MEITRACK® MD600 User Guide

Documentation

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Documentation Update Records

Version	Date	Modified
1.0	2023-09-15	Initial draft.
1.1	2023-10-31	Modify the optional model.
1.2	2023-11-24	Modified I/O port sequence.
1.3	2024-08-08	Modified usage precautions. Change the color of the I/O line.
1.4	2024-11-20	Added AI camera and UPS accessories. Modify the ACC color line.
1.5	2025-05-06	Add the number of cache storage. A 10-inch VGA display screen has been added. New AI alarm function has been added. Add the server configuration steps. Installation guidance for new equipment. New Settings for the MD600 function have been added. New upgrade steps added. New video-related setting methods have been added. Add the MS06 platform.
1.6	2025-07-01	The setup steps for adding the facial recognition function. Add event control output activation setting steps. Add details and pictures of BSD Settings. Add steps for viewing AI algorithms.

Cautions

Installation Environment

1. To extend equipment life, please install the equipment in locations with little vibration.
2. To ensure normal heat dissipation, do not install the device in a poorly-ventilated area (such as a trunk), and also keep it about 15 cm away from other objects on the same level.
3. The device shall be horizontally installed and protected against water, humidity and lightning; in addition, keep the vehicle still during installation to prevent damage to the device due to falling off.
4. To ensure safe operation, keep the device, camera, cables and other accessories out of reach of passengers and driver.

Avoid electric shock and fire

1. The machine uses 11.4V-36V DC power supply, notice the polarity when wiring to avoid short circuits.
2. Before installation, disconnect the power supply of the device and wrap each unused I/O cable with adhesive tape to prevent other cables from touching the output power cable, which may cause the device to burn.
3. Please power off the device when connecting accessories with device.
4. Do not touch the power and the device with wet hands.
5. Do not spray liquid on the device to prevent internal short circuit or fire.
6. Do not put any other equipment on top of camera.
7. Do not disassemble the housing without authorization to avoid damage or electric shock.

Transport and handling

1. Please use the original package in transport to avoid damage in transport.
2. Please keep power off in moving the device or replacing components.

Contents

1 Product Introduction

MD600 is the second generation of a new solution AI MDVR with high-performance AI processing chips, with a dual-system (dual communication channel), highly stable 6-channel AHD, and 1080P high-definition vehicle-mounted hard disk video recorder. It possesses high computing power and can support AI applications such as ADAS and DMS. The product is based on a dual system of Linux operating system and MCU OS, incorporating advanced technologies including high-performance H.264/H.265 video compression/decompression, 4G, GPS, WiFi, Bluetooth, power-off data protection, wide voltage, high voltage protection, and other technologies. It serves as the core product of the next-generation wireless vehicle-mounted video surveillance solution.

It is widely used in buses, long-distance coaches, taxis, logistics vehicles, special-purpose vehicles (e.g., armored cash transport vehicles), private cars, and forklifts, and other mobile video surveillance fields.

Product features:

Support 6-channel AHD720P/1080P cameras.

Embedded high-performance AI video processing chip (optional AI video algorithm: ADAS, DMS,BSD,face recognition).

M.2 SSD, which is more suitable for low-temperature environments than conventional hard disks, supports up to 2TB hard disk, and comes with an SD card slot (up to 512G).

Adopt industrial grade power supply chip, support 11.4~36V wide range power input, adapt to the harsh environment.

It supports dual working modes of local recording and network transmission.

The built-in 6-axis sensor can be used for sharp turning, rapid acceleration, rapid deceleration, and other alarms.

The self-developed data writing mechanism is adopted to effectively protect the video data and prevent data loss caused by abnormal power failure of the system.

2 Specifications

Power supply	
Rated voltage	DC: 11.4-36V. Rated at 12V/3A
Power consumption	The audio and video on the host is about 6W connected to 6 cameras, about 24W in the day (29W connected to the display), about 32W in the night (37W connected to the display), Connect to a single camera (normal range is 50mA~100mA during the day, 200mA~250mA at night)

AI	
AI video	ADAS、DMS、BSD、face recognition

Storage media	
SD card &SSD hard drive	1*M2 SSD and 2*SD, Capacity: 2 TB + 2* 512 GB, supports PCIe x2 and PCIe x4 NVME protocol M.2 NGFF SSD (2280 specifications)

System structure	
System operation	Dual system operation, dual communication channels (to prevent data loss)

Audio and video

Video input	6-channels AHD camera, can support D1/720P/1080P arbitrary mixing Adaptive camera resolution and format (PAL and NTSC) Maximum support 6x1080P@15fps real-time video recording
Video output	1 channel VGA video output (8Pin aviation head interface), default resolution 1024*7681 1 CVBS aviation plug (level: 1.0Vp-p, impedance: 75Ω) Resolution: PAL 704*576, NTSC 704*480
Compression standard	H.264/H.265 configurable
Image display	Support 1, 6 screen display
Audio input	6 channels for the camera Mic input, the camera should support audio 1 way of intercom handle input 1 channel 3.5MM headphone interface input (GSM call interface)
Audio output	1 independent audio isolation output (and connected to AV-OUT interface, VGA aviation head interface and intercom handle interface)1 channel 3.5MM headphone interface output (GSM call interface)
Audio compression	G.726/G.711a/AAC
Video Request and Playback	It can retrieve and playback by channel, video type, bitstream type and time
Video Recording method	Ordinary video and alarm video, sound and video recording synchronization

Frequency band	
MD600-AU	GSM: B2/B3/B5/B8 WCDMA: B1/B2/B4/B5/B8 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 LTE-TDD: B40
MD600-A	WCDMA: B2/B4/B5 LTE-FDD: B2/4/5/12/13/14/66/71
MD600-J	WCDMA: B1/B6/B8/B19 LTE-FDD: B1/B3/B8/B18/B19/B26 LTE-TDD: B41
MD600-G	GSM: B2/B3/B5/B8 WCDMA: B1/B2/B4/B5/B8/B6/B19 LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE-TDD:B38/B39/B40/B41
MD600-E	GSM: B3/B8 WCDMA： B1/B5/B8 LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41
WiFi\BLE\GNSS	
WiFi	IEEE 802.11b /g/n, frequency 2.4G&5.8G, supports STA and AP dual mode
Bluetooth	It supports master-slave dual mode, can read Bluetooth accessories, and can configure parameters through APP
Positioning mode	GPS/GPS_BEIDOU/GPS_GLONASS

Positioning accuracy	2.5m
Tracking sensitivity	-162dBm
GNSS antenna	Support antenna insert/pull out/short circuit detection

Others	
SPI memory	Built-in 64Mbit;
GPRS Cache	Store 100W pieces of GPRS data.
Operating temperature	Without battery: -20 to 70 degrees
Sensor	6-axis acceleration sensor
I/O port	Main cable port: 8*Din(Max 8*Din) + 2*Dout(Max 8*Dout) + 2*AD(Max 6*AD) + 1*Speed_IN + 1*1-wire + 2*RS485 + 1*CAN + 1*DC_5V + 1*DC_12V Other interfaces: 2-way RS232, 1-way ACC
Dimensions	Dimensions: 120*154*43mm
Weight	740g (excluding accessories)

Certification
CE certification

Protocol
Meitrack Protocol (CCE) RTMP (Audio Video Transport Protocol, also compatible with Meitrack's Audio Video Private Transport Protocol)

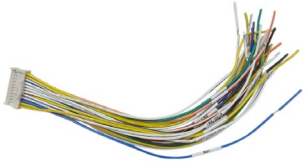
3 Main Device and Accessories

3.1 Main Device

MD600

Power cord/ACC cord

CD download card



IO cables

Lock key

USB configuration cable

WIFI antenna

4G antenna

GPS antenna

Bluetooth antenna

M.2 Screw

Standard	Quantity	Remarks
Host	1	MD600
Power cord/ACC cord	1	3PIN with 20cm of wire
IO cables	1	24PIN with 20cm thread length
CD download card	1	Neutral packaging does not come standard
USB configuration cable	1	Standard Type C connector cable For connecting PC configuration with upgrades
Key lock	2	For locking SD and SIM cards
4G antenna	1	4G signal gain
GPS antenna	1	GPS signal gain
WIFI antenna	1	WiFi signal gain
Bluetooth antenna	1	Bluetooth signal gain
M.2 Screw	1	Used to fix the M.2 SSD hard disk
Total	12	

3.2 Optional Accessories

3.2.1 MDVR Camera options

AI Camera		
DMS Telescopic Camera (ACP506)	DMS Side-mounted Camera (ACP505)	DMS Camera(ACP503)
		

ADAS Camera(ACP603)	ADAS Wide Dynamic Range Camera (ACP604)
	
BSD Side-mounted Camera (ACP301)	BSD Overhead Camera (ACP504)
	
Install the left and right blind areas of the vehicle.	Install blind spots in front and rear of the vehicle

Waterproof Standard Camera (Outdoor)	
Side-mounted Waterproof Camera 720/1080P (ACA301)	Waterproof Mini Camera 1080P (ACA105)
	
Waterproof Square Camera 720/1080P (ACA501)	Waterproof Square Camera 1080P (ACA503)
	

Non-waterproof Standard Camera (Indoor)
Metal Shell Miniature Snail Camera 720/1080P (ACA303)


Camera extension cable (default: 3M or 5M)

Note: Standard camera cable length is generally 50cm, please adapt the corresponding camera extension cable.

3.2.2 Additional options

Optional Bluetooth external accessory		
Bluetooth temperature and humidity sensor (AST101)	Bluetooth beaco (AB401)	Bluetooth beaco (AB402)
		

Other optional external accessories			
A53 Fuel sensor (voltage AD)	A52 digital temperature sensor	Relay	iButton
			
Ultrasonic Fuel Sensor ASUF103 (range 100cm)	Ultrasonic Fuel Sensor ASUF104 (range 250cm)	Ultrasonic Fuel Sensor ASUF105(range 400cm; AD analog)	Ultrasonic Fuel Sensor A76（range 100cm，Without AD analogue）
			
Microphone (A58) + speaker (A57) + connector cable	RFID reader	High temperature batteries(400mA)	Sound and Light Alarm (AAL101)
			

Intercom (A95)	7\10.1 inch VGA display	7 inch CVBS display	UPS Power Supply(APU101)
			

Memory card	M.2 Hard drive
	

4 Host interface

4.1 Appearance and interface

No.	Interface	Signage	Description
1	1.4G indicator light	4G	Green, network status indicator
	2.REC indicator	REC	Green, video status indicator
	3.PWR indicator	PWR	Red, power supply status indication
	4.GPS indicator	GPS	Blue, GPS status indicator
	5.ALM indicator	ALM	Orange, video loss status indication
	6.WIFI/ Bluetooth indicator	WIFI	Green, WIFI& Bluetooth status indicator
2	Microphone/speaker port	Audio	For external microphone \ speaker +GSM two-way calls
3	Infrared interface	IR	Infrared receiver (reserved function)
4	Debug interface	debug	Connect the PC side for parameter configuration
5	SIM card	SIM	SIM card port
6	Lid detection	NA	Start work only when the lid is detected to have

	switch		been installed
7	SD slot	SD	2*SD card loading port
8	Electronic locks	Pick/lock the sign	Lock the SD\SIM card, which is also the on/off machine for the device
9	Ethernet with USB interface	ETH&USB	Used to connect Ethernet for data transfer or parameter configuration. USB is used to upgrade the device and supports USB3.0

No.	Interface	Signage	Description	
1	Power port	PWR&ACC	Red wire power 11.4~40V, rated 12V/3A; The black wire is GND.Yellow wire is connected to ACC high level detection, 3V effective, up to 40V	
2	Serial Port 1	RS232_1	RS232_1: Used for external RFID, ultrasonic oil sensor and other peripherals	
3	Serial port 2	RS232_2	RS232_2: For extended connection peripherals such as G_MOSE	
4	24PIN main cable	IO&AD&RS485&CAN	8*Din(Max8*Din)+2*Dout(Max8*Dout)+2*AD(Max6*AD)+1*Speed _IN+1*1-wire +2*RS232+2*RS485+1*CAN+1*DC_5V+1*DC_12V	
5	4G antenna port	4G	4G antenna access point	
6	Bluetooth antenna interface	BLE	Bluetooth antenna port	
7	WIFI antenna interface	WIFI	WIFI antenna access point	
8	GPS antenna interface	GNSS	GPS antenna access point	
9	Video output	AV-OUT	Vehicle video CVBS output: Resolution -PAL 704*576,NTSC 704*480	
10	Video output	VGA	Vehicle video VGA output: Default output resolution 1280*720.	
11	1.AV-IN1	AV- IN1~6&USB Backup &SPK&MIC	Label DMS AV-IN1 on the wire	DMS 4-core aviation head
	2.AV-IN2		Identify ADAS AV-IN2 on	ADAS 4-core aviation head

	the wire	
3.AV-IN3	Label AV-IN3 on the wire	4 core aviation head
4.AV-IN4	Label AV-IN4 on the wire	4 core aviation head
5.AV-IN5	Label AV-IN5 on the wire	4 core aviation head
6.AV-IN6	Label AV-IN6 on the wire	4 core aviation head
7.MIC & SPEAKER	MIC & SPEAKER	Intercom handle for external and monitoring platform voice intercom input/output device (A95 intercom handle) Default: 4-core aviation head
8. Backup	Backup	Disaster recovery interface or USB interface default: 5 core aviation head

4.2 I/O Interface Definitions

No	Label	Color	Pin color	Function Description
1	RS485_1A+	Purple/White		485+ signal (MCU)
2	RS485_1B-	Purple		485-Signal (MCU)
3	AD1	Blue		12-bit analogue input 1 with valid input voltage values of 0-30V For connection of external sensors, e.g. fuel sensor
4	SPEED_IN	White/Black		Connect speed signal wire
5	IN8/OUT8	White/Purple		Digital input 8, default positive trigger, can be configured to negative trigger, or OUTPUT8
6	IN7/OUT7	White/Blue		Digital input 7, default positive trigger, can be configured to negative trigger, or OUTPUT7
7	IN6/OUT6/AD6	White/Green		Digital input 6, default positive trigger（Connect the right turn signals）, configurable as negative trigger,or AD5 (0 to 30V) analogue input or OUTPUT6； Connect vehicle right turn signal
8	IN5/OUT5/AD5	White/yellow		Digital input 5, default positive trigger（Connect the left turn signals）, configurable as negative trigger, or AD5 (0 to 30V) analogue input or OUTPUT5
9	IN4/OUT4/AD4	White/Orange		Digital input 4, default positive trigger, configurable as negative trigger,or AD4 (0 to 30V) analogue input or OUTPUT4
10	IN3/OUT3/AD3	White/Red		Digital input 3, default positive trigger, configurable as negative trigger,or AD3 (0 to 30V) analogue input or OUTPUT3
11	OUT2	Yellow/Brown		Output control 2. default low level trigger (0V), open drain output (OC) when invalidOutput open-drain (invalid) voltage tolerance: 40 volts maximum, 400 mA maximum current,can be set to high level trigger and PWM trigger mode,can be connected to an external relay for remote disconnection of vehicle fuel/engine power etc.

