CEN102-PRO
SPECIFICATION

Overview

The CEN102-PRO is a cost-effective device specifically developed for mobile video surveillance and remote video monitoring, offering high functional scalability. It comes equipped with a high-speed processor and an embedded operating system, incorporating the latest H.265 video compression/decompression technologies, 3G/4G/Wi-Fi network transmission capabilities, and GPS/BDS positioning technologies prominent in the IT industry.

Featuring the most recent processor solution, the CEN102-PRO supports a variety of recording formats such as 1080p, 720p, WD1, WHD1, WCIF, D1, HD1, and CIF. Additionally, it facilitates real-time local recording and wireless uploading of vehicle status data and monitoring data. When integrated with centralized software, it enables professional functions including alarm linkage, evidence center management, remote management, video playback, and track analysis. This device is characterized by its high reliability, flexible installation options, and maintenance convenience.

Strengths

✅ Embedded Linux operating system

✅ H.265/H.264 encoding and decoding to improve the memory space utilisation

✅ 3.5-inch hard disk storage, hard disk heating & hard disk power-off protection technologies

✅ SD card backup for mirror recording

✅ Connection with storage units such as a fireproof box for disaster recovery backup

✅ Boasting outstanding anti-vibration performance and high reliability, the device offers a comprehensive suite of functions.
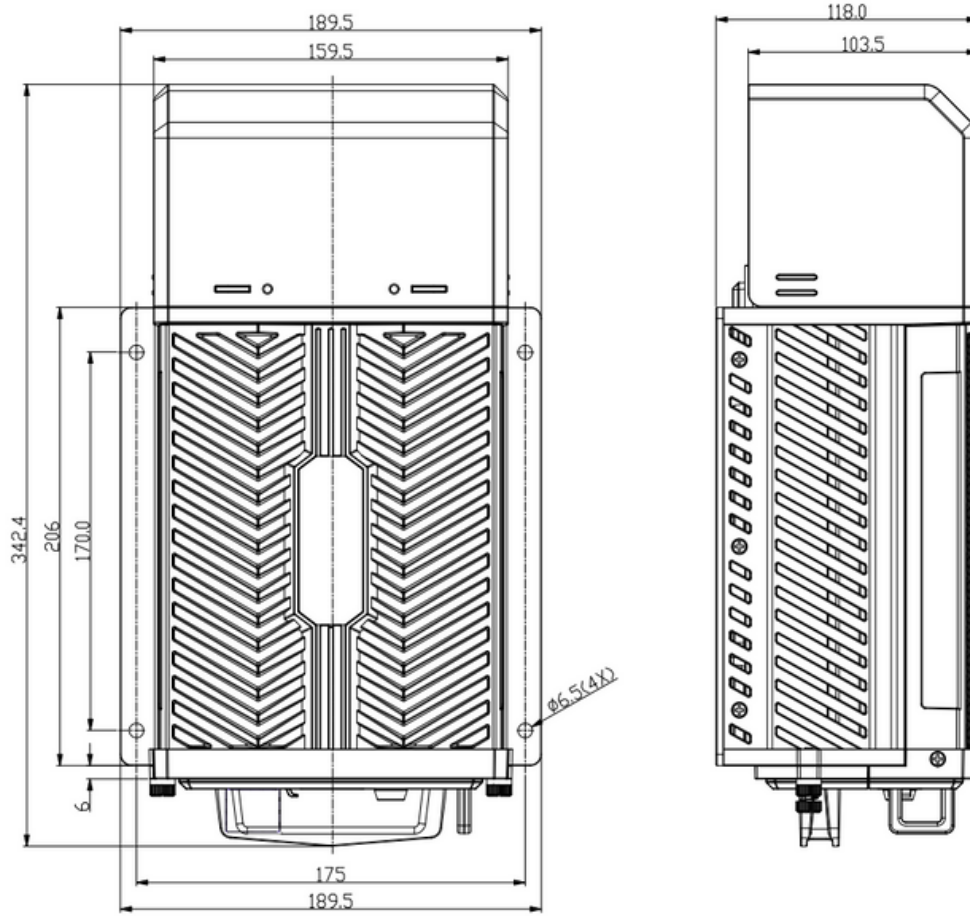
Specifications

