TC900P
Dash cam
Product Manual

catalogue

1. Product introduction

This product integrates vehicle video monitoring, driving recorder, ADAS advanced driver assistance system and DSM driver status analysis system. the analog high-definition video recording, storage and playback are realized. Combined with 3g/4g wireless transmission technology and positioning technology, it can realize real-time uploading of video recording, automobile driving record information, driving behavior analysis and alarm evidence. Through the control center, the vehicle can be remotely monitored, analyzed and processed in real time.

1.1. Product characteristics and specifications

- Built-in high performance image processing chip
- H.264/H.265 encoding, high compression ratio
- Built-in front facing 1080P camera、Built-in rear facing 1080P camera、Support 1CH 720P AHD
- DSM/ADAS

Power supply:

- Professional In-Vehicle power design, 9-32V DC Wide Voltage Range
- Multi protection circuits like under-voltage, short, reversed plug-in
- Smart power management system, shutdown under low voltage, low consumption when standby

Data storage:

- Special file management system to encrypt and protect the data
- Proprietary technology to detect the bad track of the TF card which can make sure the continuity of video and long service life of the TF card
- Built-in ultra capacitor, avoid data loss and TF card damage caused by sudden outage
- Support TF card storage, maximum 512G

Wireless module:

- Built-in 4G module
- Support GPS/BD/GLONASS, high sensitivity, fast positioning
- WIFI module (optional), frequency 2.4ghz
- Built-in 4G、GNSS、WIFI antenna

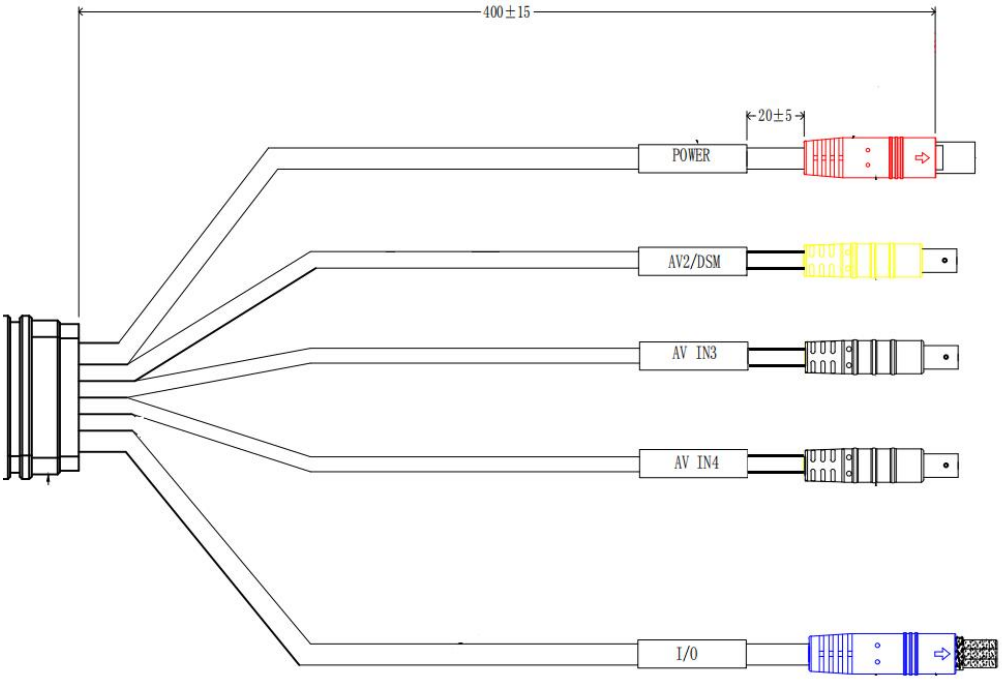
Product technical parameters：

Item	Device parameter	Performance
System	Operating system	Embedded Linux OS
	Operating language	Chinese/English
	Operating interface	GUI, Support mouse
	Password security	User Password Management
Audio & Video	Video standard	PAL/NTSC
	Compression standard	H.265/H.264
	Image resolution	720P /960H/D1/CIF（ADAS support 1080p）
	Playback quality	720P /960H/D1/CIF
	Combination mode	4CH flexible configuration
	Decoding ability	4CH 720P real time
	Recording quality	Class 1-6 optional
	Audio Compression	G.711A、G.711U、G.726
	Audio recording method	Audio & Video synchronized recording
Recording &Playback	Recording mode	Automatic/Alarm
	Audio bit rate	8Kb/s
	Storage media	TF card storage
	Video inquiry	Inquiry by channel/Recording type
	Local playback	Multi-channel playback
Software upgrading	Upgrading mode	Manual/Automatic/Remote
	Upgrading method	USB disk，TF card，wireless network
Interface	AV input	3CH 4pin BMW head port; Built-in high sensitivity microphone
	Audio output	Built-in 1.5W speaker

	Alarm input	4CH digital inputs
	Alarm output	1CH output（Outputs can directly drive relays <150mA）
	TF card	2 High speed TF card port
	USB interface	1 MICRO USB port
	Ignition input	1CH ACC signal
	LED Indicator	PWR/RUN Bicolor indicator
	RS232	1 RS232 port（DEBUG function）
	RS485	1 RS485 port
	SIM interface	1 MICRO SIM port
Extended functionality	GPS	Built- Ceramic antenna，GPS/BD
	3G/4G	4G Netcom
	WIFI	802.11b/g/n, 2.4GHz
Other	Power input	DC：8V~36V
	Camera carrying capacity	1A/11V
	Device consumption	10W(consumption of external cameras is not included)
	Working temperature	-20 --- 70℃
	Storage capacity	720P 270MB/H/CH H.265 720P 510MB/H/CH H.264
	Dimension	111.38*87.3*27mm