12	OUT1	Yellow/brown		Output control 1. default low level trigger (0V), open drain output (OC) when invalid Output open-drain (invalid) voltage tolerance: 40 volts maximum, 400mA maximum current, can be set to high level trigger and PWM trigger mode, can be connected to an external relay for remote disconnection of vehicle fuel/engine power etc.
13	DC_5V	Pink/yellow		5V DC output; MAX current 750MA, software controllable shutdown
14	GND	Black		Ground line
15	SOS/IN1	Grey		Emergency alarm input line Digital input 1, configurable for positive and negative triggering (default is SOS button, negative trigger)
16	RS485_2B-	Purple/Green		485-signal (RS485 interface)
17	RS485_2A+	Purple/Yellow		485+signal (RS485 interface)
18	GND	Black		Ground line
19	CAN_L	Orange		For connection of CANBUS peripherals
20	CAN_H	Orange/White		For connection of CANBUS peripherals
21	GND	Black		Ground line
22	AD2	Blue/Brown		12 bit analog input 1, effective input voltage value 0-30V for connecting external sensors, such as oil level sensors, etc
23	1-WIRE	green		For connecting temperature sensors, iButtons and other 1-Wire accessories
24	DC_12V	Pink/orange		MAX current @1.35A, software controlled off

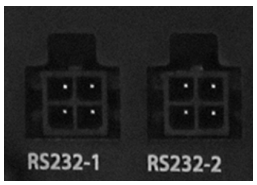
4.3 Power interface Definition

1 Power (+)	2 GND(-)
3 ACC	

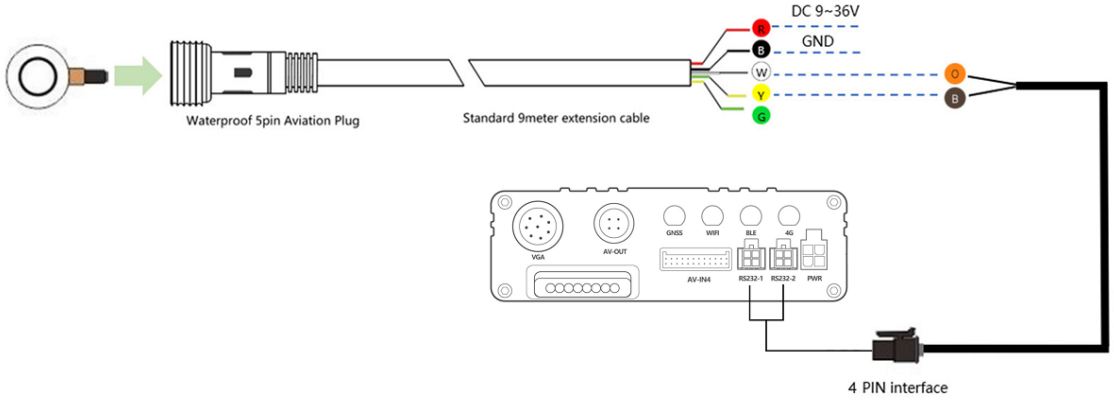
No.	Color	Function Description
1	Red	Power supply positive input
2	black	GND
3	White	ACC signal input

4.4 RS232 interface definition

1 5V(+)	3 RX
2 GND(-)	4 TX

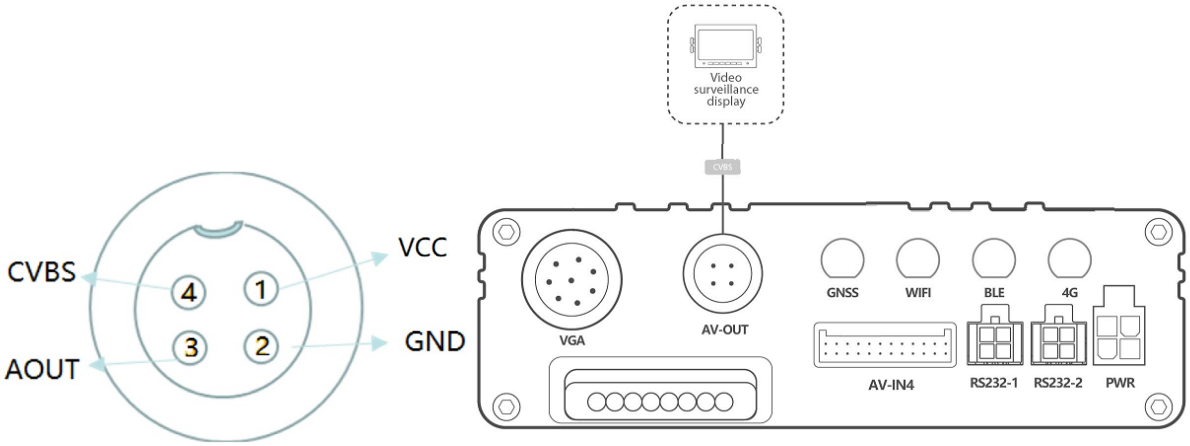


Pin Number	Description
1	Power supply output 5V
2	Ground wire
3	RX
4	TX



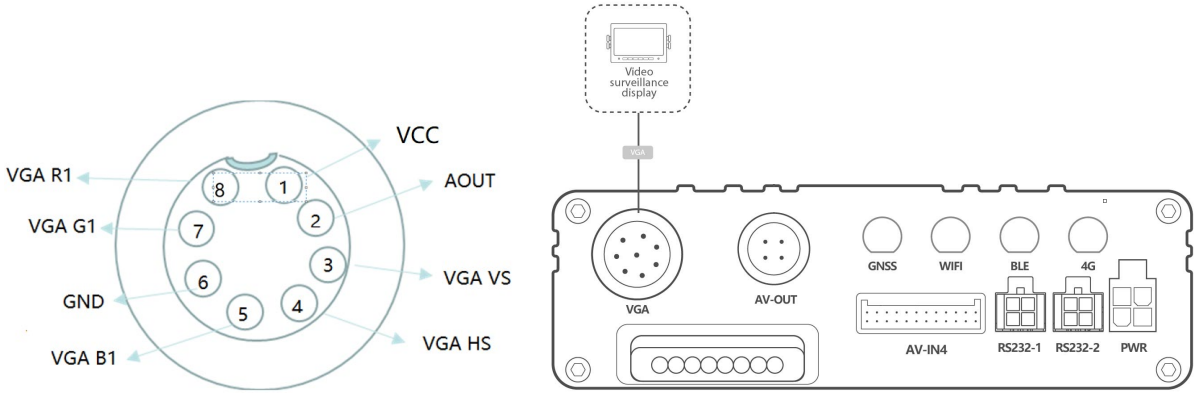
Note: RS232 is used to connect ultrasonic oil sensors, RFID and other peripherals.

4.5 AV-OUT Definition



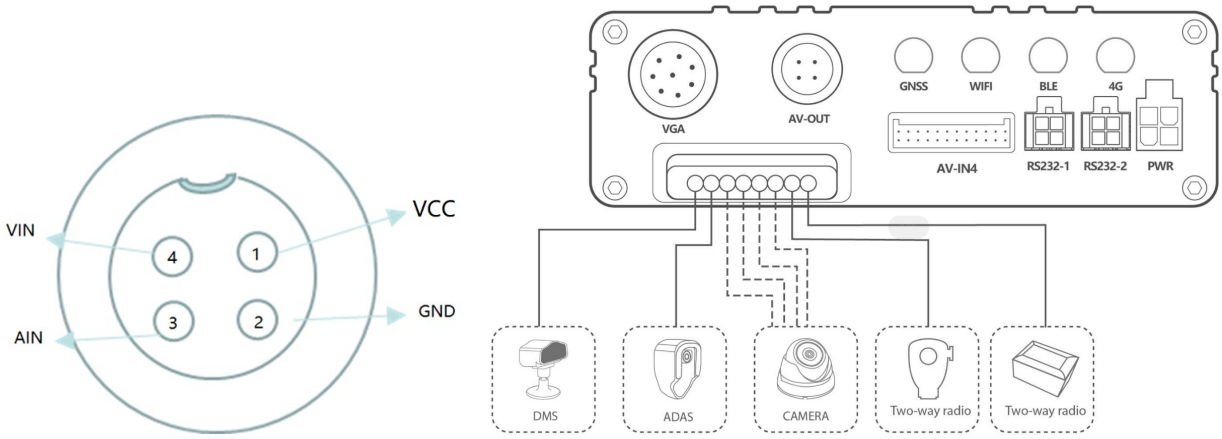
No.	Description
1	VCC (+12V)
2	GND
3	AOUT
4	CVBS

4.6 VGA interface definition



No.	Description
1	VCC (+12V)
2	AOUT
3	VGA VS
4	VGA HS
5	VGA B1
6	GND
7	VGA G1
8	VGA R1

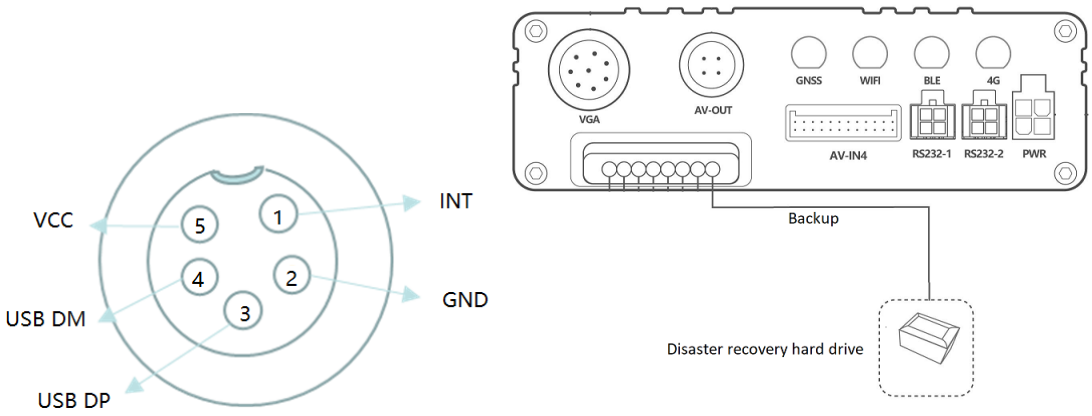
4.7 AV-IN1 to 6 Interface Definition



No.	Description
1	VCC -+12V
2	GND
3	AIN
4	VCC

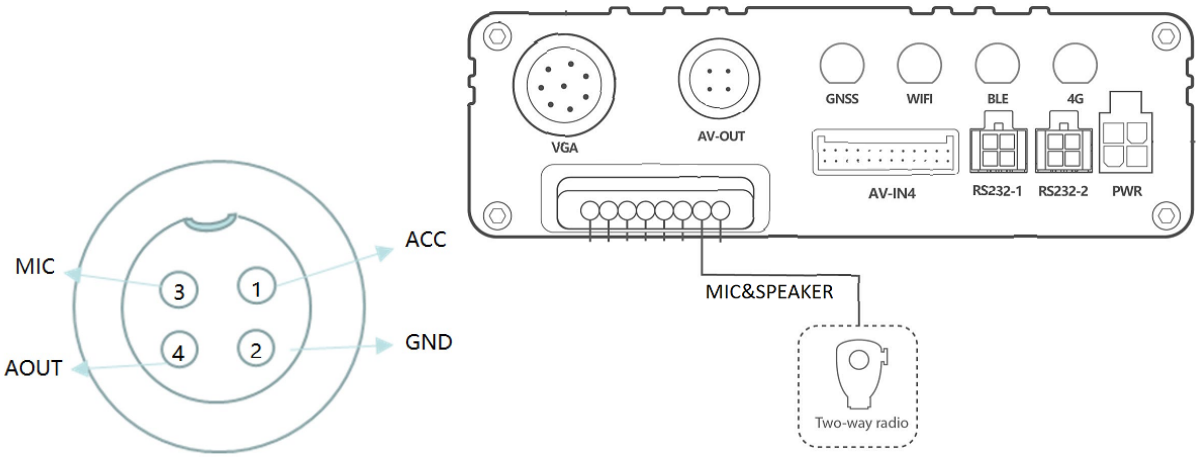
Note: The interface between ADAS and DMS can be set through the MM.

4.8 Backup interface Definition



No.	Description
1	INT
2	GND
3	USB DP
4	USB DM
5	VCC +5V

4.9 MIC&SPEAKER interface definition



No.	Description
1	ACC
2	GND
3	AOUT
4	MIC

5 LED indicator

Identifier	Meaning	Color	Status	Description
PWR	Power LED indicator	Red	Steady on	The ACC is on and the device is locked.
			Steady off	The ACC is off and the device is unlocked.
REC	SD card /M.2 Video instructions	green	Flash (frequency of writing data)	The storage disk is detected and there is written audio and video data
			once every 5 seconds	The storage disk has been detected, but no data has been written
			Steady off	No SD card is detected.
4G	4G LED indicator	Green	once every 5 Seconds	There is a 4G module, but no data is sent.
			Blink fast	4G data is sent and received normally.
			Steady off	There is no 4G module.
ALM	Video loss status	orange	Steady on	All AV inputs are not connected to cameras.
			once every 5 seconds	One AV input is not connected to a camera.
			twice every 5 seconds	Two AV inputs are not connected to cameras.
			3 times every 5 Seconds	Three AV inputs are not connected to cameras.
			4 times every 5 Seconds	Four AV inputs are not connected to cameras.
			5 times every 5 seconds	Five AV inputs are not connected to cameras.
			6 times every 5 seconds	Six AV inputs are not connected to cameras.
			7 times every 5 seconds	Seven AV inputs are not connected to

				cameras.
			Steady off	All AV inputs are connected to cameras.
WIFI/BT	WIFI/BT LED indicator	Green	once every 5 Seconds	There is a WiFi module, but no data is sent.
			Blink fast (once every 0.1 seconds)	WiFi data is sent and received normally.
			Steady off	There is no WiFi module.
GPS	GPS LED indicator	Blue	Steady on	A button or an input is triggered.
			Blink fast (once every 0.1 seconds)	The MDVR is being initialized, or the battery power is low.
			Blink fast (0.1 seconds on and 2.9 seconds off)	A GPS signal is received.
			Blink slowly (1 second on and 2 seconds off)	No GPS signal is received.

6 AI alarm function

The specific list of violation operations and the description of the corresponding Chinese and English voice alerts are as follows:

Camera	Alarm type	Prompt voice in English
DMS	Phone calls	No phone call
	Smoking	No smoking
	fatigue	Attention, drowsiness detected
	Yawning	Please stay awake
	Turn your head left and right, up and down	Please face forward
	Face lost	Please return to the seat
	Block the lens	Do not block the DMS lens
	Wear sunglasses	Do not block the DMS IR
	Please wear your seat belt	Please fasten your seat belt
ADAS	left Lane departure	Watch out lane departure
	Right lane departure	Watch out lane departure
	Watch out for cars ahead	Watch out for the front vehicle
	keep a safe distance	Keep a safe distance
	Watch out for pedestrians	Watch out for pedestrians

Note: If you need to use the AI camera to detect the alarm voice function, you must have the interphone handle or display screen as the AI alarm voice output.

Trigger conditions and sensitivity

Alarm Type	Trigger speed (Default)	Sensitivity		
		High	Medium	Low
Left lane departure	> 50	Sensitivity: 0.3	Sensitivity: -0.3	Sensitivity: -0.7
Right lane departure	> 50	Sensitivity: 0.3	Sensitivity: -0.3	Sensitivity: -0.7

Forward Impact Warning	> 30	TTC = 4.6s	TTC = 3.6s	TTC = 2.7s
Pedestrian impact warning	> 30	TTD = 3.0s	TTD = 2.5s	TTD = 2.0s
Distance Detection	> 30	TTD = 2.0s	TTD = 1.6s	TTD = 1.2s
Smoking	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 3s	Alarm Trigger Duration: 4s
Calling	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 3s	Alarm Trigger Duration: 4s
Distraction Warning	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 3s	Alarm Trigger Duration: 4s
Drowsiness	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 3s	Alarm Trigger Duration: 4s
Yawning	> 10	Alarm Trigger Duration: 1.5s	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 3s
Driver Absence Detected	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 5s	Alarm Trigger Duration: 8s
Seat belt not fastened	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 5s	Alarm Trigger Duration: 8s
IR block	> 10	Alarm Trigger Duration: 2s	Alarm Trigger Duration: 4s	Alarm Trigger Duration: 6s
DMS camera covered	> 10	Alarm Trigger Duration: 5s	Alarm Trigger Duration: 10s	Alarm Trigger Duration: 15s

6.1 ADAS Function

6.1.1 Lane Left Deviation Alarm

Real-time identification of lane deviation behavior during driving. If there is unintentional lane deviation behavior, the driver will be reminded to ensure driving safety.