Model: CEN102-PRO

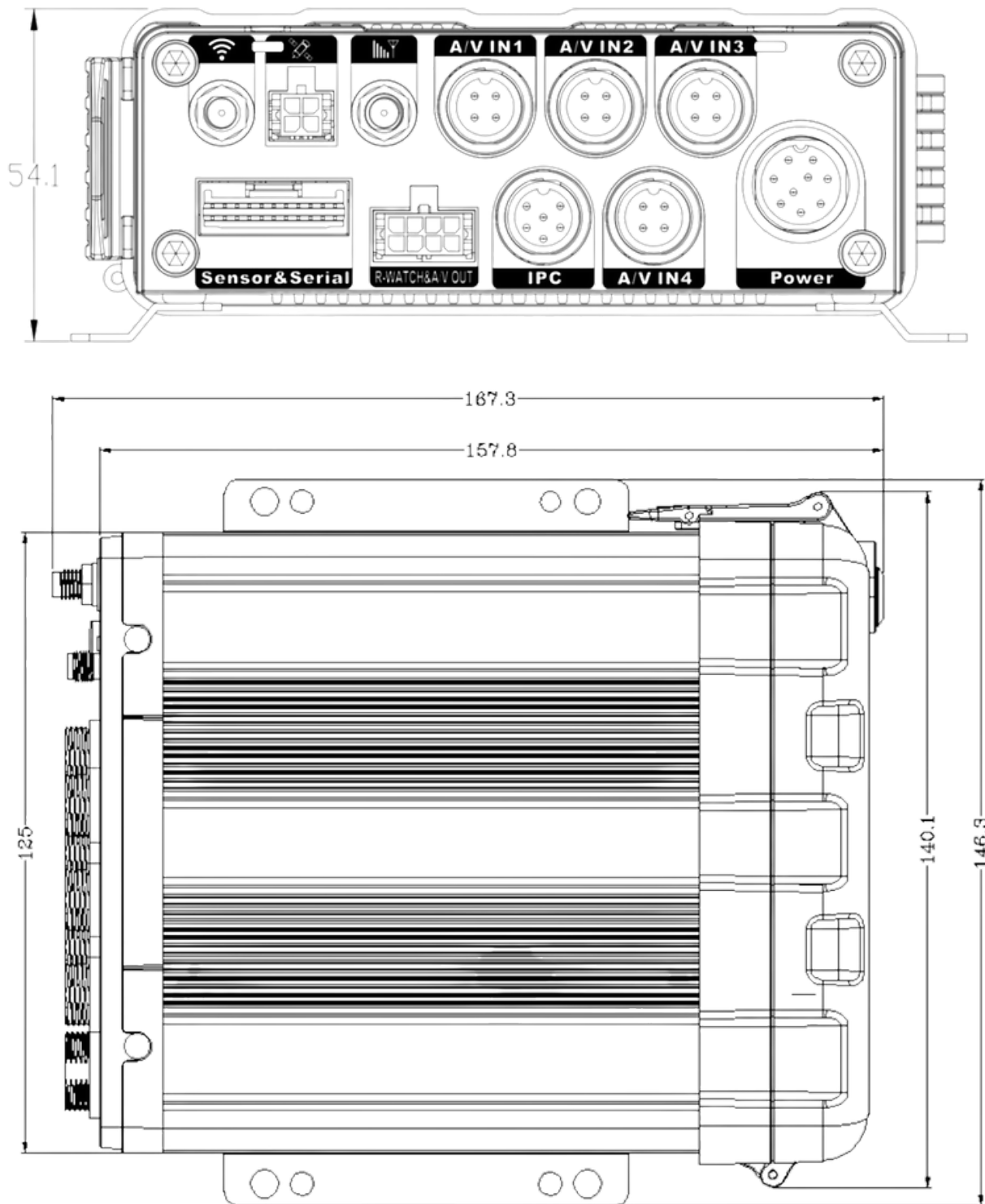| Function Overview	
Preview, video recording, playback, network transmission, and positioning	
System	
Operating System	Linux 4.9
Control Mode	CP4,mouse, EasyCheck, and network (3G/4G/Wi-Fi)
Video	
Input	8-channel AHD + 4-channel IPC (PON power supply)
Output	1-channel CVBS + 1-channel VGA
Total Resource	AHD: 8*720P@25FPS(PAL) or 8 × 1080p @ 15 FPS (PAL) or 8 × 720p @ 30 FPS (NTSC) or 8 × 1080p @ 15 FPS (NTSC) IPC: 4*1080P@30FPS(IPC)
Video Signal Standard	Level: 1 Vpp; impedance: 75 ohm NTSC/PAL (optional)
Audio	
Input	8-channel AHD + 4-channel IPC
Output	2 channels
Audio Signal Standard	Level: 2 Vpp; input impedance: 4.7 kilohm
Display	
Display Split	1/4/9-screen display
Screen Display	Time/Date, Vehicle Plate, Vehicle Number, Alarm, Speed, Location Information, Channel Name, ACC Information
Operating Interface	GUI
Recording	
Audio/Video	Video: H.264/H.265
Compression Format	Audio: ADPCM,G.711U,G.711A

