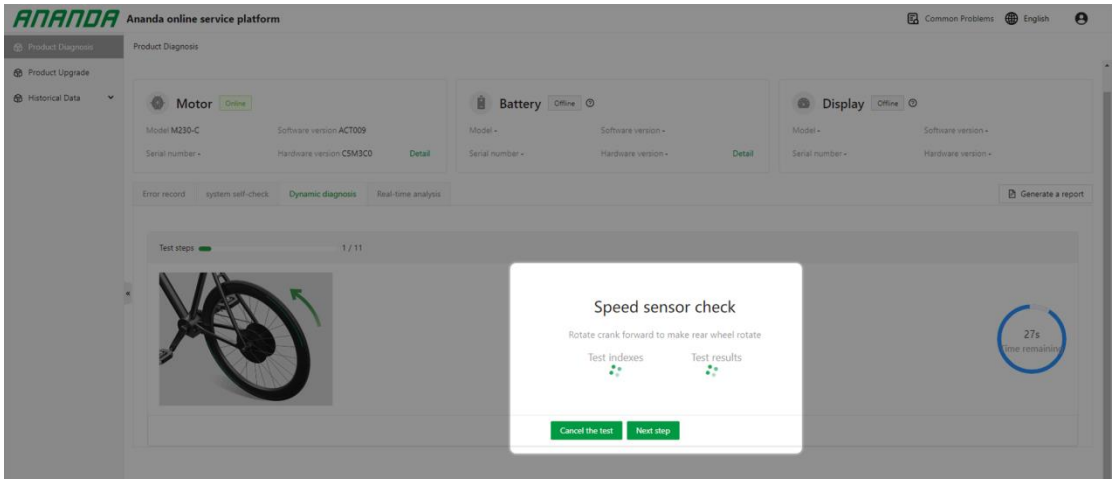

Fig16

- Real time analysis

It is used to capture the data of the device in real time to generate curves, so as to analyze the data of the device. Click Start analysis and select the data you want to analyze. After the selection, the system will automatically read real-time data and display it on the page.

- generate a report

If you want to record and store the current diagnosis results after the diagnosis and test are complete, click to generate a report and fill in the relevant information as prompted to generate a PDF report. The report can be downloaded. At the same time, feedback can be selected, and the report can be fed back to the Ananda background for the Ananda team to analyze, process and provide help.

3) Product Upgrade

It is used to update the firmware related to the device. Currently, it supports the firmware upgrade of the motor and parameter file, and the firmware upgrade of the dashboard. After the device is connected, you can select the corresponding firmware to upgrade, or click check (Figure 17), and the system will automatically check whether there is the latest version of the firmware. If there is no corresponding firmware on the cloud, you can also select local firmware to upgrade (Figure 18, Figure 19). The upgrade process usually takes a few minutes.