Note: The left and right turn signal wires must be connected in the vehicle, and the turn signal must be activated before turning; otherwise, turning may trigger a false lane deviation alarm.

6.1.2 Lane Right Deviation Alarm

Real-time identification of lane deviation behavior during driving. If there is unintentional lane deviation behavior, the driver will be reminded to ensure driving safety.

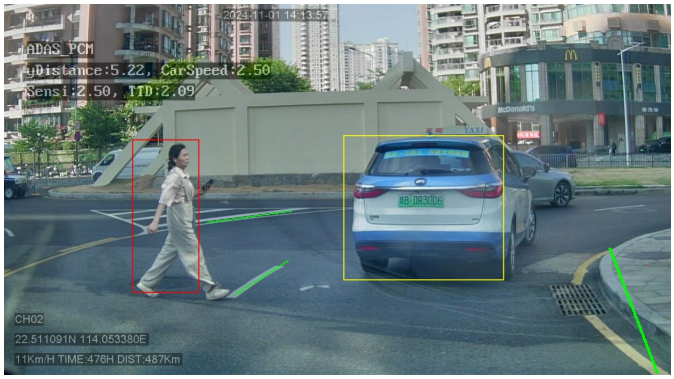
Note: The left and right turn signal wires must be connected in the vehicle, and the turn signal must be activated before turning; otherwise, turning may trigger a false lane deviation alarm.

6.1.3 Front impact warning

Real-time identification of the relative speed between the vehicle and the vehicle in front during driving. The driver will be reminded when a impact is likely to occur, ensuring sufficient emergency braking time.

6.1.4 Pedestrian Impact Warning

During driving, real-time identification of pedestrians, bicycles, and motorcycles in front of the vehicle. If there is a potential impact risk, the driver will be reminded to ensure sufficient emergency braking time.



6.1.5 Distance Detection

When the vehicle is moving at low speed, it identifies the relative speed between this vehicle and the vehicle in front. When there is a potential impact risk, it alerts the driver to maintain a safe distance.

6.2 DMS Function

6.2.1 Smoking

Identifies the driver's smoking behavior during driving and issues a warning to ensure driving safety.

Note: Smoking alarms may produce false positives easily. When the driver makes movements similar to smoking, such as resting their chin on their hand or eating and drinking, false alarms may occur. You can collect false alarm videos and provide them to us to optimize the AI algorithm.

6.2.2 Calling

Identifies the driver's mobile phone call behavior while driving and issues a warning to ensure driving safety.

6.2.3 Distraction Warning

Identifies the behavior of the driver not looking at the road ahead (looking around, looking down for something, etc.) and triggers an alarm to ensure driving safety.

6.2.4 Fatigue Driving Alarm (Eyes Closed)

Identifies the driver's fatigue state (eyes closed) and issues a warning to ensure driving safety.

6.2.5 Yawning

Identifies the driver's fatigue state (yawning) and issues a warning to ensure driving safety.

6.2.6 Driver Absence Detected

Detects that the driver may be leaving and issues a voice reminder.

6.2.7 Seat Belt Detection

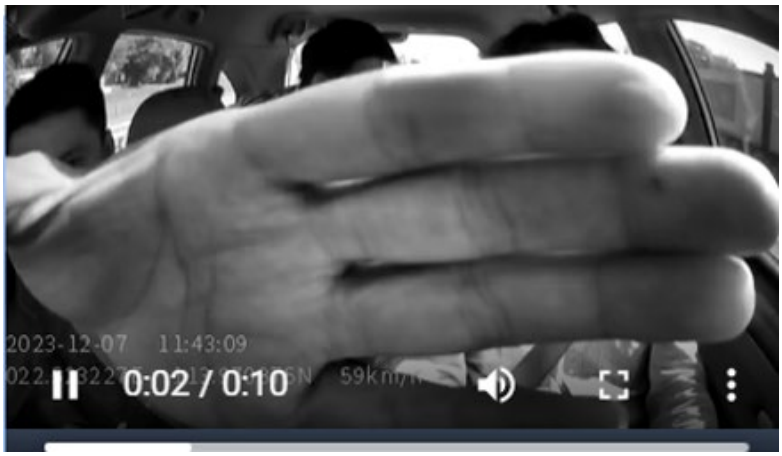
The device identifies the seatbelt status and issues a warning to the driver when the seatbelt is not fastened while driving to ensure driving safety.

6.2.8 IR block

The device has detected that the driver is wearing sunglasses, which prevents it from detecting whether the driver's eyes are closed.

6.2.9 Covered

The device has detected that the DMS camera is covered and will issue a voice warning to the driver.



7 Installation Guide

7.1 Installation of SD Card and SIM Card

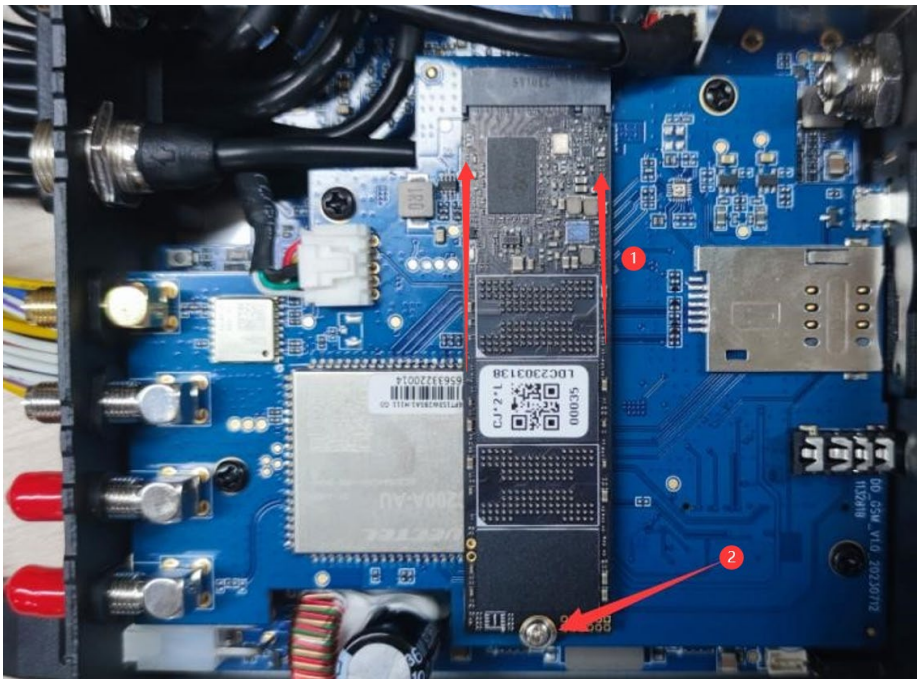
(1) Insert the SD Card and unlock the SD Card lock using the key.

(2) Install the SIM Card and SD Card, then lock the SD Card lock (Note: After closing the card cover, use the key to lock it to ensure proper startup of the video function).

7.2 Hard Drive Installation

(1) Unscrew the four screws on the top of the enclosure and open the cover.

(2) Firmly insert the hard drive into the slot, secure it with screws, and then reassemble the enclosure.



7.3 Install External Devices

(1) Connect six cameras, the display screen, GPS antenna, GSM antenna, WIFI antenna, and power cable.

(2) Connect the power cable to PWR.

(3) Connect cameras 1 through 6 to AV IN1 through IN6; connect the display screen to AV-OUT/VGA.

(4) Connect the intercom handset to MIC & SPK.

(5) Connect the WIFI antenna (otherwise WIFI will not function properly), GPS antenna, and 3G/4G antenna.

7.4 Powering the device

(Note: During testing, the recording function will only be activated when the ACC is connected to the positive power supply and the SD card cover is closed.)

Typically, the device should be connected to the vehicle's constant power line or engine line. Prior to installation, it is necessary to use a multimeter to identify the locations of these two wires within the vehicle. First, locate the constant power line and engine signal line in the vehicle's fuse box, then verify these wires using a multimeter according to their characteristics.

Connect the multimeter's black probe to ground and the red probe to the vehicle battery line. Measure the voltage with the engine off and ignition on to confirm it is approximately 12V (or around 24V for heavy vehicles). If the voltage remains stable, this can be considered the battery line.

Connect the black probe of the multimeter to ground and the red probe to the vehicle's engine signal line. Measure the voltage during vehicle ignition to verify whether it is approximately 12V (for larger vehicles, around 24V). Observe if the voltage drops to 0 when the vehicle is turned off.

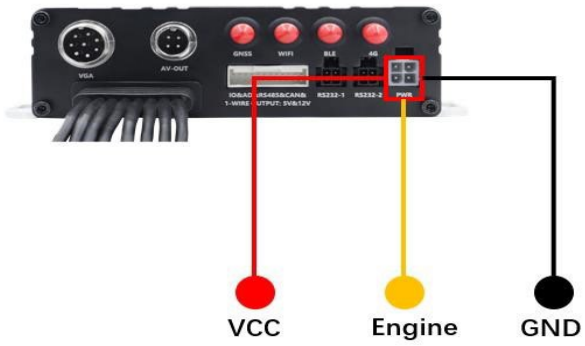
After confirming the constant power and engine signal lines, you may select the appropriate wiring method for installation.。

Different wiring methods:

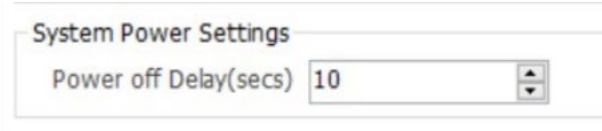
Method One:

(If recording is required only during ignition and should stop after shutdown, while the device's MCU remains operational for positioning, this method can be used.)

Connect the MDVR's ACC detection line to the vehicle's engine line, and connect the MDVR's power line to the vehicle's constant power. In this configuration, the MDVR's video module will only power on and begin recording when the engine is running.



By setting the power-off delay time, the video module is allowed to continue operating for a period after the vehicle is turned off, recording video data for a short duration post shutdown.

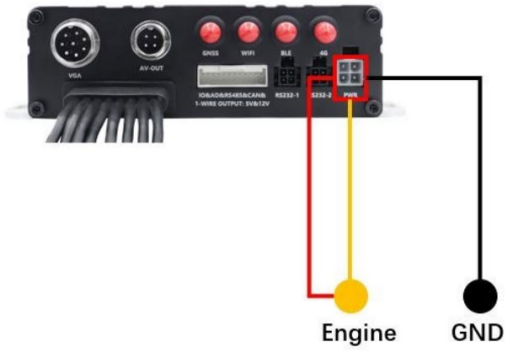


Furthermore, if special circumstances require remotely activating the device's video module while the vehicle is off, the BCA command can be used to forcibly power on the video module for a limited time.

Method Two:

(This method can be used if the device only needs to power on after the engine starts and fully shut down after the engine is turned off.)

Connect both the MDVR's power line and ACC line to the vehicle's engine line. This ensures the device fully powers down when the engine is off, and both the MCU and video module start simultaneously when the engine is running.

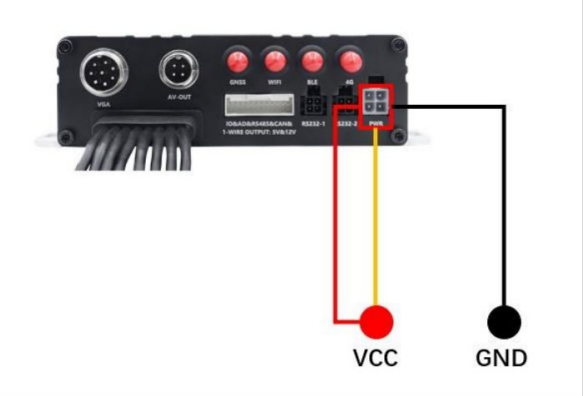


This method does not consume the vehicle battery's power; however, when the vehicle is turned off, the device will completely shut down, and the video module can only record footage prior to engine shutdown.

Method Three:

(If continuous recording is required regardless of engine status, and video recording must be uninterrupted, this method can be used.)

Connect both the MDVR's power line and ACC line to the vehicle's constant power (battery line). In this way, even when the engine is off, the device will continue to consume battery power, which carries a risk of depleting the battery. Therefore, this method is generally not recommended for customers. If the user is only conducting indoor testing, this wiring method can be used to keep the device's video module continuously operational.



8 MS06 Server Configuration Steps

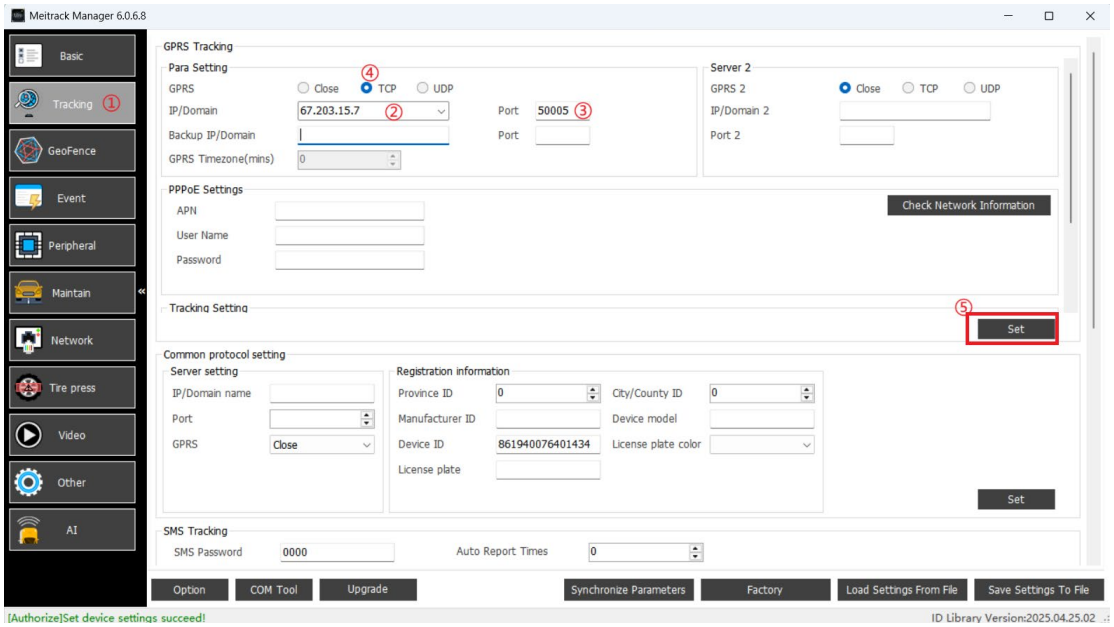
Single Server, Dual Server, JTT 808\JTT 1708 Server