Image Resolution	**AHD:** **PAL:** 1080p (1920 × 1080), 720p (1280 × 720), WD1 (928 × 576), WHD1 (928 × 288), WCIF (464 × 288), D1 (704 × 576), HD1 (704 × 288), CIF (352 × 288); **NTSC:** 1080p (1920 × 1080), 720p (1280 × 720), WD1 (928 × 480), WHD1 (928 × 240), WCIF (464 × 240), D1 (704 × 480), HD1 (704 × 240), CIF (352 × 240); **IPC:** 1080p (1920 × 1080), 720p (1280 × 720);
Image Quality	Levels 1–8 adjustable (preferably Level 1)
Recording Mode	Startup/Scheduled/Alarm event recording
Alarm Prerecording	0-60 min
Alarm Recording Delay	0-30 min
Mirrored Recording	Supported

Playback

Playback Channel	1-channel local playback
Search Mode	By date/time, channel, or event

Network

3G/4G	EVDO/TD-SCDMA/WCDMA/TDD-LTE/FDD-LTE (optional)
WIFI	W217 module. Supported protocol: 802.11a/b/g/n/ac
Ethernet	1 × RJ45 (10/100 M/1000 M)

Positioning

GPS/BD	Positioning, speed detection, and time synchronization

Sensor

G-Sensor	Built-in 6-axis inertial sensor

Storage

HDD	1 × 3.5" SATA HDD + 1 × M.2 SSD, hard disk heating supported
SD	Hot-swapping 32/64/128/256 GB SDXC

