

TD14-2 Two-channel Driving Recorder Product Manual

TD14-2 Two-channel



I. Product Introduction

This device is an intelligent terminal product integrating multiple advanced functions such as GPS/BDS positioning monitoring, 4G remote real-time video surveillance, local TF card recording, and DMS/ADAS AI voice alerts. It organically combines functions including real-time monitoring, operation management, and command and dispatch into one unit. It is a cost-effective product specifically developed for in-vehicle video surveillance and remote monitoring. It adopts domestic intelligent image chips and an embedded operating system, combined with the most advanced H.265 video compression/decompression technology, network technology, and GPS/BD positioning technology in the IT field. It supports up to 2-channel 1080P HD video surveillance recording and playback; 1-channel audio input/output. The proprietary pre-allocated vehicle-specific file system technology solves the file fragmentation problem caused by repeated read/write, and prevents storage file system crashes, data loss, failure to detect the storage, and file garbling, ensuring stable and complete data; it records vehicle driving information and uploads data wirelessly, and together with the center software enables alarm-linked central monitoring, remote management, and playback analysis based on the central database. The product features a simple appearance and flexible, convenient installation.

II. Usage Precautions

To ensure the safe use of the terminal device and extend its service life, please fully consider the following factors during installation:

1. After receiving the product, inspect the device and accessories. If any item in the package is damaged or any accessory is missing, please contact your dealer promptly.

2. When installing and operating the device, comply with relevant electronic product specifications as well as the requirements of the vehicle and other connected equipment.

3. Installation and construction must comply with relevant standards; relevant national or local standards may be referenced.

4. Check the input power voltage; it must be within the 10-36V range. The recommended operating voltage is 12V or 24V to prevent device malfunction caused by voltage mismatch.

5. For optimal positioning performance, the receiving surface of the GPS antenna must face upward with no metal objects above it. The bottom of the antenna must remain flat, the tilt angle must not exceed 30 degrees, and the distance from the device should be approximately 50 cm. Place the positioning antenna as close as possible to the junction of the dashboard and the windshield.

6. The vehicle recorder should operate within the temperature and humidity ranges specified in the technical specifications.

7. The device's external wiring should have sufficient spacing and be protected with flame-retardant conduit to ensure the cables will not cause leakage due to wear or aging.

III. Product Appearance, Features and Specifications



Side

Front

Back

Product Features

- Adopts H.265 & H.264 codec, saving storage space and transmission bandwidth;
- Built-in real-time codec for 2 channels of 1080P*25FPS, 720P, D1, etc.;
- Built-in dual-channel AI intelligent algorithms, supporting ADAS and DMS functions;
- Supports GPS + BDS dual-mode precise positioning;
- Supports 1 TF card and a supercapacitor to doubly guarantee the integrity of recording files;

- Supports 1 SIM card; the 4G module optionally supports global frequency bands; supports Wi-Fi hotspot;
- 1-channel IO output (low level);
- 1-channel RS232 serial port;
- Built-in speaker and microphone, supporting two-way voice intercom between the device and the platform;
- One-touch SOS emergency call;
- Supports video preview and parameter configuration via mobile APP, client software, and platform software;
- Dedicated file system improves disk read/write efficiency and makes recording more stable;

Product parameters

Item		Parameter
System	Operating Language	Chinese / English
	Operating System	Linux
	Operation Interface	Supports APP operation interface;
	GUI	None;
Processor and CPU	CPU	ARM Cortex-A7 MP2@950MHz
	Memory	DDR3 2Gb
	Flash	1Gb
Video and Recording System	Video Input	Resolution: front 1080P, rear 1080P. Max 1080P 60 fps
		Front 1080P sensor, horizontal angle 115°
		Rear 1080P sensor, horizontal angle 115° , with Ir-cut infrared night vision
	Video Standard	PAL standard, NTSC standard
	Video Compression Format	H.264/H.265 compression format
	Preview	Supports 1080P, 720P, D1 selectable,