MS06: IP: **MS06.trackingmate.com** Port: **6006**

JTT 808\JTT 1708 MS06: IP: **MS06.trackingmate.com** Port: **8506**

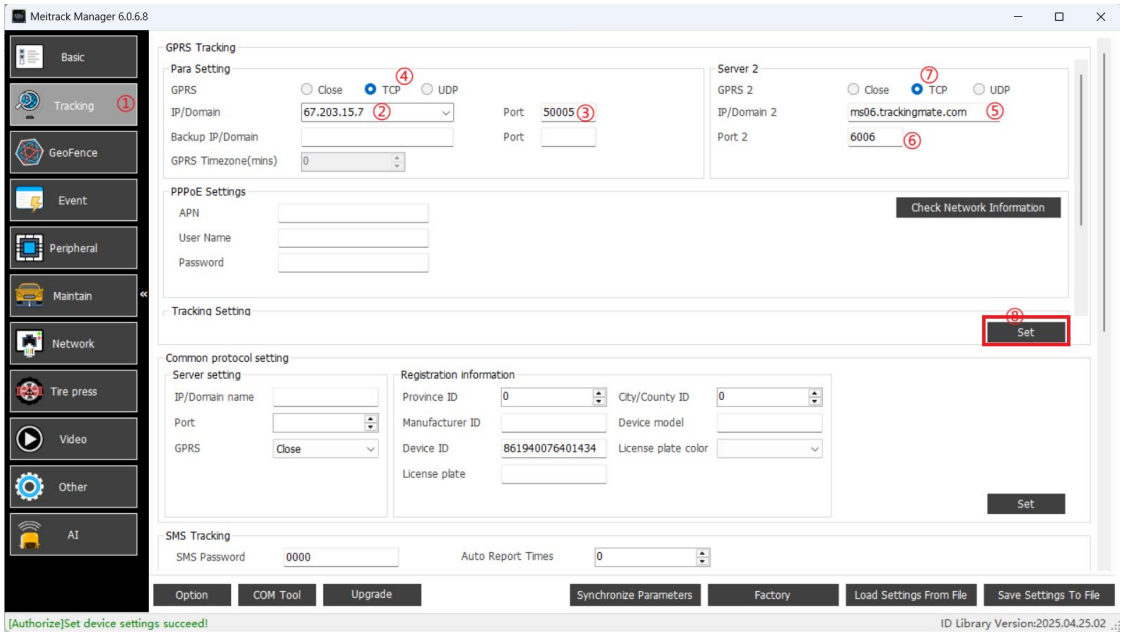
8.1 Single Server

First, click Tracking Settings ①, then enter the MDVR platform IP ② and port ③, confirm the selection of TCP Connection ④, then click Set ⑤.



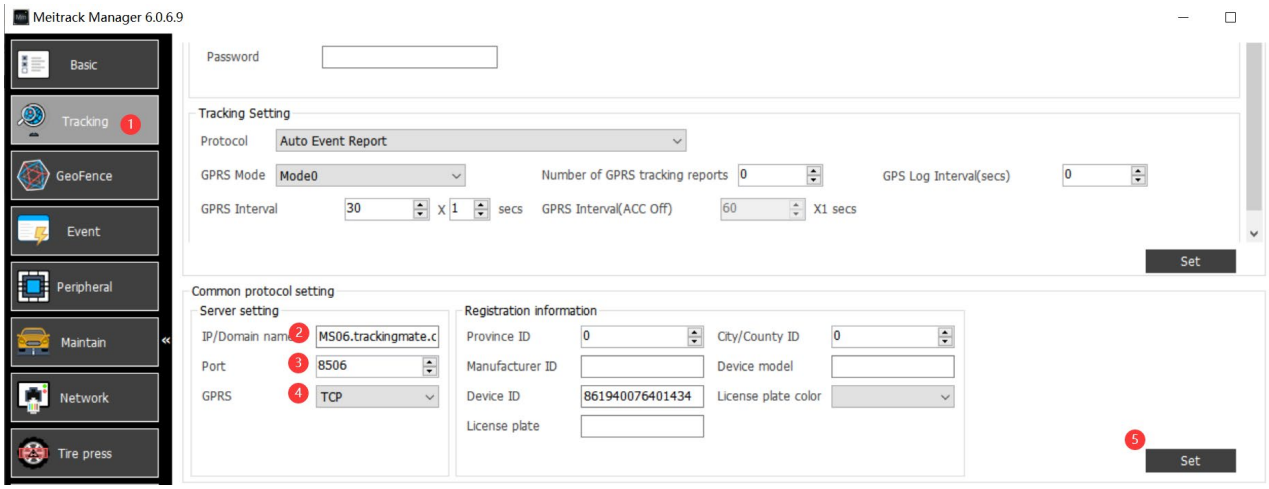
8.2 Dual Server

First, click Tracking Settings①, then enter the MDVR platform IP② and port③, confirm the selection of TCP Connection④, then enter the MS06 platform IP⑤ and port⑥, confirm the selection of TCP Connection⑦, and finally click Set⑧.



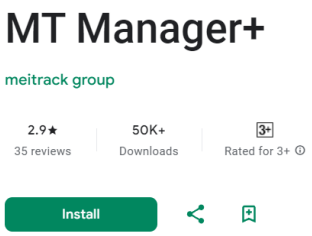
8.3 JTT 808\JTT 1708 Server

First, click Tracking Settings①, then enter the MDVR platform IP② and port③, confirm the selection of TCP Connection④, then click Set⑤.



9 APP （MT Manager+）

Search for the “MT Manager +” app in the Google Play Store or App Store on your mobile device, then download and install it.

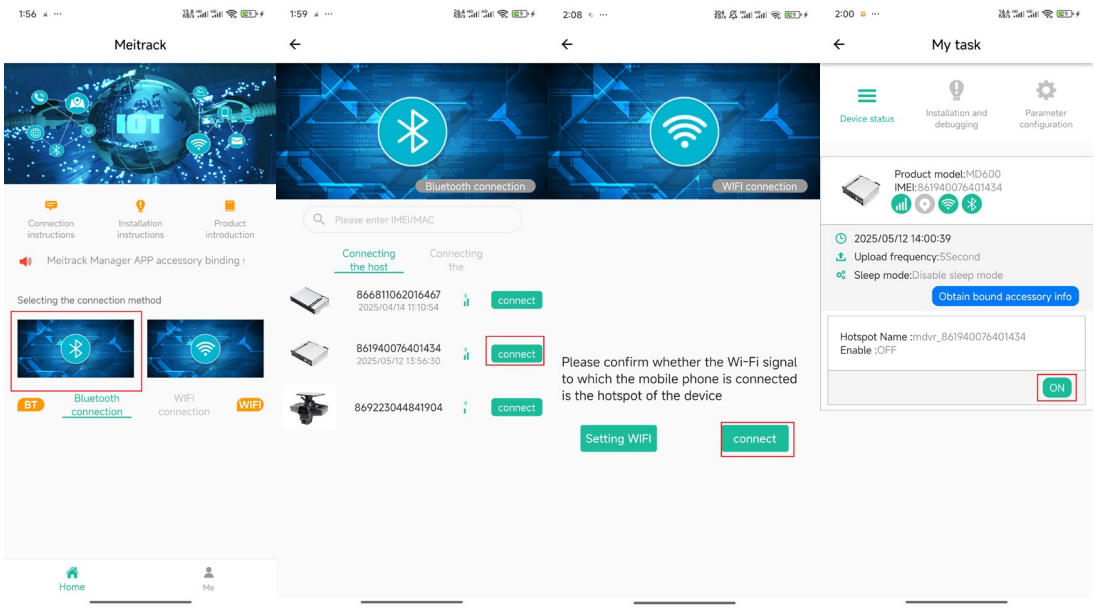


https://apps.apple.com/cn/app/mt-manager/id1640858688

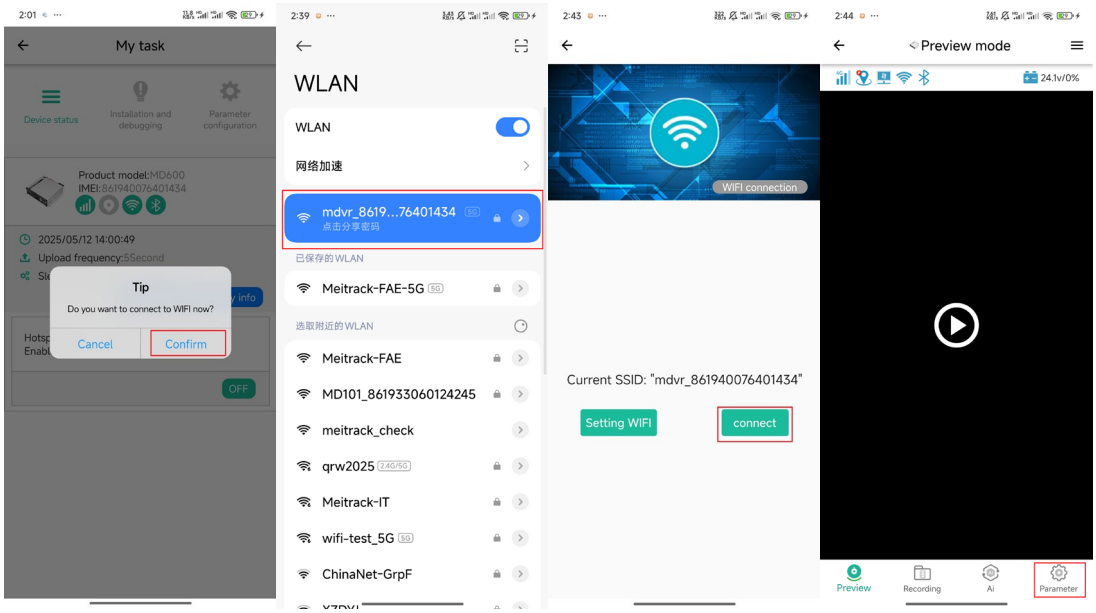
https://play.google.com/store/apps/details?id=com.meitrack.mm.all

9.1 APP connection to MD600

Open MT Manager+, tap the Bluetooth icon, select the connect button corresponding to the device IMEI number, then tap the ON button to activate the device WiFi hotspot.



Tap Confirm, connect the mobile device to the MD600 WiFi hotspot, tap connect, then tap Parameter to enter the settings interface.

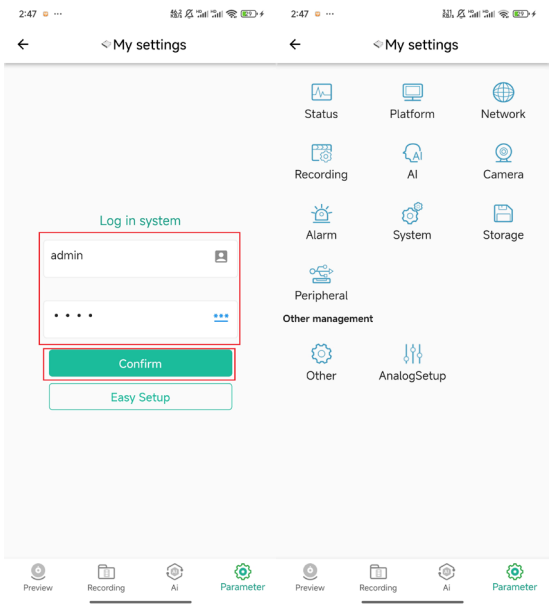


Note:

1. ACC must be activated when the APP connects to the MD600.
2. When the device WiFi hotspot is enabled, the device cannot upload data via WiFi.

9.2 Configure parameters using the MT Manager + APP

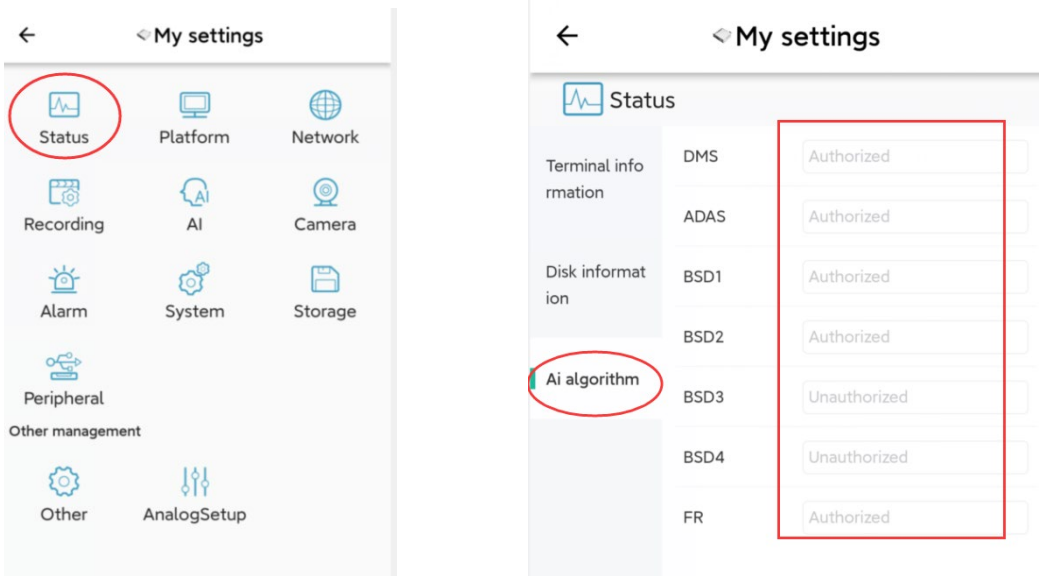
Tap the gear icon to switch to the parameter settings interface; Enter '**admin**' in the account field, use the default password '**0000**', then tap Confirm:



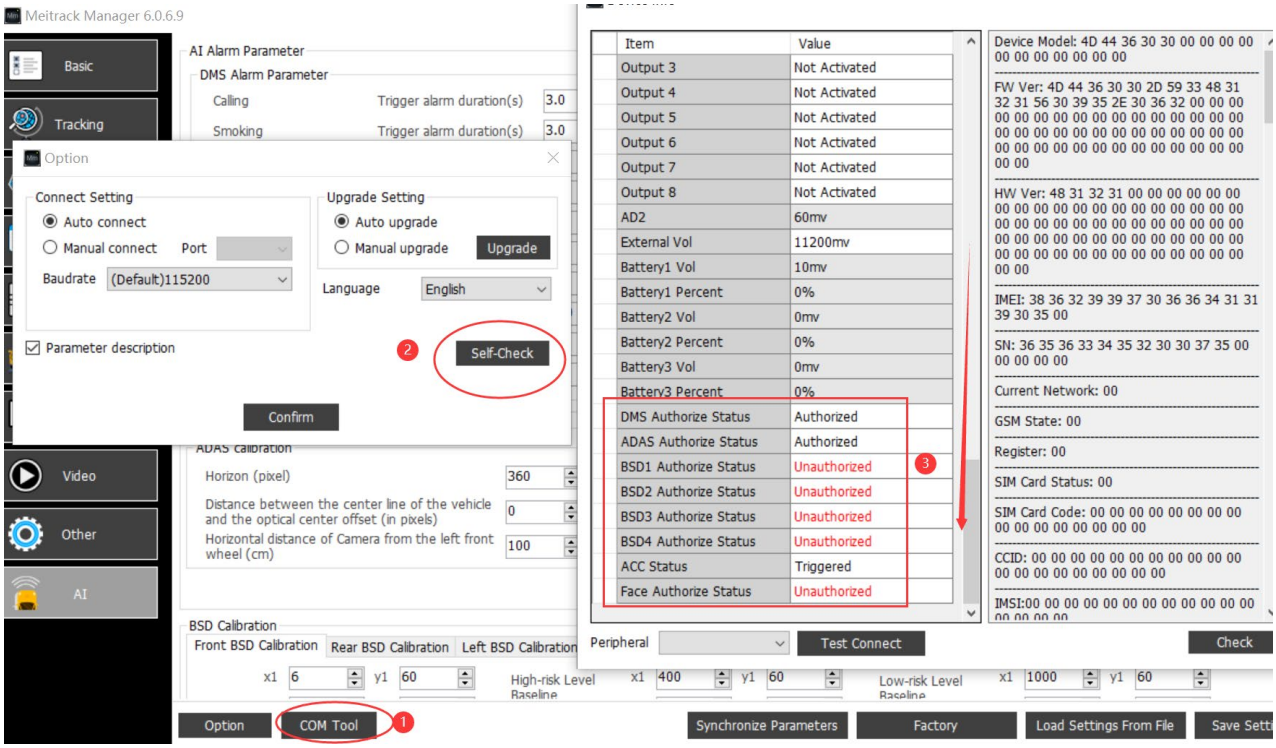
10 AI alarm settings

10.1 Check whether the AI algorithm is activated

1.Open the parameter interface as shown in the figure below: Select "Status", then select "Ai algorithm". You can check whether the corresponding AI algorithm of the device has been activated.



