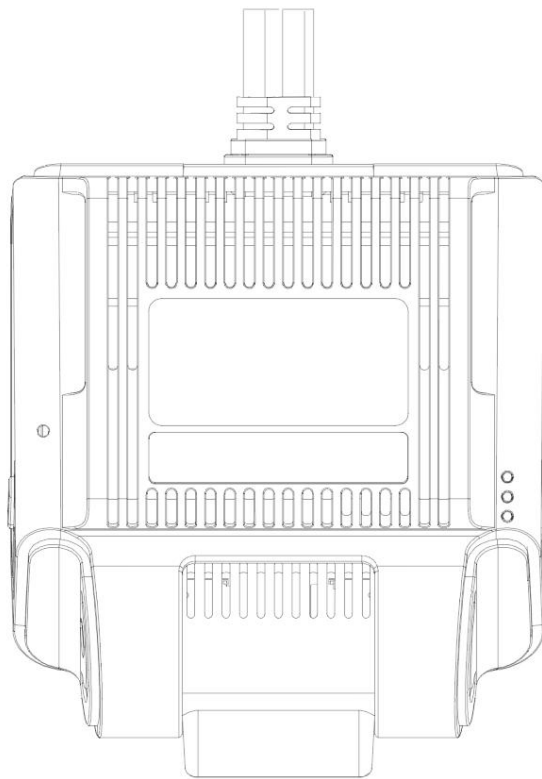


Multi-Channel AI Dash Camera

User Manual V1.0



Model: AT301

Please read this manual carefully before using the product to ensure proper installation and operation. The contents of this manual are subject to change without prior notice as part of our ongoing product improvement and development efforts.

About This Manual

This manual provides instructions for the installation, configuration, operation, and maintenance of the AT301 AI Dash Camera. It also outlines important safety information and operational precautions. All text, images, diagrams, and other content contained in this manual are the property of Anyixing. No part of this publication may be reproduced, copied, translated, modified, or distributed in any form without prior written authorization from Anyixing.

Unless otherwise stated, this manual is provided for reference purposes only and does not constitute any express or implied warranty.

Intended Audience

This manual is intended for authorized installers, system integrators, fleet operators, technical support personnel, and other users responsible for the deployment and maintenance of the AT301.

Product Information

The product images, interface screenshots, and illustrations contained in this manual are provided for reference only. Actual product appearance, color, dimensions, software interfaces, and functions may vary depending on the product version and configuration. Please refer to the actual product.

Performance data, specifications, and test results referenced in this manual are obtained under controlled laboratory conditions and may vary due to hardware configurations, software versions, network environments, operating conditions, and other factors. Actual performance may differ accordingly.

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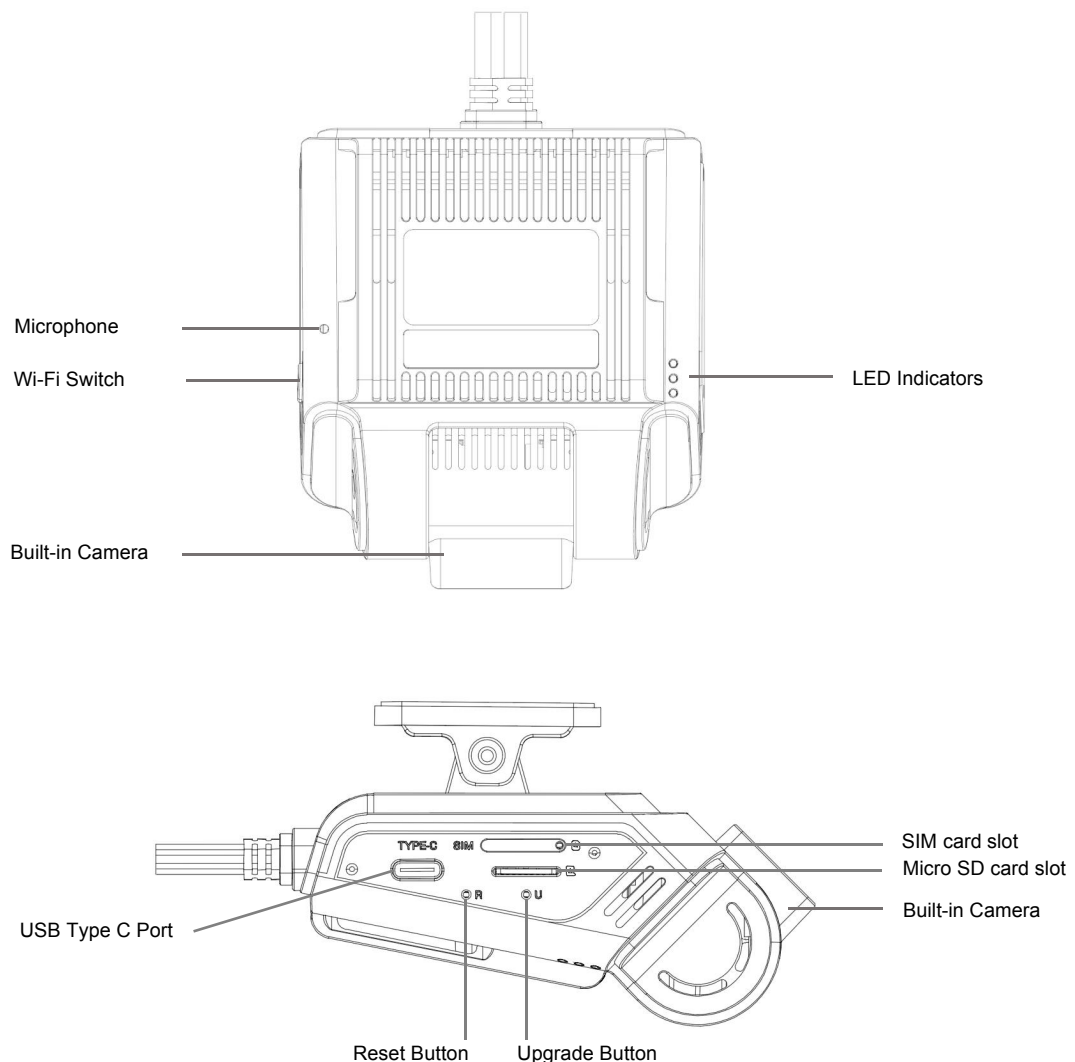
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1. Overview

The AT301 is an AI-powered video telematics solution that combines ADAS and DMS in a single compact device. It detects unsafe driving behaviors such as fatigue, distraction, mobile phone use, smoking, and seatbelt violations, providing real-time voice alerts to improve driver safety and reduce operational risks.

