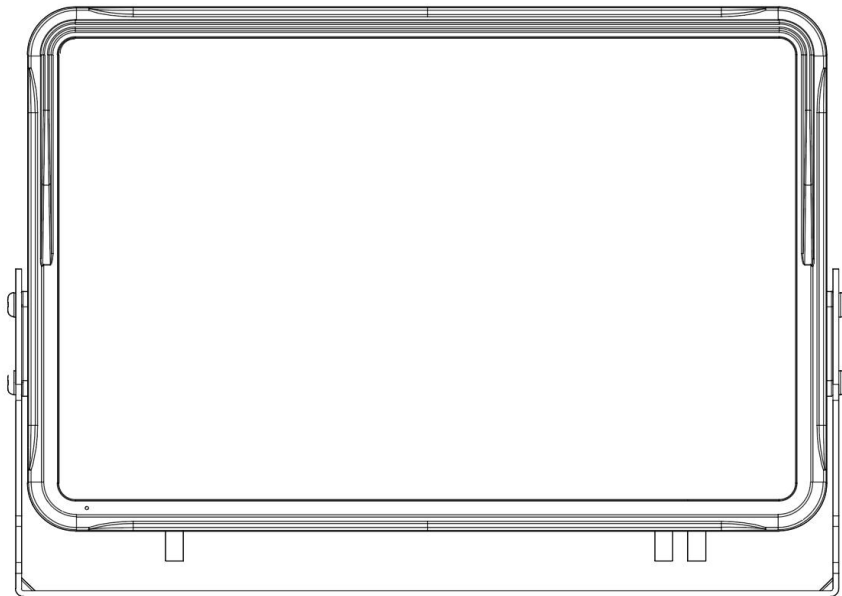


Multi-Channel AI Vehicle Monitor System

User Manual V1.1



Model: M503

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 M503 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 M503.

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.

To continuously improve product quality and user experience, Anyixing. reserves the right to modify product features, specifications, hardware, software, documentation, and related materials without prior notice. The latest product information shall prevail.

Trademark Statement

Anyixing is a registered trademark of Anyixing. All other trademarks, trade names, and brand names mentioned in this manual are the property of their respective owners.

Disclaimer and Limitation of Liability

To the fullest extent permitted by applicable law, the products and services described in this manual, including hardware, software, firmware, and related documentation, are provided on an "as available" basis. Anyixing. makes no express or implied warranties, including but not limited to warranties of merchantability, fitness for a particular purpose, satisfactory quality, or non-infringement of third-party rights.

Under no circumstances shall Anyixing. be liable for any indirect, incidental, special, consequential, or punitive damages, including but not limited to loss of profits, business interruption, loss of data, or loss of documentation arising from the use of this product or manual.

Users acknowledge that Internet-connected devices and telematics systems may be exposed to cybersecurity risks, including unauthorized access, malware, cyberattacks, or data breaches. Anyixing. shall not be responsible for losses or damages resulting from such events but will provide reasonable technical assistance when required.

Users are solely responsible for ensuring that the product is installed and operated in compliance with all applicable laws, regulations, and industry requirements. Anyixing. assumes no liability for any misuse of the product, violation of applicable regulations, or infringement of third-party rights.

In the event of any conflict between this manual and applicable laws or regulations, the applicable laws and regulations shall prevail.

Copyright © 2026 Anyixing. All Rights Reserved.

Table of Contents

- About This Manual 2
- Table of Contents 4
- 1. Overview 6
 - 1.1 Appearance Description 6
 - 1.3 Packing contents 7
 - 1.4 Specifications 8
 - 1.5 Status Icons 10
- 2. Features 11
- 3. Functions 12
 - 3.1 Basic Operation 12
 - 3.2 Core Functions 12
 - 3.3 AI Functions 13
 - 3.3.1 ADAS functions 13
 - 3.3.2 DMS functions 15
 - 3.4 Driver Identification 19
- 4. Installation 19
 - 4.1 Installation Position Recommendation 19
 - 4.2 Installation Instructions 20
 - 4.2.1 Installation Preparation 20
 - 4.2.2 Wire Diagram: 23
 - 4.2.3 Device Installation Procedure 25

4.2.4 External Camera Installation	26
5. Device Configuration	26
5.1 Configure via the built-in screen	26
5.1.1 Entering the Configuration Center	27
5.1.2 Navigating the Configuration Menus	27
5.2 Configure via the Wi-Fi Hotspot	27
5.2.1 Connect to the Device Hotspot	27
5.2.2 Platform Protocol Configuration	28
5.2.3 AI Events Indoor Test	28
6. Firmware Upgrade	29
7. Usage Precautions	30
7.1 Safety Warning	30
7.2 Maintenance Precautions	31
7.3 Troubleshooting	31
8. After-Sales Service Policy	32