	Function	
	Recording Resolution	1 to 8 quality levels, best level 1, lowest level 8
	Recording Quality	1 to 8 quality levels, best level 1, lowest level 8
	Recording Rate	PAL: 100 fps, CCIR625 line, 50 fields NTSC: 120 fps, CCIR525 line, 60 fields; CIF: 256Kbps ~ 1.5Mbps, multiple quality levels selectable HD1: 600Kbps ~ 2.5Mbps, multiple quality levels selectable D1: 800Kbps ~ 3Mbps, multiple quality levels selectable 720P: 1Mbps-4Mbps, multiple quality levels selectable 1080P: 1Mbps~8Mbps, multiple quality levels selectable 2K: 2Mbps~16Mbps, multiple quality levels selectable
	Recording Mode	Automatic recording by default, supports power-on recording, scheduled recording, alarm recording, etc.
Audio	Audio Input	1-channel audio, built-in MIC
	Audio Output	1 channel, built-in speaker
	Compression Format	G.711A compression format
	Recording Method	Audio and video recorded synchronously
Alarm Input		1-channel IO input (emergency alarm button);
Alarm Output		1-channel IO output (low level), for remote vehicle lock (optional)
Communication Interface		1-channel RS232 (optional)
GPS Positioning		Supports GPS / BD (external Gmouse, TTL level interface)
Reset Button		3 seconds to restore Wi-Fi, 8 seconds to restore factory settings;
Sensor		Built-in 3-axis acceleration
Storage	TF Card	Supports, maximum 512G
	Upgrade Method	Supports TF card upgrade, FTP remote automatic upgrade
	Storage Method	Proprietary raw-disk storage method
	SIM Card Interface	1 Micro SIM card interface
AI	ADAS	Lane departure, pedestrian, and vehicle distance detection, etc.
	DSM	Fatigued driving detection, smoking, and obstruction unsafe driving behavior detection
Low Power Consumption	Sleep Online	Supports low-power online reporting to platform function
	Vibration Wake-up	Supports vibration-triggered wake-up in low-power standby mode
Power and Consumption	Power Management	Adaptive wide-range power input, with overload, under-voltage, short-circuit, reverse-connection and other protection functions; supports scheduled

		power on/off and delayed shutdown functions.
	Input Voltage	DC:+9V ~ +36V
	Output Voltage	+5V@500mA
	Power Consumption	Normal operating state < 5W (without peripherals)
Operating Environment	Temperature	-25℃ to +70℃
	Humidity	20% to 80%
Security Management	Password Access	Two-level management with user password and administrator password
Platform Access		JT/T808-2013, JT/T808-2019, JT/T905-2014 (optional support)
		JT/T1076-2016, JT/T1078-2016
		CMSV6
Dimensions		120mm*77mm*55mm
Net Weight		240g

IV. Accessories and Interface Definitions

1. Product and Accessory Inspection

Before using this product, please check whether the product is damaged and whether the accessories are complete. If anything is missing, please contact your supplier.

The product and accessory list is as follows:

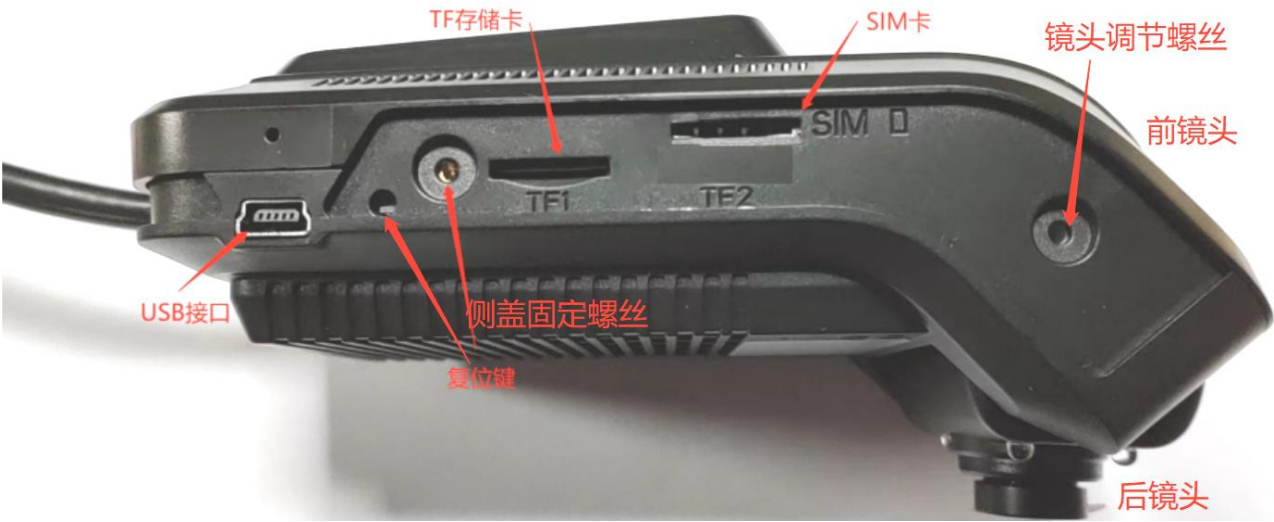
Table 2. Product Accessories List

No.	Name	Image	Qty
1	Main Unit		1
2	Power Cable		1
3	SOS One-touch Alarm Cable		1

4	BD/GPS Antenna		1
5	3M Adhesive		1
6	Side Cover Screw Tool Kit		1

2. Panel Introduction

Figure 1. Product Interface Diagram



3. Cable Interface Connection Methods

This mainly introduces the definitions of interfaces such as power, ACC, GPS, RS232, IO-out, and SOS alarm, as detailed below:

3.1 Internal Cable Interface

Connect the internal cable and the power extension cable, as detailed below:



Figure 2. Power Cable Interface Function Definition

3.2 Accessory Cable Interface Connection Methods



Figure 3. GPS Cable 3.5mm headphone jack interface or 4P BMW interface



Figure 4. SOS Alarm Cable 2P plug-in interface

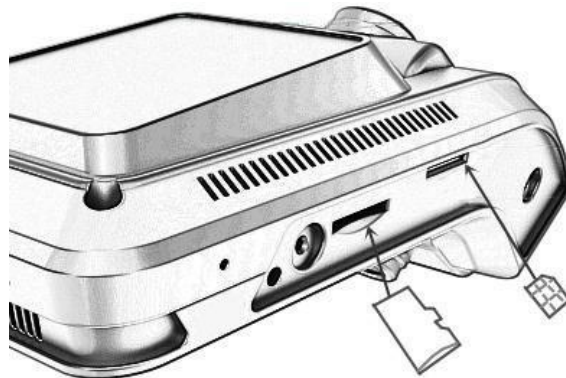
V. Installation Instructions

TF card selection: It is recommended to choose a well-known brand and high-quality TF card. A TF card of Class 10 or above is recommended, with a capacity between 8G and 128G.

TF card formatting: After obtaining a new TF card, if there is data on it that needs to be backed up, please back it up first. Once backed up, the device will automatically format the new card, and it can only be used after formatting is complete.

1. Install the 4G Card and TF Card First

Remove the side protective cover and insert the 4G card (Micro SIM card) and the recording storage card (TF card).