Featuring a built-in 2K HD camera with a 180° adjustable lens, the AT301 can be configured for either road-facing or driver-facing monitoring and supports up to two external cameras for expanded coverage. Easy to install and deploy across various vehicle types, it supports industry-standard protocols for seamless integration with fleet management and video monitoring platforms.

1.1 Appearance Description



1.3 Packing contents

Package contains the following items:

Item	Name	Photo	Quantity
1.	AT301 device		1
2.	Power cable		1
3.	Card slot protective cover		1
4.	Card slot protective cover screws		2
5.	SIM card ejector		1
6.	SIM card tray		1
7.	SOS button		1

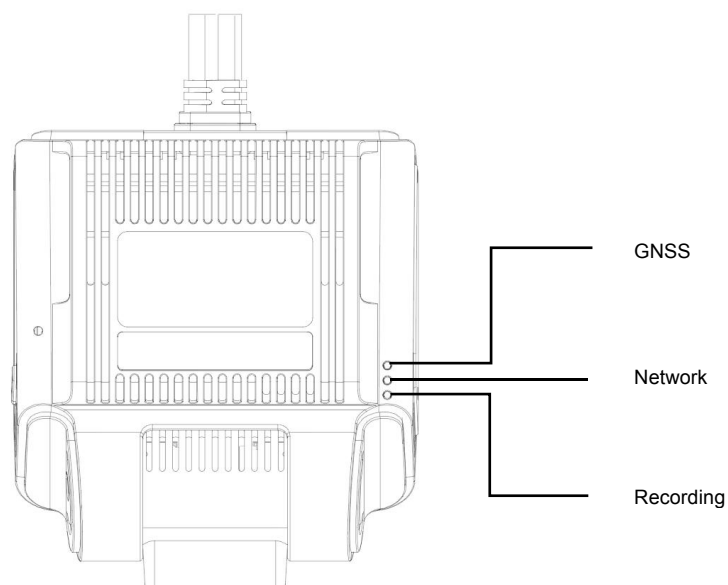
1.4 Specifications

General	
Operating System	Linux
Dimensions	95 * 80 * 45mm
Weight	205g
Color	Black
Power Supply	9-36VDC
Power Lost Protection	Super Capacitor provides 10-15s of safe power backup
Operating Temperature	-20 ~ +70 °C

Operating Humidity	10%-90% Non-condensing	
Hardware		
CPU	32-bit RISC CPU 1.0 GHz, 1T NPU	
RAM	4Gb DDR3	
Internal Storage	Built-in 8GB EMMC memory for 3-4h backup recording (Optional)	
External Storage	1*Micro SD card, max. 1TB	
G-Sensor	3 Axis Accelerometer	
GNSS	Multi-Positioning Mode, built-in antenna	
SIM Card	Nano SIM	
LED	Red(Record), Yellow(Network), Green(GNSS)	
I/O	ACC * 1, SOS * 1, Relay * 1, RS232 * 1	
Reset Button	Support	
Wi-Fi	Support	
AI Events		
ADAS	FCW, HMW, LDW, PCW	
DMS	Eye Close, Yawning, Distraction, Smoking, Phone Use, Driver Abnormal, IR Blocking, Seat belt Unfastened, Driver Face Recognition	
BSD	Front, Left, Right and Back Blind Spot Detection (Optional)	
Network		
Cellular	LTE Cat1 or LTE Cat 4 + WCDMA +GSM	
Frequency Bands	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41	CN, IN (Cat 1)
	LTE-FDD: B1/B3/B5/B7/B8/B20/B28	EMEA (Cat 1)
	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: B3/B8	EMEA (Cat 4)
	LTE-FDD: B2/B3/B4/B5/B7/B8/B28/B66	LATAM (Cat 1)
	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 LTE-TDD: B40 WCDMA: B1/B2/B4/B5/B8 GSM: B2/B3/B5/B8	LATAM (Cat 4)
Wi-Fi	802.11b/g/n 2.4G, supports AP & station mode	
Protocol	JT/T 808-2013, JT/T 808-2019, JT/T1078-2016, T/JSATL12-2017	
Video / Audio		

Channels	Built-in 1CH * 2K, External 2CH * 1080P/720P
Video Encoding	H.264
Audio Encoding	AAC/G.711A
Frame Rate	25 FPS
Microphone	Built-in
Speaker	Built-in, 1.5 Watts
Image Sensor	1/2.9", 4 megapixel CMOS Sensor
Lens	123° FOV, 2G2P, F2.0 Aperture
Recording Quality	Main and Sub Stream, Adjustable Resolution
Recording Mode	ACC ON Recording, Time Lapse Recording, Event Recording
Audio Control	Enable / Mute
Voice Volume	Mute / Low / Medium / High
Video Format	TS, MP4
Image Format	JPG
*Configurations may vary in different countries and regions.	

1.5 LED indicator



The table below shows the status of the LED:

LED	Color	Status	Meaning
-----	-------	--------	---------

Recording	Red	OFF	Power disconnected.
		Blinking	The system is running normally but not recording
		Solid ON	Video recording
Network	Yellow	OFF	No network signal.
		Blinking	The network signal is available but can't connect with the platform.
		Solid ON	The network signal is available and connected with the platform.
GNSS	Green	OFF	No GPS signal.
		Blinking	There is GPS signal but can't fix position.
		Solid ON	There is GPS signal and successfully positioned.

2. Features

- High Performance AI Chipset
- Up to 3 Video HD Channels
- Built in 180° Adjustable Lens
- Full Telematics Features
- Multi-Platform Connection
- Location Tracking
- LTE 4G High Speed Connectivity
- ADAS + DMS + BSD Events
- Live Streaming Video
- History Video Playback & Download
- Remote Engine Cut-off
- Panic Button
- Built-in Mic and Speaker
- Wi-Fi with AP & Station Mode
- Parking Monitor
- OTA Firmware Update
- EMMC Memory (Optional)

3. Functions

3.1 Basic Operation

- Startup: When the B+, ACC, and GND power lines are correctly connected to the vehicle power system, the device will automatically power on without any manual operation.
- Shutdown: The device will automatically power off when the vehicle power supply is disconnected.
- Sleep Mode: When the vehicle ignition is turned OFF (ACC signal off), the device will stop recording

and disable GNSS and other non-essential functions. The system then enters sleep mode to reduce power consumption and protect the vehicle battery.

3.2 Core Functions

Video Recording

When the vehicle ignition is turned ON, the device automatically starts recording. It captures video and audio from all connected cameras. The system supports loop recording, continuously overwriting the oldest files on the memory card when storage is full, ensuring uninterrupted recording without manual intervention.