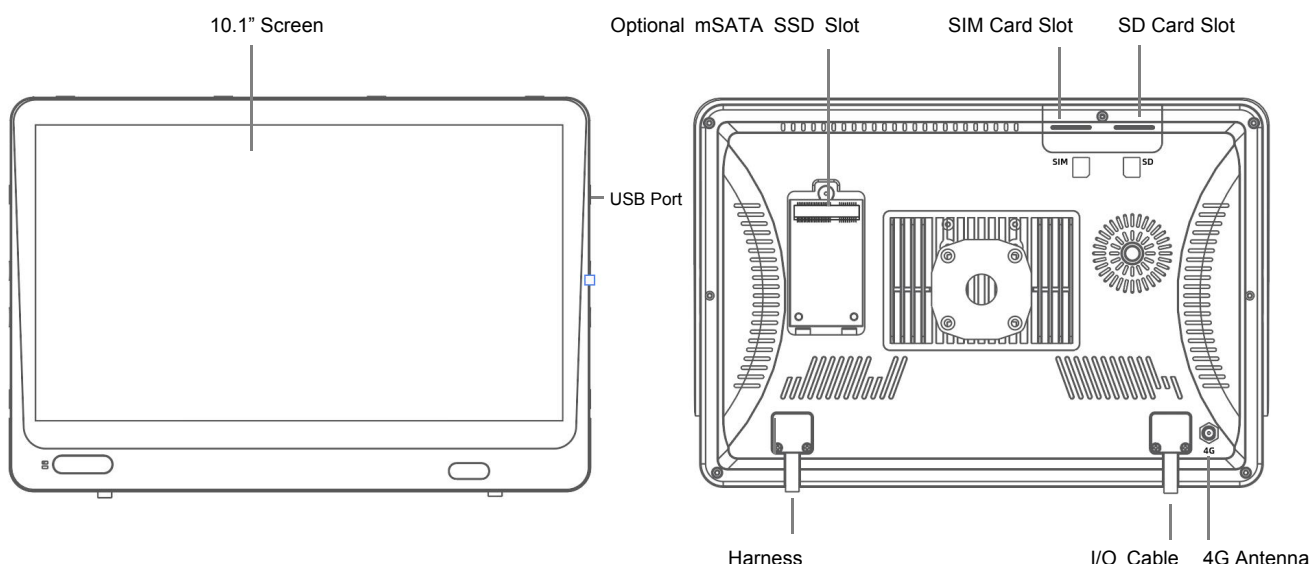
1. Overview

The M503 is an all-in-one fleet video telematics terminal that integrates GNSS positioning, HD video recording, AI-powered safety functions, and an onboard display. Designed for fleet management, dispatching, and driver safety, it helps improve operational efficiency while promoting safer and more compliant driving.

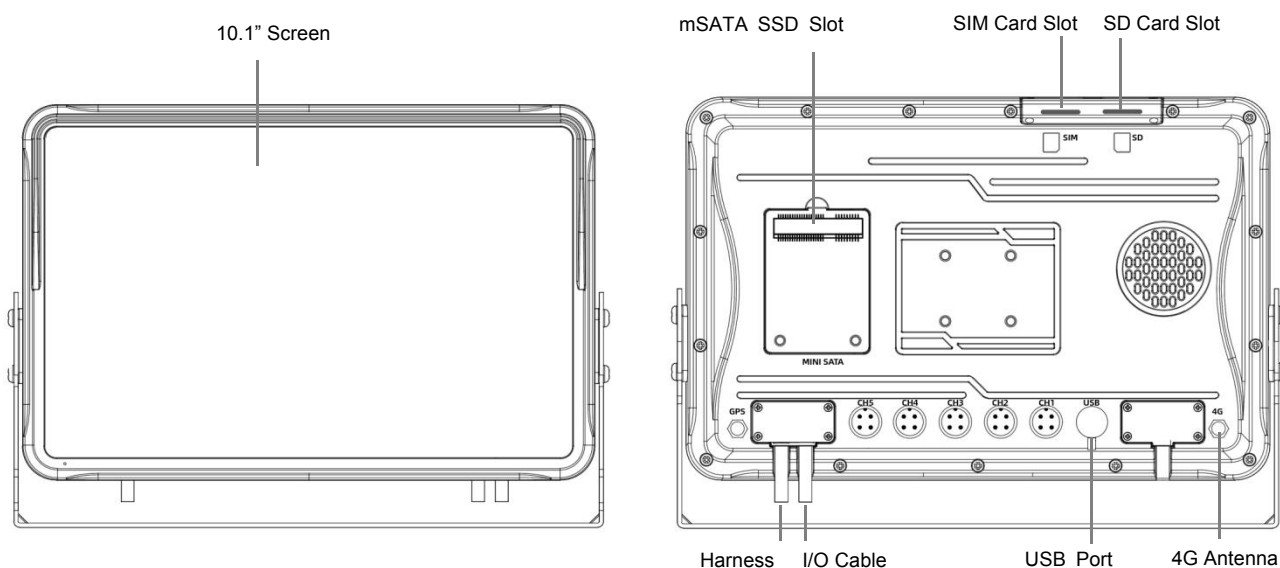
Powered by advanced AI algorithms, the M503 supports ADAS, DMS, and BSD to detect driving risks in real time and provide proactive safety alerts. It supports up to five 1080P camera channels, offers flexible installation and excellent vibration resistance, and is ideal for buses, logistics, and commercial fleets. The Pro version features a waterproof design, making it suitable for more demanding operating environments and harsh weather conditions.

1.1 Appearance Description

Standard Version:



Pro Version:



1.3 Packing contents

Package contains the following items:

Standard Version

Item	Name	Photo	Quantity
1	M503 device		1
2	Harness		1
3	Bracket		1
4	GPS antenna		1
5	4G antenna		1
6	Bracket adhesive sticker		1
7	Screen angle adjust screw driver		1
8	Bracket anchor screws		4
9	Bracket and screen joint screws		4

Pro Version

Item	Name	Photo	Quantity
1	M503 Pro device		1
2	Bracket		1
3	Harness		1
4	I/O cable		1
5	Bracket and screen joint screws		4
6	Screw driver		1
7	Backup screws		4
8	GPS antenna with adhesive sticker		1
9	Network antenna		1
10	USB type C adaptor		1