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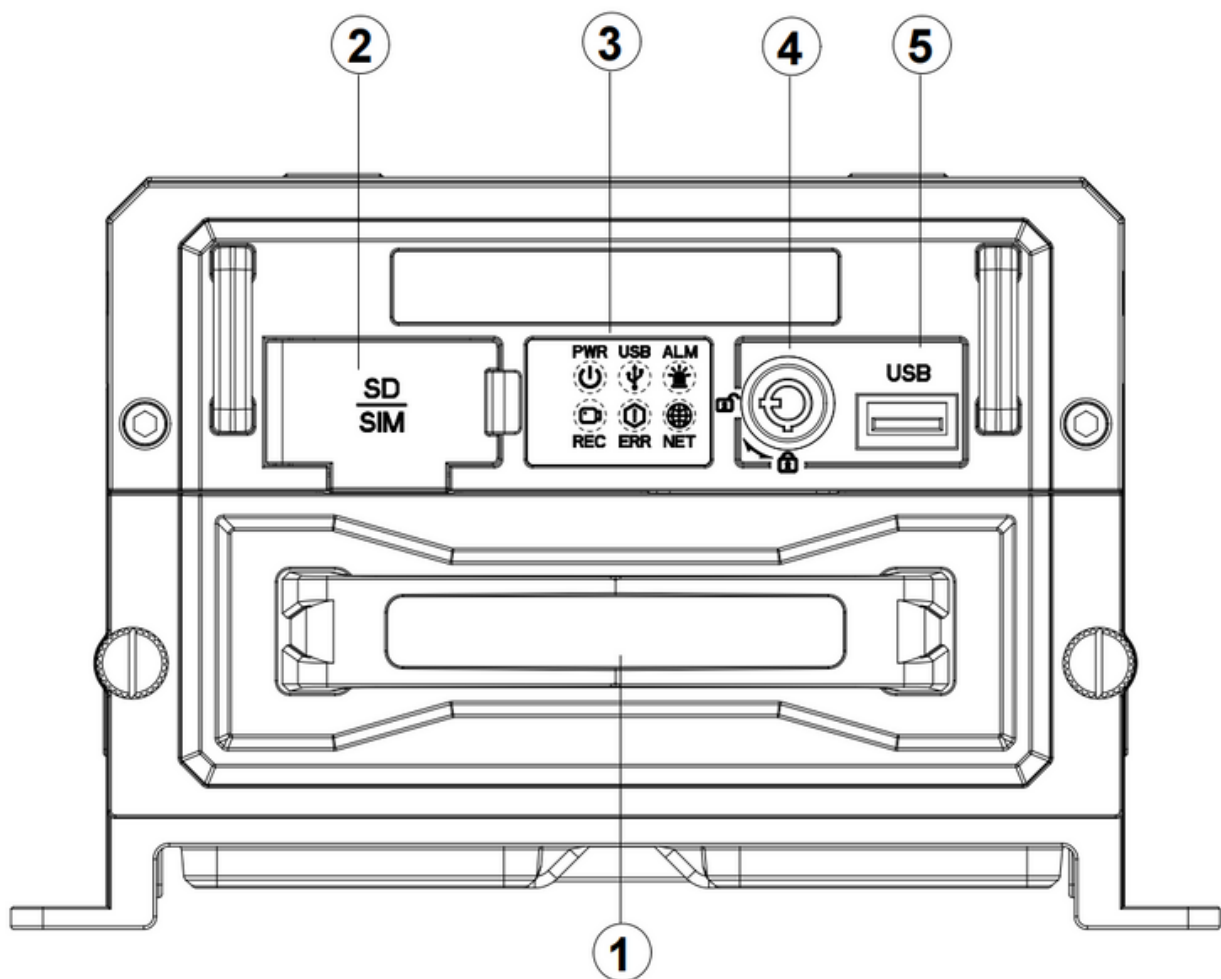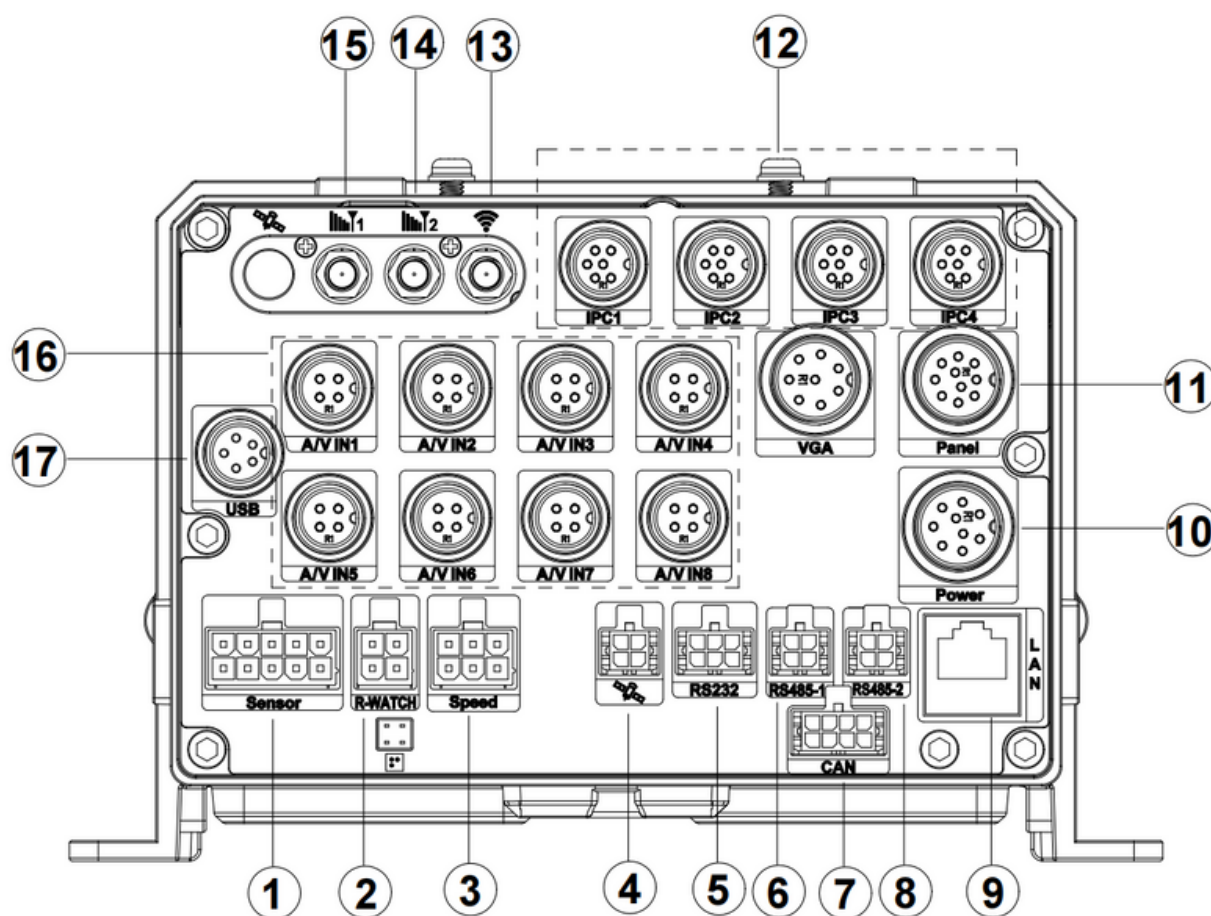| Port	
USB	1 × USB2.0 (5pin aviation connector) + 1 × USB2.0 (Type B)
SD	1 × SD card slot
SIM	2 × SIM card slot
Serial Port	2 × RS232, 3 × RS485 (1 × R-WATCH)
CAN	2 × CAN
IO	8-channel input and 2-channel output
Pulse Speed Detection	1 channel
Control Panel	CP4
Intercom	1 × MIC port (CP4)
VGA	1 × VGA
Power Supply	
Input	DC 8-36V
Output	5 V @ 500 mA & 12 V @ 500 mA
Maximum Typical Power Consumption	100 W
Standby Power Consumption	≈ 0 W
Physical Characteristics	
Dimensions (mm)	342.4 × 189.5 × 118.0 (with rear shield and bracket)
Weight (kg)	4.1 kg (without hard disks)
Environment	
Operating Temperature	−40ºC to +70ºC (heated, without hard disks)
Operating Humidity	8% to 95% (non-condensing)

