ANANDA LINK Operating Manual

1. System Introduction

Ananda online service platform provides intelligent online diagnosis, data analysis and software updating function for the mid motors, controllers of hub motors and displays which are produced from Ananda.

Users could connect and get the status of drive system and upgrade the firmware or parameter of the product upgrade, but not all the faults can be solved by Ananda link. The following list shows main functions of Ananda link system:

Function	Main Instruction
System information reading	Read the model, software version, hardware version, serial number or parameter detail information
Error record	Show the detailed Error cord if there is certain error, and could check the detail instructions
System self-check	Read all the checked items result of driver system in real-time status. Show the defects or certain Error code Clink the link and show Service Manual for defects
Dynamic diagnosis	Diagnose system items by drive system operating.
Real-time analysis	Show the real-time testing result of the motor or display when doing riding test. Such as torque, cadence, light and so on.

Generate a report	Generate one diagnosis report after testing or apply technical support from Ananda.
Common Faults	Show the non-electrical faults that system cannot detect directly, such as noise and so on
Product upgrade	Update firmware and parameter for motors and displays
Historical Data	Show the diagnosis record and software upgrade record by using Ananda link account.

2. Preparing

Supported operating systems

Ananda link service platform only supports Microsoft operating systems currently.

Windows version should be Windows 7 or newer version.

1) Supported browsers

- Google Chrome

- Microsoft Edge

- IE

2) Tools connection

Ananda link toolkit which is including host, power cable and data cable.

There are 2 versions of data cable. CAN and Uart cables are separated in old version.

The smaller male and female connectors are used for CAN. The bigger male and female

connectors are used for Uart system.

Picture shows data cable connect host in Fig1, then the connect statues shows like Fig2.

Fig3 shows the Ananda link toolkit that was completed.
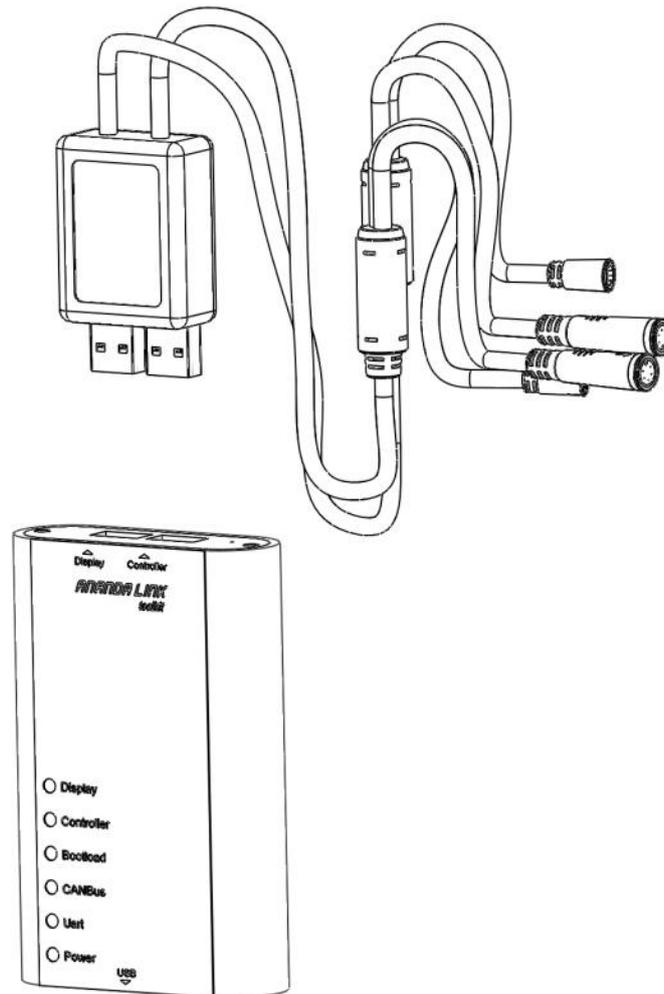
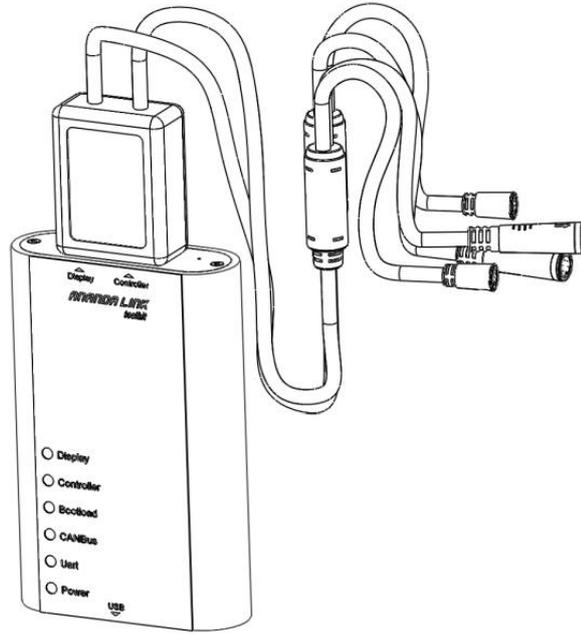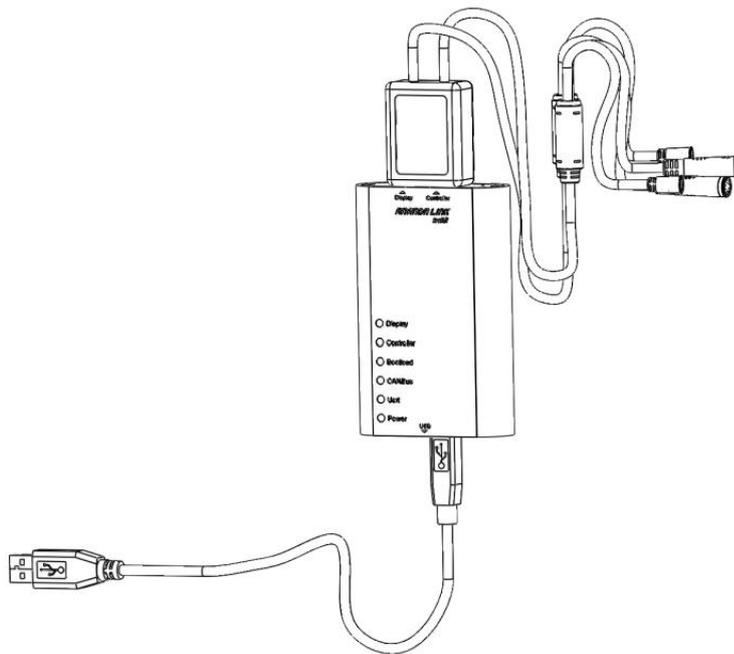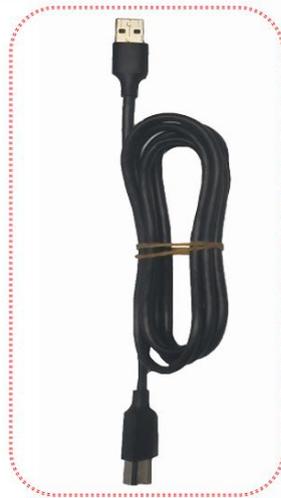## 3) Outline Characteristic Illustration

Fig1

Fig2

Fig3

4) Tools material object demonstrating

(Ananda Link toolkit)

| Power cable | Ananda Link toolkit | Data cable |

Cable: the big connector is for Uart , and the small connector is for CAN.