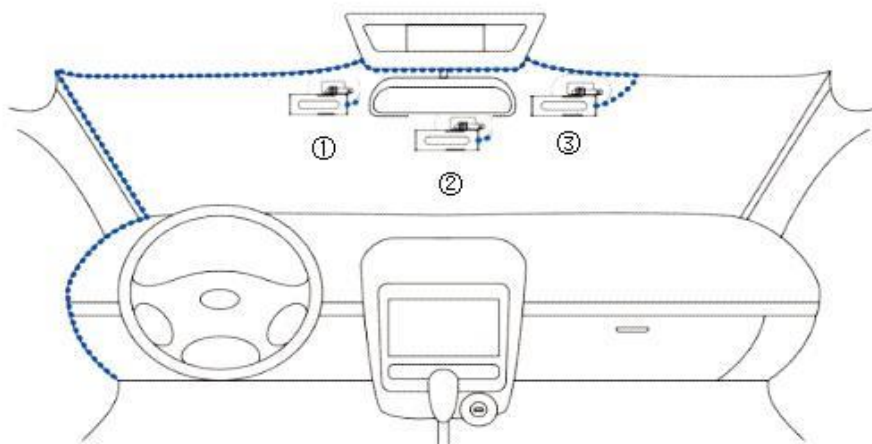
 When inserting the SIM card or TF card, if there is spring resistance and a latch clicks into place, the card is successfully installed.

Install the tamper-proof protection plate and its screws, and secure the lens at the same time. The specific accessories and the diagram are shown below.



⚠ Note: The short tamper-proof plate screw goes into the fixing hole next to the reset button, and the long tamper-proof plate screw goes into the fixing hole near the camera.

2. Select the Installation Position



Recommended Installation Position Diagram

Please note the following points during installation:

- ① Waterproofing: Choose a location that is not prone to water ingress to keep the terminal dry. Keep away from air-conditioner outlets to prevent

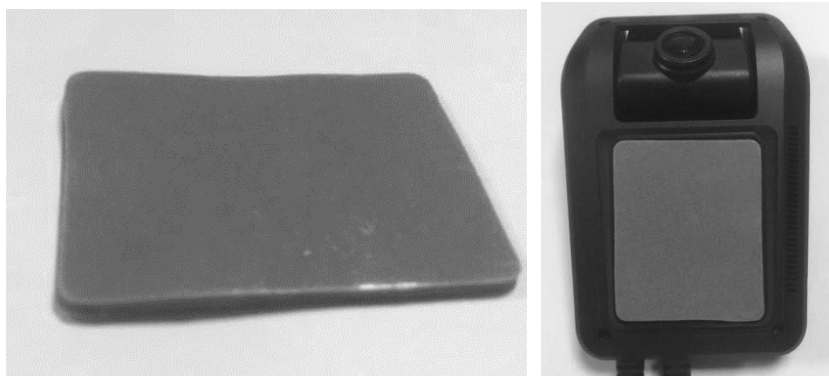
condensation from accumulating inside the terminal due to temperature differences, which would affect the product's service life.

② Shockproofing: The terminal must not be installed suspended in a position subject to prolonged severe vibration.

③ Interference protection: The terminal should be kept away from in-vehicle audio/video, intercom, and other electronic devices to prevent conducted and radiated interference.