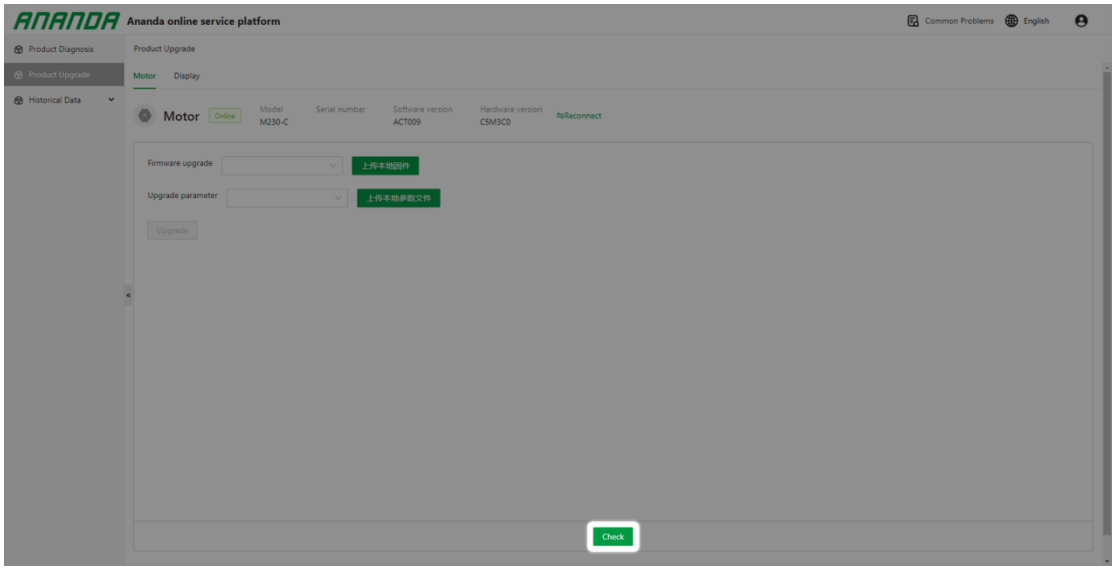

Fig17

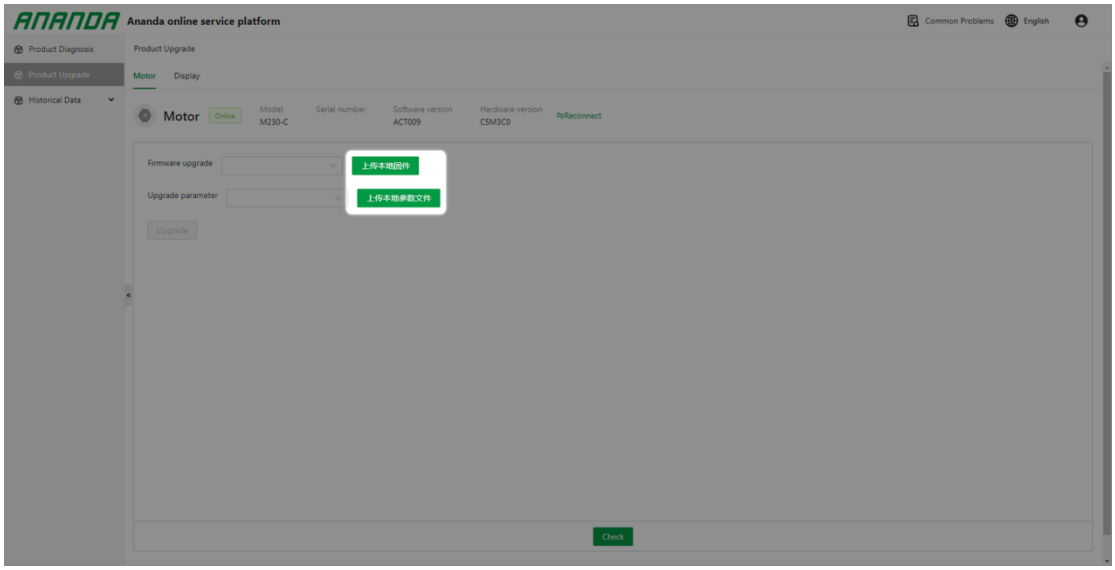

Fig18

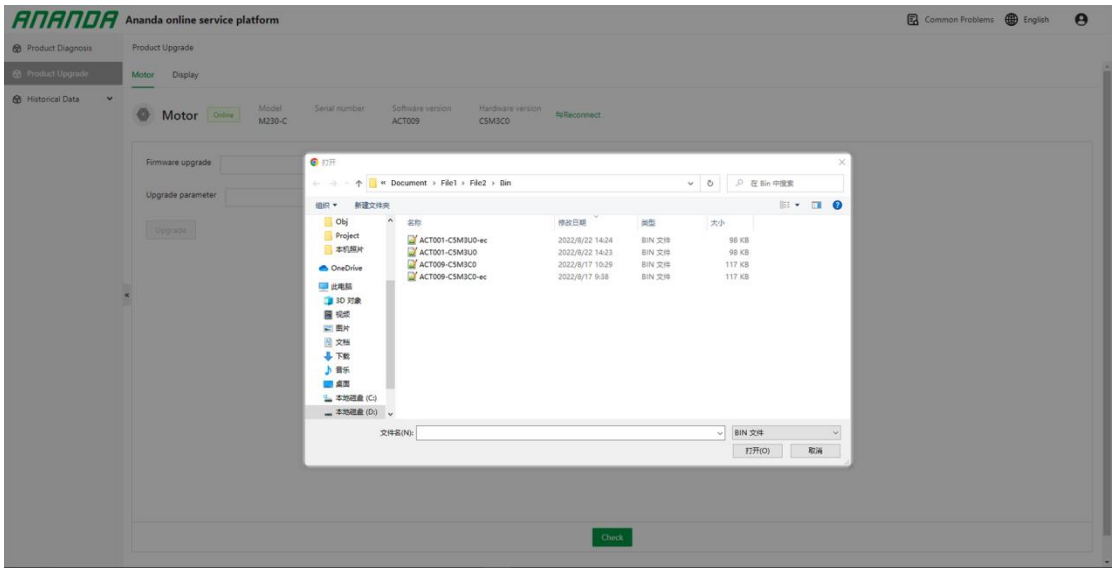

Fig19

4) Historical data

- Diagnostic report

You can view historical diagnosis reports and search by diagnosis time, diagnosis person, and diagnosis organization. Only diagnostic reports in the organization can be viewed.

- Upgrade Record

You can view the historical upgrade records of the device, including the serial number, upgrade file, version number before the upgrade, and version number after the upgrade. You can query information by serial number, product, or upgrade file.