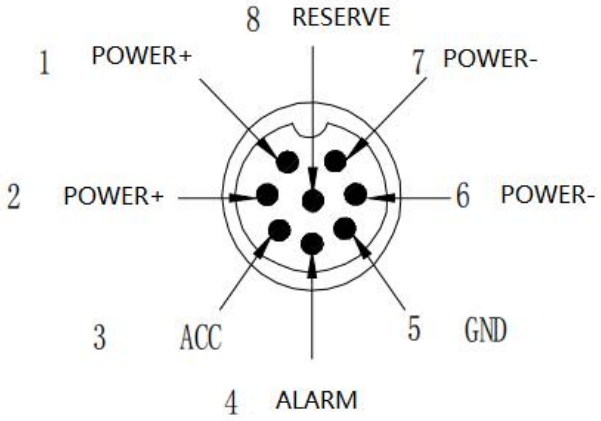
1.2. The interface definition

1.2.1 Pull-out line



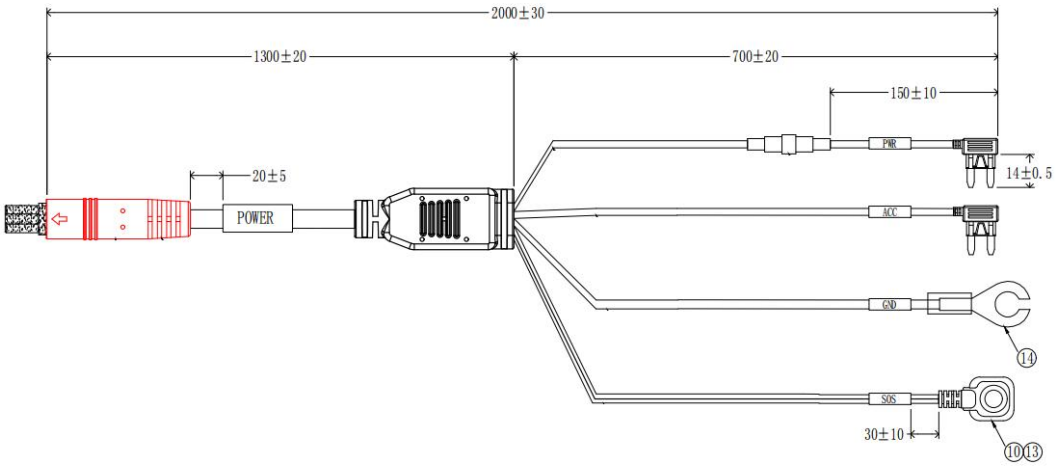
Pull-out-line definition

1.2.2 Power Interface

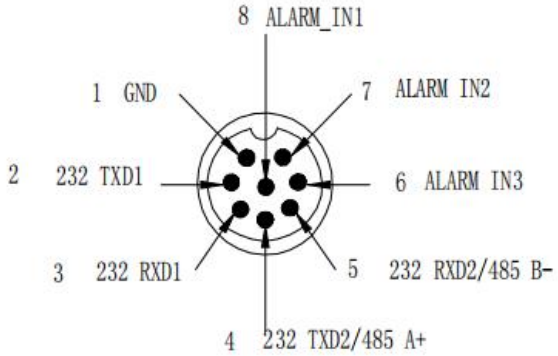


Power Interface Definition

1. Power extension cable



1.2.3 IO

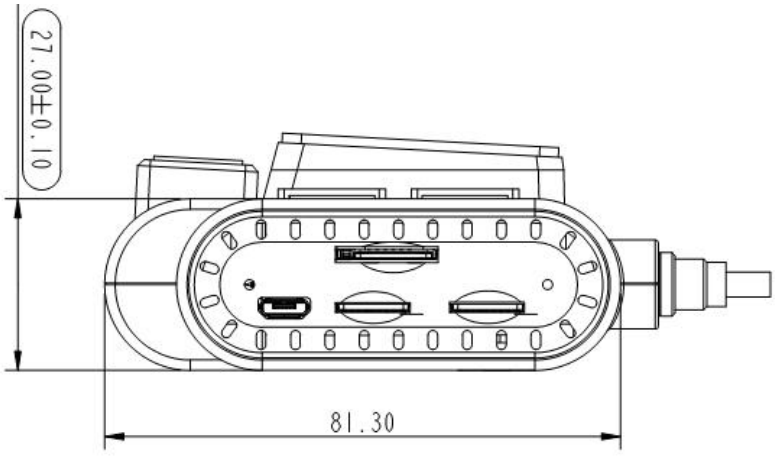


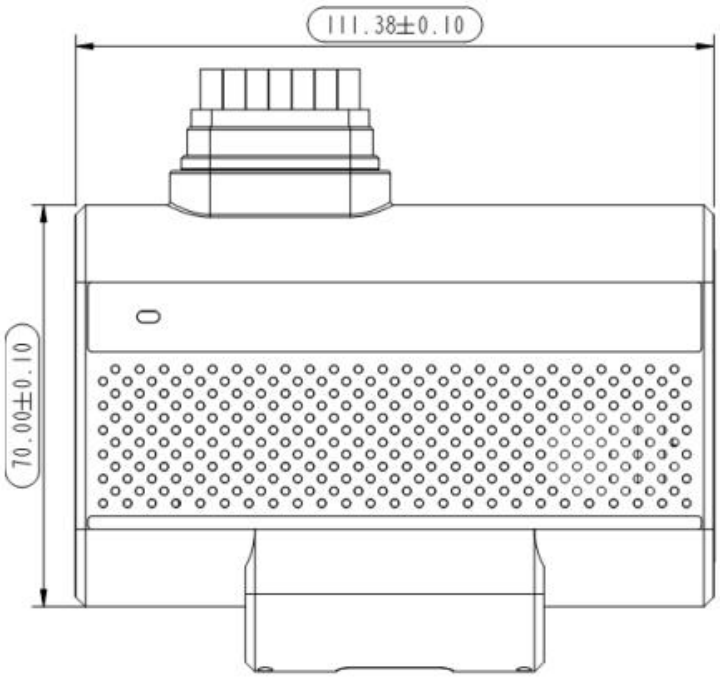
I/O

1.2.4 Audio and video

AV-IN

1.2.5 Dimensions:





2. Preparation before product installation

2.1. Inspection of products and accessories

Before using this product, please check whether the product is damaged and whether the accessories are complete. If there is any missing, please contact your supplier. The list of products and accessories is as follows:

describe	picture	quantity		describe	picture	quantity
host machine		1 set		Accessories bag		1 set
Power cord		1 root		Mini camera		1 (optional)

2.2. Preparation of tools required for installation

Please prepare auxiliary tools in advance before installation to facilitate site construction and installation. The details are as follows:

serial number	Tool name	explain
one	test pencil	Used to test whether there is electricity in the wire.
two	multimeter	Measure voltage value and whether it is short-circuited.
three	wire stripper	Stripping line for use after line search.
four	Electrical tape	After wiring, the thread ends are wrapped and used.
five	cable ties	Line arrangement and wiring use
six	RVV wire	When the standard line length of equipment is not enough, RVV conductor can be used to extend the connection, and the diameter of power extension line is not less than 1.0mm², and the signal extension line is not less than 0.5mm²