1: Connecting Box

2: HMI CAN connection pot

3: HMI UART connection pot

4: Controller UART connection port

5: Controller CAN connection port

3. System login instructions

1) Login Website

China users login website： https://cn.ananda-service.com/

European users login website： https://eu.ananda-service.com/

North American users login website： https://na.ananda-service.com/

2) Login

Apply Ananda Link account:

Registration by scanning "Registration Code"

- Scanning the Registration Code on the surface of the Toolkit by smartphone

- Open the Ananda Link registration interface (Fig4)

- Fill in personal information : Name, Company Name, Email address as login account, and Password (including at least 8-digit including number, Capital and lowercase letter)

- Submit and register successfully

- Login the Ananda Link website by the account

- Attention: this " Registration Code" can only be scanned and registered once, the " Right User" need to scan and register the code!
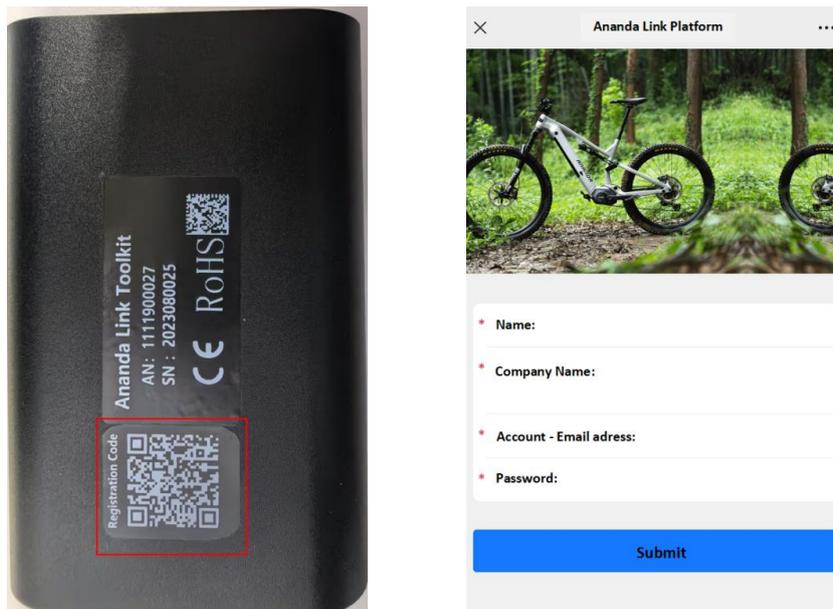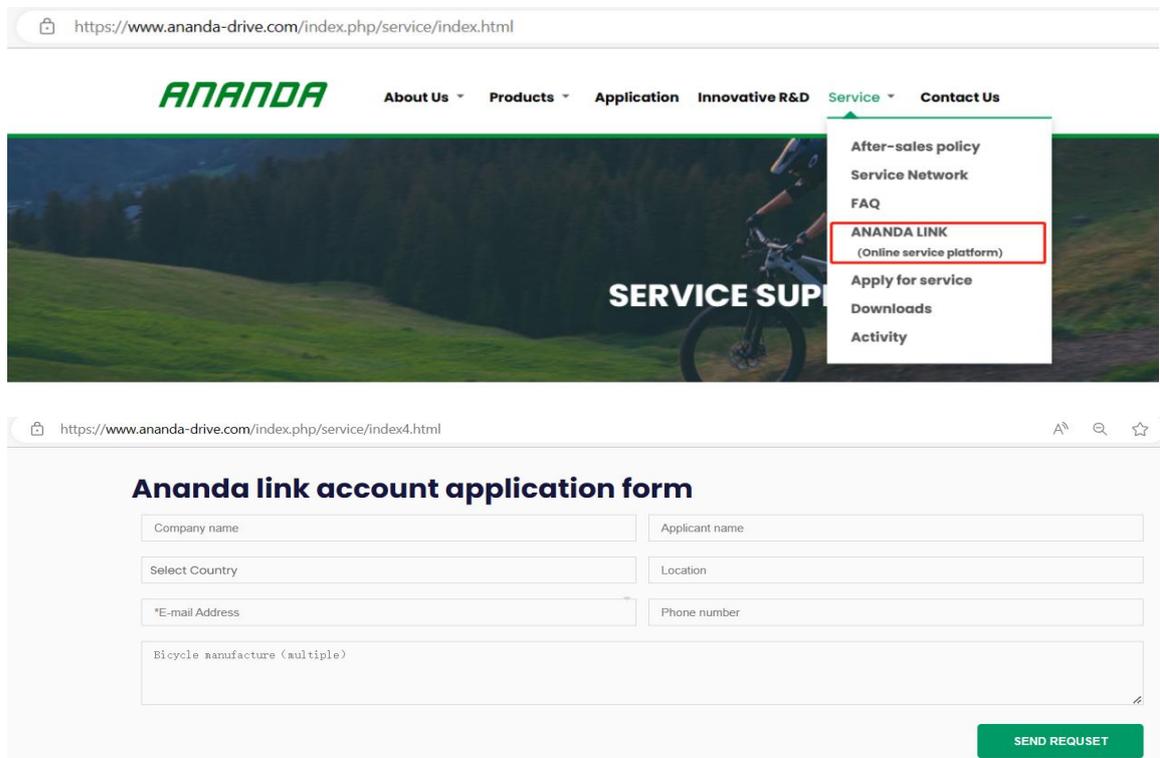

Fig4

Apply the login account on official website "https://www.ananda-drive.com"

- Select "service" menu → choose "ANANDA LINK"

- Fill the blanks on "Ananda link account application form"

- Click "SEND REQUEST" button.(Fig5)

- The account and passwords will be sent to applicants mail box in one

  work day if certificated.

- Input account and password, and then select "Read and agree《Terms of

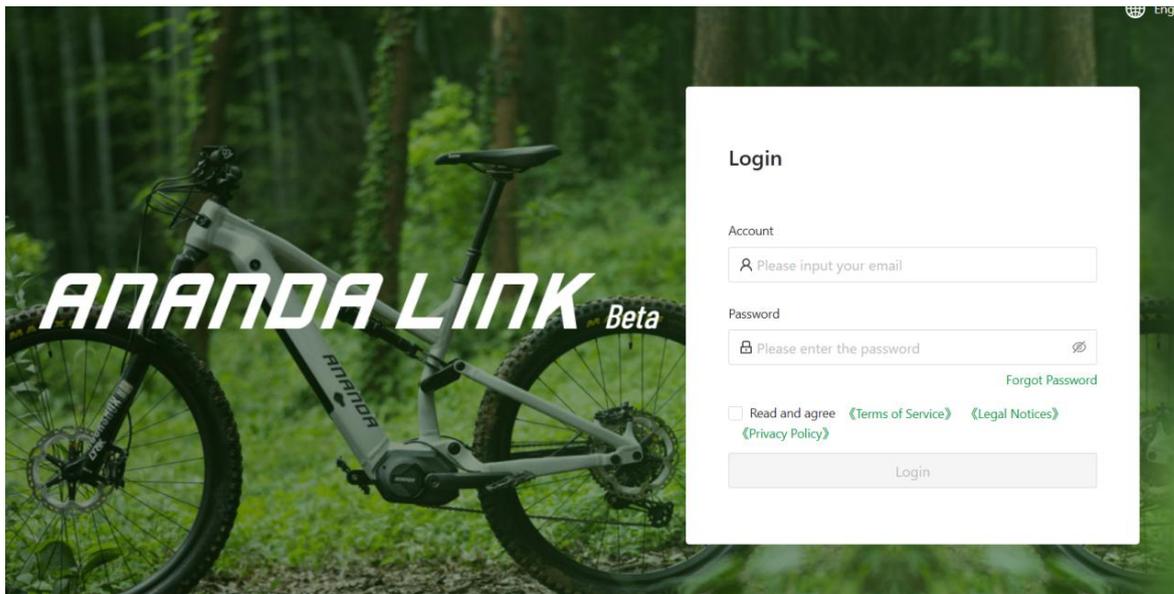 Service》《Legal Notices》《Privacy Policy》".

- Click "Login" button.

