CEN103-AHD
SPECIFICATION

Overview

The CEN103-AHD is a cost-effective device, specifically designed for mobile video surveillance and remote video monitoring, with a high level of functional scalability. It boasts a high-speed processor and an embedded operating system, incorporating the latest H.265 video compression/decompression technology and GPS/BDS positioning technology, key advancements in the IT industry.

This device supports video recording in various formats, including 1080p, 720p, WD1, WHD1, WCIF, D1, HD1, and CIF. Furthermore, it is enhanced with AI capabilities, utilizing the Advanced Driver Assistance System (ADAS) and Driver Status Monitor (DSM) to report alarms. These features are instrumental in assisting drivers with safe driving practices and in the reduction of traffic accidents."

Strengths

✅ Embedded Linux operating system

✅ Extended AI intelligent algorithms

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

✅ Dual SD cards

✅ Good anti-vibration performance, suitable for flexible & easy installation

✅ Comprehensive functions and high reliability

Active Safety Features

The CEN103-AHD is equipped with two AI algorithms: the DMS (Driver Monitoring System) algorithm, which detects risky driving behaviors, and the ADAS (Advanced Driver Assistance System) algorithm, designed to assist drivers in maintaining safety. Upon detecting events, it triggers an audio and visual notification through the R-watch, alerting the driver in real time. Simultaneously, event recordings are uploaded to the cloud for further analysis and record-keeping.

DMS Features
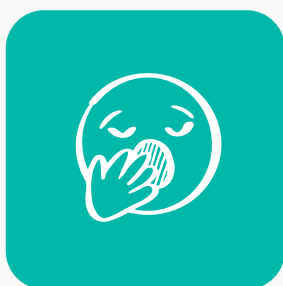
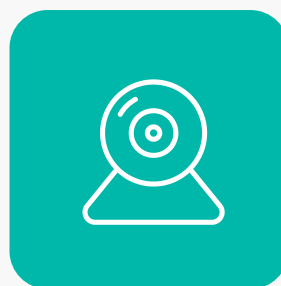|		
Yawning	**Fatigue**	**Smoking**
Phone Call	**Distraction**	**Camera Cover Detection**

ADAS Features

LDW	**HMW**	**FCW**

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Specifications

Model: CEN103-AHD

Function Overview	
Preview, video recording, playback, network transmission, and positioning	
System	
Operating System	Linux 4.9
Control Mode	Monitor / Mouse, EasyCheck, and network (3G/4G/Wi-Fi)
Video	
Input	4-channel AHD + 1-channel IPC
Output	1-channel CVBS
Total Resource	AHD: 4 × 720p @ 25 FPS (PAL) or 4 × 1080p @ 10 FPS (PAL) or 4 × 720p @ 30 FPS (NTSC) or 4 × 1080p @ 12 FPS (NTSC) IPC: 1 × 1080p @ 30 FPS
Audio	
Input	4-channel AHD + 1-channel IPC
Output	1-channel CP4
Audio Signal Standard	Level: 2 Vpp; input impedance: 4.7 kilohm
Display	
Display Split	1/4/9-screen display
Screen Display	Positioning information, alarms, license plate numbers, driving speed, time, etc.
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/Manual/Scheduled/Alarm event recording
Alarm Prerecording	0-60 m
Alarm Recording Delay	0-30 m

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 Supported frequency band: 2.4/5.0 GHz
IPC Ethernet	1 × 6-pin aviation plug (100 Mbit/s, PON-powered)

Positioning

GPS	Positioning, speed detection, and time synchronization

Sensor

G-Sensor	Built-in 6-axis inertial sensor

Storage

SD	Hot-swapping 32/64/128/256 GB SDXC

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Port	
SIM	1 × SIM card slot
USB	1 × USB2.0(Type A)
Serial Port	1 × RS232，1 × RS485(R-WATCH)
IO	8-channel input and 2-channel output
Speed	1-channel pulse speed detection
Control Panel	CP4 (accessories optional)
Intercom	1 × MIC port
CAN	Not supported

Power Supply	
Input	DC 8-36V
Output	5 V @ 500 mA
Maximum Typical Power Consumption	29 W
Standby Power Consumption	≈ 0 W

