# User Manual

**Applicable model: TCM2**

**Version number: V1.0**

# CONTENT

# 1. Product introduction

TCM2, integrates vehicle video monitoring, driving recorder, 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. 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

**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:**

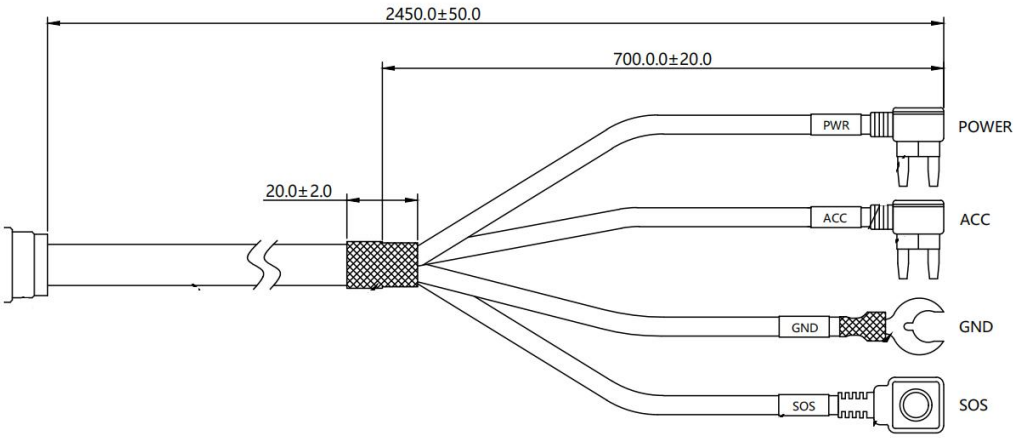
- Built-in 4G module
- Support GPS/BD/GLONASS, high sensitivity, fast positioning
- WIFI module (optional), frequency 2.4ghz
- Built-in 4G、GNSS、WIFI antenna

**Product technical parameters:**

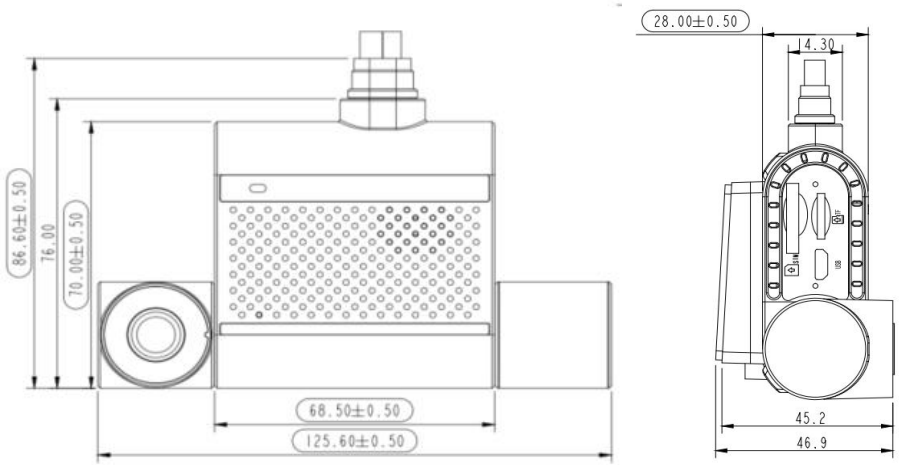
| project | Equipment parameters | Performance index |
|---|---|---|
| system | operating system | Embedded Linux operating system |
| | operating language | Chinese/English |
| | Operating interface | Configuration through operation and maintenance treasure |
| | Password security | User password management |
| audio and video | Compression standard | H.265/H.264 |
| | image resolution ratio | 1080P/720P /960H/D1/CIF |
| | Video quality | Level 1 to 6 can be matched |
| | audio compression | G.711A、G.711U、G.726 |
| | Recording mode | Synchronous recording of sound and video |
| Video recording and playback | Video recording mode | Automatic, alarm |
| | Audio code rate | 8Kb/s |
| | Video inquiry | It can be searched by channel and video type |
| software upgrade | Upgrade mode | Manual/Automatic/Remote |
| | Upgrade method | U disk, TF card, wireless network |
| joggle/interface | Ignition input | 1 ACC signal |
| | One-button alarm | 1 SOS |
| | audio input | Built in MIC |