1.4 Specifications

General	
Operating System	Linux
Dimensions	25*17*3.5 cm

Weight	Standard Version: 1.83kg Pro Version: 2.53kg	
Color	Black	
Power Supply	9-36VDC	
Power Lost Protection	Super Capacitor provides 10 - 15s of safe power backup (Optional)	
Operating Temperature	-20 ~ +70 °C	
Operating Humidity	10%-90% Non-condensing	
Hardware		
CPU	32-bit RISC CPU 1GHz, 1T NPU	
RAM	2Gb DDR3	
External Storage	1* SD card, max. 1TB 1* mSATA SSD (Optional for standard version, built in for Pro version)	
G-Sensor	3 Axis Accelerometer	
GNSS	Multiple Positioning Mode	
SIM Card	Standard SIM	
I/O	ACC *1, SOS*1, Relay*1, DIN*3, RS232*2, VOUT*1 (Pro version: VOUT*3)	
Screen	10.1” 720P ISP Screen	
USB Port	Standard Version: Type A, Pro version: Type C	
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	
Network		
Cellular	LTE Cat 4 + WCDMA	
Frequency Bands	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8	CN, IN
	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8	EMEA
	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B17/B28/B66 LTE-TDD: B38/B40/B41	LATAM

	WCDMA: B1/B2/B4/B5/B8	
Wi-Fi	802.11b/g/n 2.4G, supports AP & station mode	
Protocol	JT/T 808-2013, JT/T 808-2019JT/T1078-2016, T/JSATL12-2017	
Video / Audio		
Channels	External 5CH * 1080P	
Video Encoding	H.264	
Audio Encoding	AAC/G.711A	
Frame Rate	15 FPS	
Microphone	Built-in	
Speaker	Built-in, 1.5 Watts	
Recording Quality	Main and Sub Stream, Adjustable Resolution	
Recording Mode	ACC ON Recording, Time Lapse Recording, Event Recording	
Audio Control	Enable / Mute	
Voice Volume	1-10 levels	
Video Format	MP4	
Image Format	JPG	
*Configurations may vary in different countries and regions.		

1.5 Status Icons

Function	Icon	Status	Meaning
Network Signal		Signal Available	The icon is highlighted, indicating the device is connected to the 4G network. The signal bars indicate the current signal strength.
		No Signal	The icon is greyed out, indicating no 4G network connection.
Platform Connection		Connected	The icon is highlighted, indicating the device is successfully connected to the monitoring platform.
		Disconnected	The icon is greyed out, indicating the device is not connected to the platform.
Wi-Fi Status		STA Mode	The icon is highlighted, indicating the device is operating in Station (STA) Mode.

		AP Mode	The icon is highlighted, indicating the device is operating in Access Point (AP) Mode.
		Wi-Fi Off	The icon is greyed out, indicating Wi-Fi is disabled.
SD Card		Card Detected	The icon is highlighted, indicating the SD card has been detected and is functioning normally.
		Card Error	The icon is greyed out, indicating the SD card is not detected or has encountered an error.
Hard Disk (if equipped)		Drive Detected	The icon is highlighted, indicating the hard disk is recognized and operating normally.
		Drive Error	The icon is greyed out, indicating the hard disk is not detected or is operating abnormally.
GNSS Positioning		Position Fixed	The icon is highlighted, indicating the device has successfully acquired a GNSS position.
		No Position	The icon is greyed out, indicating GNSS positioning is unavailable.
Mute		Mute Enabled	The icon is highlighted, indicating the device is operating in mute mode.
USB Storage		USB Drive Detected	The icon is highlighted, indicating the external USB storage device has been successfully recognized.

2. Features

- High Performance AI Chipset
- Up to 5 HD Video Channels
- Supports ADAS + DMS + BSD
- Built-in 10.1" Touch Screen
- Multi-Platform Connection
- Location Tracking
- LTE 4G High Speed Connectivity
- Live Streaming Video
- History Video Playback & Download
- External USB Storage
- Remote Engine Cut-off
- Panic Button
- Built-in Mic and Speaker
- Wi-Fi with AP & Station Mode
- Parking Monitor

- Extended RS232 Sensors
- OTA Firmware Update

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 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.

Note: 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 Recommendation

The device is designed to be mounted on the center of the vehicle dashboard using the supplied

mounting bracket. This installation position provides convenient access to the touchscreen while maintaining a clear view of the display and minimizing driver distraction.

To ensure safe operation and optimal performance, observe the following installation guidelines:

- Install the device on a stable, flat surface near the center of the dashboard.
- Ensure the mounting bracket is securely fastened and all adjustment knobs are tightened after positioning.
- Position the display so it is easily visible to the driver without obstructing the forward field of view.
- Do not install the device where it may interfere with the steering wheel, gear selector, pedals, airbags, or other vehicle controls.
- Route all cables securely and away from moving parts or areas where they may be pinched or damaged.
- If external cameras are connected, verify that each camera is installed at the recommended location and adjusted to provide the required field of view.
- After installation, confirm that the display angle is properly adjusted to minimize glare and ensure comfortable viewing during normal driving.

Important: Before operating the vehicle, verify that the mounting bracket is firmly secured and the device is stable. Periodically inspect the bracket and mounting hardware to ensure they remain tight during long-term vehicle operation.

4.2 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.