Live Video Streaming

Through the backend platform, the device can transmit real-time audio and video data via cellular network. This allows fleet operators to monitor the vehicle and driver status remotely in real time.

Historical Video Retrieval

The platform enables users to request and download event-based or time-based video clips. Recorded files stored on the memory card can be uploaded to the cloud server for playback, analysis, and evidence review.

Event Monitoring

During operation, the device continuously monitors vehicle speed, acceleration (G-sensor), GNSS data, and driver status. When abnormal driving behavior or critical events are detected, the system triggers alerts and automatically uploads event data, including location information and photo/video evidence, to the platform.

Position Tracking

When the vehicle ignition is turned ON, the GNSS module is activated automatically for real-time positioning. The system continuously tracks and records vehicle location data, which is transmitted to the cloud platform. Users can view both real-time and historical trip routes through the fleet management system.

3.3 AI Functions

The device utilizes AI-powered computer vision technology to automatically detect road hazards and unsafe driving behaviors. When an event is detected, the device immediately issues an audible alert to warn the driver in real time. Event data is also uploaded to the monitoring platform for fleet management and safety analysis.

Important: To ensure optimal detection accuracy, all AI functions must be properly installed, calibrated, and configured according to the installation guidelines. Incorrect installation or calibration may affect AI performance and detection accuracy.

AI Event Trigger Conditions

AI safety alerts are activated only when the vehicle speed exceeds the configured enable speed threshold.

Outdoor Testing

For outdoor testing, ensure that the device has acquired a valid GPS signal. The AI system will use the GPS speed as the trigger condition for event detection.

Indoor Testing

For indoor testing without GPS reception, a simulated speed higher than the events enable speed threshold is required. Please refer the Article 5 for how to configure the simulated speed.

The simulated speed setting is valid only for the current session. After the device is restarted, the system automatically returns to using GPS speed for AI event triggering.

3.3.1 ADAS functions

When multiple ADAS events are detected simultaneously, alerts are triggered according to the following priority order:

1. Auto Calibration
2. Forward Collision Warning
3. Pedestrian Collision Warning
4. Close Distance Warning
5. Lane Departure Warning
6. Front Vehicle Start Warning

The system processes alerts based on their priority level. Higher-priority alerts will override and interrupt the voice prompts of lower-priority alerts to ensure that the most critical safety warnings are delivered to the driver without delay.

3.3.1.1 Forward Collision Warning



Function:

Monitors the distance and relative speed between the host vehicle and the vehicle ahead in real time. When a potential collision risk is detected, the system provides an early warning to help the driver take corrective action and maintain a safe following distance.

Trigger Conditions:

A warning is generated when:

- Vehicle speed exceeds 30 km/h (default threshold);
- A vehicle is detected in the host vehicle's driving lane;
- The estimated Time-to-Collision (TTC) falls below the configured warning threshold.

To reduce false alerts, warnings are suppressed when the host vehicle is already decelerating significantly.

3.3.1.2 Pedestrian Collision Warning



Function:

Detects pedestrians, cyclists, and motorcyclists in front of the vehicle in real time. When a potential collision risk is identified, the system issues an early warning to help the driver react promptly and avoid an accident.

Trigger Conditions:

A warning is generated when:

- Vehicle speed is within the configured warning range (10–60 km/h by default);
- A pedestrian, cyclist, or motorcyclist is detected ahead of the vehicle;
- The distance to the detected road user exceeds the configured threshold.

3.3.1.3 Lane Departure Warning



Function:

Monitors the vehicle's position within the lane in real time and alerts the driver when an unintentional lane departure is detected, helping to reduce the risk of accidents caused by distraction or fatigue.

Trigger Conditions:

A warning is generated when:

- Vehicle speed exceeds the threshold;
- The vehicle drifts toward visible lane marking and the distance is less than the configured threshold;

3.3.1.4 Close Distance Warning



Function:

Designed for low-speed driving scenarios, the Close Distance Warning continuously monitors the distance and relative movement between the host vehicle and the vehicle ahead. When a potential rear-end collision risk is detected, the system alerts the driver to maintain a safe following distance.

Trigger Conditions:

A warning is generated when:

- Vehicle speed is between minimum and maximum trigger speed threshold;
- The estimate time of collision falls below the configured threshold;
- The host vehicle and the vehicle ahead are moving closer to each other.

3.3.1.5 Front Vehicle Start Warning

**Function:**

When the host vehicle is stopped in traffic, the system monitors the vehicle ahead and notifies the driver when the leading vehicle begins moving, helping to reduce delays caused by driver distraction.

Trigger Conditions:

- Host vehicle remains stationary while the distance to the vehicle ahead is longer than the threshold;
- Distance to the vehicle ahead is within the maximum configured value;

3.3.2 DMS functions

Alarm Priority

To ensure critical driver safety events receive immediate attention, DMS alerts are processed according to the following priority order:

1. Fatigue Driving Detection
2. Mobile Phone Usage Detection
3. Driver Distraction Detection
4. Smoking Detection
5. Seat Belt Detection

When multiple events are detected simultaneously, only the highest-priority alert will be triggered. Higher-priority alerts will override and interrupt lower-priority voice prompts to ensure that the most critical safety warning is delivered to the driver without delay.

3.3.2.1 Fatigue Driving Detection



Function:

Monitors the driver's level of alertness by detecting signs of fatigue, including prolonged eye closure and yawning. When fatigue-related behavior is identified, the system issues a warning to help reduce the risk of fatigue-induced accidents.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds configured threshold and the detected fatigue indicators exceed the configured time duration and sensitivity threshold.

3.3.2.2 Driver Distraction Detection



Function:

Detects driver distraction behaviors, such as looking away from the road, frequently turning the head, or looking down for extended periods. When distracted driving is identified, the system issues an alert to help the driver maintain focus on the road and improve driving safety.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds the configured threshold and the detected driver's head pose exceeds the configured time duration and sensitivity threshold.

3.3.2.3 Smoking Warning



Function:

Identifies smoking behavior during driving and issues an alert to the driver to improve safety and maintain compliance with fleet driving policies.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds the configured threshold and smoking behavior is detected continuously for a specified duration.

3.3.2.4 Calling & Phone Use Detection



Function:

Detects mobile phone usage during driving, specifically phone call behavior, and issues alerts to help prevent distracted driving and improve road safety.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds the configured threshold and detected continuous phone call or using behavior is exceeds the configured time duration and sensitivity threshold.

3.3.2.5 Seat Belt Detection



Function:

Detects whether the driver is wearing a seat belt during vehicle operation. If the driver is not properly restrained, the system issues a warning to improve driving safety and ensure compliance with fleet safety regulations.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds configured threshold and the driver is detected as not wearing a seat belt exceeds the configured time duration.