3. Product installation and construction

3.1. Host installation location determination

The main engine should be installed at the top of the front windshield. In order to avoid affecting the driver's sight, it is better to install it above the right co-pilot seat and as close as possible to the center line of the vehicle, as shown in the following figure:

The equipment has a built-in GPS positioning antenna. In order to avoid interference, the equipment should try to avoid the black shading area at the middle and upper part of the front windshield. The following figure shows the wrong installation method:

After the installation position is selected, paste the main engine on the selected position. Before fixing, please wipe the windshield clean, which can be wiped with adhesive. When pasting, ensure the horizontal angle of the main engine, and the left and right sides cannot be tilted. The main engine needs to be pressed for more than 1 minute to ensure the bonding strength, and the wiring harness of the main engine is hidden in the lining plate of the roof, as shown in the following figure:

3.2. Fitting installation

After opening the side cover of the device, insert the SIM card and TF memory card in turn. Please pay attention to the chip direction.

note:

1. Please use Micro Sim industrial ceramic integrated card for SIM card.
2. TF memory card: Please use SanDisk, Kingston or customized TF card (over 16G) purchased through regular channels.

After all accessories are installed, close the cover plate and fix it with screws (there are cover plates and fixing screws in the accessory bag). Please pay attention to the direction of the cover plate (frosted surface facing outwards, smooth surface facing inwards).

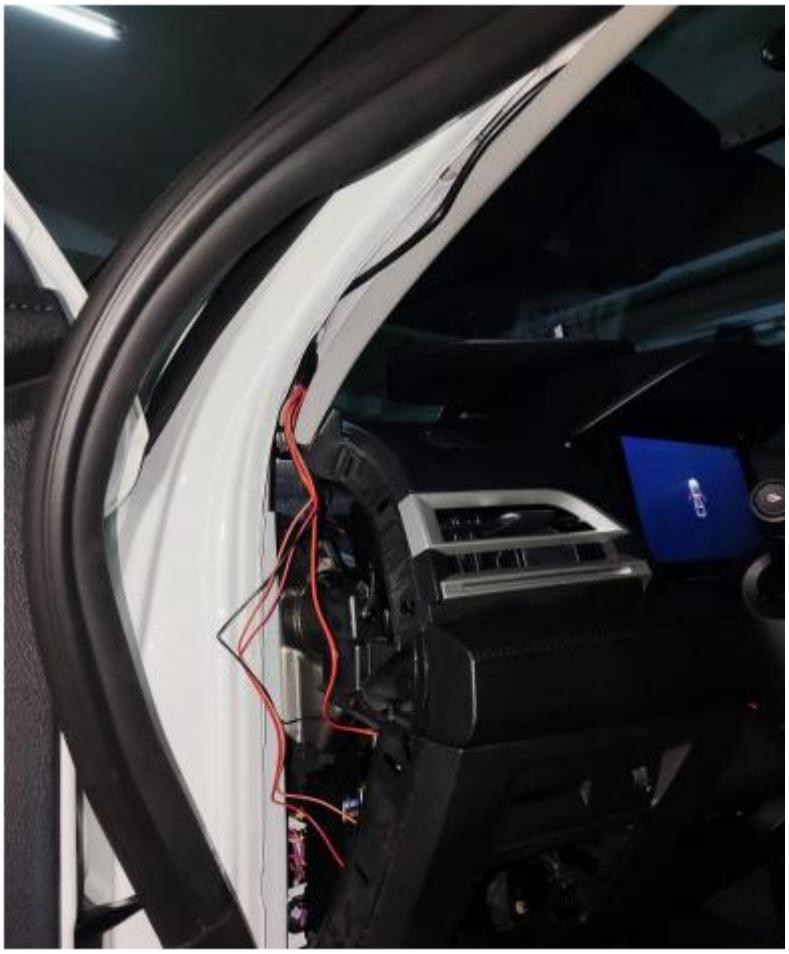
3.3. Host power supply description

Connect according to the definition of power cord interface. Before connecting, please check the power supply voltage, which should be within the range of 8-36V. The recommended working voltage is 12V or 24V. When the length of the power cord is not enough, RVV wire can be used to extend the wiring, and the diameter of the power extension wire is not less than 1.0mm²

The red line (positive pole) of the power supply is connected to the positive pole of the main control power supply of the automobile.
The black power supply (negative electrode) should be connected to the negative electrode or ground of the automobile power supply, and the ground should ensure good conductivity.
The yellow power supply (ignition) should be connected to the ignition control cable, which is the line that only has electricity when the vehicle is running.
When connecting the power adapter to debug the equipment, please connect the red line and the orange line together to the positive pole of the power supply.
When the equipment is powered on, the indicator light will turn red, which is always on. When the equipment is started normally, the green indicator light will flash and the red light will go out.

3.4. Wiring instructions

The wiring harness of the main engine should be concealed, and it can be connected to the left A-pillar from the top inner liner, and then routed down the inner liner of the left A-pillar or the rubber strip, and then connected to the vehicle fuse box, as shown in the following figure:



3.5. Constant current search

Turn off the vehicle key, open the vehicle fuse box, use electroprobe or multimeter to measure and find it, unplug it after finding the fuse with electricity, and insert the red plug of the power cord into the plug with electricity in the fuse slot (if the fuse plug models are different, it is necessary to use adapter or broken wire connection, please connect it according to the actual situation).

3.6. ACC lookup

Turn the vehicle key to the ACC or ON position, and use electroprobe or multimeter to measure and search. If the fuse is charged, it is proved that the fuse is basically controlled by the key ACC. At this time, turn the vehicle key from the ACC or ON position to the OFF position, and measure whether the fuse is charged again. If it is not charged, it is proved that the fuse is an ACC signal line, otherwise it needs to be searched again. After the search is completed, insert the orange ACC line plug of the equipment into the live pin of the fuse slot (if the fuse plugs are not the same model and need to be connected by adapter or broken line, please connect them according to the actual situation).