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Dimensions (unit: mm)

189.5
159.5
342.4
206
170.0
6
Ø6.5(4X)
175
189.5
118.0
103.5

Dimensions (mm)

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Panel Ports

Front panel

S/N	Name
1	Hard disk caddy
2	SD/SIM card slot
3	Indicator: power (PWR), USB, alarms (ALM), recording (REC), errors (ERR), network (NET)
4	Device lock
5	USB interface

Rear panel:

S/N	Silk Screen	Description
1	Sensor	Serial port
2	R-WATCH	R-WATCH port
3	Speed	Pulse velocity measurement input port/alarm output port
4	⚡	8–36 V DC power input
5	RS232	2 RS232 ports
6	RS485-1	1 RS485 port
7	CAN	2 CAN ports
8	RS485-2	1 RS485 port
9	LAN	LAN port
10	Power	CP4 port
11	Panel	Wi-Fi antenna connector
12	IPC1~IPC4	IPC (PON power supply) audio/video input ports 1-4
13	📶	Wi-Fi antenna port

S/N	Silk Screen	Description
14	▥2	3G/4G antenna port
15	▥1	3G/4G antenna port
16	A/V IN1~A/V IN8	Analog audio/video input ports 1 to 8
17	USB	USB interface

Installation

Typical Wiring Diagram
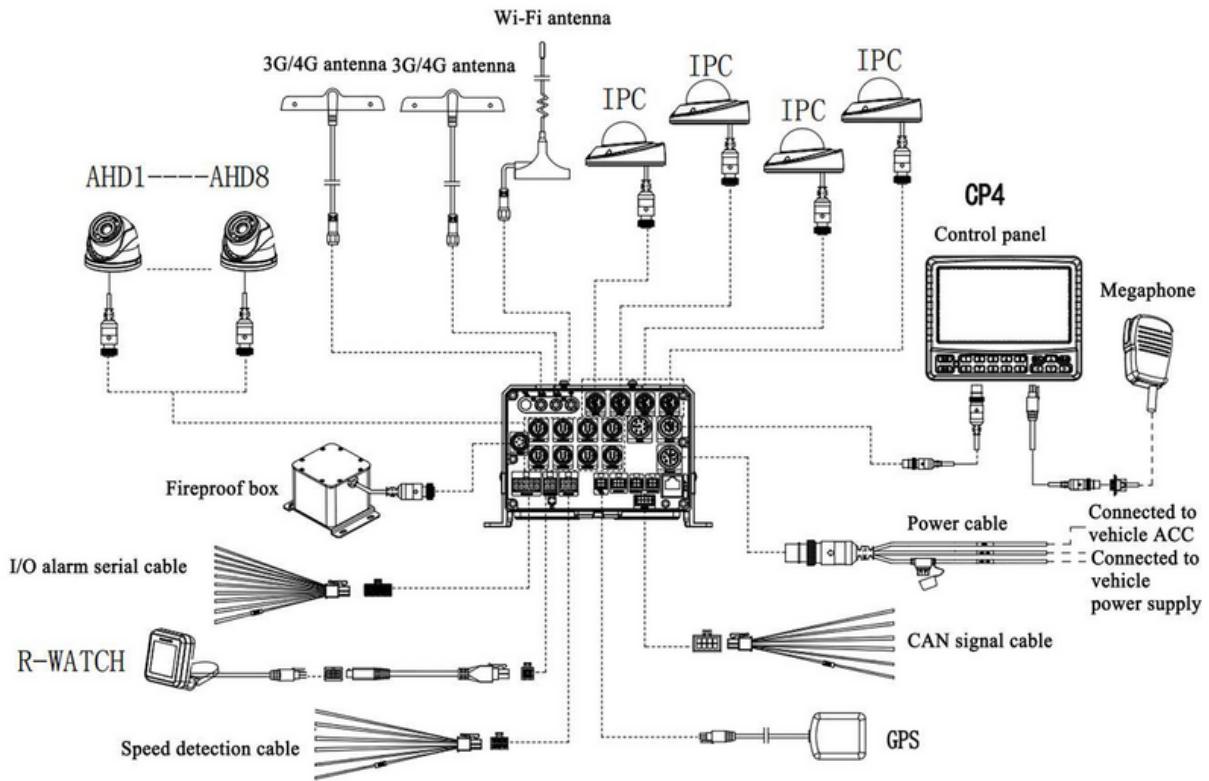
Installation

Hard Disk Installation

1-1: Use the key to open the lock.