| | | |
|---|---|---|
| | audio output | Built-in 2W speaker |
| | TF card | 1 TF card interface |
| | SIM interface | 1 MICRO SIM interface |
| | Usb interface | 1 MICRO USB interface |
| | light emitting diode | PWR/RUN two-color lamp |
| extended function | GNSS | Built-in ceramic antenna, GPS+BD+GLONASS |
| | wireless | Support 4G full netcom |
| | WIFI | Frequency 2.4GHz |
| other | Power input | DC：9V~32V |
| | Typical power consumption | Less than 10W |
| | Working temperature | -20 --- 70℃ |
| | storage capacity | 1080P 600MB/ hour/channel H.265<br>1080P 1200MB/ hour/channel H.264 |
| | measure | 125.6*86.6*46.9mm |

## 1.2. Definition of pull-off line




## 1.3. Outline dimension drawing:



# 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 as following:

| describe | picture | QTY | | describe | picture | QTY |
|---|---|---|---|---|---|---|
| host machine |  | 1 set | | Accessories bag |  | 1 set |
| Power cord |  | 1 root | | | | |

## 2.2. Preparation of tools required for installation

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

| No. | Tool name | explain |
|---|---|---|
| 1 | test pencil | Used to test whether there is electricity in the wire. |
| 2 | multimeter | Measure voltage value and whether it is short-circuited. |
| 3 | wire stripper | Stripping line for use after line search. |
| 4 | Electrical tape | After wiring, the thread ends are wrapped and used. |
| 5 | cable ties | Line arrangement and wiring use |
| 6 | 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 |

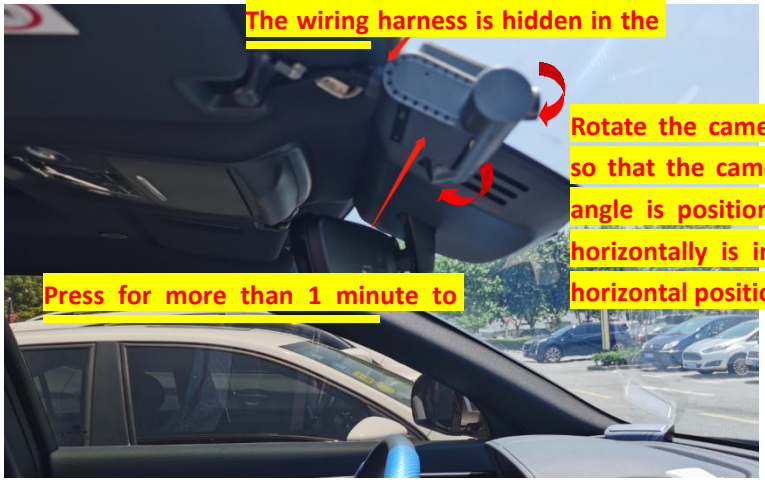
# 3. Product installation and construction

## 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 device 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

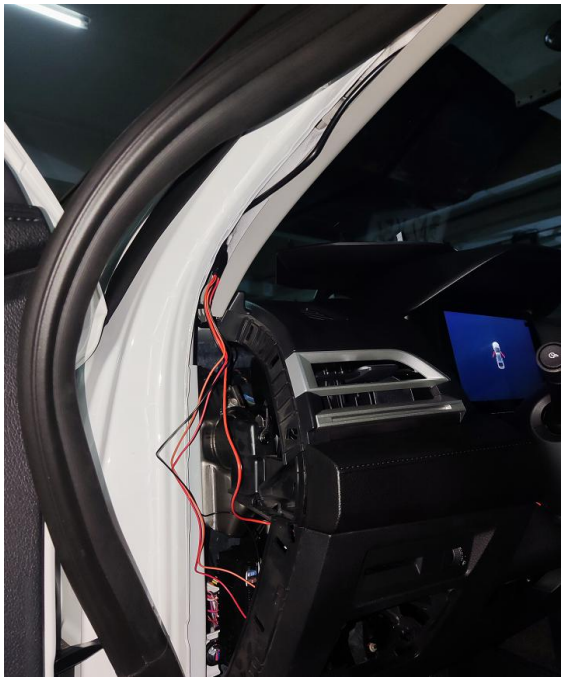
Connect according to the definition of power cord interface. Before connecting, please check the power supply voltage, which should be within the range of 8-36V. The recommended working voltage is 12V or 24V. When the length of the power cord is not enough, RVV wire can be used to extend the wiring, and the diameter of the power extension wire is not less than 1.0mm $^2$

- 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. 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. (http://www.mdvrdata.com:89/).

