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

# 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)





### 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: <u>https://cn.ananda-service.com/</u> European: <u>https://eu.ananda-service.com/</u> Please apply to Ananda for the account password.





### 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).

AUAUDA	Ananda online service pla	stform					Common Problems	🌐 English 🛛 🔒
🚯 Product Diagnosis	Product Diagnosis							
<ul> <li>Product Upgrade</li> <li>Historical Data</li> </ul>	System information Second	nnect						
	Motor 🗠		Battery co	nnecting,		Display co	nnecting	
	Model M230-C	Software version ACT009	Model -	Software version -		Model -	Software version -	
	Serial number -	Hardware version CSM3C0 Detail	Serial number -	Hardware version -	Detail	Serial number -	Hardware version -	
	Error record system self-c	check Dynamic diagnosis Real-time analysis						🕑 Generate a report.
	* Start diaground Mak	ke sure the battery is on						
	Serial Module	Self-check items Self-check Acti results Acti	vity		Hel	lp manual		
								.3

Fig4

RUUNDA	Ananda online service platfor	m				E	Common Problems	🌐 English 🧧 🤆	•
	Product Diagnosis								
Product Upgrade	System information Reconnect								
Historical Data	Motor Other Model M230-C	Software emisor ACT009	Battery Office (	Software version -		Display Office C	) Software version -		1
		Hardware version CSM3C0 Detail	Serial number -	Hardware version -	Detail	Serial number -	Hardware version -		
	Error record system self-check   Start diagnoss Make sur	Dynamic diagnosis Real-time analysis re the battery is on						Generate a report	f
	Serial Module	Self-check items Self-check Activity	,		Help ma	encal			

Fig5

AUUUU	Ananda online service platfo	rm					Common Problems	English
Product Diagnosis	Product Diagnosis							
Product Upgrade	System information Seconnect	•						
g Historical Data	Motor Dela		Battery or	tine ()		Display G	mine 💿	
	Model M230-C	Software version ACT009	Madel -	Software version -		Model+		
		Hardware version CSM3C0 Detail			Detail			
	Error record system self-check	c Dynamic diagnosis Real-time analysis						Generate a report
	Start diagnosis     Make st	ure the battery is on						
	Serial Module * number	Self-check Items Self-check Acti results	vity		Hel	p manual		

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	1~5 档的电流限制
	number of gears 5 as an	
	example)	
	Level1~5 maximum speed	1~5 档的速度限制
	(Take the number of gears	
	5 as an example)	
	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.

oduct Upgrade	Product Diagnosis						
oduct Upgrade							
	System information Seconnect						
	Motor Ordine		Battery Connecting		B Display	Connecting	
	Model M230-C Softw	Motor detail			×		
	Serial number - Hardv	Motor Online			Limbér -		
	Error record system self-check Dy	Model C5M3C0 Sena	il number - Software versio	n ACT009 Hardware version CSM3C0			
	Start shapness     Make sure the I	ODO 3.2km	Circumference 2194mm	Maximum level 5	-		
	Serial Madels Salt	Current level 1 14089A	Current level 2 10A	Current level 3 12A			
	K number Module Self-c	Current level 4 16A	Current level 5 18A	Level 1 maximum speed 25km/h			
		Level 2 maximum speed 25km/h	Level 3 maximum speed 25km/h	Level 4 maximum speed 25km/h			
		Level 5 maximum speed 25km/h					
		Devices					
		Cadence sensor.Gear sensor.Brake.Torqi	ue sensor.Throttle				
		-					

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	Count of times faults occurred times
number	
ODO	Total mileage at the time of failure
BMS	BMS temperature at the time of failure
temperature	
Cell	Battery cell temperature at the time of failure
temperature	
Controller	Controller temperature at the time of the fault
temperature	
Motor	Motor temperature at the time of failure
temperature	
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.

ANANDA	Ar	nanda online service platfo	rm						Common Problems	English	0
👸 Product Diagnosis	P	Product Diagnosis									
Product Upgrade											
😸 Historical Data 🗸 👻		Motor Online			Battery CH	ine O		Display	ffine 💿		
		Model M230-C	Software version ACT009		Model -	Software version -		Model -	Software version -		
		Serial number +	Hardware version CSM3C0	Detail	Serial number -	Hardware version -	Detail	Serial number -	Hardware version -		
	r	Error record system self-check	Dynamic diagnosis Real-tim	e analysis						🕑 Generate a 1	report
	L	Read faults     Make sure	the battery is on								
	L	Serial number	Module	Fault	t name		Late	st time	Fault detail		
	×	1	Motor	Spee	ed sensor error		2000	0/0/0 0:00	View		
	L	2	Motor	Cont	troller voltage error		2022	/1/17 15:33	View		
	L	3	Motor	Cont	troller communication error		2000	1/0/0 0:00	View		
	L										_