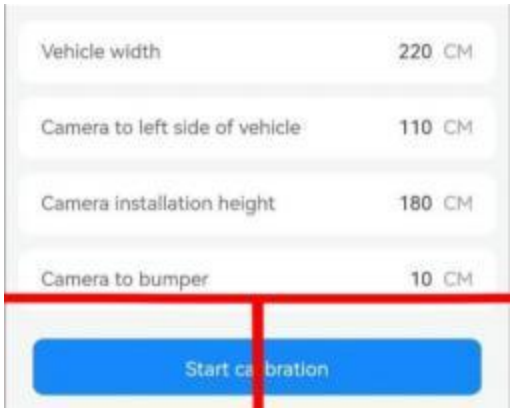
3.7. Adas calibration

3.7.1. Body parameter measurement

Measure the required vehicle parameters: car body width, the distance from the center of ADAS camera to the left side of the vehicle, the installation height of the camera (the height of the center of ADAS camera perpendicular to the ground) and the distance from ADAS camera to the front bumper of the vehicle, and record the test results. Later, enter the corresponding body parameters in the calibration of the Simba Maintenance APP 3.0 app “ADAS ".

3.7.2. Parameter setting before calibration

After connecting to the Maintenance Tool hotspot on your phone, open the Maintenance Tool app. After logging in and entering the interface, click on the "Install Calibration" menu , and then select "ADAS Calibration" to enter the ADAS calibration interface. Before calibration, you need to set the vehicle parameters first, and the parameters below must be filled in correctly. After completing the filling, click on "Start Calibration". The specific instructions are as follows:



Vehicle width: The actual width of the vehicle
Camera to left side of vehicle: The distance from the center of the camera to the left side, which is half the width when installed in the center.
Camera installation height: The vertical distance between the ADAS lens and the ground.
Camera to bumper: Measure the distance from camera to front of vehicle, which is generally 0 for large vehicles.

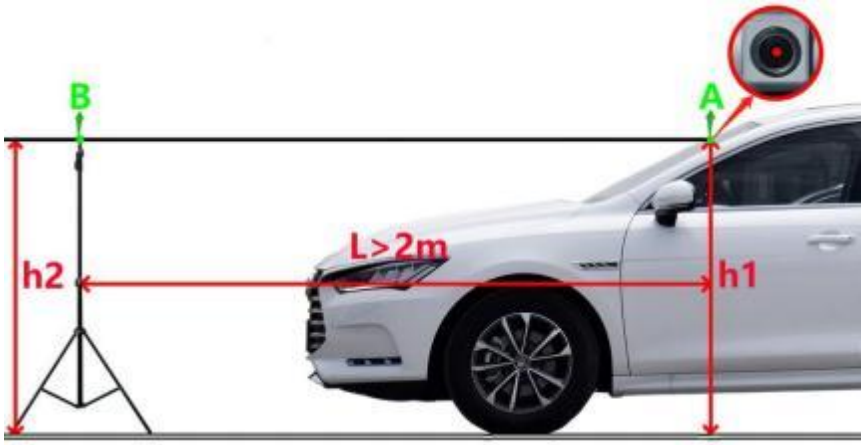
3.7.3. Horizon calibration

Park the vehicle on a flat road to ensure a wide field of vision in front of it, adjust the angle of the camera so that the distant skyline (the junction of heaven and earth) in the video coincides with the horizontal center line in the app (the horizontal green dotted line) (if it can't completely coincide, you can fine-tune it by using the up and down arrow keys), and then click to finish the calibration.


2020-09-22 14:48:13
B123456 AV 02
80 km/h
Horizontal
CALIBRATION COORDINATE
CALIBRATION
N: 31.059850 E:121.414141

3.7.4. Calibration rod calibration

Place a calibration rod at the position in front of the car (in front of the camera) (the distance L between points A and B must be more than 2m), and the height h2 of the calibration rod must be the same as the height h1 of the center point of the adas lens from the ground, as shown in the following figure:



Adjust the angle of the adas camera so that the top of the calibration rod coincides with the horizon position in the app (if it can't completely coincide, you can fine-tune it by using the up and down arrow keys), and then click Calibration Complete.

3.8. Dsm installation calibration

3.8.1. Dsm installation

The dsm camera should be installed on the instrument panel at the left front of the steering wheel. Tear off the 3m film on the base of the dsm camera, stick the camera on the instrument panel, and then fix it with self-tapping screws for the second time to prevent the position deviation of the equipment after long-term operation.

Please connect the dsm camera to the av3 interface of the host computer, and then wrap the interface

with insulating tape. If the video screen is black, please confirm whether the resolution of the camera and the device is consistent.

3.8.2. Dsm calibration

Adjust the angle of the DSM camera so that the driver's face is in the center of the display interface . After fixing the angle, lock the three screws on the bracket to avoid angle deviation caused by prolonged vibration.

The pitch angle of DSM cannot exceed 30 °, otherwise it will affect the accuracy of the DSM algorithm.

3.9. Precautions for installation

In order to ensure the safe use of the terminal equipment and prolong the service life of the equipment, please fully consider the following factors during installation:

a) After receiving the product, check the equipment and accessories. If you find that the items in the box are damaged or any accessories are in short supply, please contact the dealer in time.
b) When installing and operating equipment, comply with the specifications of relevant electronic products and the requirements of vehicles and other connected equipment.
c) Installation and construction shall conform to the specifications, and refer to relevant national or local standards.
d) Check the connected power supply voltage, and push the working voltage to 12V or 24V within the range of 8-36V to prevent equipment abnormality caused by voltage mismatch.
e) Vehicle-mounted video recorder should work in the temperature and humidity range allowed by technical indicators.
f) The external wires of the equipment shall be sufficiently spaced and protected by a flame retardant tube to ensure that the wires will not cause leakage due to wear or aging.

4. Product connection platform settings

The device can be connected to the platform through the Simba Maintenance app 3.0. Please download the latest Simba Maintenance app 3.0 first.

4.1. Download Simba Maintenance app 3.0

Please scan the QR code below for mobile app download.