Fig5

3）Plug-in installation

The plug-in is used for drive system and platform communication.　It is needed for

plug-in automatically when login first time, or if Ananda online service platform updated.

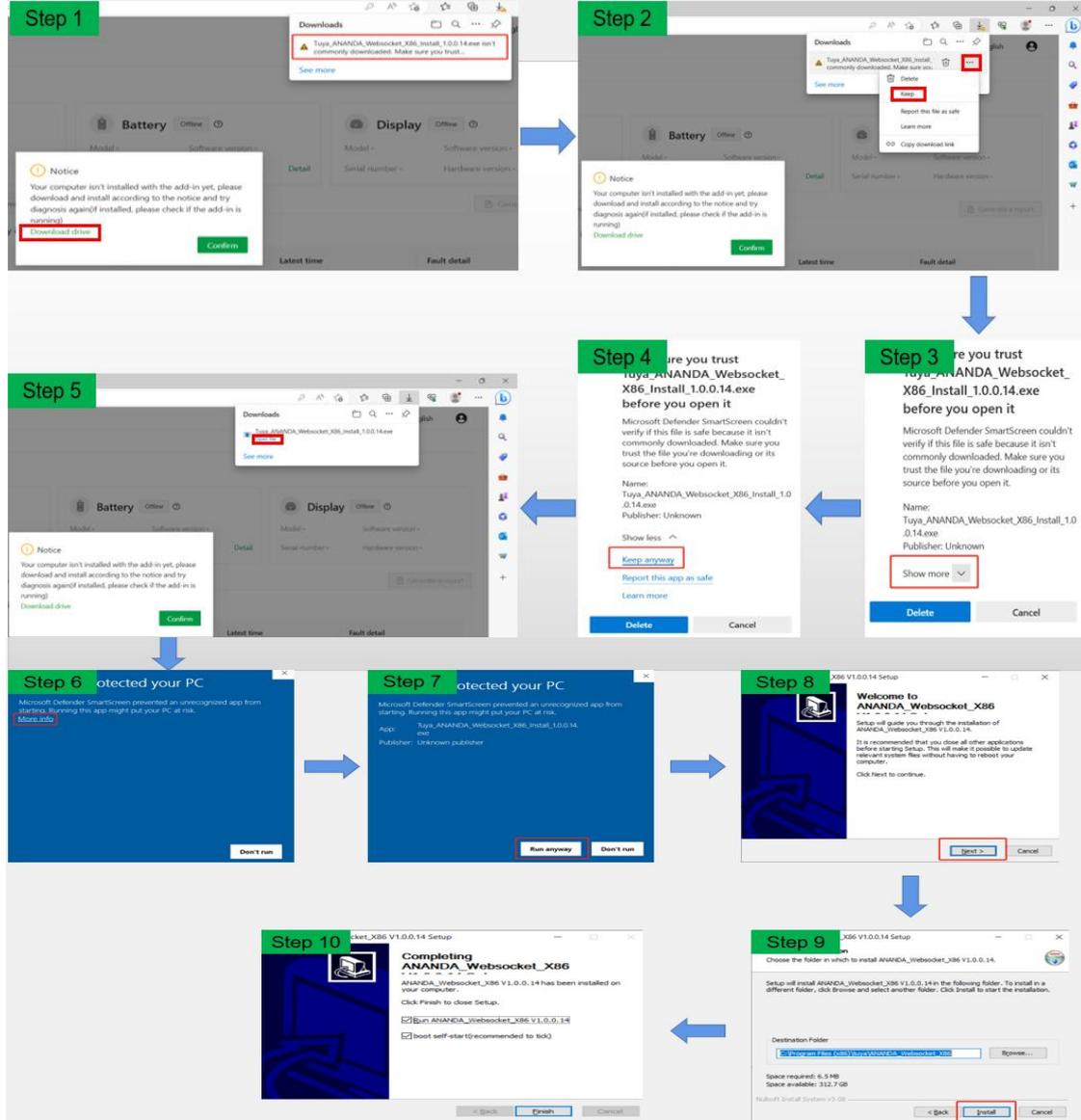Following the following step for installation process. (Fig7).

Fig6

4） Plug-in download issue

If you fail to download the plug-in. Need to check the internet connecting

status.

If you switch the network and check that there is no problem, it is

recommended that you wait for a while, it may be that the server is not receiving
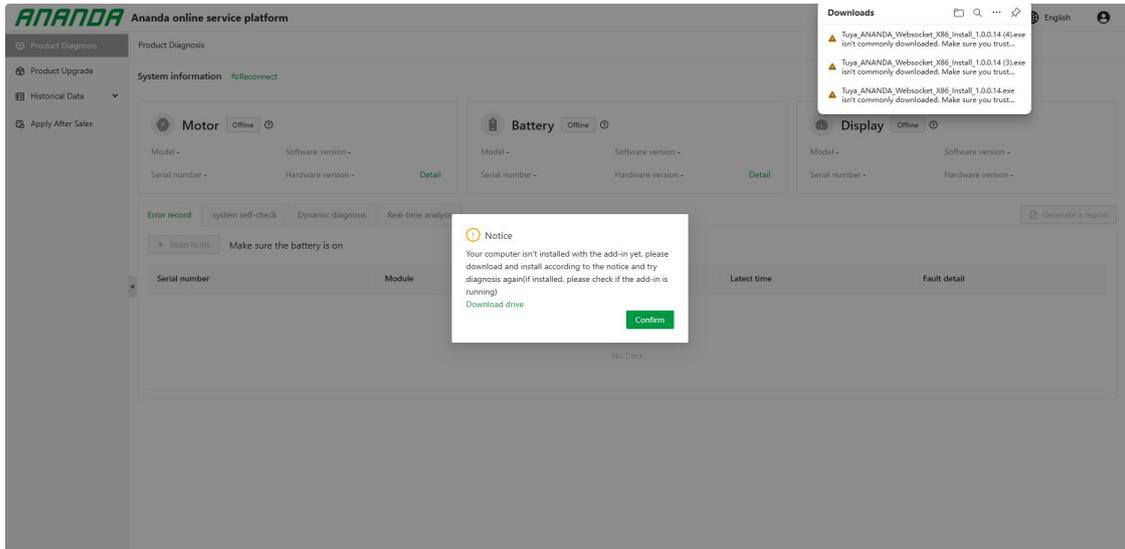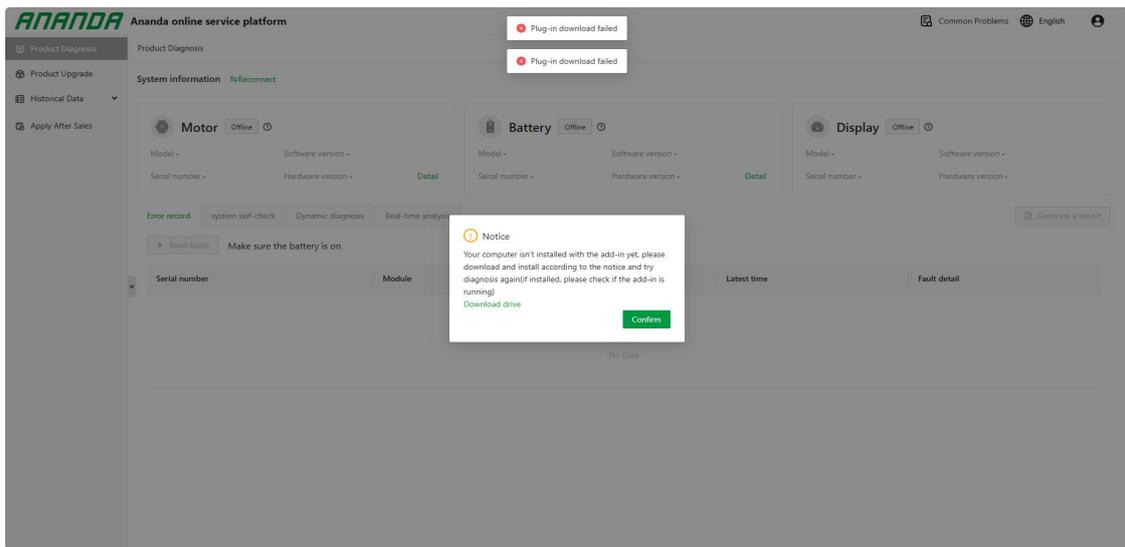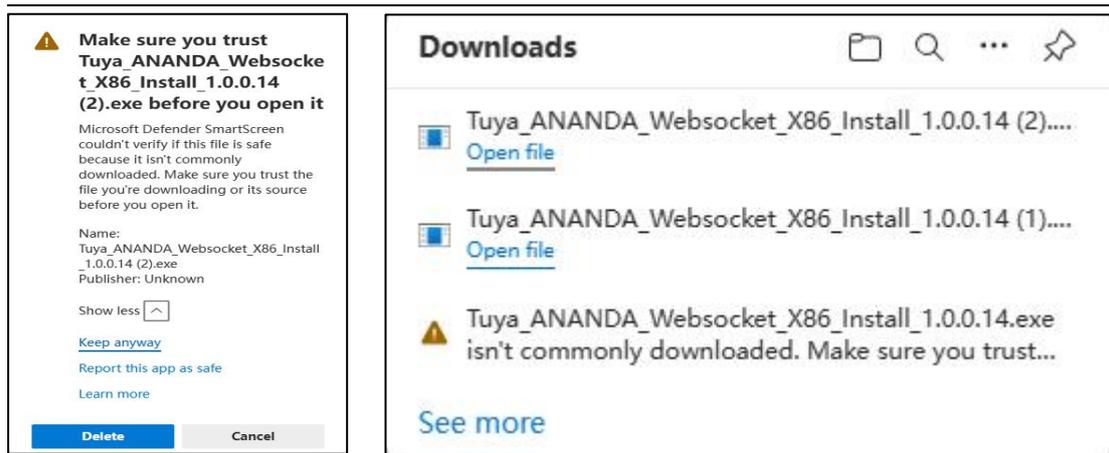
data in time.