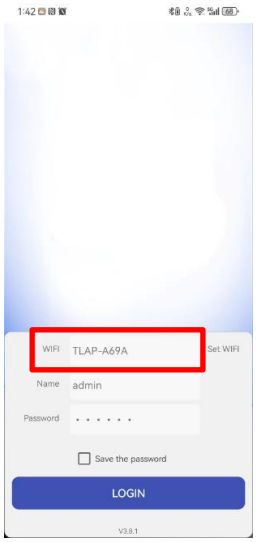
Please prioritize using your mobile browser for scanning and downloading.
Please download SimbaMaintenanceTool_V3.x.xx.apk.

## 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 TLAP-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.

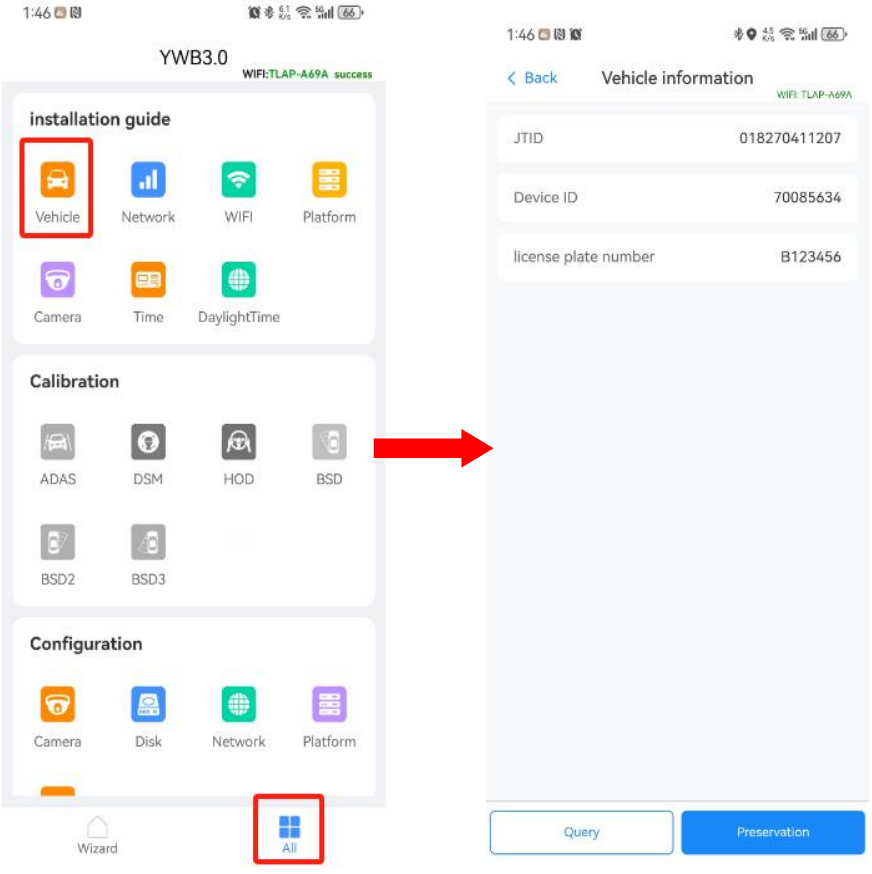
## 4.3. Simba Maintenance APP settings

Open the Simba maintenance app, make sure the TLAP 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