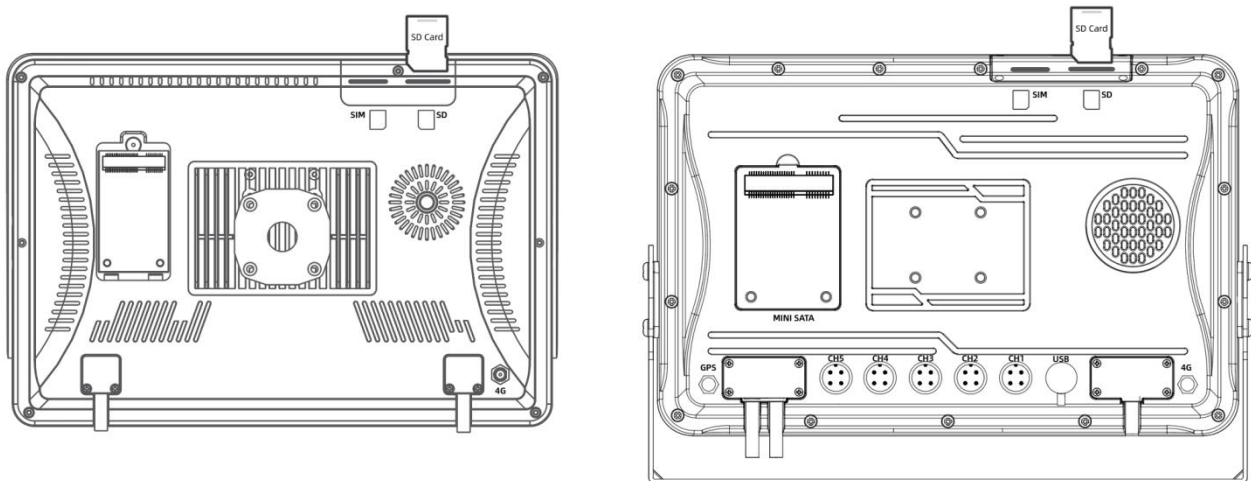
4.2.1 Installation Preparation

- 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 (or mSATA SSD if supported) to operate at full functionality. These accessories can be selected based on deployment requirements; however, the following specifications and guidelines must be strictly observed.

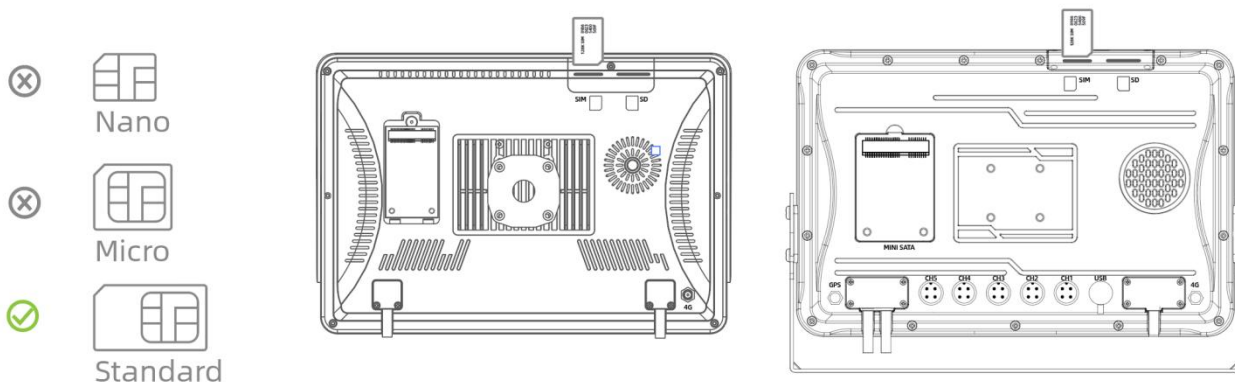
Memory card:

1. The device supports one **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 **Standard 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. Insert the SIM card according to the correct direction until a “click” sound is heard, indicating proper installation.
4. To remove the SIM card, gently press it inward until it releases. When removing in a vehicle, handle with care to avoid losing the card in hard-to-reach areas.
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.

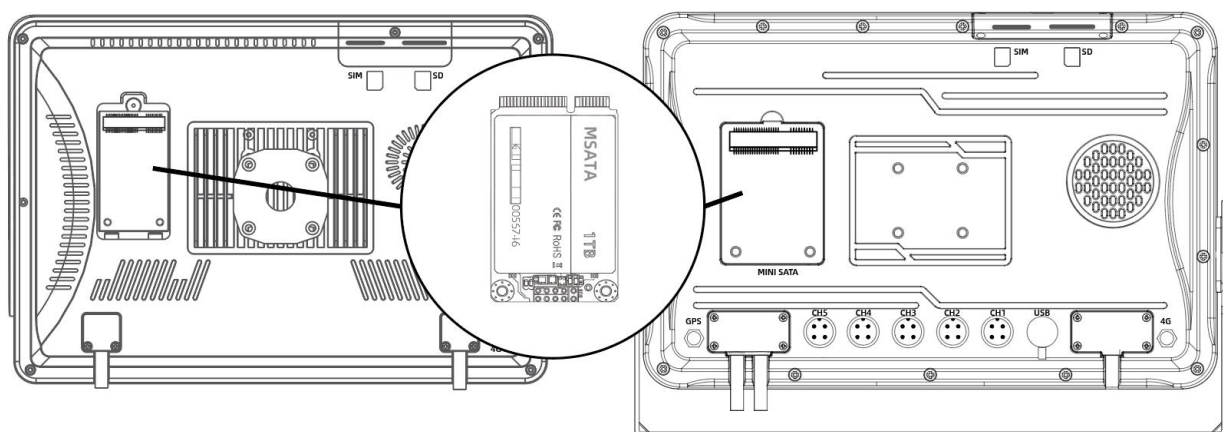


Installing the mSATA SSD (Optional)

Note: The mSATA storage slot is available only on selected M503 models. Please confirm with your distributor or supplier that your device supports mSATA SSDs before installation.

Installation Procedure

1. Power off the device and disconnect the power supply before installation.
2. Locate the mSATA compartment on the rear of the device and remove the cover if applicable.
3. Insert the mSATA SSD into the connector at an angle of approximately 30°, ensuring the gold contacts are fully inserted.
4. Gently press the SSD downward until it is aligned with the mounting hole.
5. Secure the SSD using the supplied mounting screw.
6. Reinstall the compartment cover (if applicable).
7. Power on the device. The system will automatically detect the installed SSD.
8. If prompted, format the SSD before using it for video recording.