3.3.2.6 Lens Occlusion Warning



Function:

Detects when the DMS camera lens is blocked, covered, or otherwise obstructed, which may prevent the system from accurately monitoring driver behavior. It helps ensure that the DMS camera remains unobstructed so that driver monitoring functions can operate correctly.

Trigger Conditions:

Trigger Conditions:

A warning is generated when the vehicle speed exceeds configured threshold and DMS camera detects

lens occlusion continuously exceeds the configured time duration and sensitivity.

3.3.2.7 Infrared Blocking Warning



Function:

Detects when the infrared (IR) illumination or infrared sensing area of the DMS camera is blocked, which may affect driver monitoring performance, especially in low-light or nighttime conditions. It helps maintain reliable DMS performance under all lighting conditions.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds configured threshold and detected infrared blocking continuously exceeds the configured time duration and sensitivity.

3.3.2.8 Driver Abnormal Warning



Function:

Detects abnormal driver conditions that may indicate unsafe driving status, such as unusual posture, loss of normal driving behavior, or other abnormal conditions identified by the AI algorithm. It provides an additional layer of driver safety monitoring by identifying abnormal driver conditions that may require immediate attention.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds configured threshold and detected abnormal driver condition continuously exceeds the configured time duration and sensitivity.

3.3.2.9 Drinking Warning



Function:

Detects drinking-related behavior while driving and issues an alert to help reduce distracted driving and improve fleet safety. It helps fleet operators monitor and reduce unsafe behaviors that may distract the

driver while the vehicle is in motion.

Trigger Conditions:

A warning is generated when the vehicle speed exceeds configured threshold and detected drinking behavior continuously exceeds the configured time duration and sensitivity.

3.4 Driver Identification

Overview:

Face recognition is a biometric identification technology based on unique facial feature analysis. The system captures images or video streams via an in-vehicle camera, automatically detects and tracks faces, and performs identity matching against enrolled driver profiles. This technology is also known as facial recognition or driver identity verification.

Operational Workflow:

1. The device must be online and properly connected to the platform.
2. Driver information is created on the platform, and a high-quality driver profile image (recommended resolution: 1080P) is uploaded. It is recommended to use a snapshot captured directly from the device as the reference image.
3. The driver profile is assigned to the corresponding vehicle/device.
4. After assignment, the device prompts the driver to perform face verification within approximately 2 minutes.
5. By default, the system performs automatic driver verification every 120 minutes during operation and reports recognition results to the platform in real time.

Notes:

For best recognition accuracy, ensure proper lighting conditions and correct camera installation angle. Driver profile images should be clear, front-facing, and of sufficient resolution to ensure reliable matching performance.

4. Installation

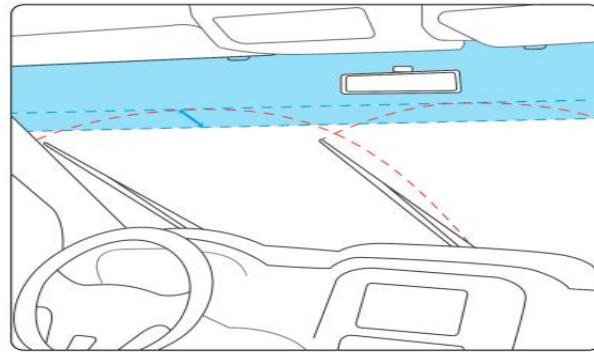
4.1 Installation Position Regulations

Note: The following information is provided for reference only and does not constitute legal advice. Users must comply with all applicable local laws and regulations.

Dash Camera Installation Guidelines (United States)

According to regulations from the Federal Motor Carrier Safety Administration (FMCSA), in-vehicle recording devices may be installed within permitted areas on the windshield, provided they do not obstruct the driver's field of view.

The device may be installed in the area from the top of the windshield down to 8.5 inches (approximately 216 mm) below the upper edge of the windshield wiper sweep area.

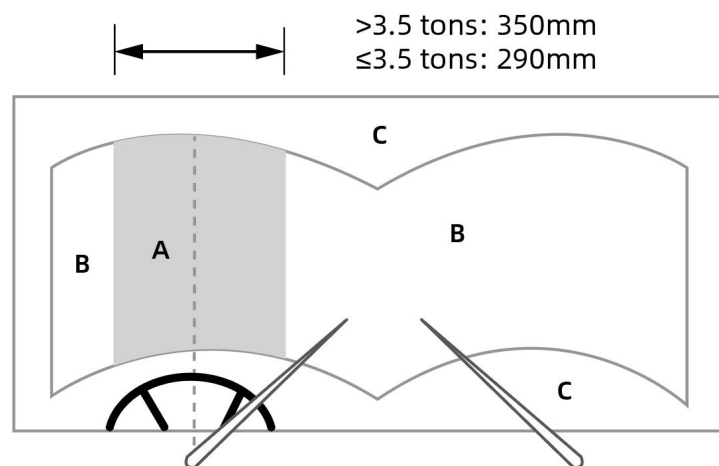


Dash Camera Installation Guidelines (United Kingdom)

To determine compliant installation positioning, the windshield is typically divided into defined visibility zones:

- Area A: A vertical zone centered on the steering wheel, 29 cm wide (35 cm for vehicles over 3.5 tons), within the area swept by the windshield wipers.
- Area B: The remaining swept windshield area excluding Area A.

The dash camera must be installed in a manner that does not obstruct the driver's field of view. Any part of the device, including the bracket and wiring, must not extend more than 10 mm into Area A, and must not extend more than 40 mm into Area B.



4.2 Installation Position Recommendation

It is recommended to install the device on the upper edge of the windshield, directly above the steering wheel, to ensure safe driving and optimal AI performance, the installation location should follow the principles below:

- Do not obstruct the driver's field of view.
- Do not interfere with or distract the driver during operation.
- Ensure the device is installed horizontally and remains level without tilt.
- The driver's face should be centered within the field of view of the inward-facing camera.

- The center point of the forward-facing camera image should be aligned with the horizon line for optimal ADAS performance.

4.3 Installation Instructions

Important Notes:

- Use only the supplied accessories for installation.
- The device operates on a **DC 9–36V power supply**. Ensure the positive and negative power cables are connected correctly to avoid damage to the device or vehicle.
- After installation is completed, remove the protective film from the camera lens to ensure optimal image quality.
- Use only memory cards and SIM cards that meet the specifications outlined in this guide.
- Installation and commissioning should be performed by a qualified technician, dealer, or professional installation service provider.