Fig7

If you switch to the network and check that there is no problem, it is

recommended that you wait for a while or check your browse setting to confirm the

alert is allowed.

Otherwise, you can fresh your browse or switch to another browse, and wait

for it to pop up in the download window.

Open the popup window in the upper right corner and select keep anyway.

Then the plug-ins of our system can be downloaded normally.

5）Precautions for different systems

- Ananda online service platform can connect the controller, battery simultaneously (if have battery communication), and display simultaneously for data reading and diagnosis in CAN communication protocol.

- In Uart communication protocol, Ananda online service platform can connect the controller and battery simultaneously (if have battery communication), but not allowed connecting displays. If display connected simultaneously, the system cant read the data from display. Display should be connected by separately for data reading and diagnosis.

6）Connection

After login to Ananda online service platform, it will come to the Product Diagnosis page.

The status connection of the three devices will change to 'Connecting' automatically

(Fig8). The Ananda online service platform will automatically identify and connect all

devices, which lasts for 30 seconds at most.

If connection is successful in 30 seconds, the connection status will be 'Online' (Fig8).

If there is no successful connection after 30 seconds later, the connection status will be

'Offline' (Fig9).

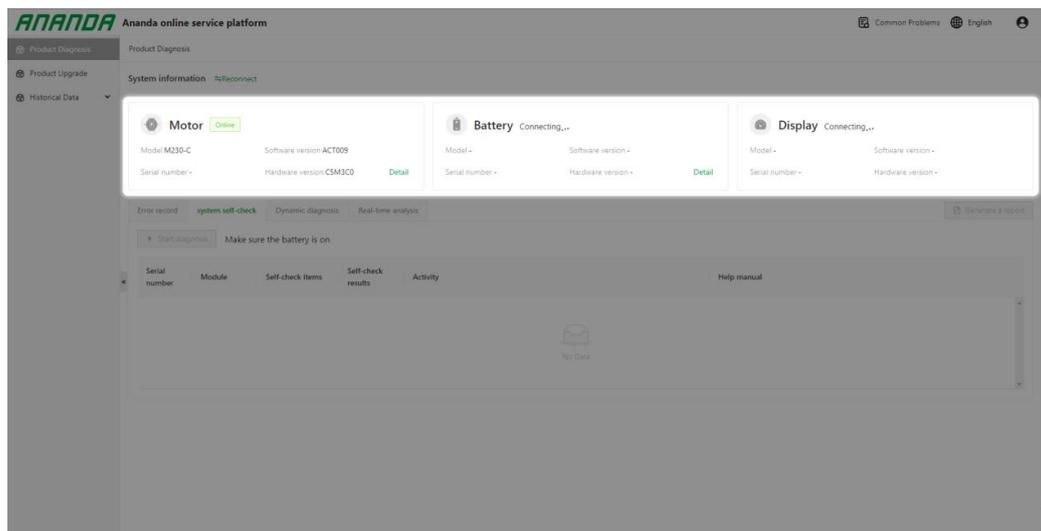Click 'Reconnect' to try reconnecting after plugging in or out hardware (Fig10).
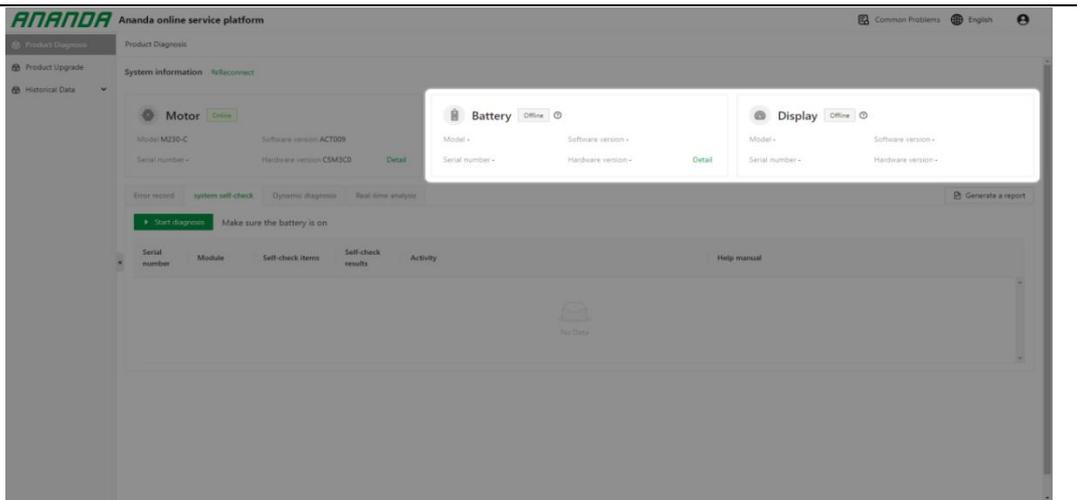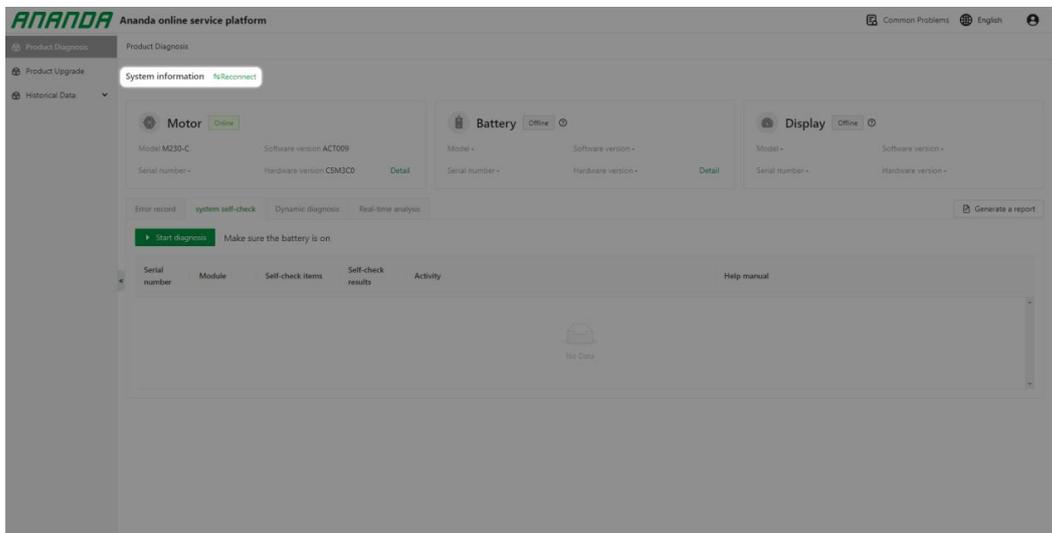