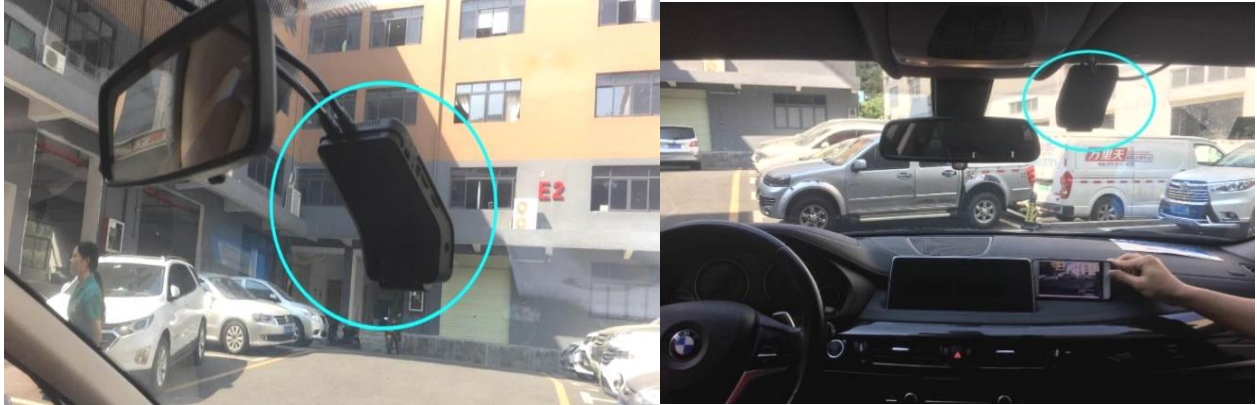
3. Fixed Installation and Commissioning

Install the dust-free adhesive sticker: Before installing the main unit, clean the windshield at the intended mounting position to prevent the sticker from falling off due to poor adhesion. First attach the 3M adhesive to the device, find the proper installation angle inside the vehicle, peel off the 3M dust-free adhesive paper from the bracket, pay attention to the installation direction, and stick the device with the 3M adhesive onto the vehicle's front windshield.



Adjust the angle of the recorder lens: Adjust the recorder camera and move the recorder as required to ensure the front camera faces straight ahead of the

vehicle. The rear camera can be adjusted according to personal needs and actual conditions, as shown in the figure:



4. Antenna Installation and Wiring

Take the external GPS antenna out of the accessory box and connect the GPS antenna correctly. For optimal positioning performance, the receiving surface of the positioning antenna must face upward with no metal objects above it, and the bottom of the antenna must remain flat with a tilt angle not exceeding 30 degrees. Keep the antenna at least 50 cm from the device, and place it as close as possible to the junction of the dashboard and the windshield.

For wiring, the user may refer to '2. Recommended Installation Position Diagram' (subject to the user's actual conditions). ①②③ are reference positions for device installation; please wire according to actual conditions. If the main unit has built-in front and rear dual cameras, positions ①② are recommended; if only a front camera is available, positions ②③ are more suitable. Concealed wiring is recommended.

5. Power Connection

Follow the blue wiring in the 'Recommended Installation Position Diagram' to connect to the in-vehicle fuse control box, and find the corresponding signal wires to connect with the device wiring (ACC, ground, constant power, left/right turn signal wires, etc.). Connect according to the power cable interface definition. Before connecting, check that the input voltage is within 10-36V, with a recommended operating voltage of 12V or 24V, to prevent device malfunction caused by voltage mismatch.

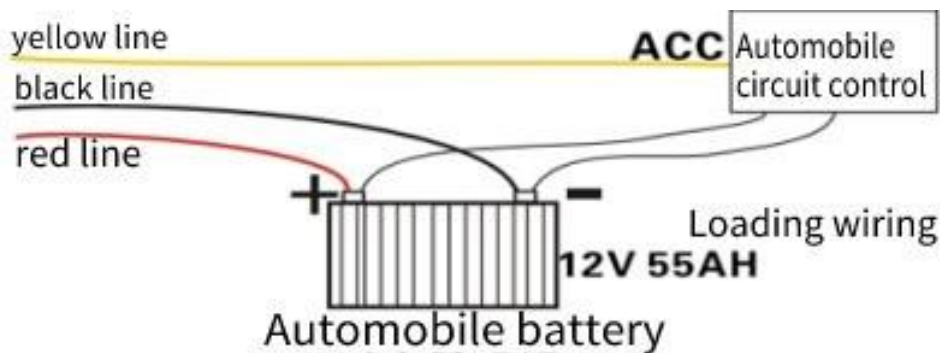
Connect the red power wire (positive) to the vehicle's constant power, i.e., the positive terminal of the vehicle's main control power supply.

The black power wire (negative) should be connected to the vehicle power negative terminal or ground; ensure good conductivity at the grounding point.