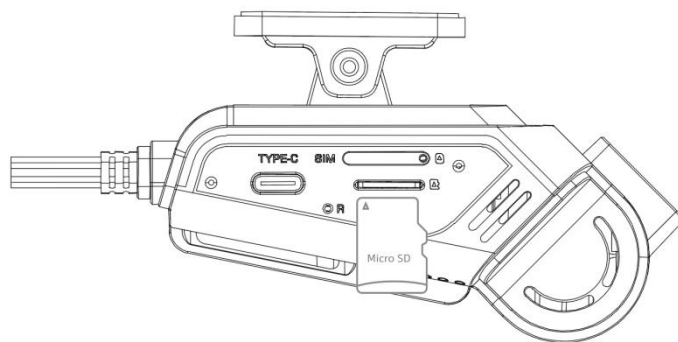
4.3.1 Installation Preparation

- Verify all items in the package against the packing list and ensure no components are damaged or missing before installation.
- Prepare necessary installation tools, such as insulation tape, wiring tools, and disassembly tools.
- Check that all original vehicle functions are operating normally. If any abnormal condition is found, do not proceed with installation.
- Clean and prepare the installation area in advance to ensure proper mounting and adhesion.

The device series requires both a SIM card and a micro SD memory card to operate at full functionality. These accessories can be selected based on deployment requirements; however, the following specifications and guidelines must be strictly observed.

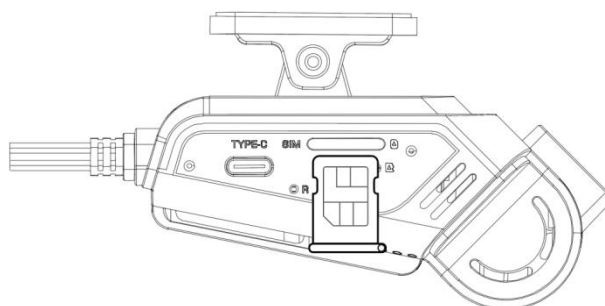
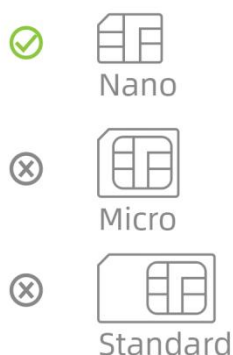
Memory card:

1. The device supports one **Micro SD** card slot.
1. Supported file system: **FAT32**, with a capacity **up to 1TB**.
2. Speed class requirement: Class 10 or higher, or A1 application performance class or above.
3. It is recommended to use memory cards supplied or certified by the device manufacturer to ensure optimal compatibility and system stability.
4. Insert the card following the correct orientation as indicated in the installation diagram to avoid damage.
5. To remove the card, gently press it inward until it ejects. When removing in a vehicle, handle with care to prevent the card from being lost or dropped into inaccessible areas.
6. Ensure the SIM card is not inserted into the memory card slot.
7. Memory cards are consumable components with a limited service life. It is recommended to perform quarterly testing to verify normal read/write performance and replace the card periodically to prevent data loss.
8. For long-term continuous recording in high-temperature environments, industrial-grade memory cards are recommended to ensure recording stability and reduce the risk of video corruption.



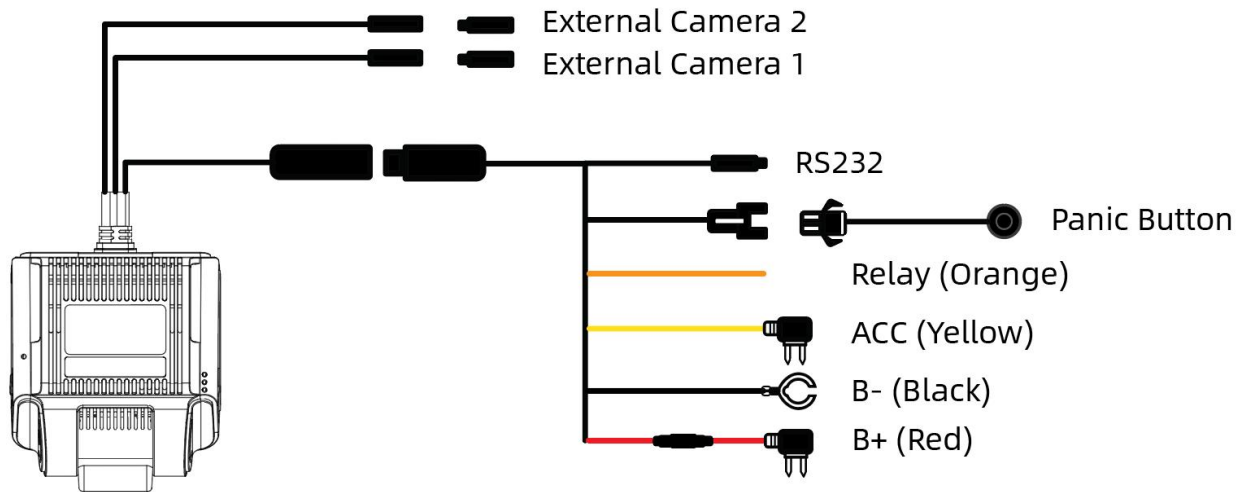
SIM card installation:

1. A **Nano SIM** card is required (refer to the installation diagram for size reference).
2. The SIM card must have an active cellular data service subscription.
3. Place the Nano SIM card into the SIM card tray in the correct orientation, then carefully insert the tray into the device until it is fully seated.
4. To remove the SIM card, use the SIM eject tool to remove the SIM card tray, then take out the SIM card from the tray.
5. For long-term operation in high-temperature environments, ceramic SIM cards are recommended to reduce the risk of deformation and communication failure caused by heat exposure.



4.3.2 Wire Diagram:

1. The functions and connections of all wiring harnesses are illustrated in the wiring diagram below. Please verify that all required accessories are available and complete the installation according to the actual vehicle configuration.
2. If I/O expansion functions are not required for the deployment, the I/O extension harness may be omitted to simplify installation and reduce cable routing complexity.
3. Depending on the installation location of external cameras, dedicated extension cables may be required to support remote camera installation and ensure reliable connectivity.