SimbaMaintenanceTool_V3.8.5.2.apk
ywb3.0

4.2. Simba Maintenance APP 3.0 connection

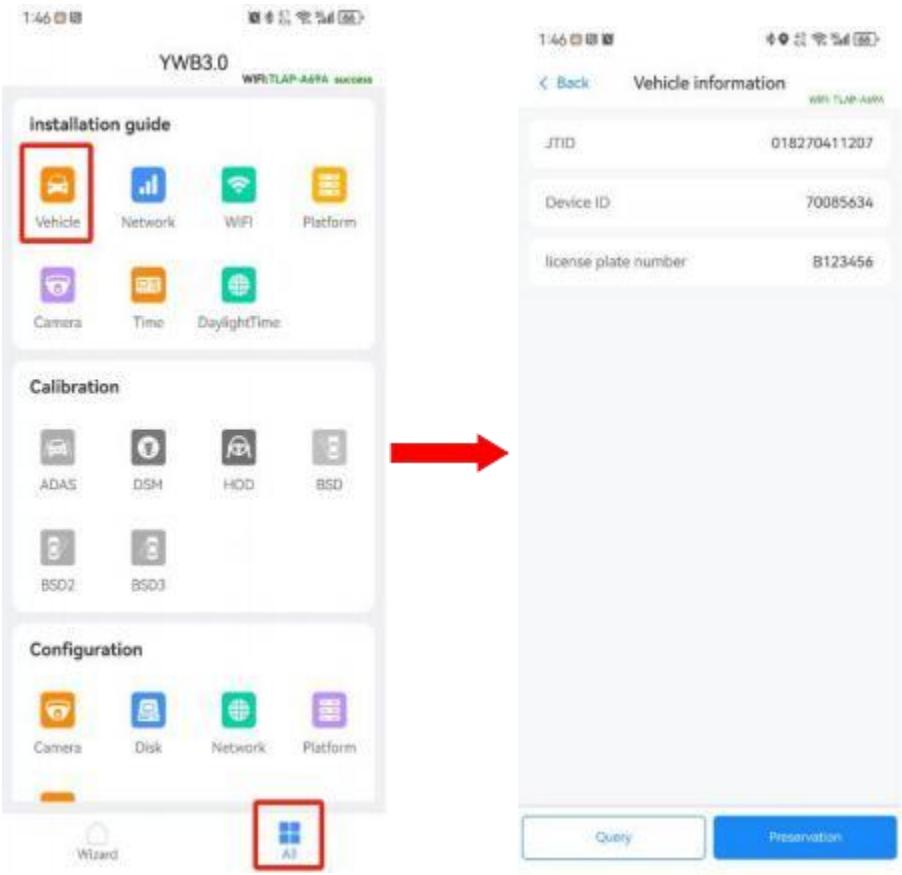
After the device is started, wait for about 1 minute, and use your mobile phone to search for WiFi hotspots. The hotspot name is TC900P-xxxx (the name of each Simba Maintenance tool is different), and the default password is 12345678. After the connection is successful, proceed to the next setting operation.

4.3. Simba Maintenance APP settings

Open the Simba maintenance app, make sure the TC900 hotspot name of the device is displayed in the WiFi menu, and then click login to enter the settings interface.

4.3.1. Vehicle information settings

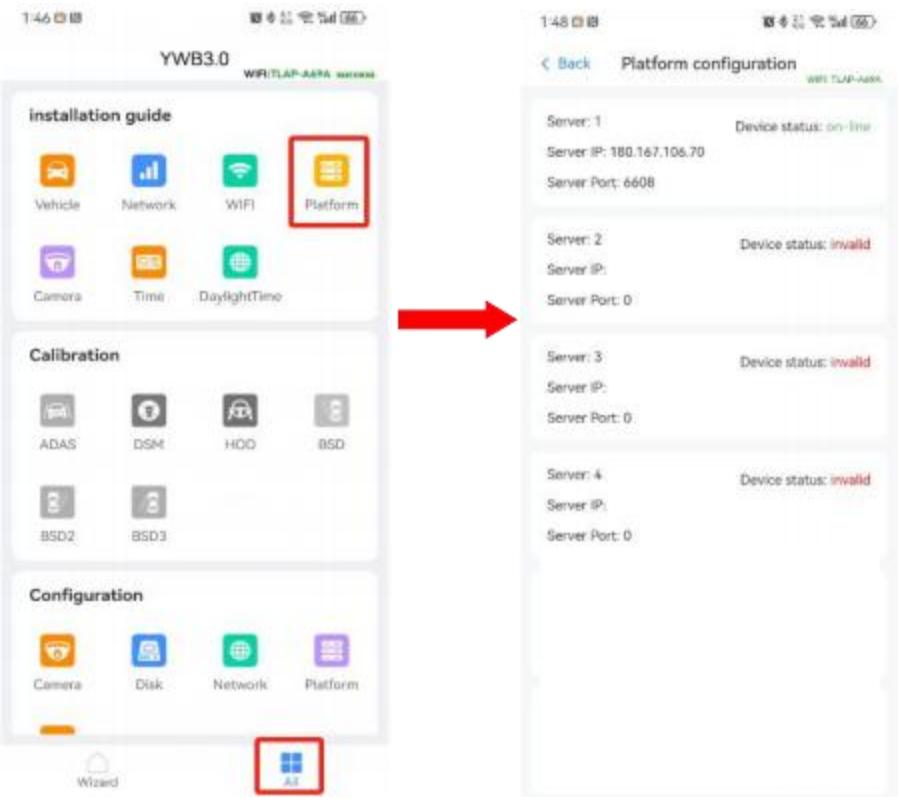
After logging in to the app, click on the configuration menu to configure device parameters. Select "Vehicle" in the left menu bar to set vehicle information. After the settings are completed, scroll down and click "Preservation" to save the parameters.



Set parameters according to the platform verification information, and ensure that the JTID is consistent with the "Device NO" information added on the cmsV6 platform.

4.3.2. Platform information settings

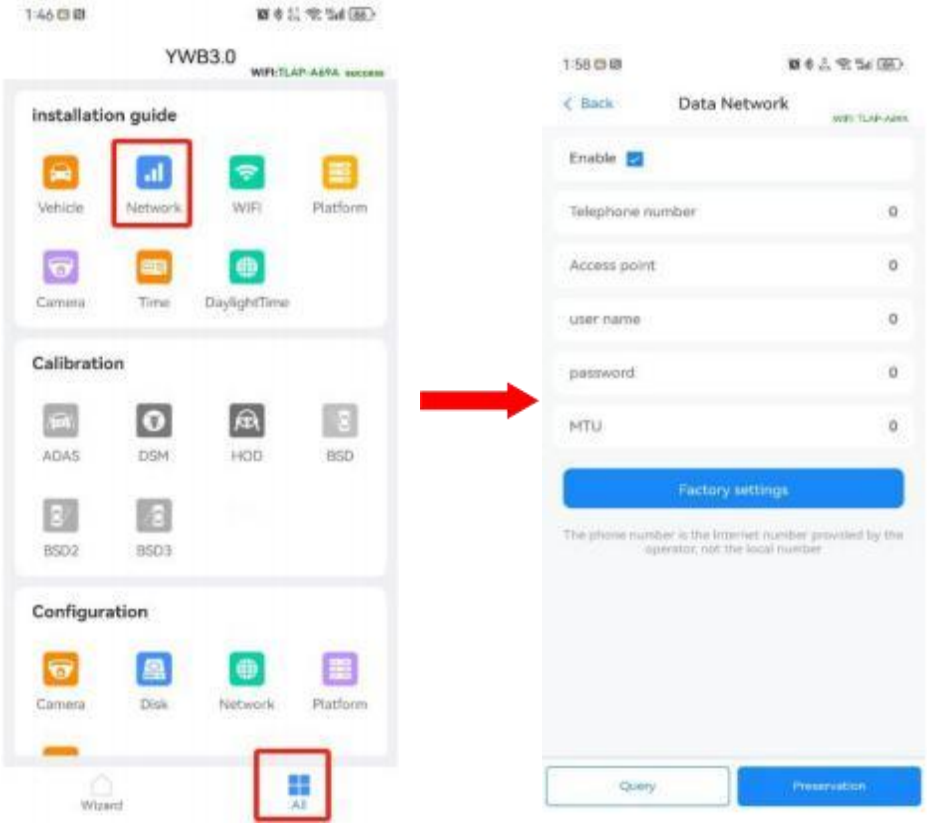
Click on the "Platform" settings interface to set the server IP/domain name and port. This device supports 4 central server connections. Please make necessary settings.