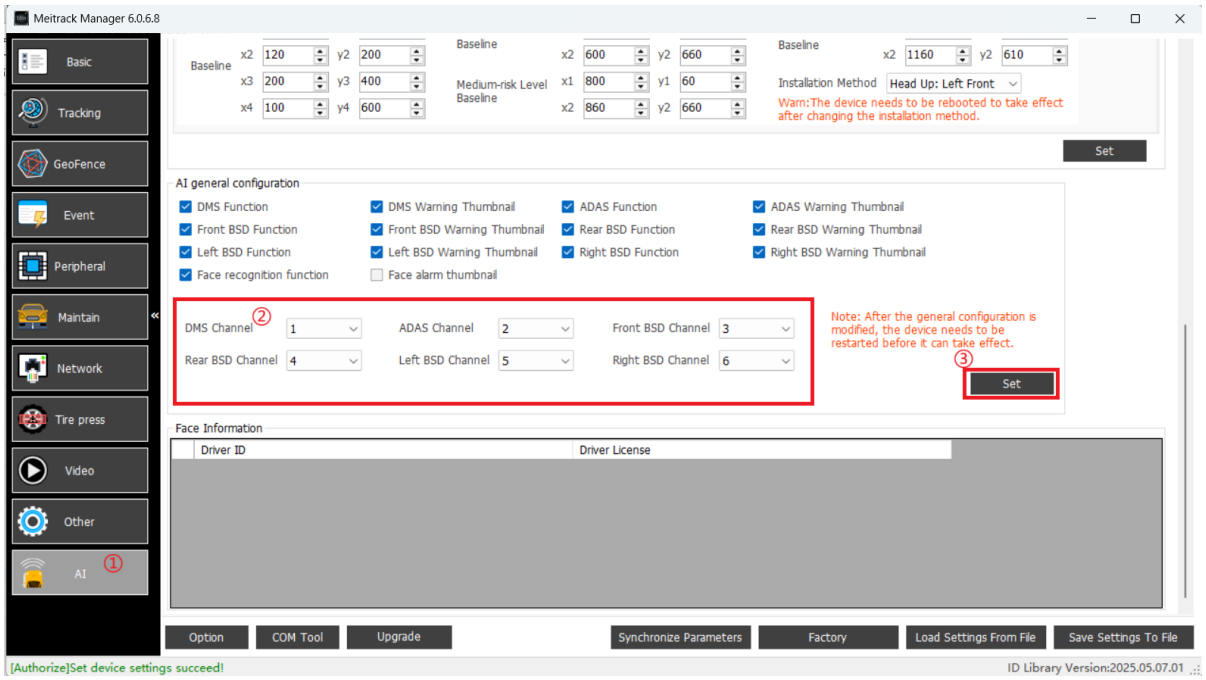
2. Or, as shown in the following screenshot, use the Meitrack Manager configuration tool to check whether the AI algorithm has been activated.



Notes: If the AI algorithm is not activated, the corresponding AI functions will not be available.

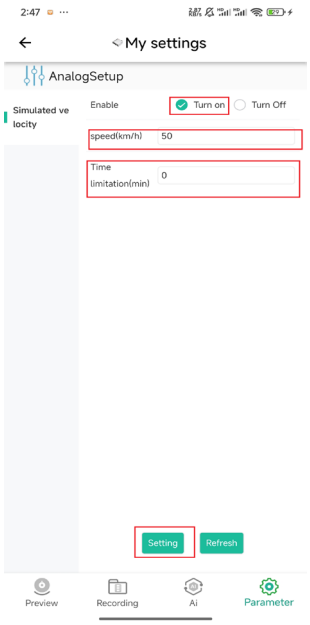
10.2 AI Function Video Channel Configuration

In MM, click AI Settings ①, select the desired AI function channel number ②, then click Set to apply the configuration ③.



10.3 Indoor testing: enable simulated speed

Usage: Indoor testing of ADAS and DMS with simulated speed; set the simulated speed as shown in the figure below:



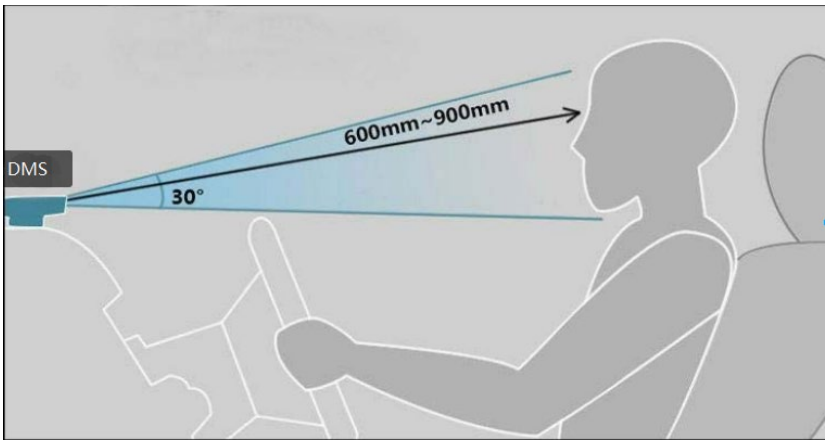
Parameter	Description
Enable	Toggle option for simulated speed
Speed (Km/h)	The device automatically simulates the current driving speed to trigger specific conditional event feedback.
Duration (min)	Duration for which the simulated speed remains active to prevent forgetting to disable it, thereby avoiding false alerts during use.

Note: The simulated speed will be disabled after the device restarts.

10.4 Calibration of ADAS, DMS, BSD, and facial recognition via the APP.

10.4.1 Installation and calibration of the DMS camera.

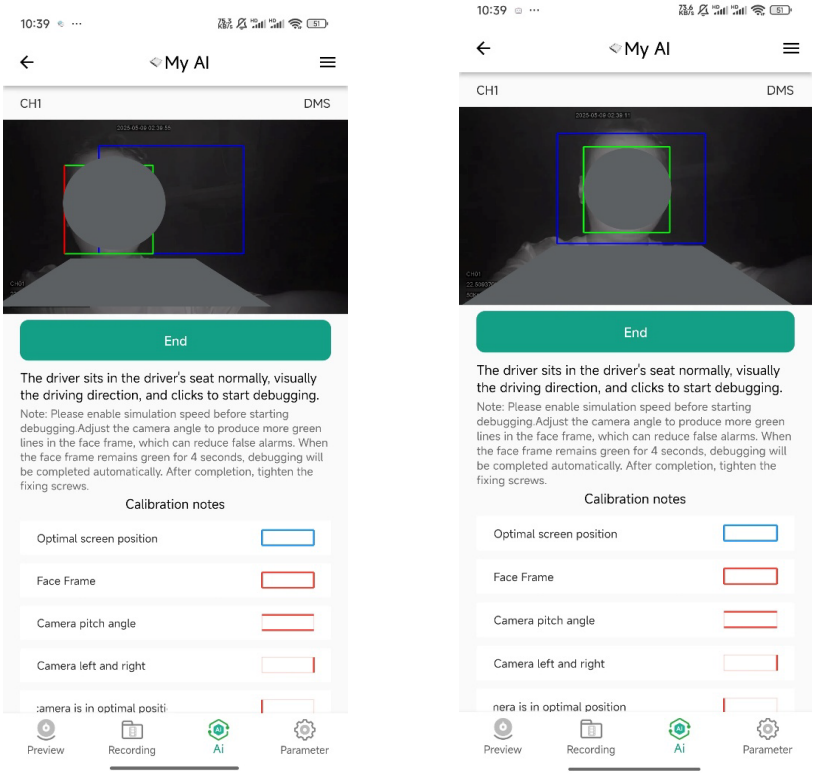
The DMS should preferably be installed directly in front of the driver at a relatively high position, with an angle not exceeding 30 degrees. The main unit should not be higher than eye level, nor lower than 30 degrees below the eye. The lens distance from the eyes should be between 60 cm and 90 cm. Additionally, the maximum horizontal angle must not exceed 30° to the left or right of the driver. An example image is shown below:



Calibration adjustments can be performed via MT Manager +, as shown in the following image:

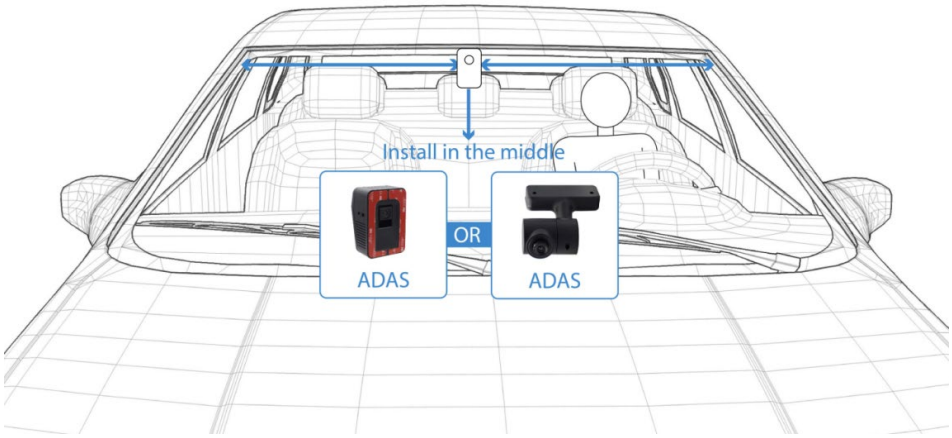
The blue box represents the fixed DMS detection area; the red box indicates a detected face outside the range; the green box indicates a detected face within the range and functioning properly. When the primary facial features are fully enclosed within the

blue box and the face frame turns green, calibration is successful.



10.4.2 Installation and Calibration of the ADAS Camera

Install as close to the center of the windshield as possible without obstructing the driver's field of view. An example image is shown below:



Note: After installation, adjustment and calibration must be performed using MT Manager+ to enhance ADAS accuracy.

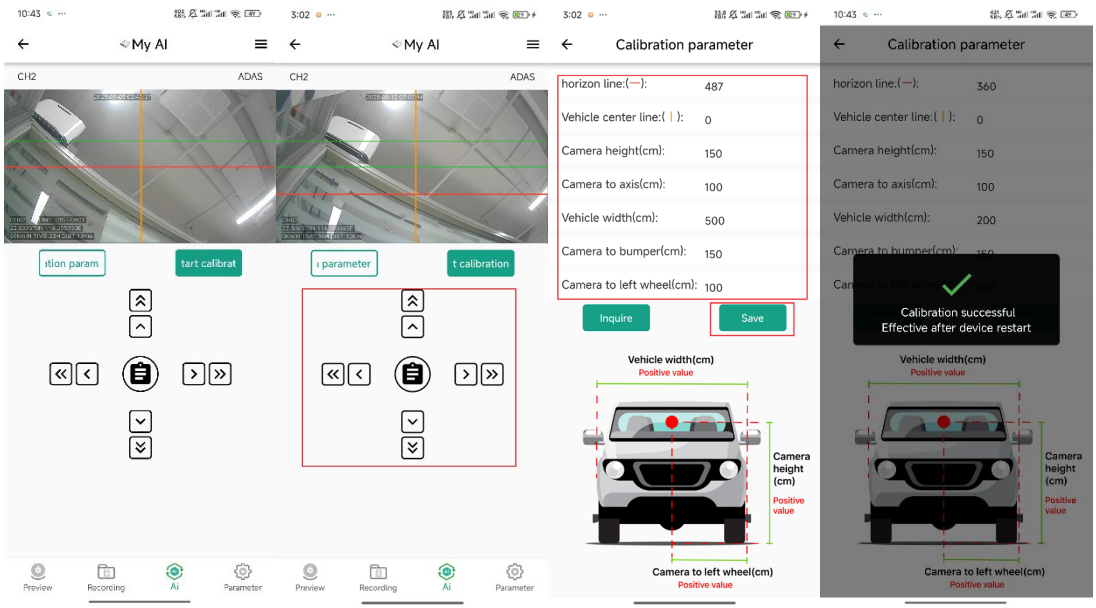
There are three methods to calibrate ADAS. Once the ADAS position is confirmed, you may proceed with calibration:

Method One: On the touchscreen, drag the red horizontal line to the position where the horizon disappears (the green lines indicate the range). The yellow vertical line represents the road's center line.

Second method: Click the button and drag the red horizontal line to the position where the sky and ground disappear (the green

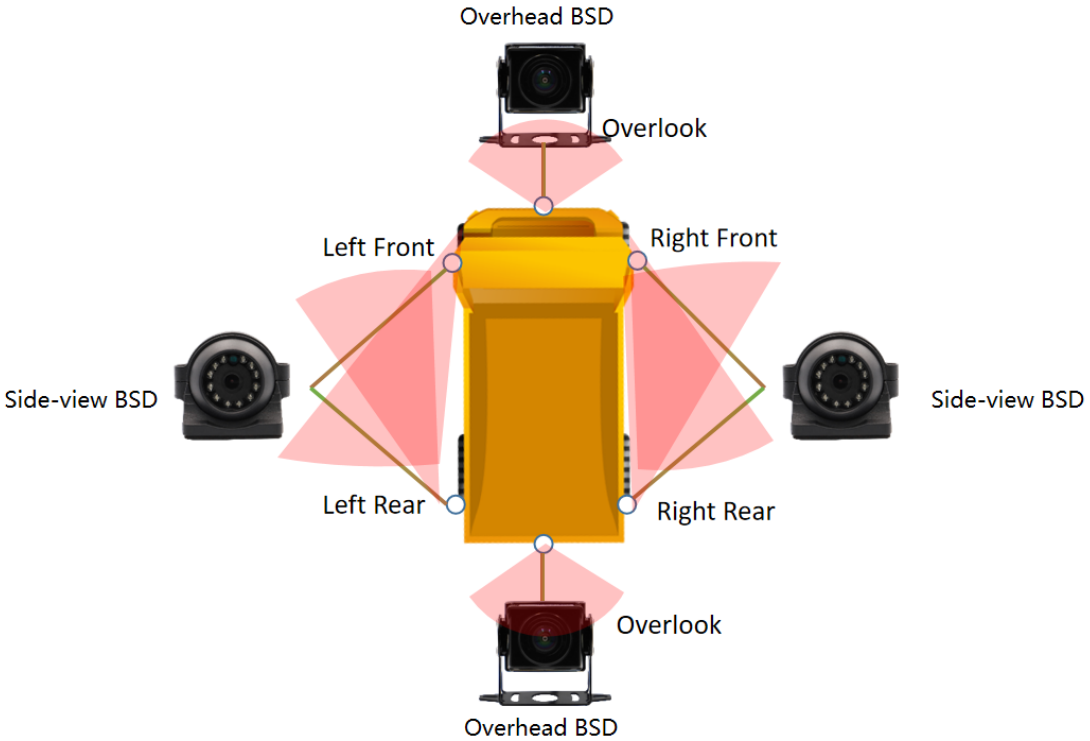
line indicates the range). The yellow vertical line represents the road centerline.