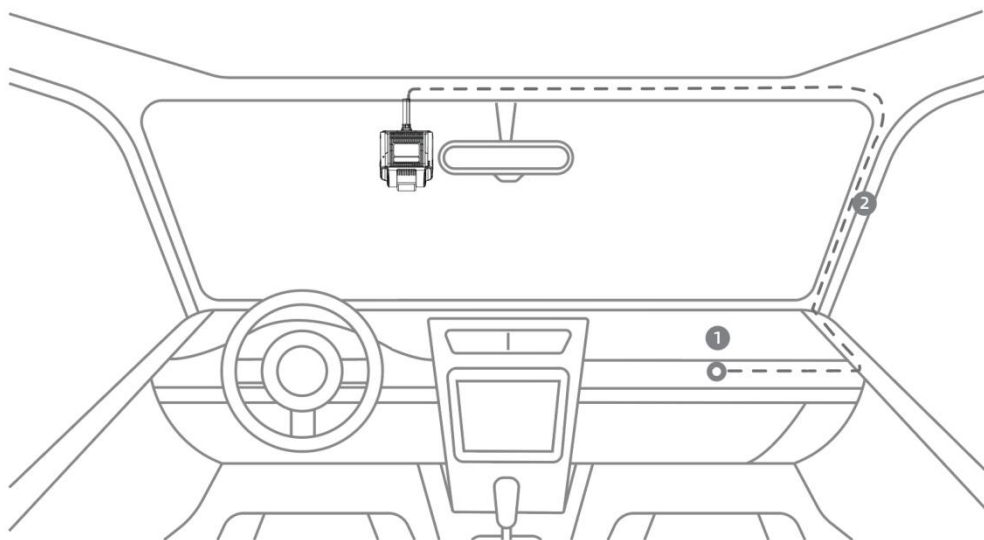
4.3.3 Device Installation Procedure

Step 1: Connect Vehicle Power

Connect the device power harness to the vehicle's B+ (constant power), ACC (ignition), and GND (ground) circuits at the fuse box. Refer to Figure 1 for the recommended wiring locations.

Step 2: Route the Power Cable

Route the power cable along the edge of the dashboard toward the upper center area of the windshield, following the path indicated by the dotted line in Figure 2. Ensure the cable is securely concealed and does not interfere with vehicle operation.



Step 3: Install the Mounting Bracket

Select an appropriate installation location on the windshield according to the recommended positions in 4.2., then:

- Clean the mounting surface thoroughly to remove any dust, grease, or residue.
- Remove the protective film from the 3M adhesive pad on the mounting bracket.
- Firmly attach the bracket to the selected location as shown in Figure 3.

- Apply steady pressure for several seconds to ensure full adhesive contact and remove any trapped air, helping to secure the bracket permanently.



Step 4: Install and Adjust the Device

Attach the device to the mounting bracket and adjust the forward-facing camera to ensure it is level and aligned with the road ahead, as shown in Figure 4.

After the camera position has been verified:

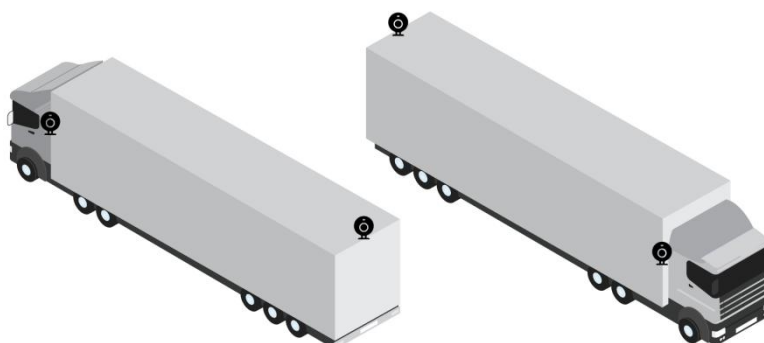
- Tighten the bracket adjustment screw securely.
- Connect the power cable to the device.
- Confirm that the device powers on correctly and that the camera view is properly aligned.

4.3.4 External Camera Installation

The device supports up to **three** camera channels simultaneously. Its 180° adjustable built-in camera can be configured as either a forward-facing (ADAS) or driver-facing (DMS) camera, while up to **two** external cameras can be connected to provide additional monitoring for a variety of fleet applications.

The installation locations of external cameras should be selected based on the vehicle type and application scenario. Common uses include cargo monitoring, passenger compartment monitoring, side-view coverage, or rear-view monitoring.

The illustration below shows several commonly recommended installation positions for external cameras. Select the mounting location that provides the required field of view while ensuring secure installation and unobstructed operation.



5. Device Configuration

5.1 Connect to the Device Hotspot

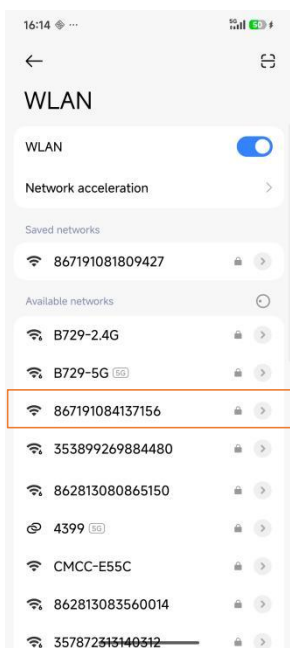
The device's Wi-Fi hotspot is enabled by default in AP (Access Point) Mode. If Wi-Fi has been disabled, briefly press the panic button connected to the device to re-enable the hotspot.

Once the hotspot is active, follow the instructions below to connect your smartphone to the device and access the configuration page.

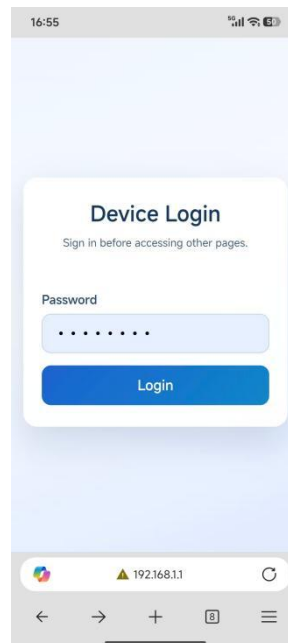
Warning:

The dash camera can be connected to only one smartphone at a time. Connecting multiple devices simultaneously may cause communication errors or configuration failures. For the best user experience, an Android smartphone is recommended.