Select one of the columns to enter the IP address setting interface, as shown in the following figure. Please fill in the server address, port, and then click "Preservation" to save.

4.3.3. Network information settings

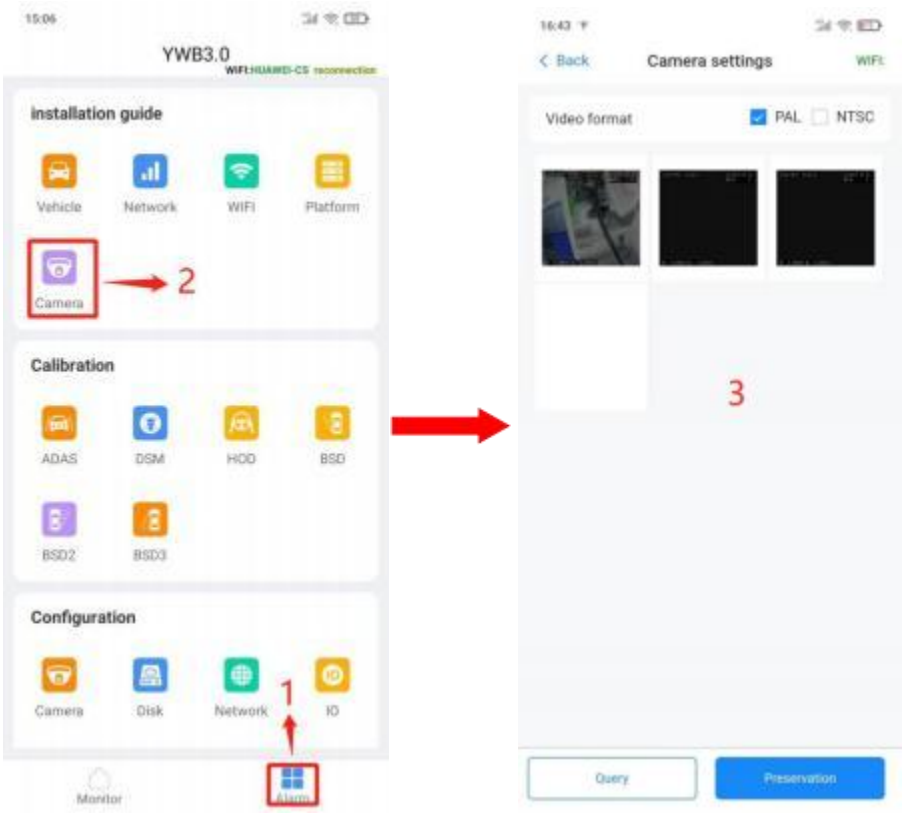
When using a APN private network, it is necessary to set the APN access point parameters in the "Network" configuration. The specific parameters are based on the parameters provided by the SIM card operator.



The specific parameters are subject to the parameters provided by the card vendor , and the corresponding apn or vpn values are filled in the "Access Point" setting item in the interface.
If this feature is not set correctly, the device will not be able to connect to 4G networks.

4.3.4. Camera mode setting

Click on the camera menu to enter camera mode settings.



This device can support connecting a third camera separately. Please set parameters based on the resolution of the camera. If the settings are incorrect, normal images will not be displayed.Please enable this channel first, then set the parameters and save them after completion

Enabled: all channels are enabled by default. If this channel is not used, uncheck it, otherwise a video loss alarm will be reported to the platform.

Resolution: Please set it according to the camera mode. If it is not set correctly, the image will not be displayed normally.

Horizontal Mirror: When checked, the device image will be horizontally inverted.

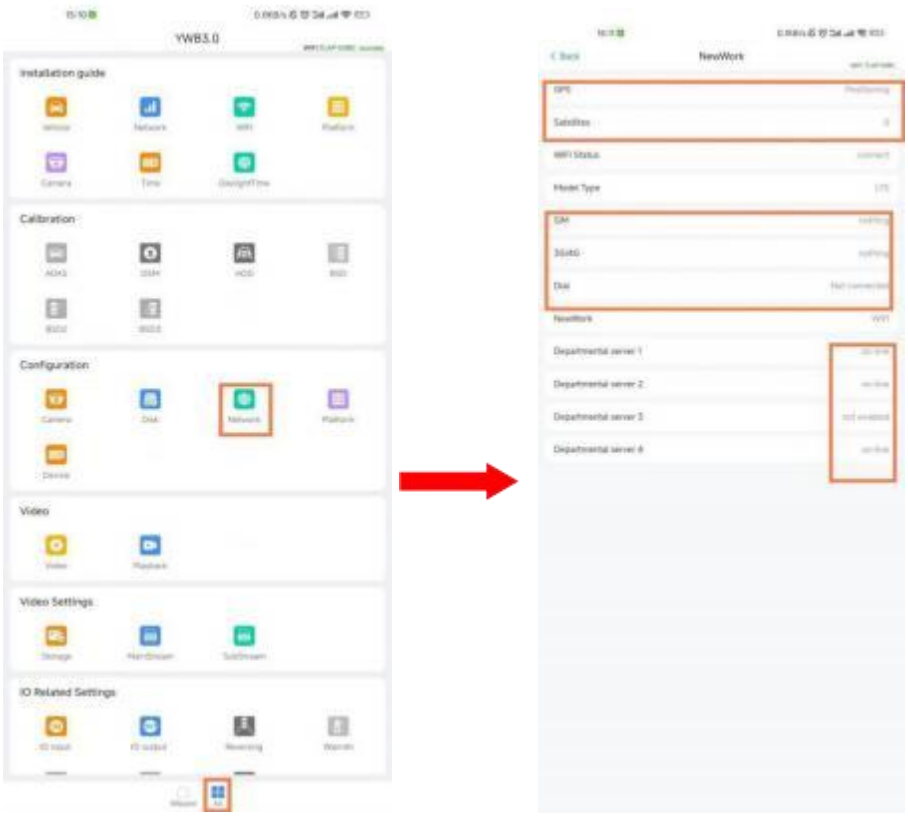
Vertical Mirror: When checked, the device image will be vertically inverted.