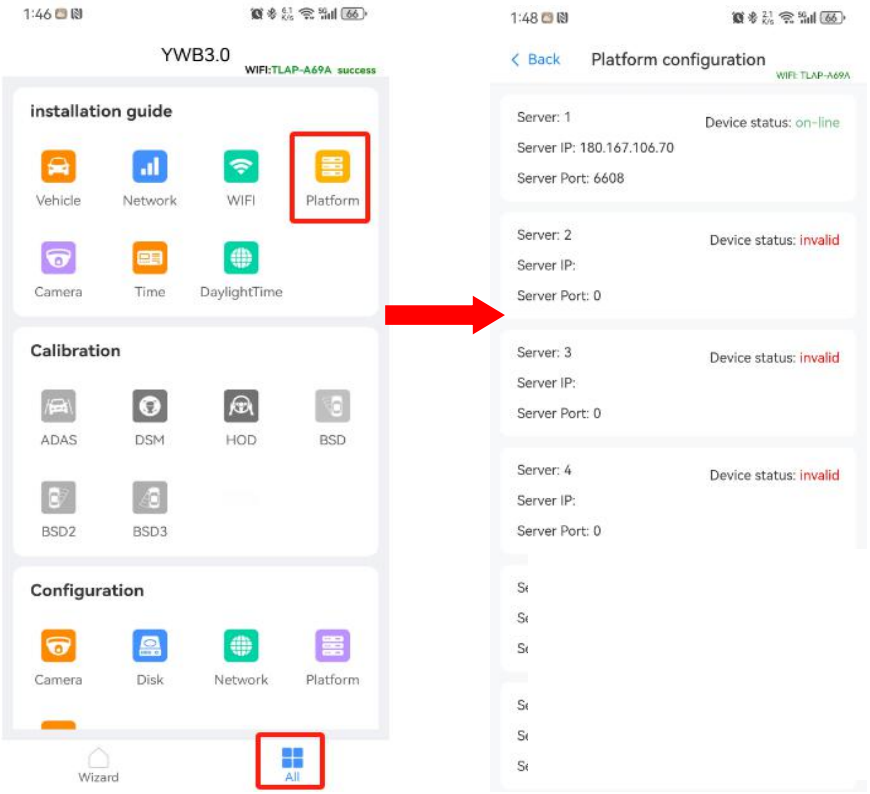
After logging in to the app, click on the configuration menu to configure device parameters. Select "Vehicle" in the left menu bar to set vehicle information. After the settings are completed, scroll down and click "Preservation" to save the parameters.



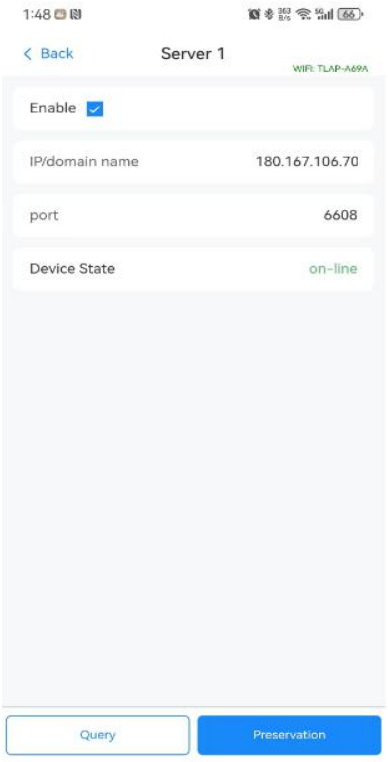

Set parameters according to the platform verification information, and ensure that the JTID is consistent with the "Device NO" information added on the cmsV6 platform.