Fig8

Fig9

Fig10

7) Product diagnosis

- **System Information**

In this page there are product model, hardware version, software version, and SN

information can be checked directly on motor, battery and display (Fig11).

If need to get more detail parameters, click 'Detail' with green word. The following

list shows the information currently supported.

Module	Data	Instruction

	Model	Product model
	Serial number	ID of every product
	Software version	Firmware for drive setting
	Hardware version	Hardware version
	ODO	Total mileage
	Circumference	Wheel size
	Maximum Level	The quantity of levels selection
	Current level 1	Maximum current limited in level 1
	Current level 2	Maximum current limited in level 2
Motor detail	Current level 3	Maximum current limited in level 3
	Current level 4	Maximum current limited in level 4
	Current level 5	Maximum current limited in level 5
	Level 1 maximum speed	Maximum speed limited in level 1
	Level 2 maximum speed	Maximum speed limited in level 2
	Level 3 maximum speed	Maximum speed limited in level 3
	Level 4 maximum speed	Maximum speed limited in level 4
	Level 5 maximum speed	Maximum speed limited in level 5
	Devices	Chosen equipment or sensor
	Model	Product model
Battery detail	Serial number	ID of every product
	Software version	Software version

	Hardware version	Hardware version
	Voltage	Output Voltage
	Current	Output Current
	Full Capacity	Electric capacity
	Charge-Discharge number	Charge-Discharge times
	SOC	State of charge
	Residual capacity	Rest of electric capacity
	SOH	State of health
Display	Model	Product model
	Serial number	ID of every product
	Software version	Software version
	Hardware version	Hardware version

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 display is used, the SN will not be displayed.
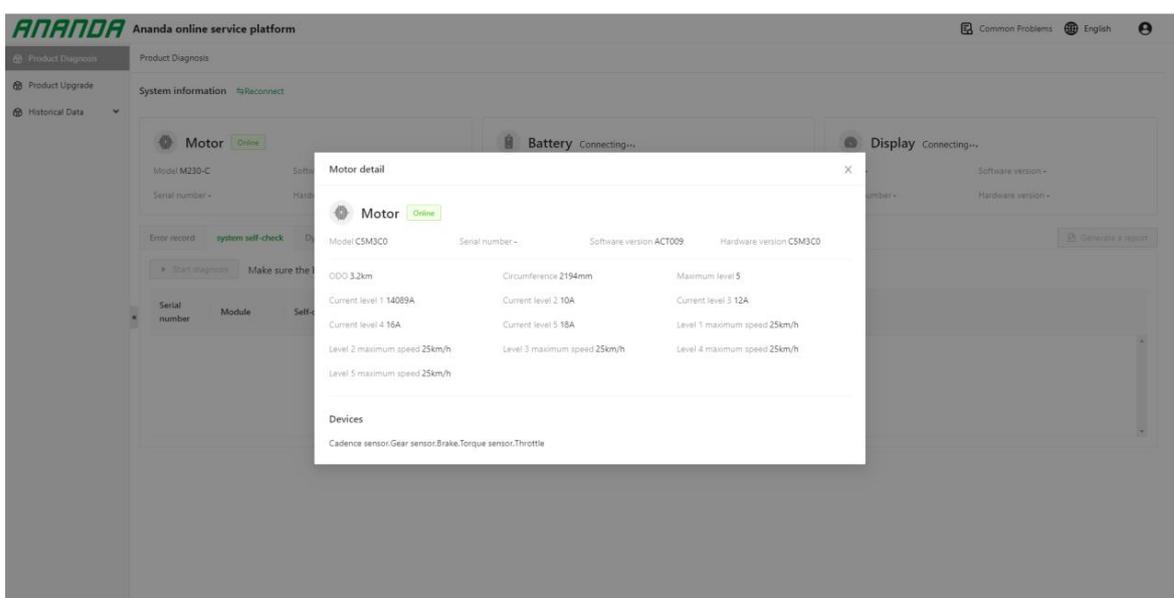
Fig11

- Error record

This function is used to review historical faults of connected device.

Click Read faults button to review:

The serial number, module type, fault name, latest time and faulty detail will be listed on the line. (Fig12).

Click the "view" which is green word on fault detail column to review the generated report including some information. Such as gear position and speed.

(Recent 10 history faults of motors or displays can be read)

The following table explains the detailed data of the fault:

Error code	Error detail
Date	Checking time of failure accurate to year, month, day, hour, minute, second.
Total number of error	Error times of failure
Level	Level at the time of failure
SOC	State of charge at the time of failure
Motor temperature	Motor temperature at the time of failure
Bike speed	Speed at time of failure
BMS temperature	BMS temperature at the time of failure
Motor speed	Motor rpm at the time of failure
Battery cell temperature	Battery cell temperature at the time of failure
Bus-current	Bus current value at the time of failure
ODO	Total mileage at the time of failure
Controller temperature	Controller temperature at the time of the fault
Phase current	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.
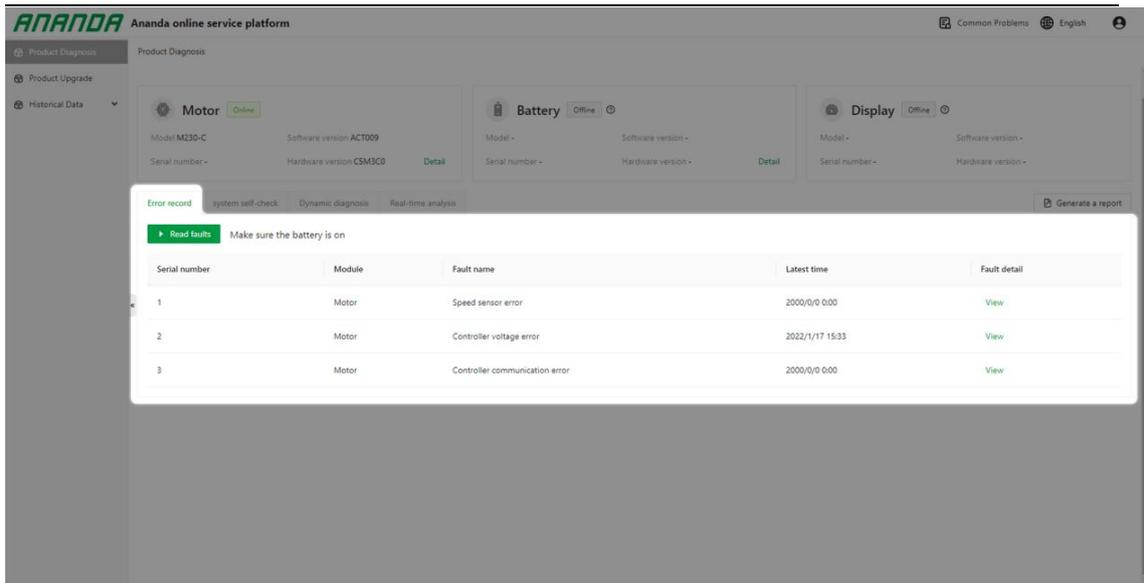
Fig12