4.4. Product status view

In the "Configuration Status" column, you can view the status information of camera, disk, network, platform and equipment.

4.4.1. Network state

Select "all" in the lower right corner > "network" in configuration status in turn to view the "network" status, as shown below.



GPS: "Locked" is normal, and there are several other states-

1. Unauthorized means that the GPS function is not supported.
2. During positioning, the device is searching for GPS.

Satellite number: displays the number of satellites searched by the equipment and the satellite signal strength. When the number of satellites reaches more than 7 and the signal value reaches more than weak (strong, medium, weak and poor), the GSP data will be stable. If it cannot be reached, the installation location needs to be changed.

WIFI module: in the following states respectively.

1. Without authorization, the device does not support WIFI.
2. Yes, the device can search for available WIFI.
3. None, the device can't search for available WIFI.

WIFI status: check the networking status of wifi.

1. Not connected, not connected to wifi.
2. Connected, connected to wifi.

Module type: 3/4G module information, which uses LTE by default.

1. When no module is displayed, the device does not support the communication function or the module fails.

SIM card: the insertion detection status of SIM card.

1. Yes, the device has detected the SIM card.
2. No, the device has not detected the SIM card.
3. Abnormal. The device detects the SIM card, but it cannot read the SIM card correctly.

3G/4G signal: It indicates that it is not necessary to check whether the antenna is plugged in or whether the APN is set correctly at all times. Generally, it indicates that the signal strength is weak-strong, which means normal.

Dialing: Dialing networking status of SIM card.

1. Connection. The SIM card of the device is connected normally.

2. No connection. The device is not connected to the SIM card network.
3. During dialing, the SIM card of the device is dialing the Internet.
4. If the registration fails, check whether the SIM card is open or in arrears, and whether the APN is set correctly.

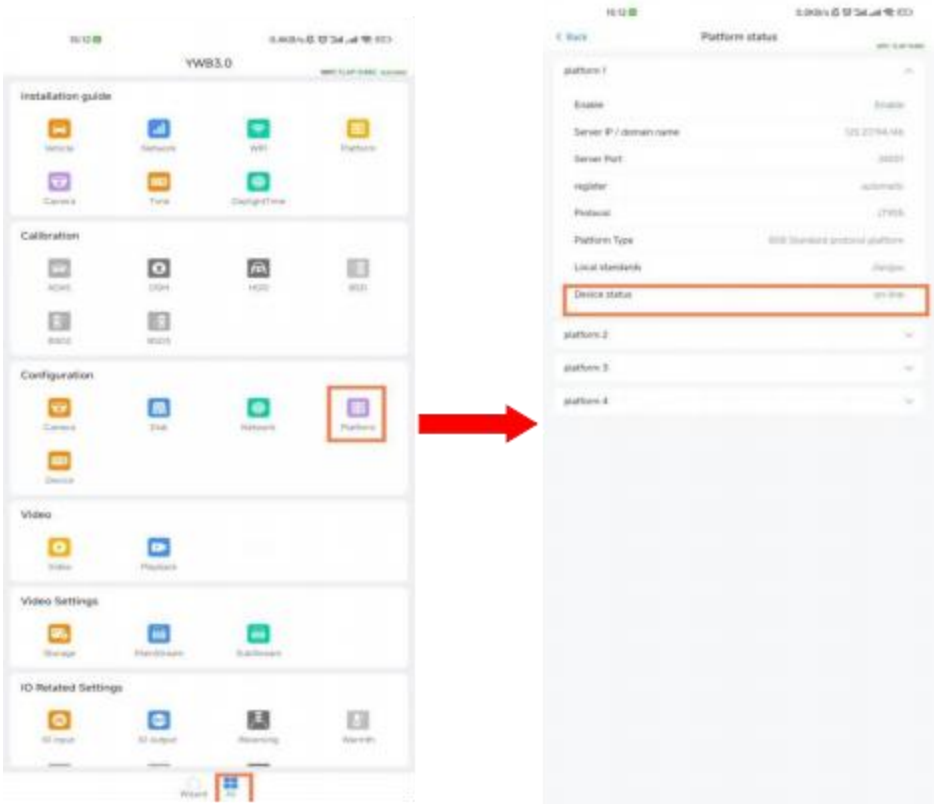
Network type: generally divided into WIFI(WIFI connected to the Internet) and 2/3/4G(SIM card connected to the Internet). When both networks can access the Internet, the priority is WiFi > 2/3/4G.

1~4: 808 protocol platform connection status of the server (this status is not displayed if the device does not support 808 protocol).

1. Online is connected to the platform normally, while offline is not connected to the platform.
2. If it is not enabled, the IP enabled status of this road is not checked. The authorization expires, please contact the relevant business.
3. Conflict, which is the same as the IP set by other routes, and there is conflict.
4. Online/locked, the device is normally connected to the platform, and the IP of this road is locked and cannot be modified.
5. Offline/locked, the device cannot connect to the platform, and the IP of this road is locked and cannot be modified.