The yellow power wire (ignition) ACC switch (the gear switch before the vehicle starter motor) should be connected to the ignition control cable, i.e., the circuit that is powered only when the vehicle is running.

When the vehicle key is turned on, the device will start automatically; when the vehicle key is turned off, it will shut down automatically.

When debugging the device with a power adapter, you may connect the red and yellow wires together to the positive terminal of the power supply.



💡 After connecting the power, the working indicator light will illuminate when the recorder is operating, and a startup sound will be emitted from the speaker hole.

⚠️ Users must not reverse the positive and negative terminals.

6. Camera Angle Adjustment during Installation

DSM/ADAS function: This function issues alarms for irregular driving such as fatigued driving and lane departure. When the driver yawns, closes eyes, smokes, uses a phone, makes a call, or engages in other irregular driving behaviors, the function will trigger a voice alarm and report the alarm information.

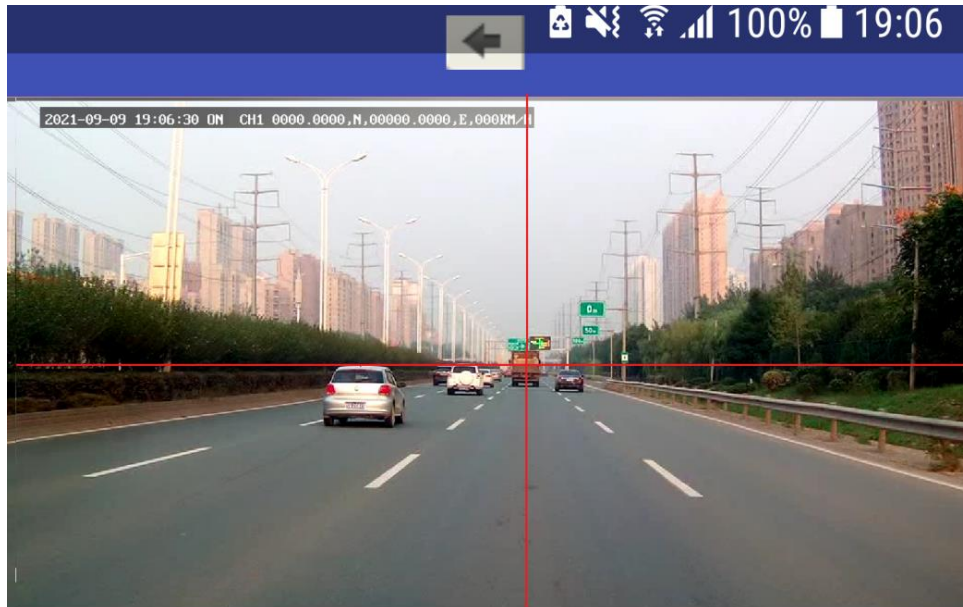
6.1 ADAS Front Camera

Installation position: Try to center it on the windshield as the axis, moving up or down depending on the vehicle type. For a steeply sloped windshield, install it slightly above the center; for a vertical windshield, install it slightly below the center. (Note: It must not be affected by the wiper.)

The ADAS camera is embedded in the main unit. After securing the main unit, only the ADAS camera angle needs to be adjusted. Power on the main unit and use the APP to view the image ratio: the road surface should occupy 1/2-2/3 of the

image and the sky 1/2-1/3 of the whole image, as shown in the effect diagram below.

After adjusting the angle, use a tool to secure the camera.



When performing ADAS calibration with the APP, drive the vehicle straight in the middle of the lane. The vertical line is the lane centerline, and the horizontal line is the level of the vanishing point ahead; place the crosshair at the intersection and adjust using up/down/left/right, then click 'Start Calibration' once calibrated.