Important Notes

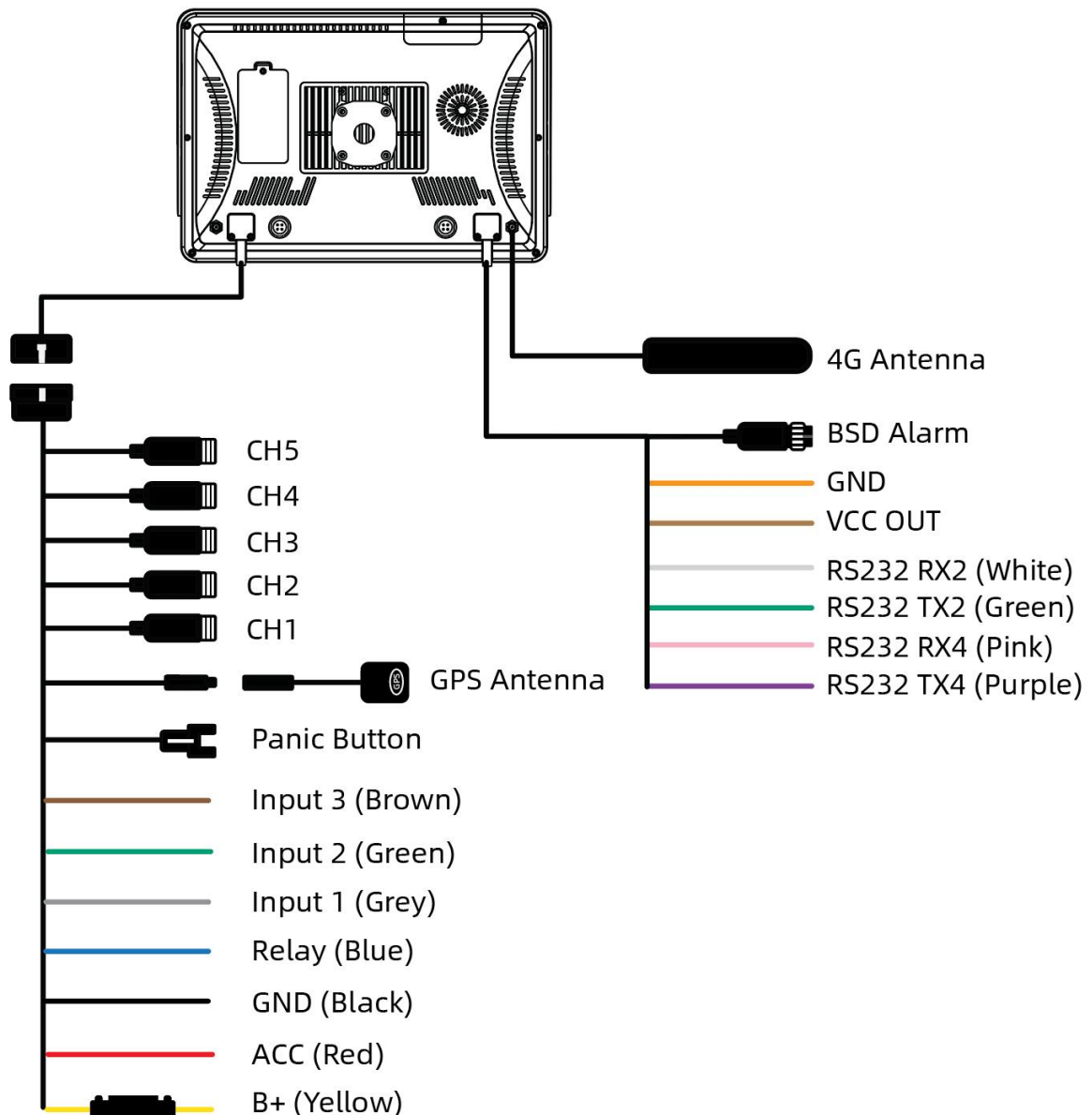
- Only use **standard mSATA SSDs** supported by the device specifications.
- Always disconnect the power before installing or removing the SSD.
- Do not force the SSD into the connector. Ensure it is inserted in the correct orientation.
- Handle the SSD carefully and avoid touching the connector pins to prevent electrostatic damage.
- After installation, verify that the SSD is recognized in the **Device Status** or **Storage** menu before operation.

If the SSD is not detected, power off the device and check that it is fully inserted and securely fastened.