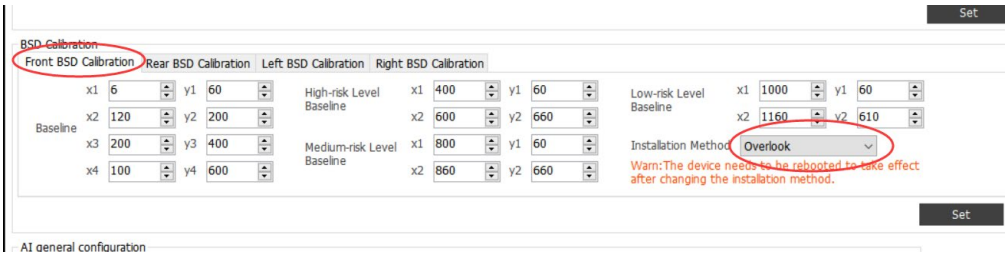
Third method: Configure the ADAS calibration parameters and click Save to apply.



10.4.3 BSD Camera Installation and Calibration

1.There are two types of cameras: side-mounted cameras and overhead cameras. Therefore, when installing the BSD on a vehicle, if the blind spots to be detected are on the left and right sides of the vehicle, the corresponding cameras are Head-up (side - mounted) cameras. If it is to check the blind spots at the rear or front, then the overhead camera should be selected. As shown in the figure below.





Note: The "front/rear" BSD corresponds to Overlook. The "left/right" BSD corresponds to a Head-up: left front/rear, right front/rear.

2. Regarding the configuration of the BSD function in the MT Manager + APP.

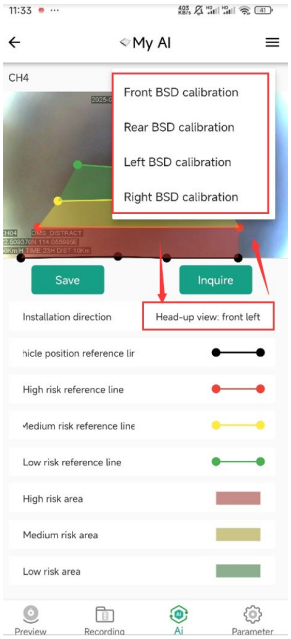
(1) The screen will automatically switch to the BSD camera. Use your finger to adjust the four lines on the screen to define three zones. By default, red represents a high-risk area, yellow represents a medium-risk area, and green represents a low-risk area.

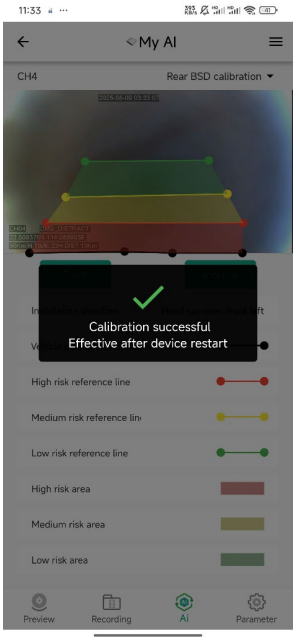
(2) The "front/rear" BSD corresponds to Overlook. The "left/right" BSD corresponds to a Head-up: left front/rear, right front/rear.

(3) Only one save is required; click Save to apply the settings.

(4) Then click the upper right corner to switch to the other BSD camera and repeat the procedure.

(5) Once all BSD calibrations are completed, testing may commence.



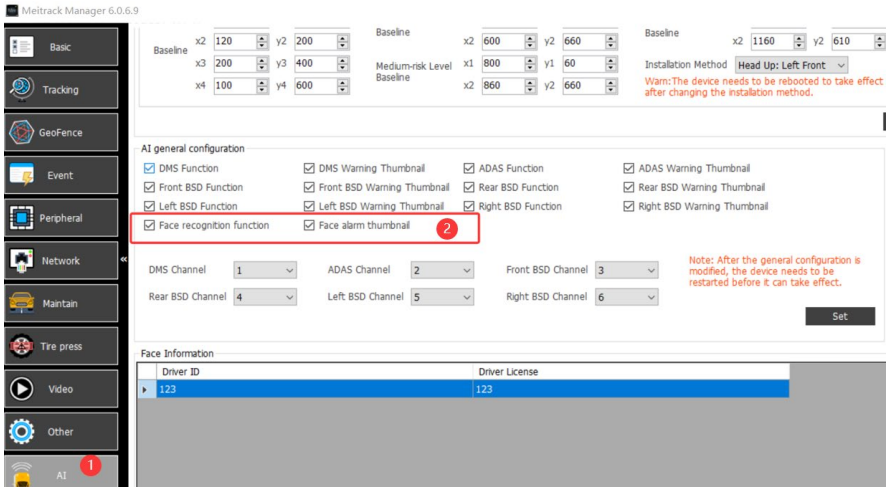


Note: The MS600 is connected to an audible and visual alarm device. Please refer to the relevant accessory documentation.

By default, the BSD (Blind Spot Detection) will trigger an alarm only when the speed is lower than 30KM/H.

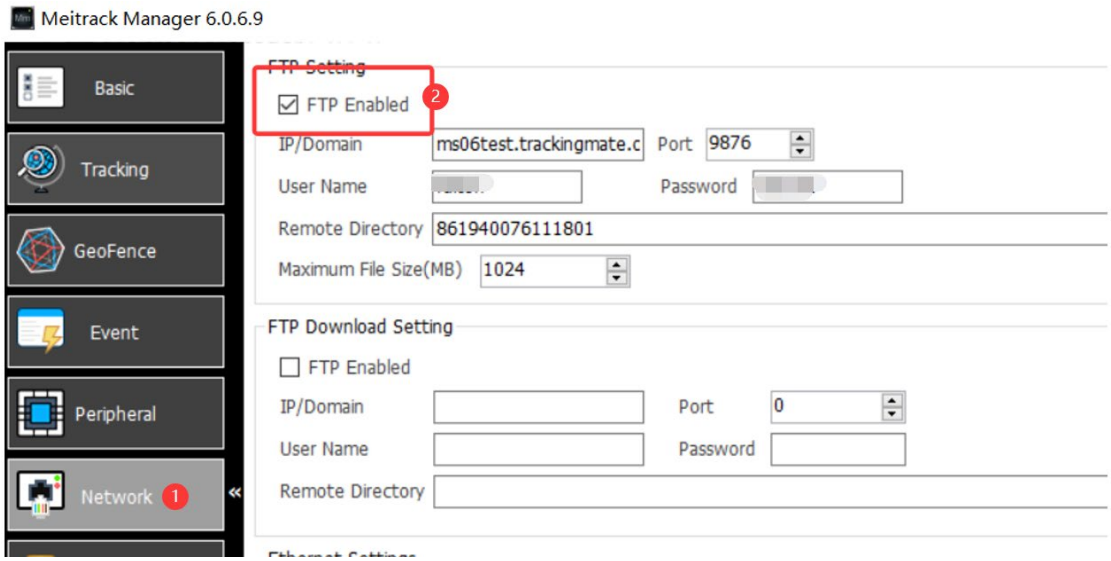
10.4.4 Facial Recognition Function

1.Enable the facial recognition function

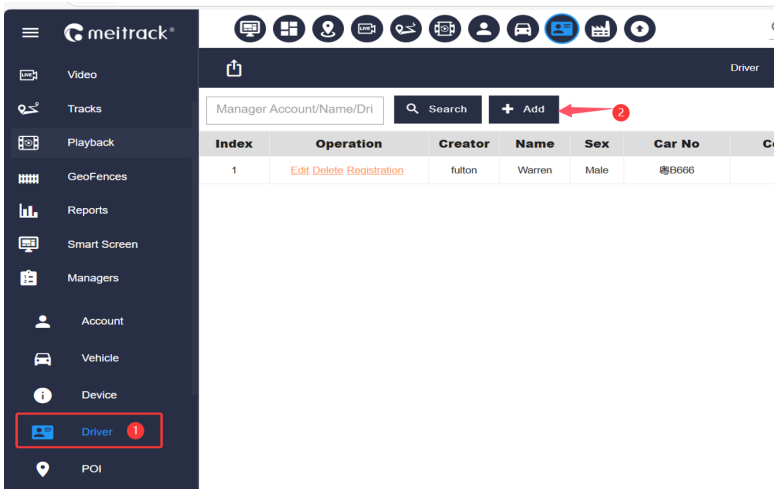


Note: Please verify if the device has activated the facial recognition AI algorithm.

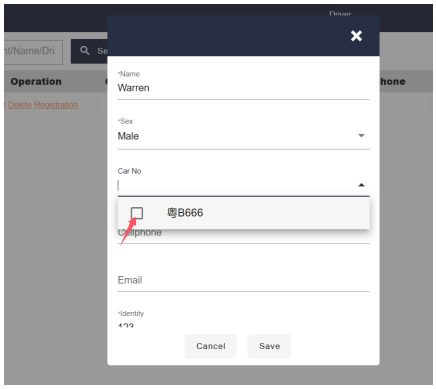
2. Set up an FTP server for downloading the facial image data.



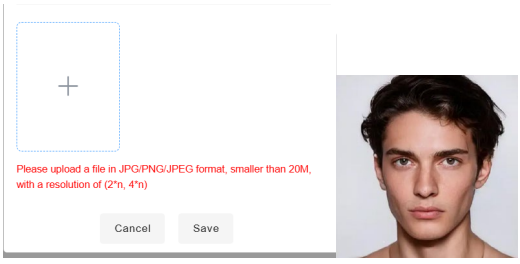
3. Add the face image to the MS06 platform, which will be used for the device to download the face image via the FTP server. Refer to the following steps as shown in the figure.



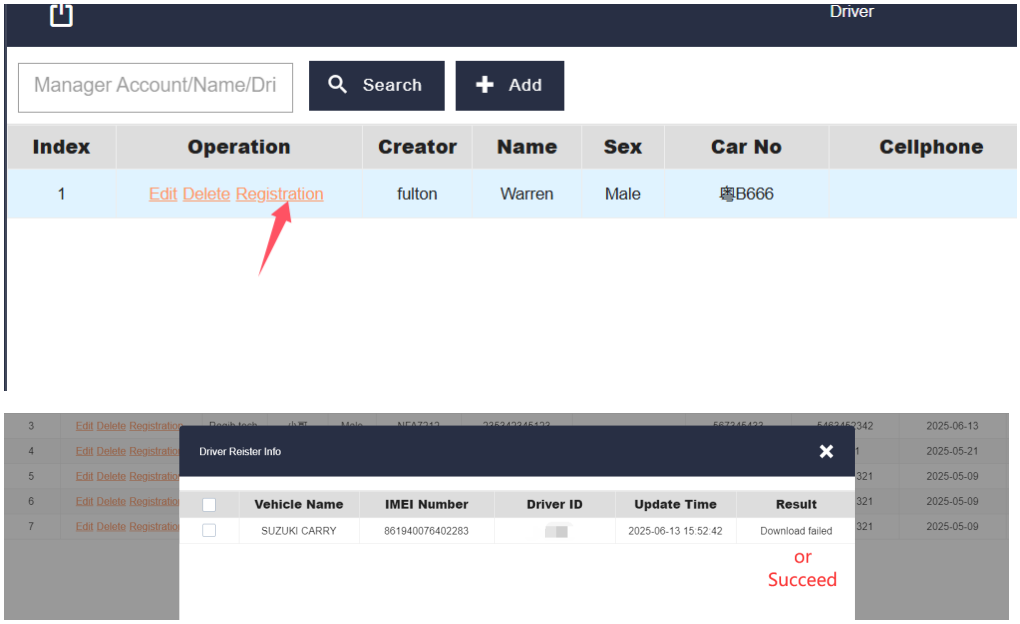
4. Bind the driver to the vehicle (this binding process requires the use of a facial recognition device). One driver can bind multiple vehicles.



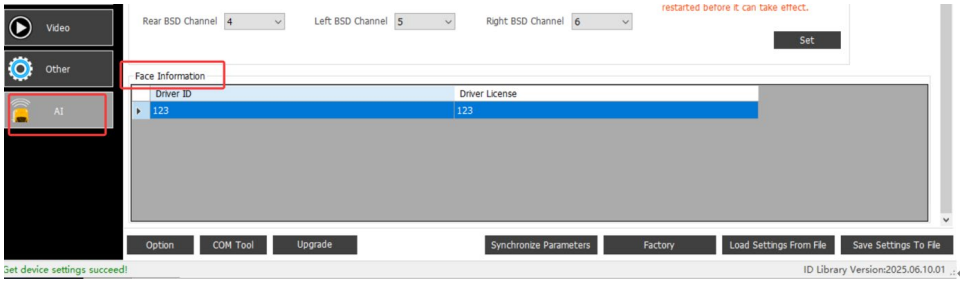
5. Upload the face image. It must be a frontal photo. Click "Save". As shown in the picture below.



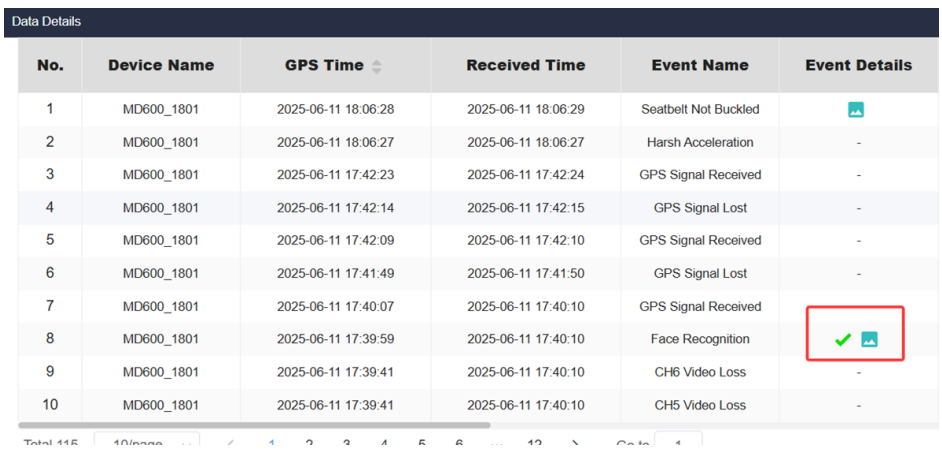
6. Confirm the status of face registration. If it shows as successful, it indicates that the device has downloaded the face image data and can now be used for face recognition functionality.



7. We can check MeitrackManager to confirm that the facial information has been downloaded to the device.



8. Once the engine is started, the DMS camera can perform facial recognition within one minute and upload the facial recognition event to the server.