Step1: Select the Wi-Fi named with model + IMEI number and connect it with default password: "12345678"



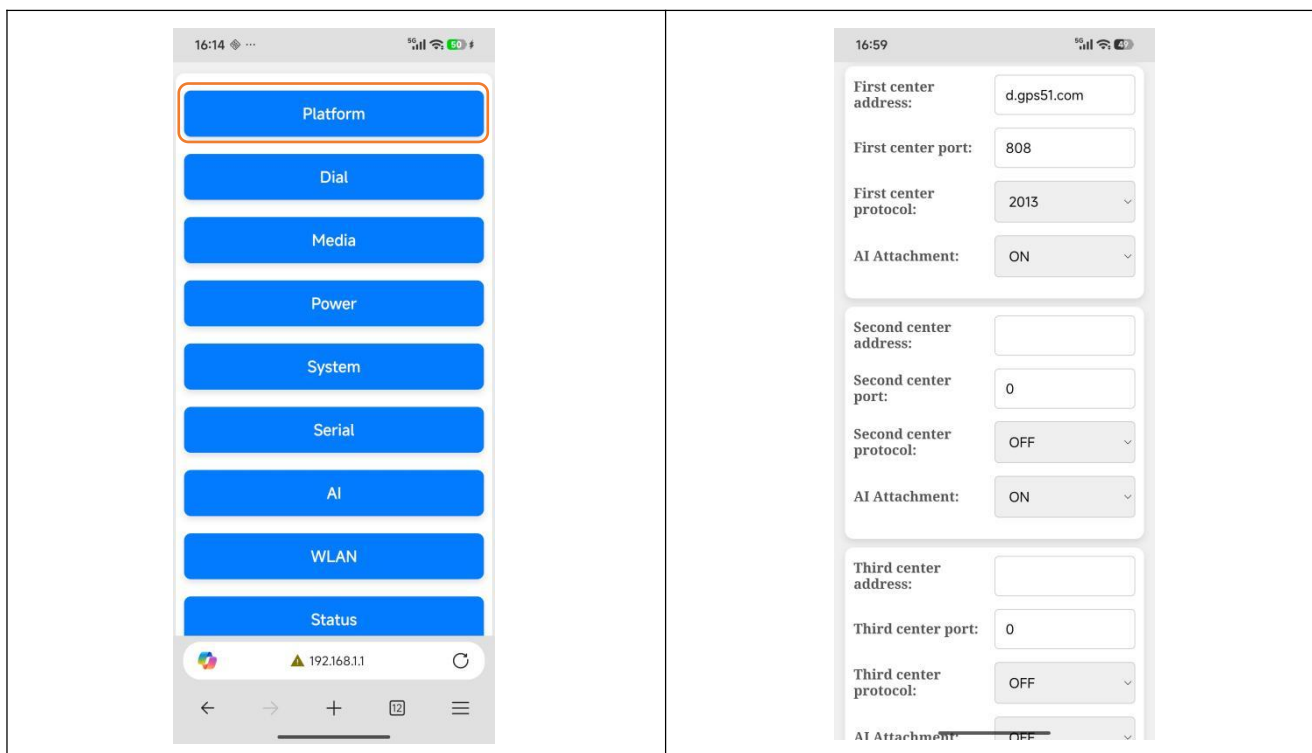
Step 2: Open this link <http://192.168.1.1> in the phone browser and login with password "00000000".



5.2 Platform Server

Step 1. Please select platform menu to modify the platform server settings.

Step 2. Input the server address (IP or domain name), port, protocol, and alarm attachment for AI events.



Note: Device ID Reporting Rules

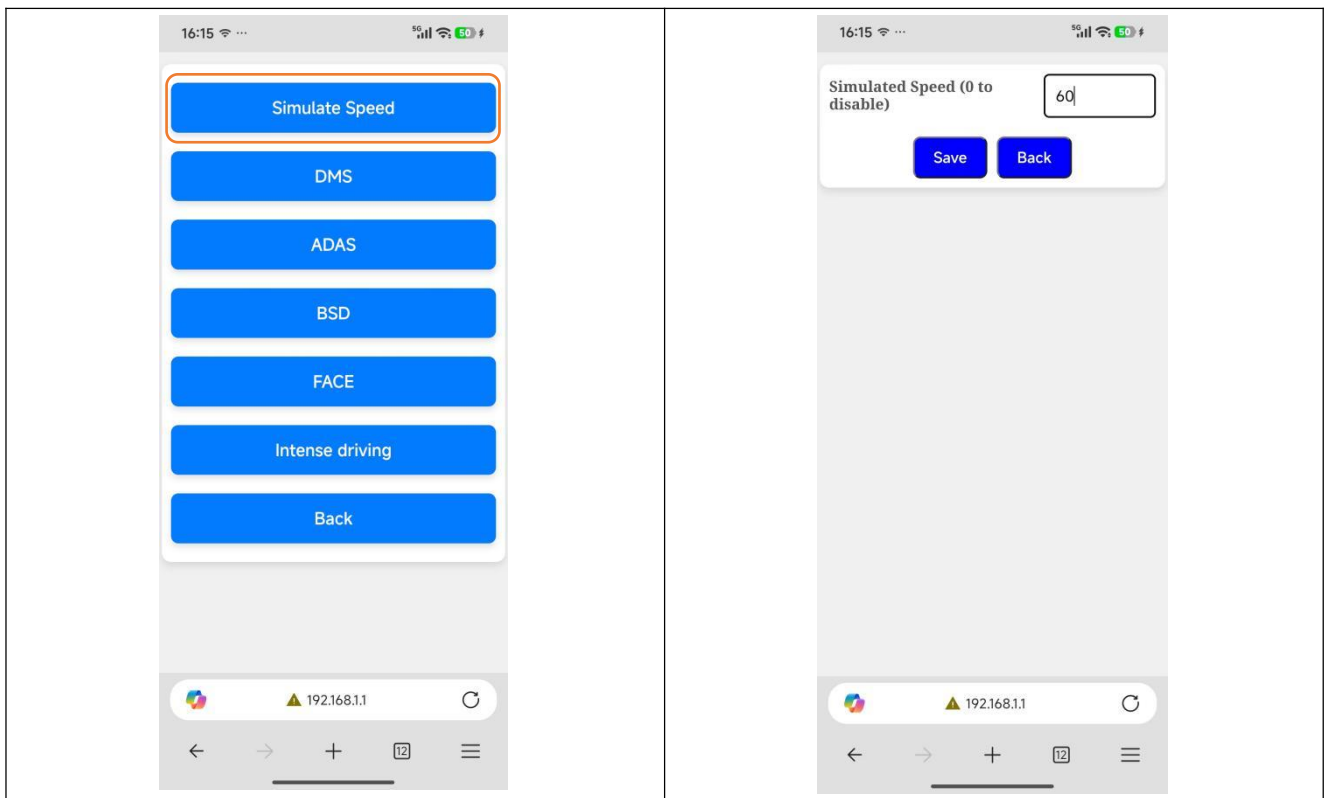
The device use the JT/T 808 protocol and the reported device ID varies depending on the selected protocol version:

- JT/T 808-2013: The device reports the last 12 digits of the IMEI as the device ID by default.
- JT/T 808-2019: The device reports the full 15 digits IMEI number as the device ID by default.

When configuring the platform connection, simply select the appropriate JT/T 808 protocol version (2013 or 2019) according to the platform requirements. This setting only determines the version of the JT/T 808 protocol used for communication.