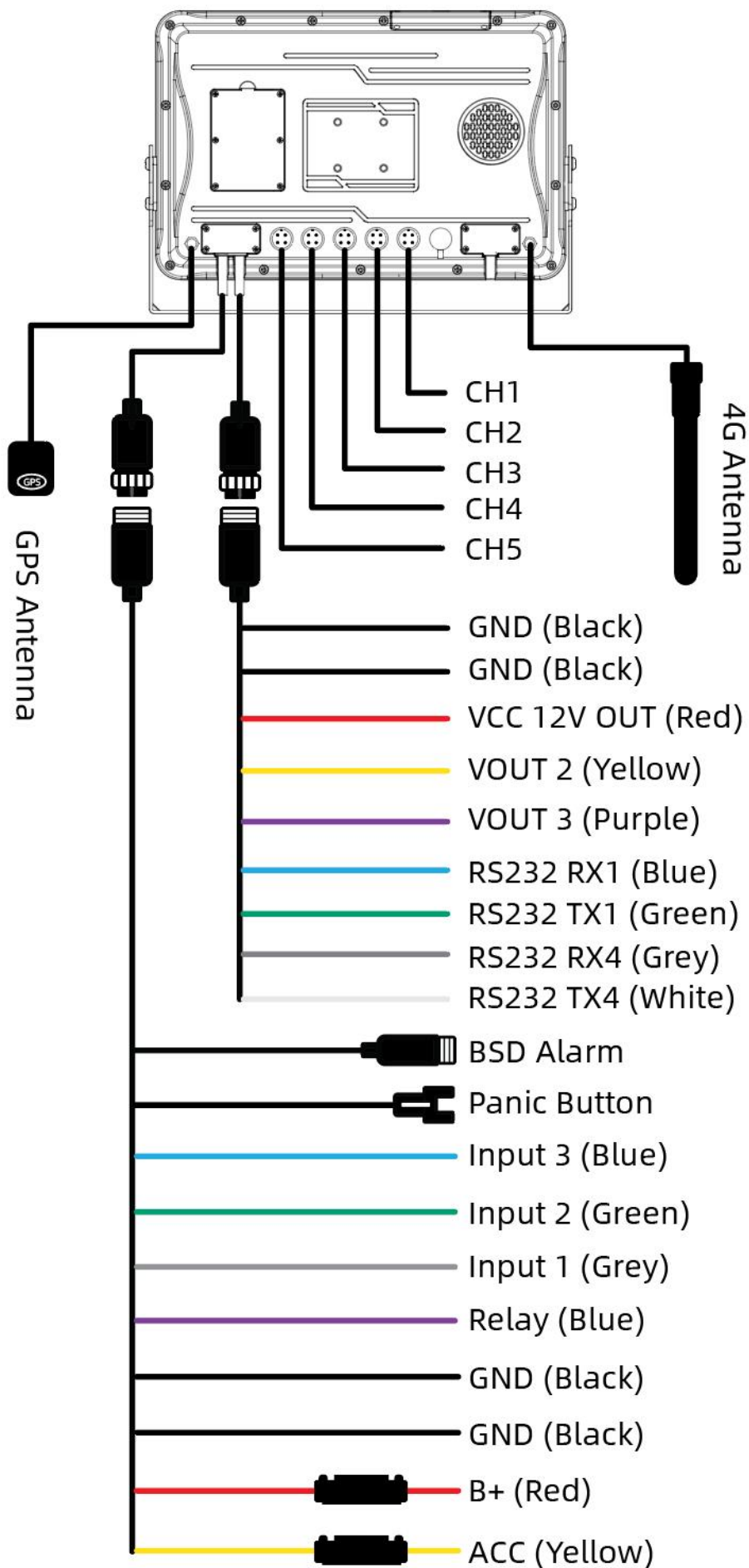
4.2.2 Wire Diagram:

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.

Standard Version:



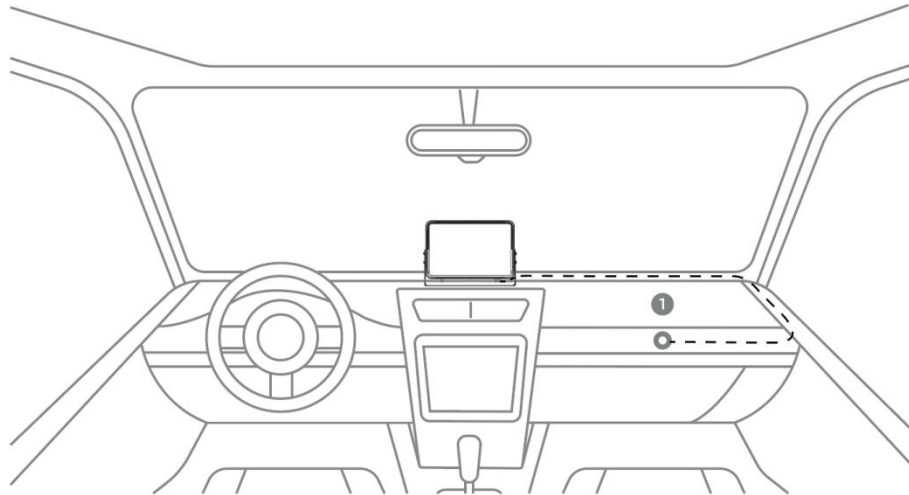
Pro Version:



4.2.3 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: Install the Mounting Bracket

Select a suitable mounting location on the center of the vehicle dashboard where the display is easily visible without obstructing the driver's view or interfering with vehicle controls.

Secure the mounting bracket firmly to the dashboard using the supplied hardware. Ensure the bracket is stable and can withstand normal vehicle vibration.

Step 3: Mount the Device

Attach the M503 to the mounting bracket and tighten the screws to secure the device. Adjust the display to the desired viewing angle, then fully tighten all adjustment screws to prevent movement during vehicle operation.

Step 4: Complete the Installation

Connect all required accessories, such as antennas, or peripheral devices, if applicable. Route all cables neatly and secure them away from moving parts, sharp edges, and heat sources.

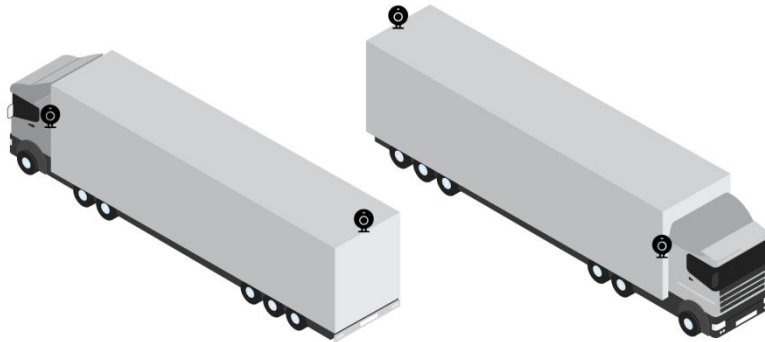
Power on the device and verify that it starts normally, acquires GNSS and network signals, and that all connected peripherals operate correctly before placing the vehicle into service.