## 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.

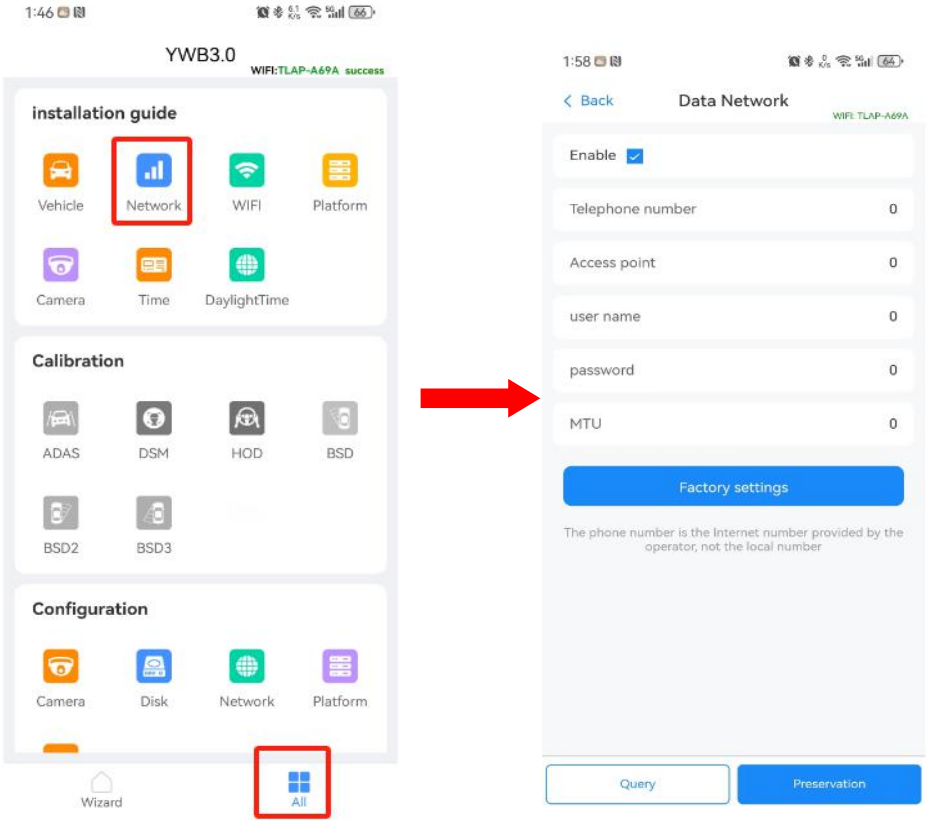



Select one of the columns to enter the IP address setting interface, as shown in the following figure. Please fill in the server address, port, and then click "Preservation" to save.



## 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.

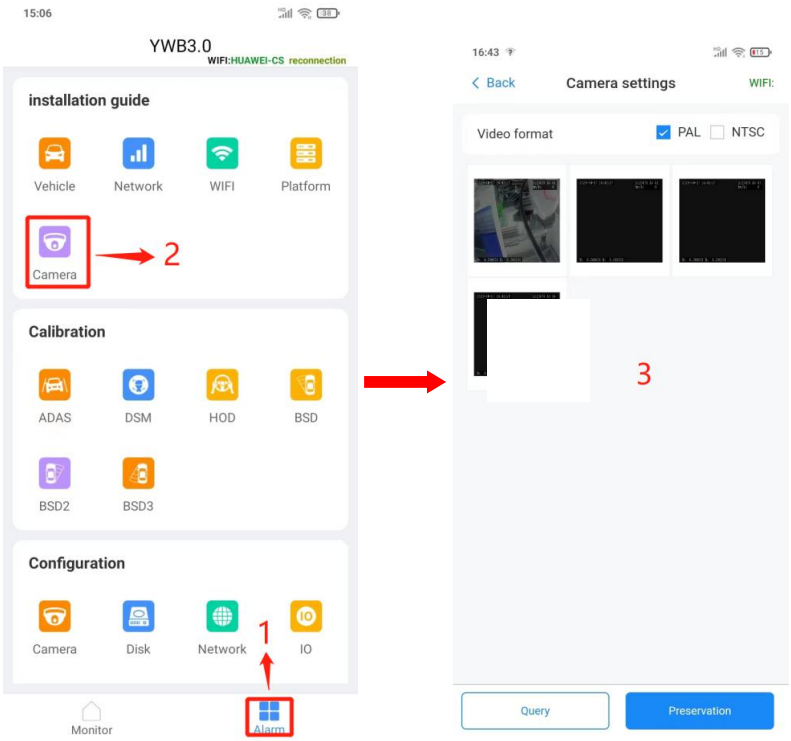



The specific parameters are subject to the parameters provided by the card vendor , and the corresponding apn or vpn values are filled in the "Access Point" setting item in the interface.

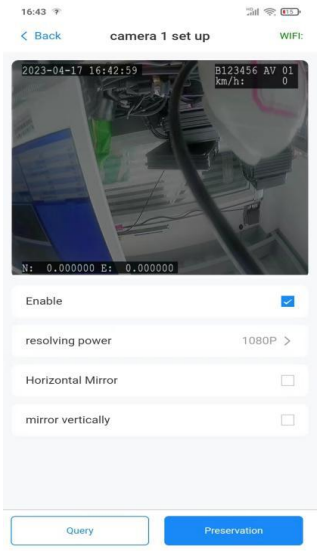
If this feature is not set correctly, the device will not be able to connect to 4G networks.