- **System self-check**

The function will assist to read all the checked items result of driver system in real-time status. The system will diagnose the device automatically after click "Start diagnosis". The diagnosis items result will be listed on the list after self-check complete. If any item checked is abnormal, the activity and help manual are displayed. Click the link to view the help manual. (Fig13)
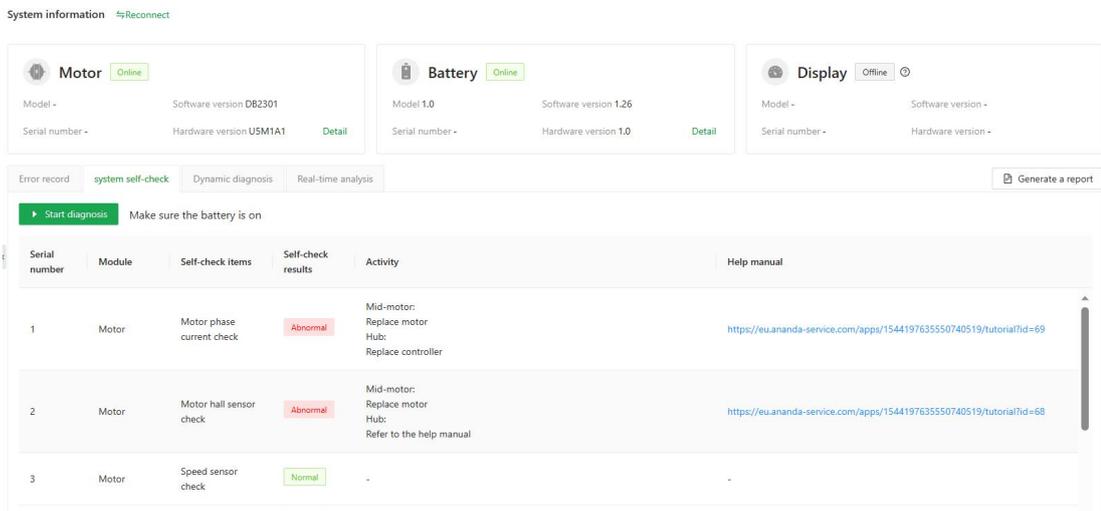
Fig13

- **Dynamic diagnosis**

Used to diagnose more items dynamically. When clicking "Start the test" button, the system will display the existing peripheral sensors automatically for selection what you need to check (Fig14).

After selecting in first step, there are more submenu dynamic test items for selection in second step (Fig15).

After the second selection, click "Next step" button to start the test according to the prompts on the page. In each test page, the left side will prompt how to operate and the current test steps (Fig16, Fig17).

and the right side will show the remaining time (Fig18).

The user needs to complete operation within the specified time, otherwise system will judge to diagnosis fail automatically. The test item and operation guide are displayed in the middle of page.

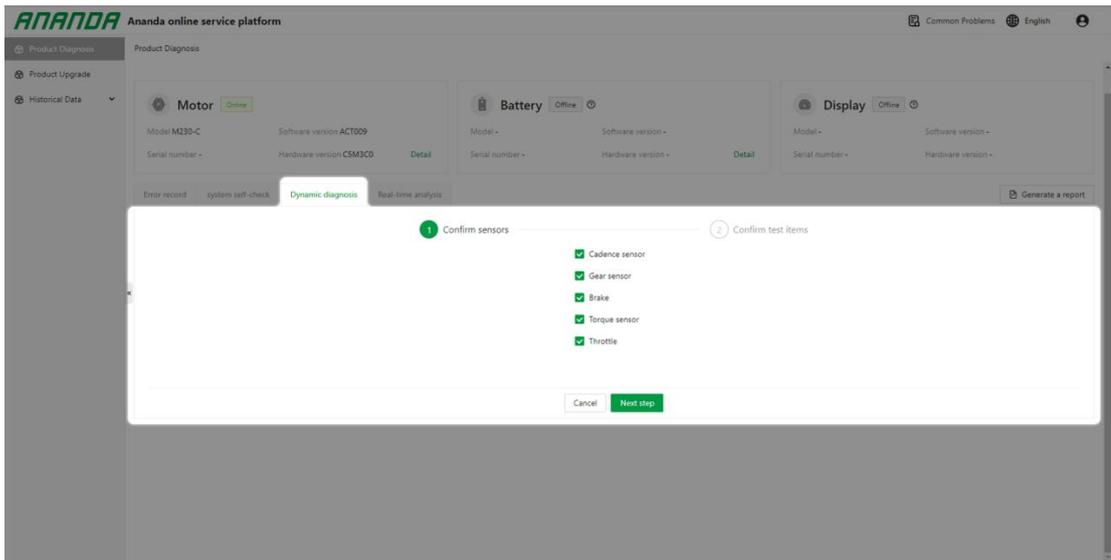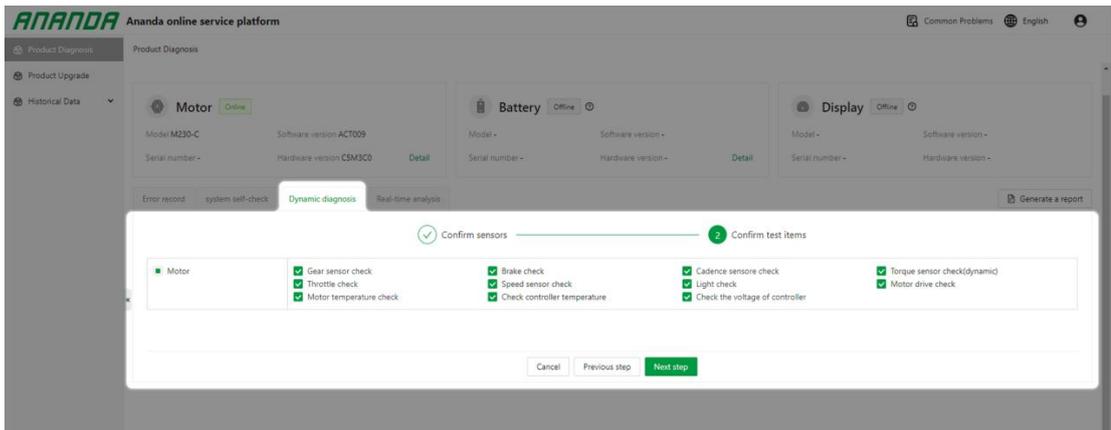The data and results can be obtained directly after finishing (Fig19).
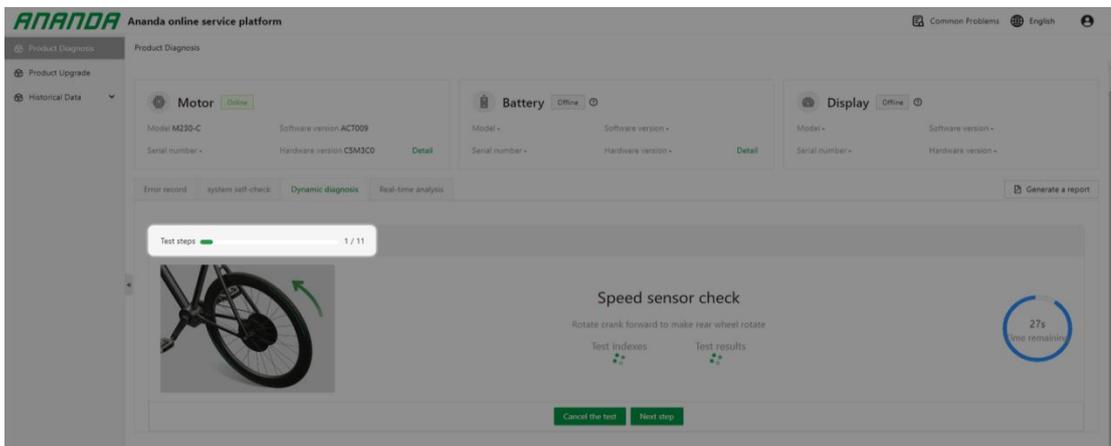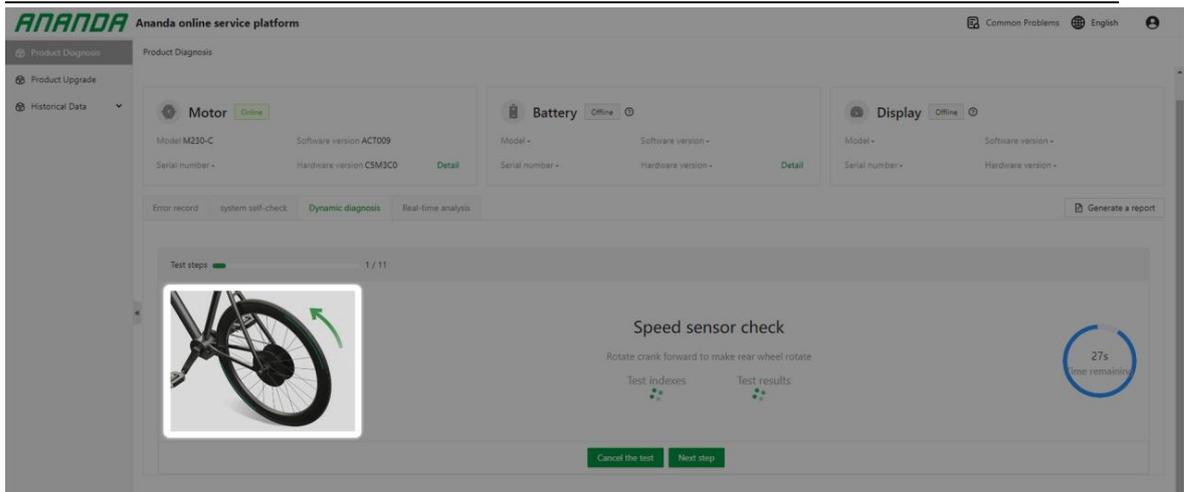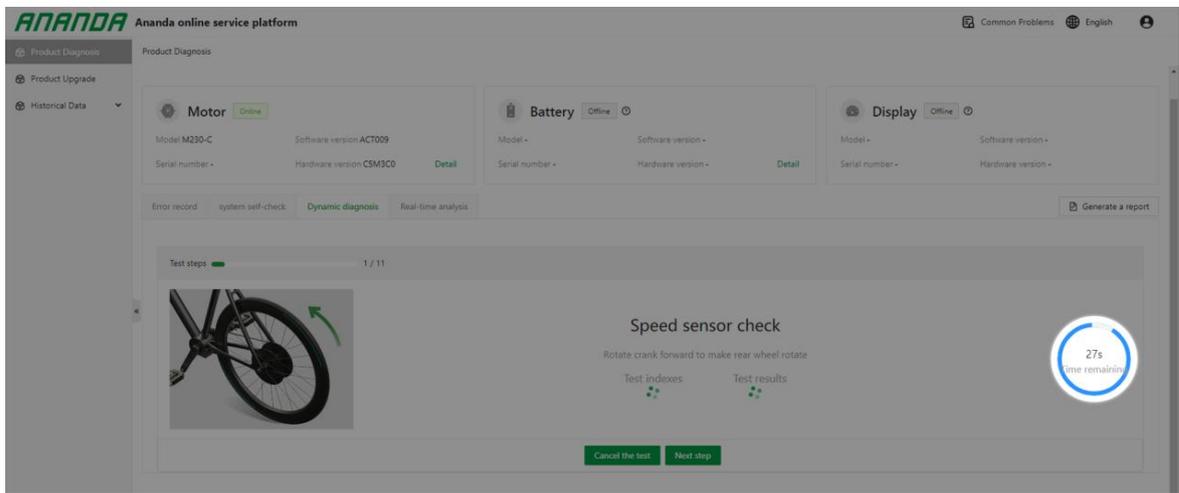
Fig14