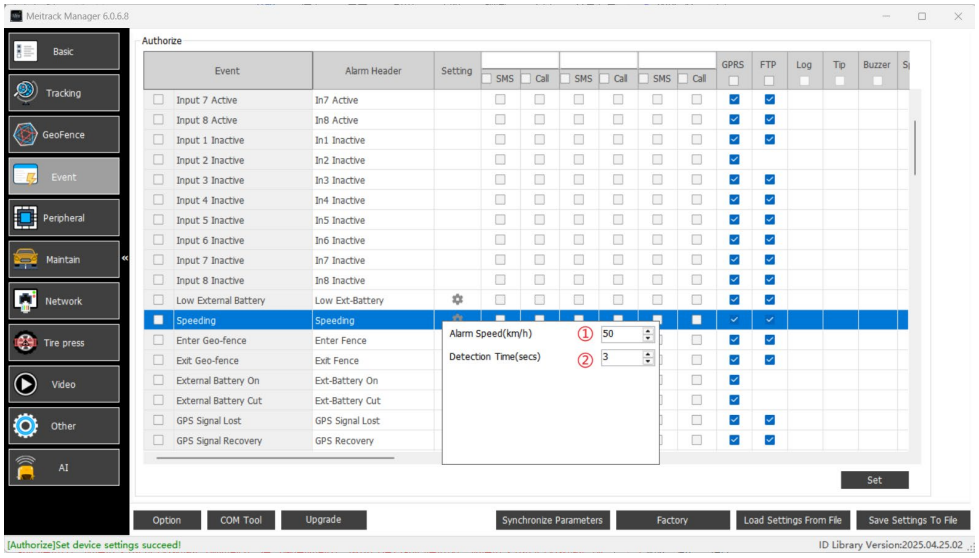


11 MD600 Function Settings,

11.1 Set Overspeed, Harsh acceleration\Harsh Braking, and Impact Alarm

(1) Overspeed: In the MM overspeed event settings, the alarm method can be configured as SMS, telephone, or GPRS.

Set the overspeed threshold and alarm detection time: When the device detects that the speed exceeds the threshold and remains above it for the specified detection time, an overspeed alarm will be triggered.



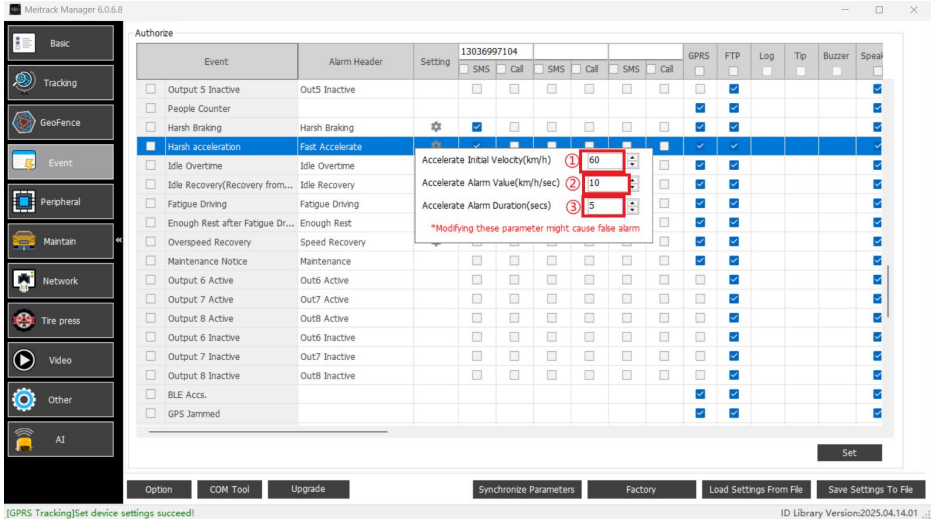
(2) Harsh acceleration\Harsh Braking: In the MM Harsh acceleration and Harsh Braking event settings, the alarm method can be configured as SMS, telephone, or GPRS.

For Harsh acceleration\Harsh Braking events, you can set ① initial speed, ② acceleration\deceleration threshold, and ③ alarm duration;

① Initial speed: The initial speed value that triggers Harsh acceleration or Harsh Braking;

② Harsh acceleration/deceleration value: Sets the trigger threshold for acceleration or deceleration;

③ Detection time for triggering Harsh acceleration/deceleration: Within this time frame, the acceleration or deceleration value reaches the trigger threshold.

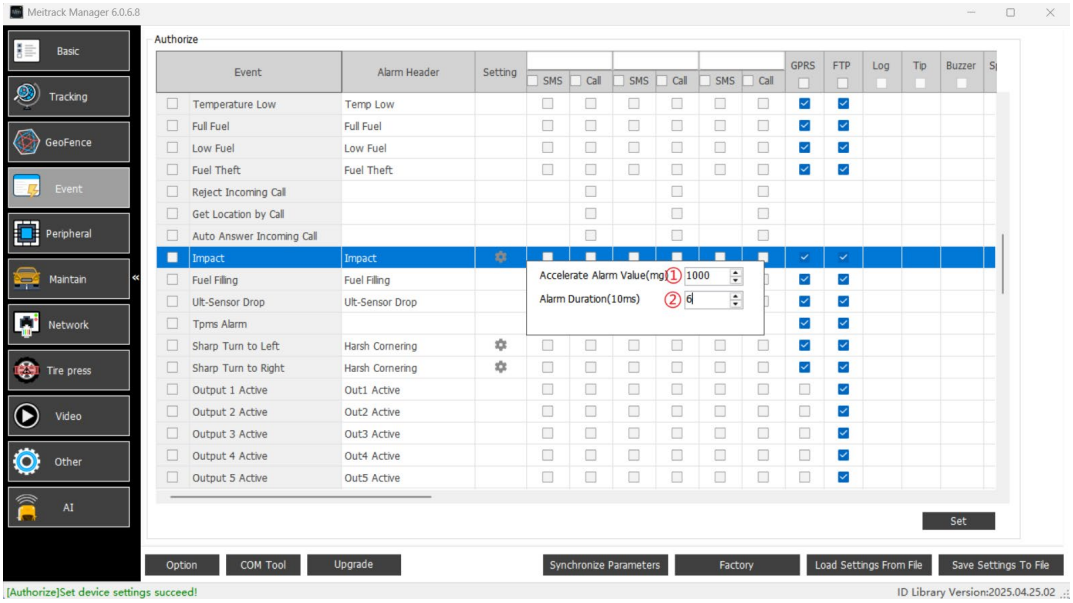


(3) Impact alarm: In the MDVR impact event settings, the alarm method can be configured as SMS, telephone, or GPRS;

① Alarm acceleration: Sets the acceleration threshold that triggers a impact event, unit mg, range 500–65535;

② Alarm duration: Sets the duration of the impact event, unit 10 ms, range 0–255;

Note: For actual vehicle installation, the device must be firmly secured to the vehicle to ensure more accurate impact alarms. (The default values are identical for both small and large vehicles. If frequent false impact alarms occur during actual use, the impact acceleration threshold can be raised.)



11.2 Upload Alarm Images and Videos

11.2.1 Configure to trigger alarm photo capture and snapshots;

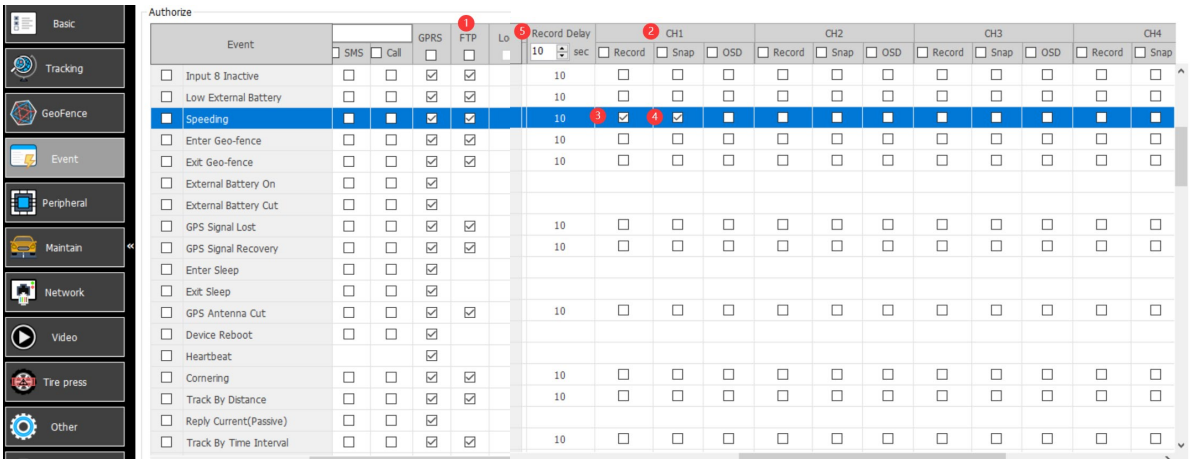
① Set whether to upload to the FTP Server;

② After triggering the alarm, select which CH to capture photos and record videos;

③ “Record” refers to video recording; video recording will start after triggering the overspeed alarm;

④ “Snap” refers to photo capture; a photo will be taken after triggering the overspeed alarm;

⑤ “Record delay” specifies the duration of video recording after the alarm is triggered. For example, setting it to 10 seconds will record video data 5 seconds before and 5 seconds after the alarm.



11.2.2 Configure FTP Server

① In Network Settings, enable ② FTP Enable;

Enter ③ Domain Name, ④ Port, ⑤ Username, ⑥ Password, then click Set

Default FTP Server IP: **67.203.15.7**; Port: **9876**;

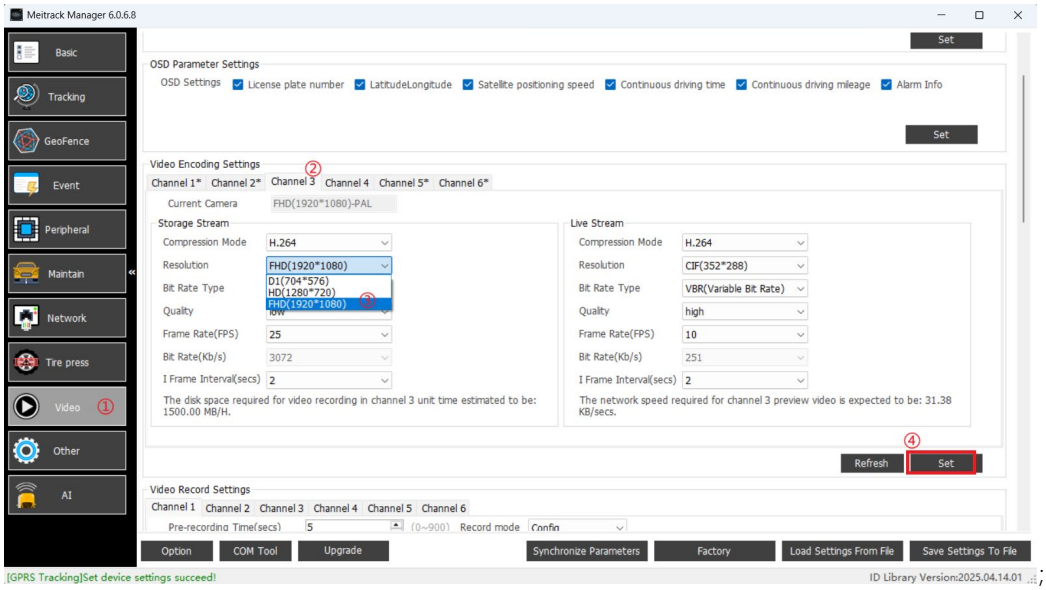
The username and password are the same as the MS06 platform account.

Note: Incorrect FTP Server parameter settings will cause images and videos to fail to upload properly to the FTP Server.

11.3 Set the resolution for stored stream video and real-time stream video.

11.3.1 Set the resolution for stored stream video.

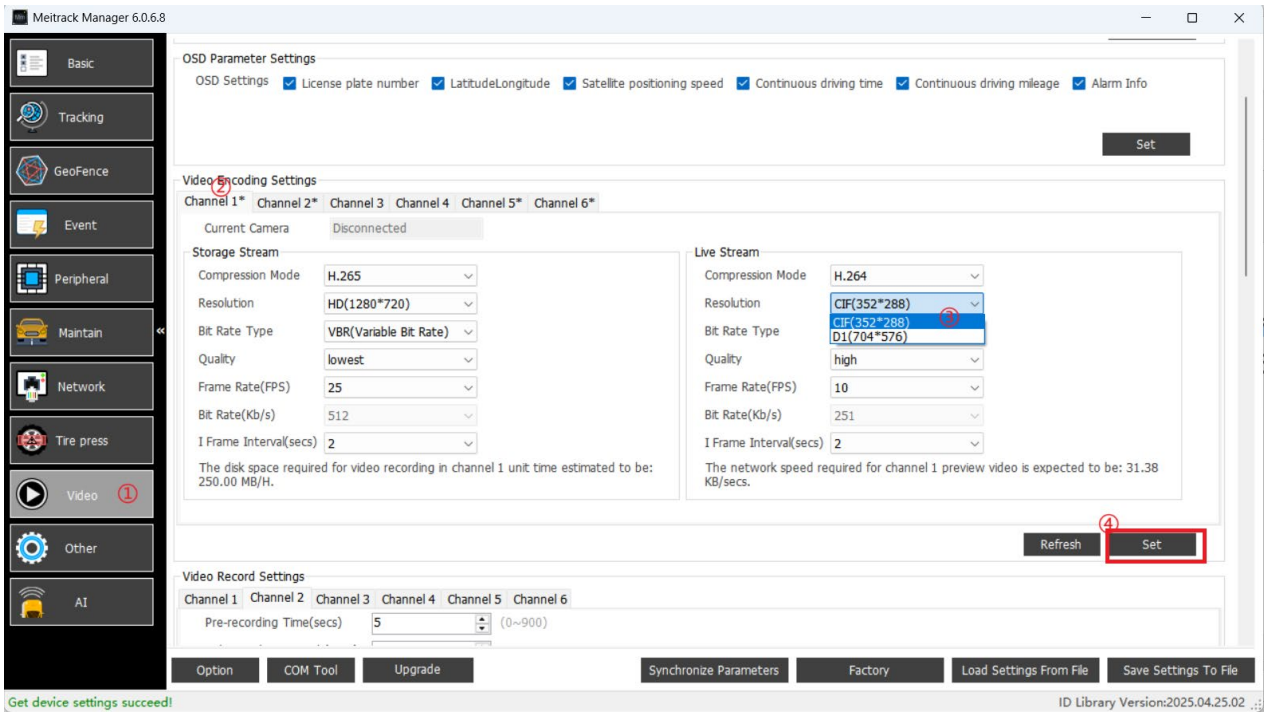
Click ① Video Settings, select ② Camera Channel and ③ Resolution, then ④ click Set.



Note: Stored stream video will not be actively uploaded to the FTP Server; it requires a command from the server to retrieve the stored stream video.

11.3.2 Set the resolution for real-time stream video.

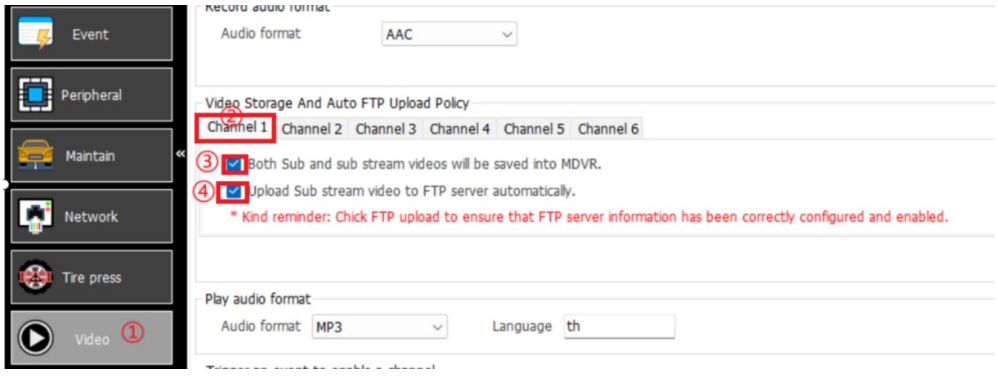
Click ① Video Settings, select ② Camera Channel and ③ Resolution, then ④ click Set.