#### 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)

ANANDA	An	anda online	service platfor	m							Common Problems	English	θ
Product Diagnosis	Pn	oduct Diagnosis											
Product Upgrade		Mot	or Online				Battery Office	0		Display	ffine 💿		
gp Historical Data -		Model M230-C		Software version ACTO	09		Model -	Software version -		Model -	Software version -		
		Serial number -		Hardware version C5M	13C0 Det	tail	Serial number -	Hardware version -	Detail	Serial number -	Hardware version -		
	I	Error record	system self-check	Dynamic diagnosis	Real-time an	alysis					[	🕑 Generate a re	port
		<ul> <li>Start diag</li> </ul>	nosis Make su	ire the battery is on									. 1
		Serial number	Module	Self-check items	Self-check results	Activity			Help	manual			
	×	7	Motor	Motor phase current check	Normal								
		8	Motor	Motor temperature check	Normal	-			-				11
		9	Motor	Check the bus- current of controller	Normal	-							Н
		10	Motor	Check the voltage of controller	Normal								Н
		11	Motor	Check controller temperature	Normal	-			-				Ц
		12	Motor	MCU error	Normal								IJ



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

ЯПЯПDЯ	Ananda online service platfo	rm					Common Problems	English	0
Product Diagnosis	Product Diagnosis								
Product Upgrade									
🚯 Historical Data 🗸 👻	Motor Online		Battery Office @			Display	Offline		
	Model M230-C	Software version ACT009	Model -	Software version -		Model -	Software version -		
	Serial number -	Hardware version C5M3C0 Detail	Serial number -	Hardware version -	Detail	Serial number -	Hardware version -		
	Error record system self-chec	k Dynamic diagnosis Real-time analysis						🕑 Generate a repo	ort
		$\bigcirc$	Confirm sensors		2 Confirm te	st items			
	Motor	Gear sensor check     Throttle check     Motor temperature check	<ul> <li>Brake check</li> <li>Speed sensor check</li> <li>Check controller temperation</li> </ul>	ture	<ul> <li>Cadence sensore chec</li> <li>Light check</li> <li>Check the voltage of c</li> </ul>	k ontroller	<ul> <li>Torque sensor check(dynamic)</li> <li>Motor drive check</li> </ul>		
			Cancel Pre	evious step Next st	tep				

Fig12



Fig13







Fig15

	Ananda online service platform		6	Common Problems 🌐 English
duct Diagnosis	Product Diagnosis			
duct Upgrade				
orical Data 🔍 🛩	Motor Online	Battery Office O	Display Office @	
	Model M230-C Software version ACT009	Model - Software version -	Model -	Software version -
	Serial number - Hardware version CSM3C0 Detail	Serial number - Hardware version - Detail	Serial number -	Hardware version +
	Error record system self-check Dynamic diagnosis Real-time analysis			🖹 Generate a r
	Test steps  1/11			
		Speed sensor check		()
		Rotate crank forward to make rear wheel rotat	ie	27s
		Test indexes Test results		time remainin
				<u> </u>



- 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

								Common Problems	🌐 English
oduct Diagnosis	Product Upgrade								
oduct Upgrade	Motor Display								
istorical Data 💙	Motor Online Model M230-C	Serial number	Software version Handware versio ACT009 CSM3C0	n toReconnect					
	Firmware upgrade	<b>6</b> 約开					×		
	Upgrade parameter	← → - ↑ [ « ]	Document > File1 > File2 > Bin			v 0 .≏ €	Bin 中設案		
		Obj ^	名称 黛 ACT001-C5M3U0-ec	博改日期 2022/8/22 14:24	间型 BIN 文仲	大小 98 KB			
		<ul> <li>本市1280所</li> <li>OneDrive</li> <li>此地路</li> <li>30 対象</li> <li>第 投始</li> </ul>	ACT001-CSM3U0 ACT009-CSM3C0 ACT009-CSM3C0-ec	2022/8/22 14:23 2022/8/17 10:29 2022/8/17 9:38	BIN 文件 BIN 文件 BIN 文件	98 KB 117 KB 117 KB			
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						\$7 <b>7</b> 7	(O) Rom		

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.

АПАПDA	安乃达在线服务平台					🛃 常见问题 🌐 简体中文	0
会产品诊断	历史数据 / 诊断报告						
✿ 产品升级	10.161月1日	10.00 Å	+0:86:10:40				
⑦ 历史数据 ^	开始日期 一 结束日期 首	请输入诊断人	请选择诊断组织	∨ 提索 重置			
诊断报告							
升级记录	诊断自力问			诊断人	诊断组织	诊断报告	
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						共1条 < 1 > 1	0 条/页 ∨

### • 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.

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7 产品诊断	历史教师 / 开稿记录											
9 产品升级 9 历史数据 <b>^</b>	序列号		产品类型 (消活用产品类型 > <b>升級人</b> (消除人升能人)		<b>升级文件</b> 请输入文件名	升级前软件版本号 话输入版本号 程家 章 面	升级后软件版本号 请输入版本号					
诊断报告 升级记录	<b>升级时间</b> 开始日期	→ 结束日期			<b>升级组织</b> 请选择升级组织							
	序列号	广品类型	升级文件	升级前软件版本号	升级后软件版本号	升级时间	升级人	升级组织				
		仪表盘	0701			2022-07-04 14:50:54	admin	用户				
		仪表盘	0702			2022-07-04 14:47:49	admin	用户				
	· · ·	仪表盘	0702			2022-07-04 10:34:40	admin	用户				
		仪表盘	0701			2022-07-04 10:29:44	admin	用户				
		仪表盘	0702			2022-07-04 10:26:46	admin	用户				
		电机	108		-	2022-06-30 15:06:55	admin	用户				
		电机	107	-	-	2022-06-30 15:02:45	admin	用户				
		电机	108	-		2022-06-30 15:00:09	admin	用户				
		电机	107	-	-	2022-06-30 14:57:49	admin	用户				
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