## 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.**

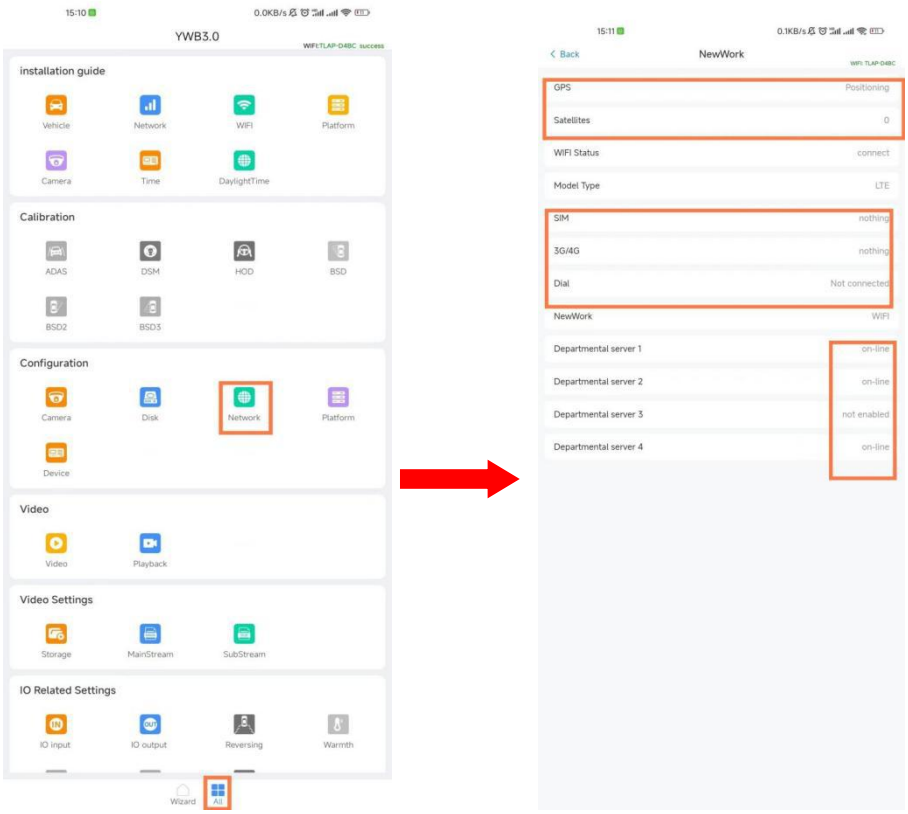
**Vertical Mirror: When checked, the device image will be vertically inverted.**

## 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.

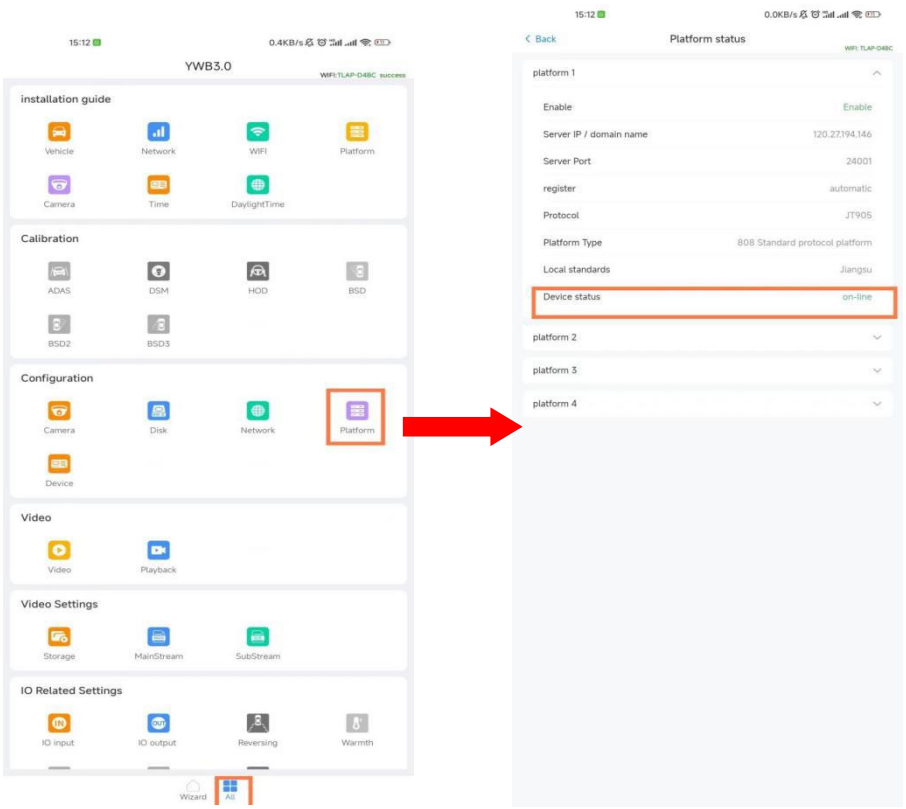
**Network type: generally divided into WIFI(WIFI connected to the Internet) and** 2/3/4G(SIM card connected to the Internet). When both networks can access the Internet, the priority is WiFi > 2/3/4G.