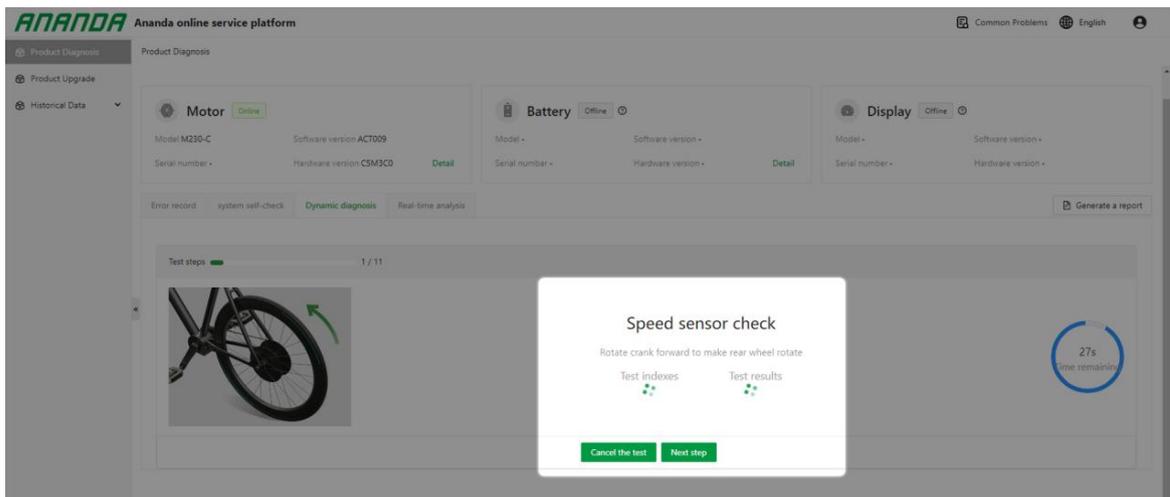Fig15

Fig16

Fig17

Fig18

Fig19

- **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 the report**

Click "Generate a report" words and fill in the relevant information as prompted to generate a PDF report if need. The report can be downloaded or as a failure proof for technical support from Ananda.

8）Product Upgrade

It is used to update the software of connected device which is including motors, controllers and displays. When connecting with green words "online" successfully, the upgrade function can be used. Click "check" button to search latest version of the software on cloud for upgrade automatically (Fig20).

If software is not in cloud, select local firmware or parameter saved on PC hardware to upgrade (Fig21, Fig22).