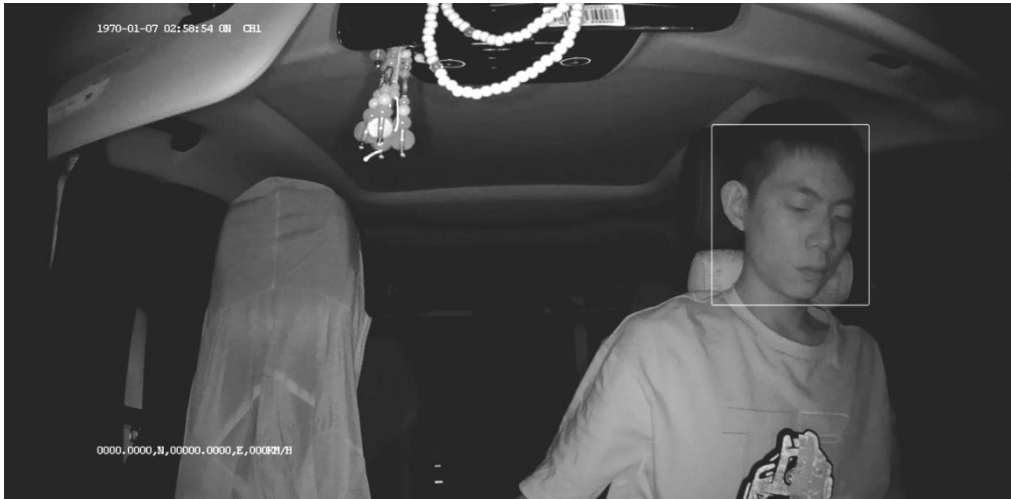
6.2 DSM Rear Camera (supports infrared night vision)

1. Height requirement: 10-15 cm below the driver's eye level (the camera should have a slightly upward tilt, as if looking up toward the driver's eyes, which yields better fatigue detection results).

2. Distance requirement: Within 70 cm-100 cm from the driver's head.

3. Angle requirement: Adjust the camera angle via video so that the driver's face is clearly and completely visible on one side of the video.

Refer to the figure above for the DMS camera installation position. If the main unit has built-in front and rear dual cameras, positions ①② are recommended, with the driver as centered as possible so the face is clearly visible, the head in the upper area, and the entire head kept complete, as shown below;



If the main unit only has a front camera, the external DMS camera is recommended at position ④ on the left side of the steering wheel, with the driver's face centered in the image, as shown below. Note: Position ⑤ is the GPS antenna location.





After powering on the main unit, use the APP to view the image. The DSM will calibrate automatically; click 'Start Calibration', look straight ahead, and it will automatically succeed and prompt by voice in about 3 seconds. Manual calibration is also available.

7. Emergency Alarm Button Installation

The alarm button serves as an emergency alarm; install it in as concealed a location as possible.

8. Reset Button

The device reset button restores the device's Wi-Fi to the default AP mode (Wi-Fi name is the device number, password: 88888888), resets the device number to empty, and restores the server network protocol to the CMSV6 protocol. The device reset button is located next to the TF card, as shown in the figure below.



9. Device Upgrade



Upgrade files must be obtained by the user from the vendor.

Do not cut power during the upgrade process and do not perform any operation on the device; otherwise the recorder upgrade will fail. Please operate with caution!

Method 1: TF Card Upgrade

- ① First store the firmware upgrade program into the TF card; (Note: Have the device format the TF card first, then save the upgrade program.)
- ② Enter the system menu 'System Information' to view the application and MCU version numbers; record or photograph them. The upgrade version number must differ from the current version number;
- ③ Insert the TF card containing the upgrade file into the device card slot;
- ④ After inserting the TF card, the device will upgrade automatically. During the upgrade, the device will restart; it will restart as many times as there are types of upgrade files, so please wait patiently. The recorder automatically restarts and emits a startup tone to indicate the upgrade is complete, as shown in the figure below.