A. Platform connection state

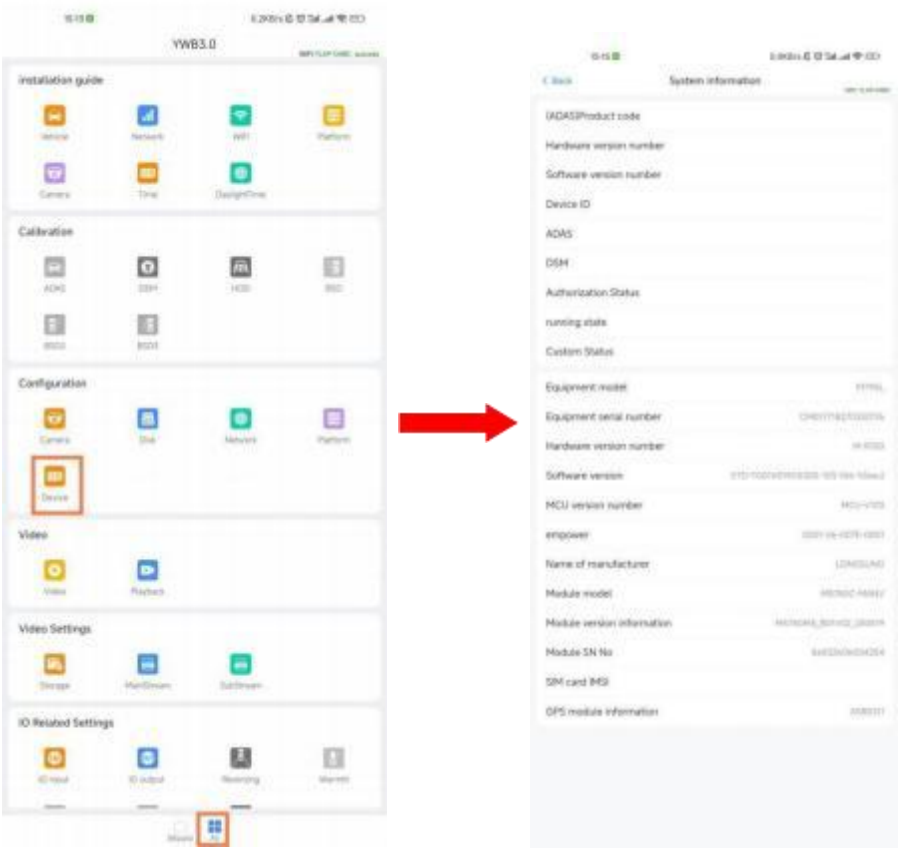
Select "all" in the lower right corner > "platform" in configuration status in turn to view the connection status of "platform", as shown in the following figure.



In the "Platform" information, you can view the setting information and connection status of the four platforms. When the "Equipment Status" shows "Online", it means that the equipment and the modified platform are connected normally.

4.4.2. Device status

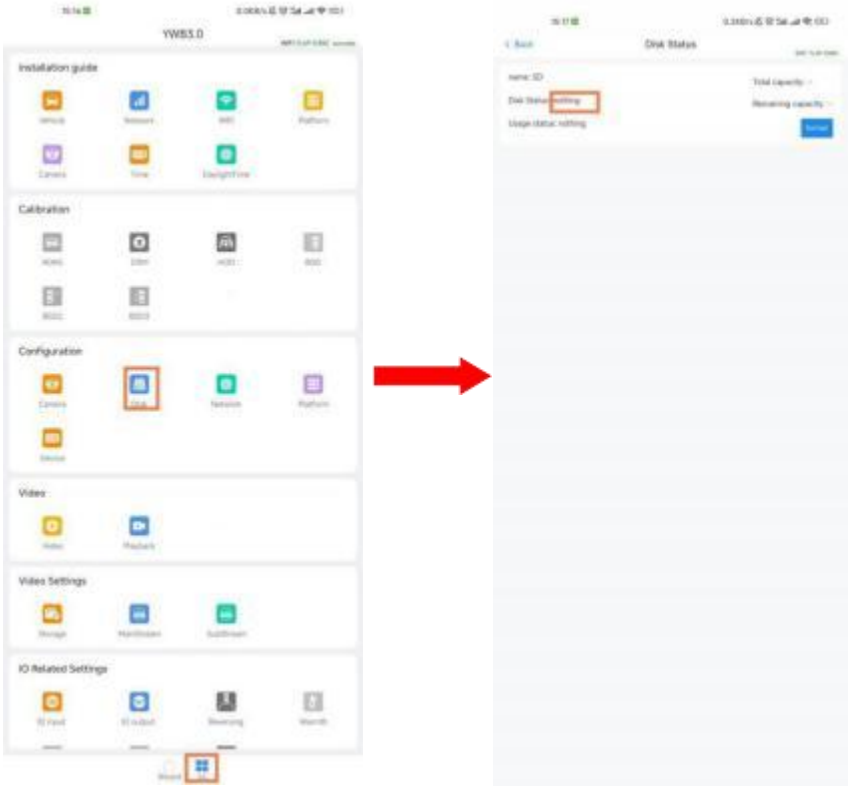
Select "all" in the lower right corner > "equipment" in configuration status, and you can view the information of "equipment", as shown in the following figure.



In the "Device" state, you can check the software and hardware version of the device, the version of the 4G\GPS module, etc. You can look at the basic information first when troubleshooting the problem.

4.4.3. Disk state

Select "all" in the lower right corner > "Disks" in the configuration status to view the information of "Disks", as shown in the following figure.



You can see the status of SD1 in the "Disk" information.
Name: SD1 corresponds to device TF1. If only one disk information is displayed, the device only supports a single card.

Total capacity: the total capacity of the current TF card

Remaining capacity: the remaining capacity of the current TF card, which is 0 when the video is overwritten.

5. Frequently asked questions

phenomenon	Phenomenon analysis	processing method
Unable to boot	The power supply is not connected correctly.	Connect the wiring as required and ensure that the input voltage is within 8-36V.
	Power cord fuse	Eliminate the cause of burning and replace the fuse.
Can't connect to the center	Parameter setting error (server not connected)	Reset according to the instructions
	SIM card arrears (dialing or registration failure)	Recharge after inquiry
	APN parameter error (dialing or registration failure)	Check the parameters with the operator and reset them.
	Is the SIM contact good (without SIM card)	Reinsert and install SIM card.
No video recording	Unformatted disk	Format disk locally or remotely.
	Disk damage	Replace disk
	The disk lock is unlocked.	Lock the disk lock, and there is a prompt on the disk status in the upper right corner.
Unable to locate	Vehicles are in underground parking lots and tunnels.	Leave the area
No image display	Incorrect interface definition	Check whether the interface definitions are consistent.
	Mode setting error	Follow the camera mode for setting.
	Camera damage	Replace the camera with a new one

After the installation is completed, you need to check the following:

Check item	Has the camera protective film been torn off?	
	Can the alarm be generated normally?	
	Is 4G dialing successful?	
	Did the device successfully connect to the server?	
	Does the platform check whether the equipment is positioned?	
	Is the platform alarm data normal?	
	Is there any training for customers? equipment installation Equipment debugging Equipment alarm test Platform use method Frequently asked questions and answers	