Important: After installation, confirm that the mounting bracket and device are securely fastened. Periodically inspect the mounting hardware and wiring to ensure safe and reliable operation during long-term use.

4.2.4 External Camera Installation

The device supports up to **five** camera channels simultaneously. 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.

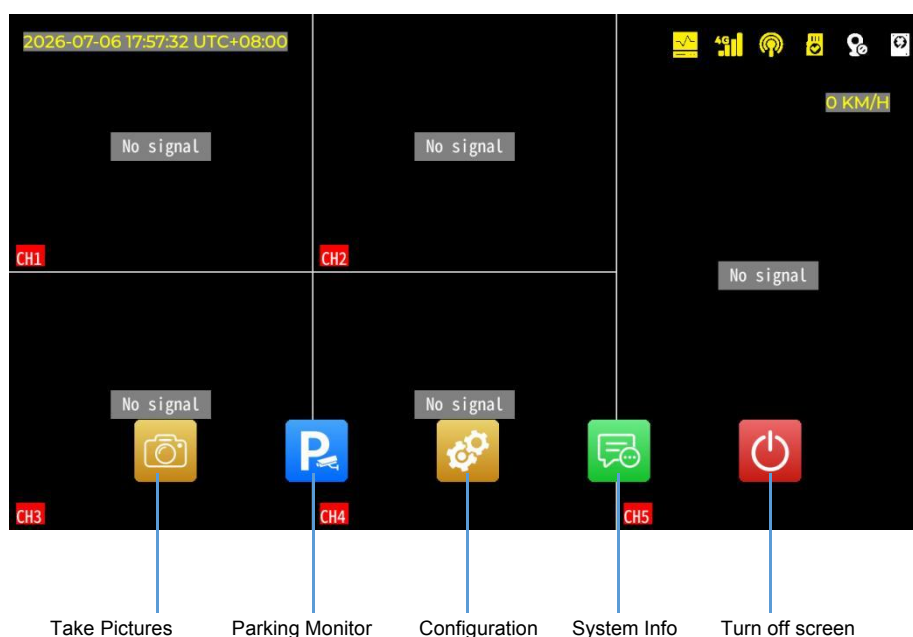
The illustration below shows several commonly recommended installation positions for external cameras. Select the mounting location that provides the required field of view while ensuring secure installation and unobstructed operation.



5. Device Configuration

5.1 Configure via the built-in screen

The M503 provides an intuitive on-screen configuration interface that allows users to configure the device easily. Device settings are organized into functional categories, making deployment and maintenance simple and efficient.

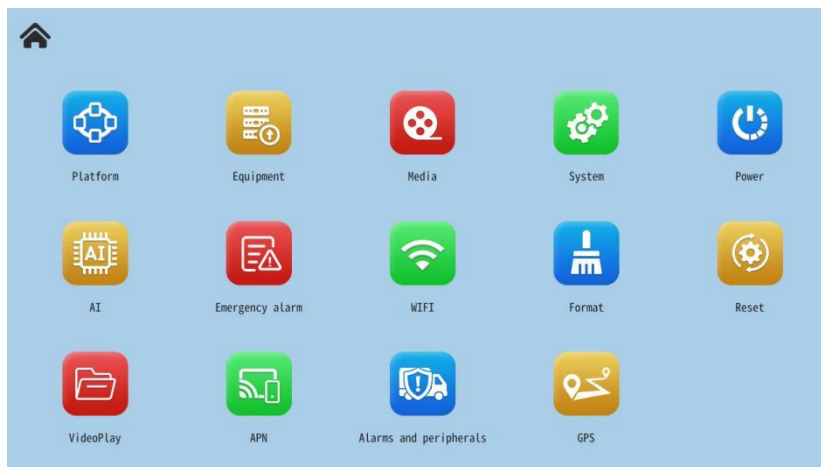


5.1.1 Entering the Configuration Center

1. Power on the device and wait until the Live View screen appears.
2. On the Live View screen, tap the Configuration button located at the bottom of the screen.

5.1.2 Navigating the Configuration Menus

1. In the Configuration Center, tap the desired function icon to open its configuration page.
2. Modify the required parameters according to your application requirements.
3. After completing the configuration, tap Confirm to save the changes.
4. Tap Refresh to reload the current configuration from the device.
5. Tap the Back icon to return to the previous menu.



Note: Some configuration changes may require the device to reconnect to the network or restart before they take effect.

5.2 Configure via the Wi-Fi Hotspot

In addition to on-screen configuration, the device can also be configured through its built-in Wi-Fi hotspot using a smartphone, tablet, or computer.

5.2.1 Connect to the Device Hotspot

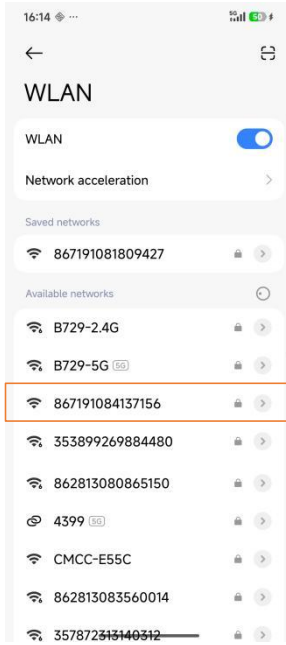
The device's Wi-Fi hotspot is enabled by default in AP (Access Point) Mode. If Wi-Fi has been disabled, please re-enable it by the built-in screen configuration first.