5.3 AI Events

Step 1. Please select the menu AI then Simulate Speed to configure a simulated speed for testing the AI events indoor without GPS reception.	Step 2. The Simulated Speed should be higher than the AI Events enable speed threshold and ensure the camera is facing a person during testing.
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6. Firmware Upgrade

The device supports the following firmware upgrade methods:

Method 1: Local Upgrade via MicroSD Card

- Obtain the latest firmware package provided us.
- Copy the firmware file to the root directory of the MicroSD card.
- Insert the MicroSD card into the device.
- Power on the device. The firmware upgrade will start automatically.

Method 2: Remote Upgrade via FTP

The device also supports remote firmware upgrades over a network connection (Wi-Fi or cellular network).

Send an FTP upgrade command to the device, which will download the latest firmware package from the specified FTP server and perform the upgrade automatically.

For the command format and configuration details, please refer to the Device Command List.

7. Usage Precautions

7.1 Safety Warning

The driver remains fully responsible for the safe operation of the vehicle.

The alerts generated by the AI safety system are intended to assist the driver and **must not** be used as a substitute for the driver's judgment, attention, or vehicle control.

The AI warning functions are based on computer vision and deep-learning algorithms. Detection accuracy may vary depending on road conditions, lighting, weather, traffic environments, camera installation quality, and other factors. Therefore, the system cannot guarantee 100% detection accuracy under all driving conditions.

This device is designed to help improve driver awareness and fleet safety when used correctly. Improper use may cause driver distraction and could result in property damage, personal injury, or traffic accidents.

For safe operation:

- Do not review recorded videos, access the platform, or modify device settings while driving.
- Perform device configuration, maintenance, and video review only when the vehicle is safely parked and in compliance with local laws and regulations.
- Always maintain full attention on the road and surrounding traffic conditions.
- Do not allow mobile phones, tablets, or other devices used to access the platform to distract the driver.

Installation Safety Requirements

When installing the device, ensure that it:

- Does not obstruct the driver's field of view.
- Does not interfere with vehicle controls, including the steering wheel, pedals, gear selector, or other operating components.
- Is securely mounted and properly fastened.
- Is not installed in front of or within the deployment area of any airbag.

Regulatory Compliance

Some countries and regions prohibit or restrict the use of video monitoring and recording devices in vehicles. Users are responsible for ensuring that the installation and use of this product comply with all applicable local laws and regulations.

7.2 Maintenance Precautions

1. Keep the device dry at all times. Do not expose the device, cables, or connectors to water, moisture,

or high-humidity environments. Do not handle the device with wet hands, as this may result in short circuits, corrosion, equipment failure, or electric shock.

2. Avoid strong impacts, excessive vibration, or mechanical shock, as these may affect device performance or cause hardware damage.
3. Do not expose the device or power supply to extreme temperatures. Operating or storing the equipment outside the specified temperature range may result in malfunction or reduced service life.
4. Do not strike, throw, puncture, drop, crush, or otherwise subject the device to physical abuse.
5. Use only power cables, accessories, and data cables approved or supplied by the manufacturer. The use of incompatible accessories may affect performance, safety, or product reliability.
6. Do not disassemble, modify, or repair the device or its accessories without authorization. Unauthorized modifications may cause equipment failure and will void the product warranty.

7.3 Troubleshooting

Problem	Possible Cause / Solution
1. No video recording / recording invalid	Ensure a compatible MicroSD card is installed. The card must be formatted as FAT32 and meet the minimum requirement of Class 10 (C10) or higher.
2. Loop recording not working	Check available storage space on the memory card. If the card is full or abnormal, back up important files and format the card.
3. Video is blurry or unclear	Remove the protective film from the camera lens. Clean both the lens and the windshield to ensure proper image clarity.
4. No audio in recordings	Verify that audio recording is enabled in the device or platform settings.
5. Memory card not readable / files cannot be played	Confirm the memory card is properly inserted and formatted as FAT32. Test the card on a computer. If playback still fails, use a different video player or replace the memory card if it is damaged.
6. Device does not power on (no LED indicators)	Check vehicle ignition (ACC status). Ensure B+, ACC, and GND connections are correct. Inspect the fuse and wiring for damage or loose connections.
7. Device cannot connect to network (SIM issue / blue indicator flashing)	Verify SIM card is correctly installed and has an active data plan. For IoT SIM cards, APN configuration may be required manually.
8. No GNSS positioning (green indicator flashing)	Move the vehicle to an open area with a clear sky view. GNSS signal may be weak or unavailable in tunnels, underground parking, or between tall buildings.
9. ADAS / DMS functions not working	Ensure vehicle speed exceeds the activation threshold. Check camera connections, installation angles, lens cleanliness, and AI calibration settings.
10. Platform does not receive alerts	Confirm event types are enabled on the platform and verify network connectivity between device and server.
11. Device overheating during operation	High processing load from AI algorithms may cause the housing and heat sink to become warm. This is normal. Do not touch the heat sink during operation.
12. Camera angle becomes loose after	Ensure mounting screws at the camera joint are properly

adjustment	tightened after adjusting the angle.
13. Mount base falls off windshield	Ensure the installation surface is clean and free of dust, grease, or moisture before applying the 3M adhesive. Apply firm pressure during installation for proper adhesion.
14. Other issues	Restore factory settings and reconfigure the device. If the issue persists, contact technical support or your local distributor.

8. After-Sales Service Policy

Important Notice

To support continuous product improvement, specifications, features, software, and hardware may be updated without prior notice. The appearance, color, and configuration of the product are subject to the actual product delivered.

This warranty applies to the repair, replacement, or return of products identified by their unique IMEI number. Please keep the original proof of purchase in a safe place, as they may be required when requesting warranty service.

Warranty Coverage

For defects caused by non-human factors under normal use conditions, the product is covered by a one-year limited warranty from the date of purchase.

Warranty Exclusions

Repair services may be provided on a chargeable basis under any of the following circumstances:

1. The warranty period has expired.
2. The warranty card, proof of purchase, or other valid purchase documentation cannot be provided.
3. The product or its accessories are outside the applicable warranty period.
4. Damage caused by unauthorized repair, modification, disassembly, misuse, accident, impact, liquid ingress, improper installation, or incorrect power supply voltage.
5. The product label, serial number, IMEI, or anti-counterfeit label has been removed, altered, damaged, or is illegible.
6. Damage resulting from installation, operation, or maintenance that does not comply with the instructions in this manual.
7. Damage caused by force majeure events, including but not limited to fire, flood, lightning, earthquake, or other natural disasters.
8. The product model does not match the information recorded on the warranty documentation, or the warranty documentation has been altered.
9. Any other damage resulting from circumstances beyond the manufacturer's reasonable control.