Click "Select firmware" and "Select parameter" buttons separately for bin file selection. After selecting, click "Upgrade" button to start. The whole upgrade process will takes a few minutes.
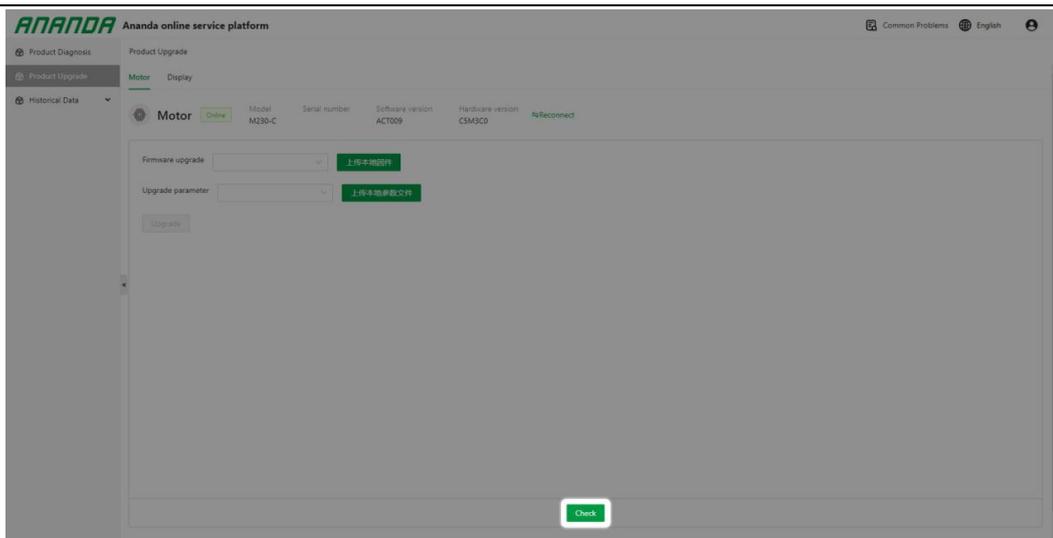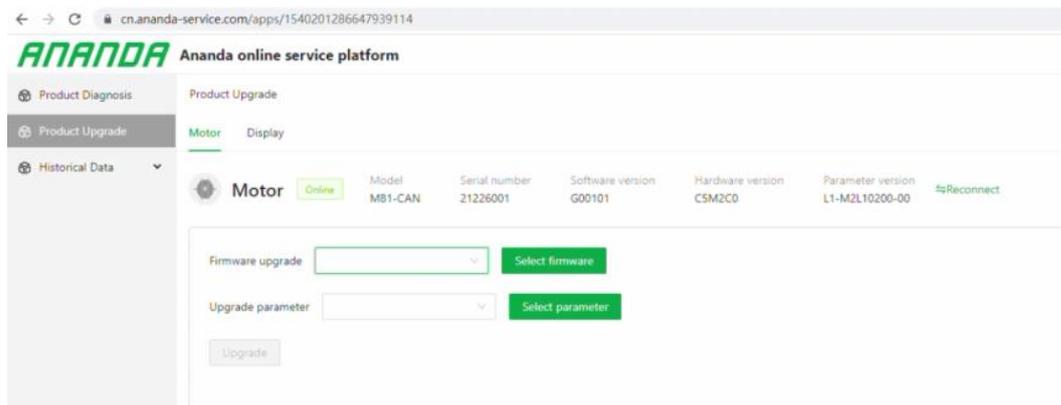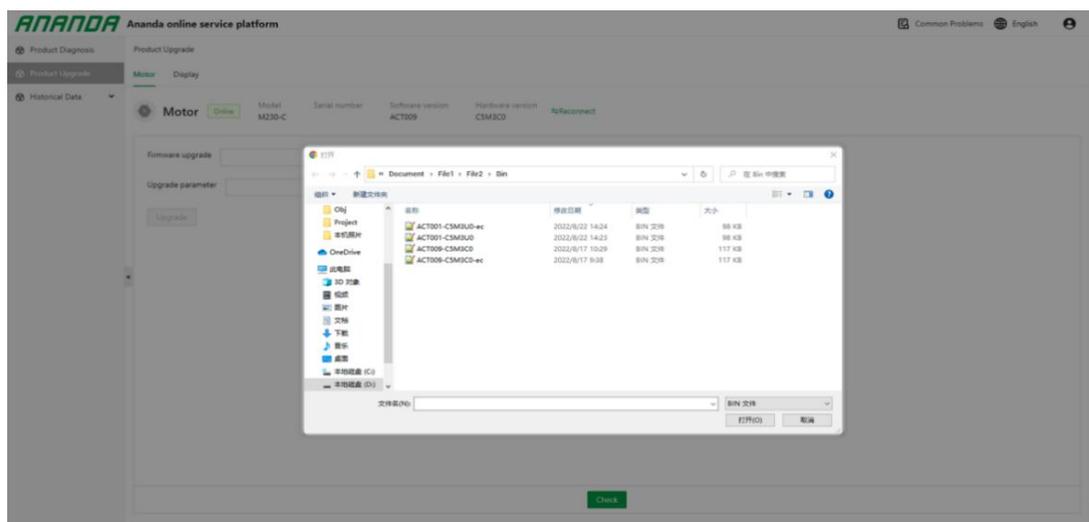
Fig20

Fig21

Fig22

9）Historical data

- Diagnosis report

You can view historical diagnosis reports and search by time of diagnosis, diagnosis person, and diagnosis organization. Only diagnostic reports in the organization can be viewed （Fig23）.
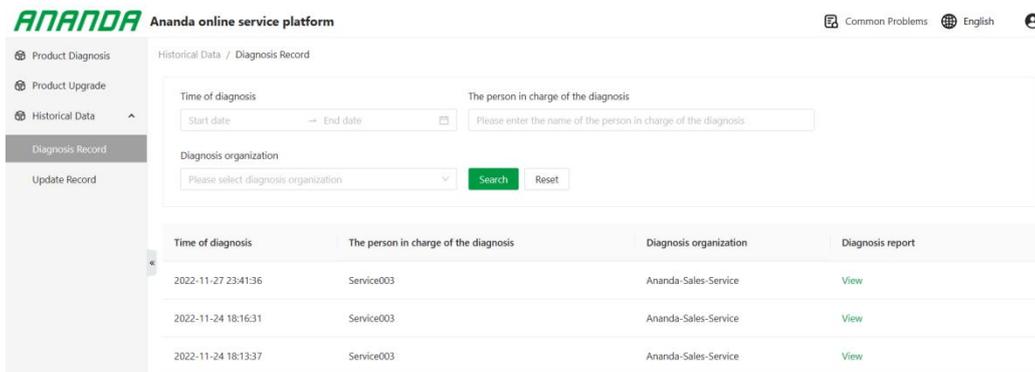

Fig23

- **Update 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 track information by serial number, product, or upgrade file(Fig24).
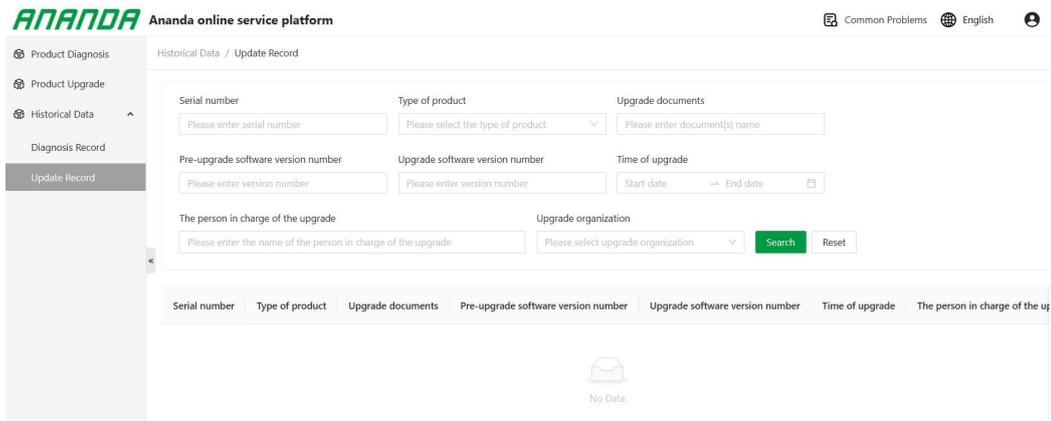
Fig24

4. Attentions

- In order to ensure USB power supply, the toolkit must be connected directly to the computer USB.

- When connecting the Ananda link toolkit to a PC, do not use intermediate devices such as USB hubs.

- PC must be connected to the network and kept working model, otherwise the data sending and receiving will be suspension.