**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

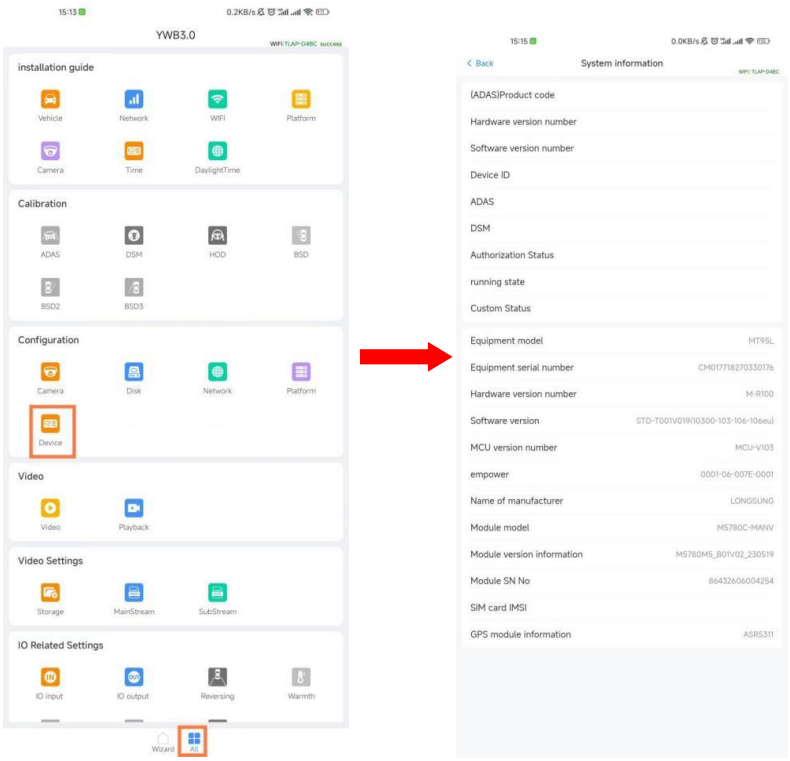
Select "all" in the lower right corner > "platform" in configuration status in turn to view the connection status of "platform", as shown in the following figure.




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

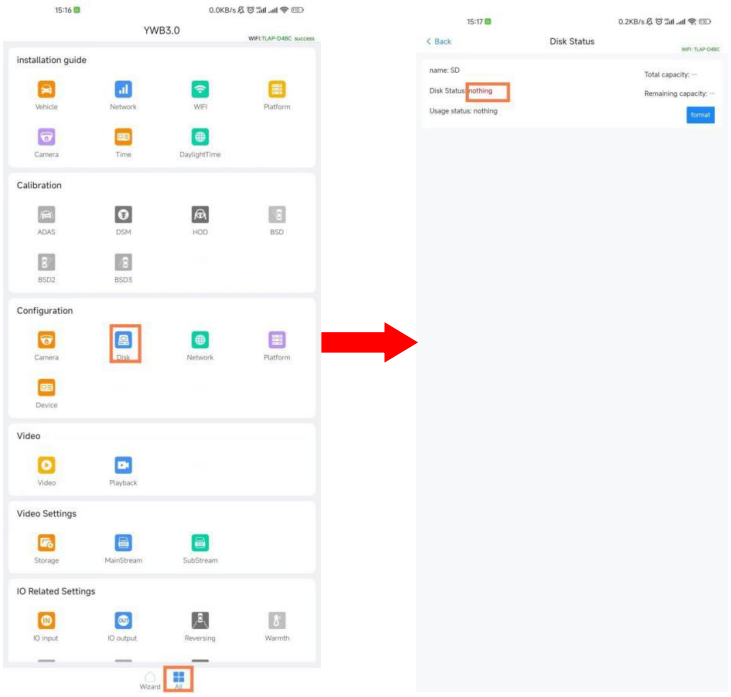
Select "all" in the lower right corner > "equipment" in configuration status, and you can view the information of "equipment", as shown in the following figure.




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?<br>equipment installation<br>Equipment debugging<br>Equipment alarm test<br>Platform use method<br>Frequently asked questions and answers | |