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

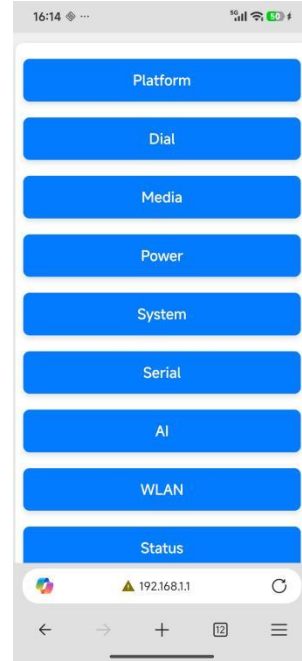
Warning:

The device 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 browser for configurations.



5.2.2 Platform Protocol Configuration

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

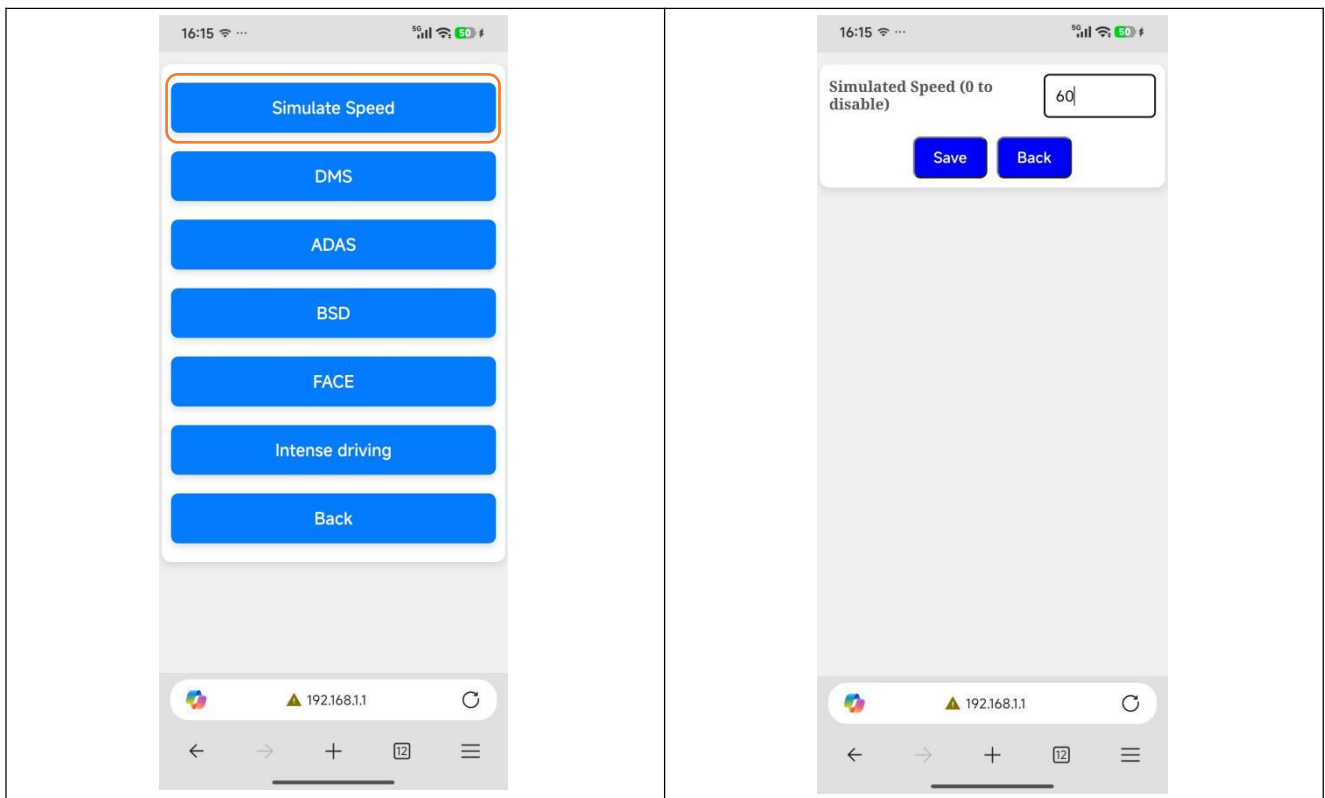
- JT/T 808-2013: The device reports the last 12 digits of the IMEI as the device ID by default.
- JT/T 808-2019: The device reports the full 15 digits IMEI number as the device ID by default.

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.

5.2.3 AI Events Indoor Test

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.



6. Firmware Upgrade

The device supports the following firmware upgrade methods:

Method 1: Local Upgrade via SD Card

Step 1: Download the latest firmware package and copy the .bin firmware file to the root directory of the SD card. Do not place the file inside any folder.

Step 2: Power off the device, insert the SD card containing the firmware file then power on the device. The device will automatically detect the firmware file and begin the upgrade process. After the upgrade is completed successfully, the device will restart automatically.

Step 3: Verify the Firmware Version

After the device restarts, navigate to Device Status and verify that the firmware version matches the upgraded version.

Important Notes:

- Do not power off the device during the upgrade.
- Do not press any buttons or operate the device while the upgrade is in progress.
- Do not remove the SD card or disconnect the power supply until the upgrade is complete.
- Interrupting the upgrade process may cause firmware corruption and prevent the device from starting.

Data Backup

Before upgrading, back up any important recordings to a computer or cloud storage. Some firmware upgrades may erase data stored on the SD card..

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 SD 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	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	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	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. 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.