1-2: Remove the captive screws on both sides of the hard disk case.

2: Hold the handler of the case by hand to pull it out.

3: Use a cross screwdriver to remove the 6 screws of the front panel of the hard disk case and take off the panel.

4: This is what the case looks like after you take off its front panel.

5: Insert the 3.5-inch hard disk into the case in the direction of the arrow (put the hard disk in carefully to avoid damaging it).

6: Fix the hard disk using 4 screws at the positions indicated by the arrows.

7: Use a cross screwdriver to fix the front panel of the hard disk case with the 6 screws.

8: Install the hard disk case in the device according to the direction of the arrow.

9-1: Fix the case using the captive screws on both sides of it.

9-2: Lock with the key.

Installation

External Cable Connector Pinouts

I/O alarm and serial cable connector pinouts:

Large 5557-10 pins		Label content
1	Green	SENSOR IN5
2	Green	SENSOR IN6
3	Green	SENSOR IN7
4	Green	SENSOR IN8
5	Red	+12 V
6	Green	SENSOR IN1
7	Green	SENSOR IN2
8	Green	SENSOR IN3
9	Green	SENSOR IN4
10	Black	GND
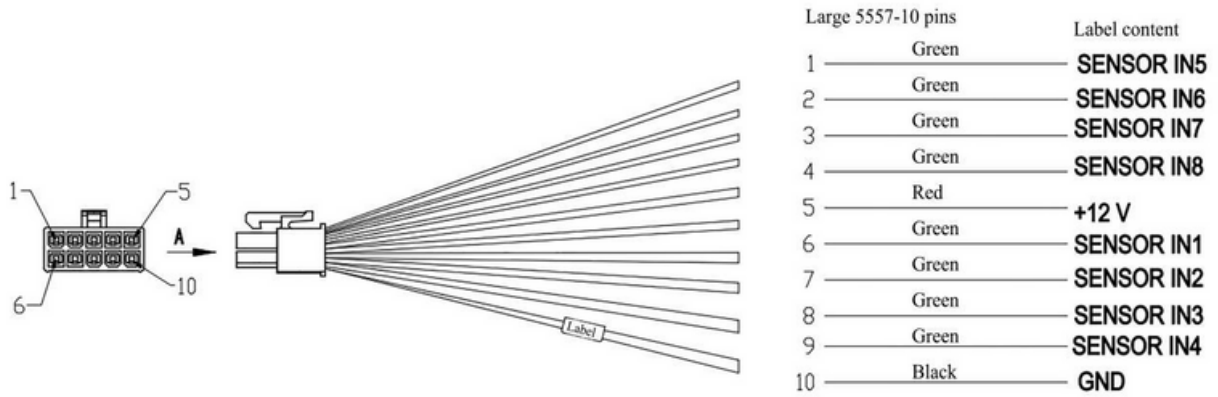
Speed detection cable connector pinouts:

Large 5557-6 pins		Label content
1	Green	SENSOR OUT1
2	Green	SENSOR OUT2
3	Black	GND
4	Brown	SPEED-B
5	White	SPEED-A
6	Red	5V OUT

CAN signal cable connector pinouts:

Small 5557-8 pins		Label content
6	Green	CAN-L1
1	White	CAN-H1
2	Black	CAN-GND1
8	Green	CAN-L2
3	White	CAN-H2
4	Black	CAN-GND2
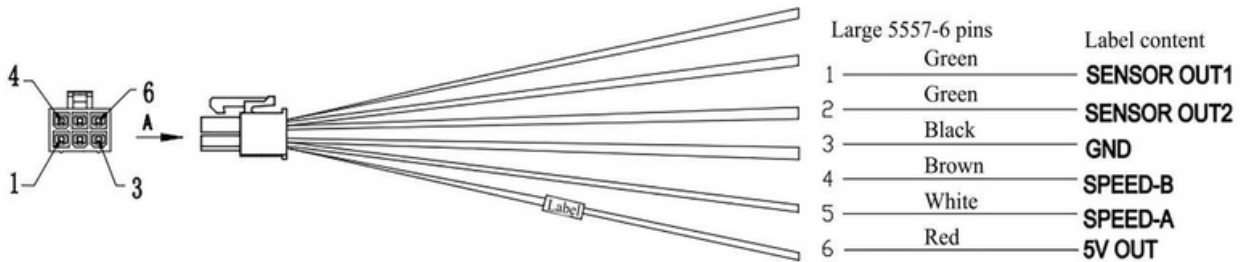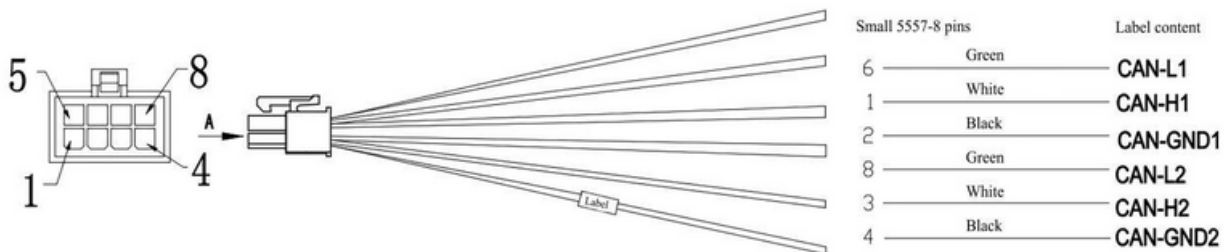
MDVR Fails to Start

✅ Check the input power supply of the device by checking whether the power cable is correctly connected, whether the ground cable is connected to the battery, and whether the fuse in the power cable is intact.

✅ Check whether the ACC signal cable of the power supply device has a voltage (greater than 7 V).

✅ Check whether the key on the device is switched off.

MDVR Keeps Restarting

✅ Check whether the voltage is too low to start the device, causing the device to randomly restart.

✅ Hard disk/SD card failures may cause device startup failure. Remove the storage unit and turn on the device again to determine whether the storage unit is faulty.

Video Recording Does Not Work

✅ Check whether a storage unit is installed and in good contact and whether the storage unit can read data normally when connecting to a computer.

✅ The storage unit is not formatted. After the storage unit is inserted into our device, it needs to be formatted to perform normal data storage.

✅ Check whether there is a video signal input from the camera to the MDVR and whether there is a video image shown on the live view screen.

Video Files Have No Sound

✅ Check whether there is an external pickup connected or whether the camera features audio acquisition.

✅ Access the video channel settings and check whether the audio option is enabled.

✅ The channel that realizes the sound recording function must have video input and can perform video recording normally.

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GPS Abnormality

✅ Check whether the GPS antenna is correctly installed and whether there is a GPS silk screen on the GPS antenna pedestal on the back of the MDVR.

✅ Check whether the antenna receiver is blocked. The antenna receiver must not be covered, or else signal reception failure may occur as a result.

✅ The impacts caused by surrounding environments such as tree shelters, tunnels, driving near tall buildings and overpasses, thunderstorm weather, etc. may cause GPS signal loss or GPS to receive the wrong signal.

Device Cannot Be Shut Down in the Ignition Startup & Shutdown Mode

✅ Check whether the ACC signal cable connection is correct and whether there is no voltage on the ACC yellow line after the key is switched off.

✅ If the Timing Video Record is enabled and the current time has not exceeded the limit set in the recording time task table, the device cannot be shut down.