名称	修改日期	类型	大小
AS	2021/9/27 14:12	文件夹	
debug	2021/9/28 10:32	文件夹	
JtConf	2021/9/28 10:32	文件夹	
picture	2021/9/27 14:12	文件夹	
REC-ALARM	2021/9/24 16:47	文件夹	
UpgradeDaemon	2021/9/28 10:29	文件夹	
cache_alarm	2021/9/28 10:32	文件	2,801 KB
cache_status	2021/9/28 15:58	文件	2,401 KB
effectLocation.dat	2021/9/28 15:50	DAT 文件	1 KB
itnochlnd4	2021/9/28 15:59	Data Base File	258 KB

Troubleshooting

Symptom	Cause	Solution
Cannot Power On	Incorrect Power Wiring	Wire as required and ensure the input

		voltage is within 8-36V
	Power Cable Fuse Blown	Replace with a New Fuse
Connection Failed Center	Incorrect Parameter Settings (Server Not Connected)	Reconfigure According to the Manual
	SIM Card Out of Credit (Dialing or Registration Failed)	Check and Then Top Up / Renew
	Incorrect APN Parameters (Dialing or Registration Failed)	Verify Parameters with the Carrier and Reconfigure
	Check Whether the SIM Card Has Good Contact (No SIM Card)	Reinstall the SIM Card
	Disk Not Locked (Power Off)	Lock the Hard Disk Lock; a disk status prompt appears in the upper right corner
No Recording	Disk Not Formatted	Format the Disk Locally or Remotely
	Disk Damaged	Replace the Disk
	Disk Lock Not Engaged	Engage the Hard Disk Lock; the LCD panel will show it
Cannot Locate	Vehicle Is in an Underground Parking Lot or Tunnel	Drive Away from That Area
	Stuck in 'Locating' Status	Tighten the Positioning Antenna and

		Place It as Required
	Antenna Short Circuit (Shown on LCD Screen)	Replace the Positioning Antenna
No Image Display	Incorrect Interface Definition	Verify That the Interface Definitions Match
	Incorrect Mode Setting	Set the Camera Mode in 'Basic Settings'
	Camera Damaged	Replace with a New Camera
Upgrade Failed	Software Versions Are Identical	Use a Different Software Version
	Software Model Mismatch	Use Software of the Matching Model
	Improper Card Insertion/Removal Causing File Loss	Re-store the Software and Follow Proper Procedures
Delayed Voice Announcement	Delayed Announcement upon Fatigue Driving or Other Alarms	Insert the SIM Card and Connect the 4G Antenna
Definition of AI sensitivity	The factory default values for ADAS and DMS are 2.	The smaller the value, the higher the sensitivity.
AI alarm video attachments not	AI alarms are divided into level one and level two. Level	The speed threshold for level one is 30-60 KM/H, and for level two it is

uploaded to the platform	one alarms do not upload attachments, while level two alarms do.	above 60 KM/H. The thresholds can be adjusted in the software or on the web.
AI calibration offset	In the window, multiple people, and the target person is not automatically recognized.	It is possible to manually drag the red points on the calibration box for calibration, and select the face within the fixed position of the box.
Cannot Connect to the Platform	Platform Device ID and Unit Device ID Do Not Match	Enter the Correct Device ID
	Incorrect Server IP or Port	Enter the Correct IP and Port
	Computer or Device Not Connected to the Network	Connect the Computer to the Network or Connect the Device via Network Cable
Remote Upgrade Unsuccessful	The account, password, and port set in Center Settings -> Extended Settings -> FTP do not match the FTP server settings	Enter the Same Account, Password, and Port
	Upgrade File Not Placed in the Root Directory	Place the Upgrade File in the Root Directory
	Upgrade File Has No Prefix	MCU prefix: 06_5656_5656_7878_

		Application prefix: 01_5656_5656_7788_
	Incorrect URL Format	For example, the correct application URL format: ftp@192.168.1.12:21/01_5656_5656_7788_HJAV300JT-V19062701-V18070301-V18112801-T19071605.3358.sw, where 192.168.1.12 is the computer's local IP and 21 is the port number,

FCC Warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.