Note: Real-time video can be configured to actively upload video to the FTP Server. To enable this function, please follow the steps below:

(1) Configure the FTP Server first.

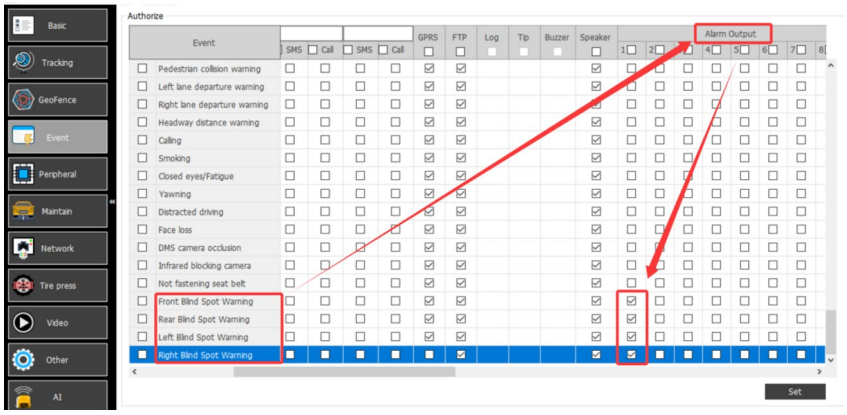
(2) Select ①Video Settings, then choose ②Camera Channel, ③Real-time Video Storage (if unchecked, real-time video will not be uploaded), and ④Upload Real-time Video to FTP Server;



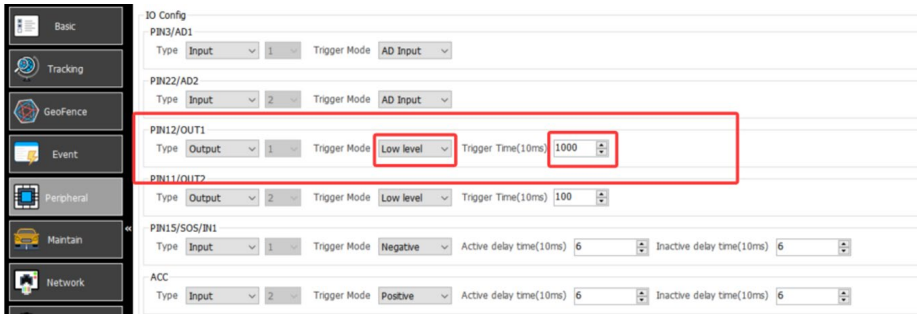
11.4 Event triggers OUTPUT output

This function is used to control the OUTPUT to output a GND or PWM. The OUTPUT can be connected to relays, LED lights or buzzers.

For example: As shown in the figure below, it is set for the BSD event to trigger OUTPUT1 to control the buzzer to make a sound.



Set OUTPUT1 to low trigger mode and set the trigger time to 1000ms; When the trigger alarm occurs, the buzzer will sound for 10 seconds and then automatically turn off.

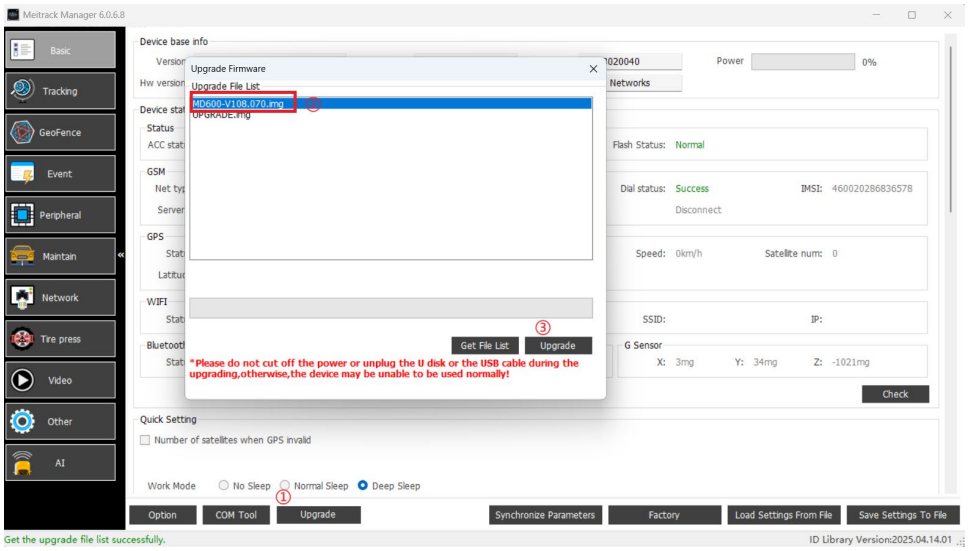


11.5 MD600 Upgrade

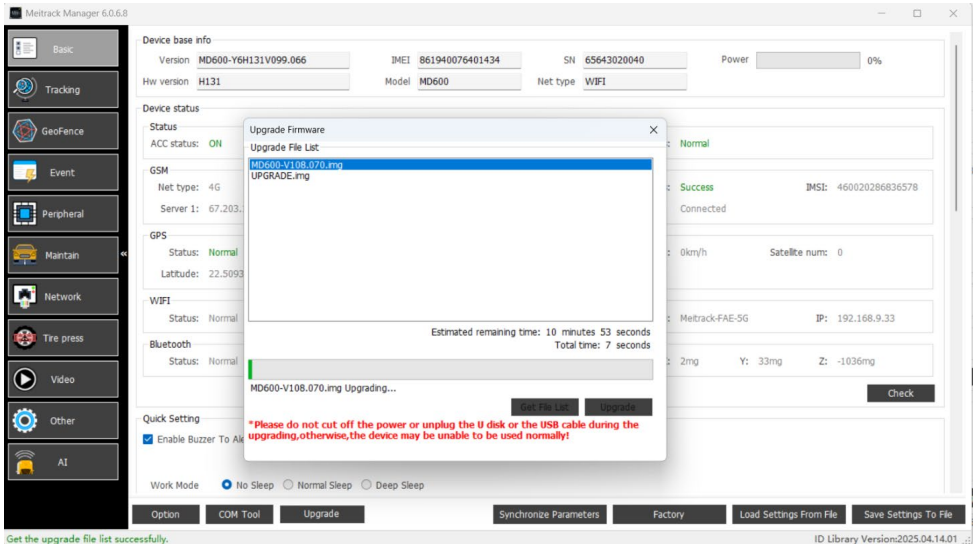
Ensure the USB drive contains an img file, for example, MD600-V108.070.img

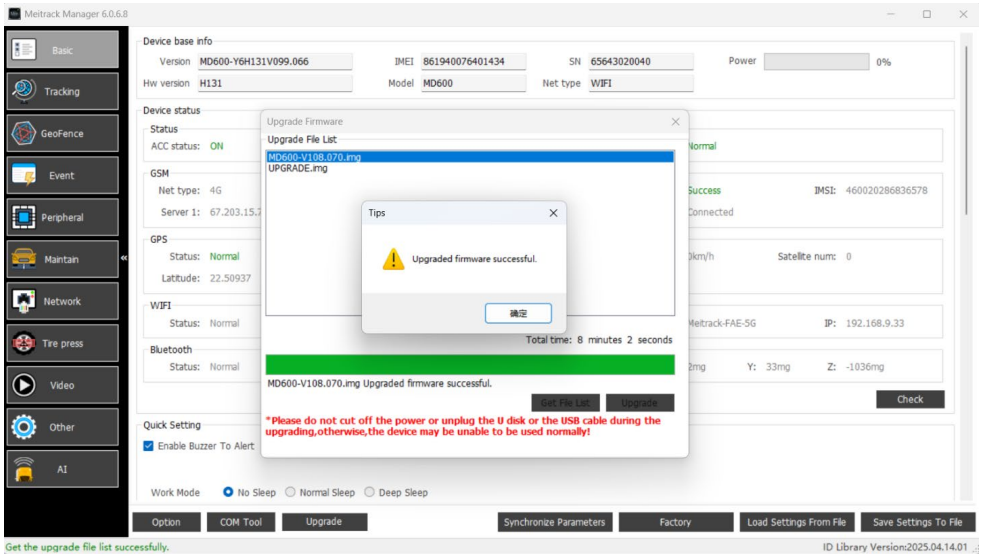
Insert the USB drive into the USB port of the MD600 device

Open the MM software, then click ①, select the upgrade file ②, and click Upgrade ③



A progress bar will be displayed during the upgrade process

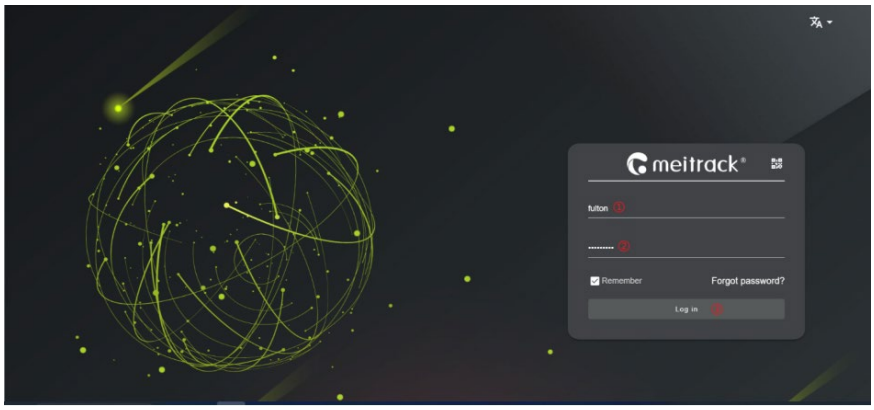




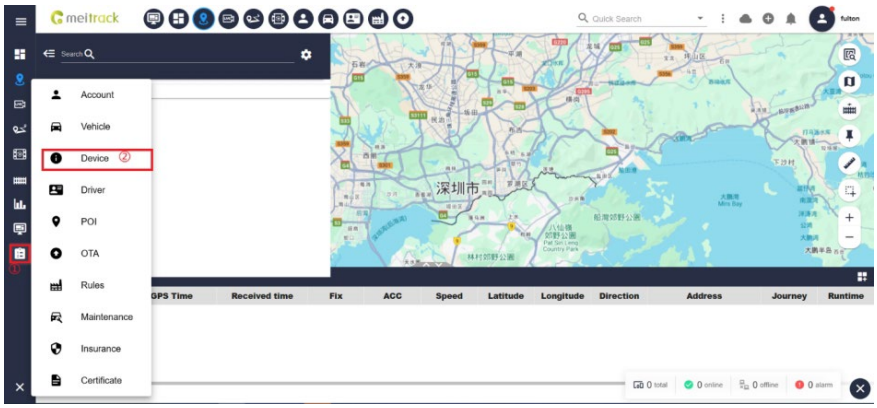
12 MS06 Platform

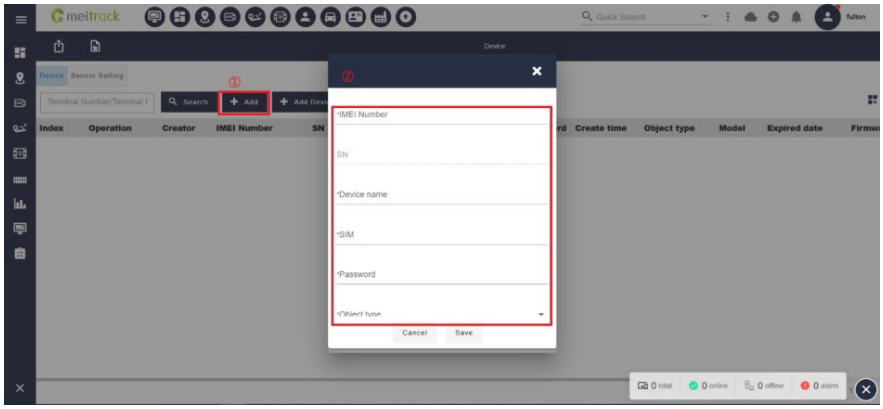
12.1 Bind Device

Enter https://ms06.trackingmate.com/loginPage to open the MS06 official platform website, then enter your account and password, and click Login



Click Device; select Add; fill in the required fields marked with *; then click save ;





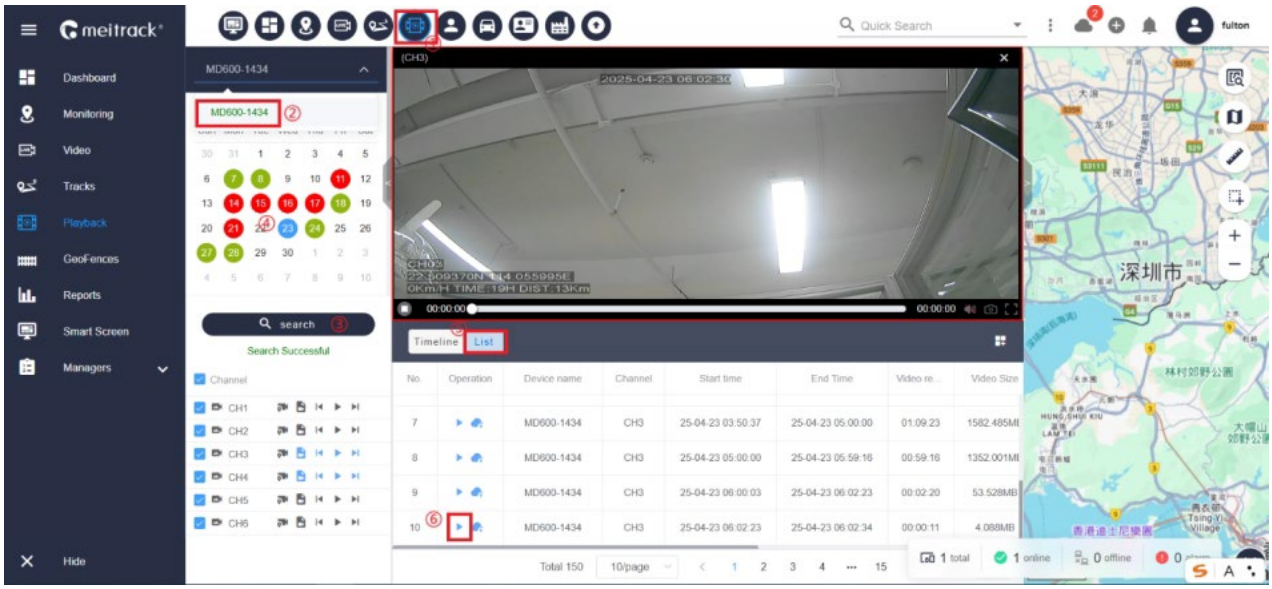
Note: If unclear, please refer to the detailed MS06 user manual or contact Meitrack technical support for assistance;

12.2 How to view live video

Click the ① icon, then double-click the desired ② video channel to view the video.

12.3 How to view playback video

Then click the icon ①, select the device name ②, click Search ③, select the date ④, choose from the list ⑤, and click Play ⑥.



Playback video viewing diagram

Note: For additional features of the MS06 platform, please refer to the MS06 platform user manual.

If you have other questions, please email us at info@meitrack.com, and we will be happy to serve you.