Physical Characteristics	
Dimensions (mm)	167.3 × 146.3 × 54.1
Weight (kg)	0.83

Environment	
Operating Temperature	-40°C~+70°C
Operating Humidity	8% to 95% (non-condensing)

AI	
MDVR AI	Centrad AHD camera for DSM and ADAS

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Dimensions (mm)
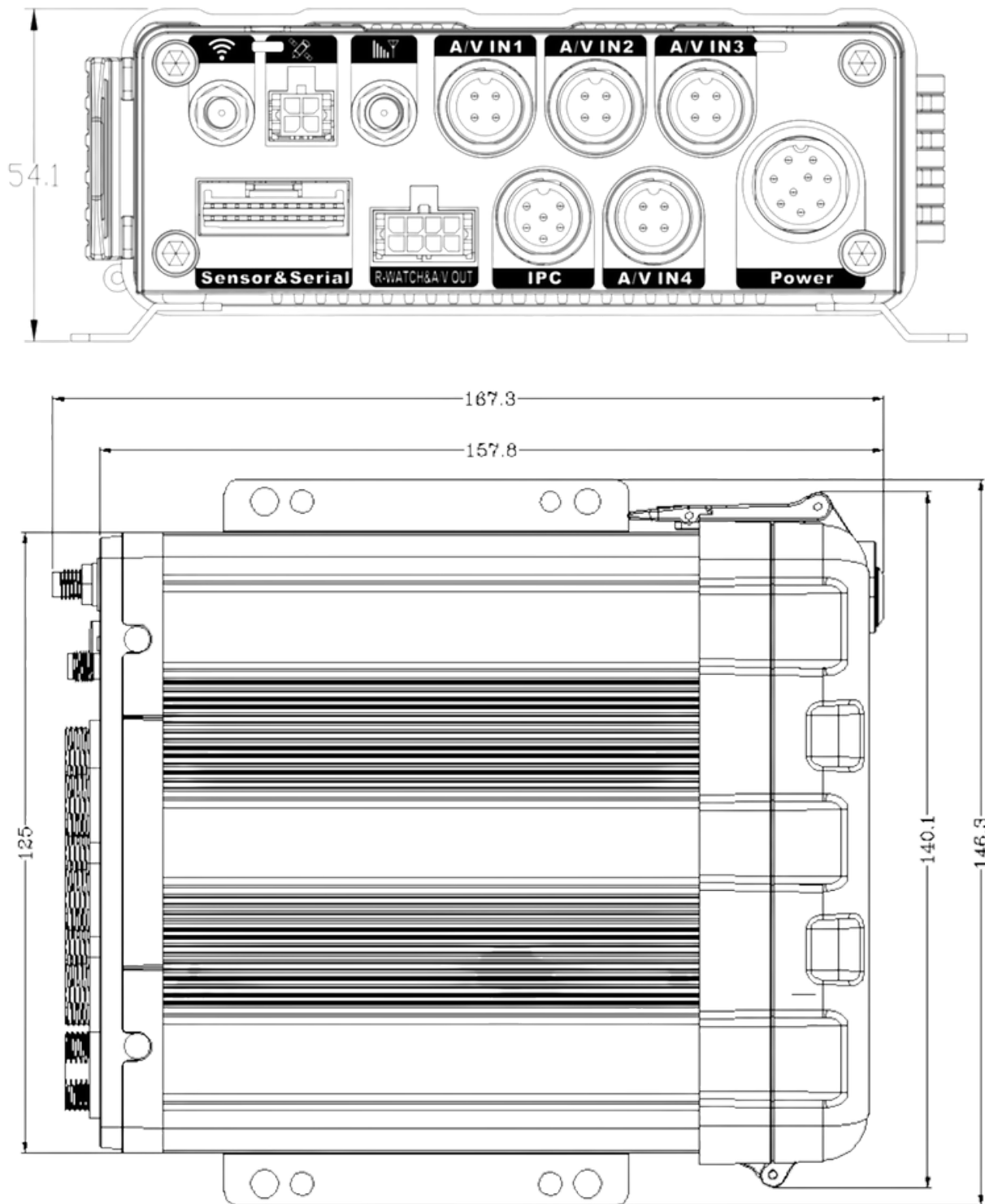
Panel Ports

Front panel
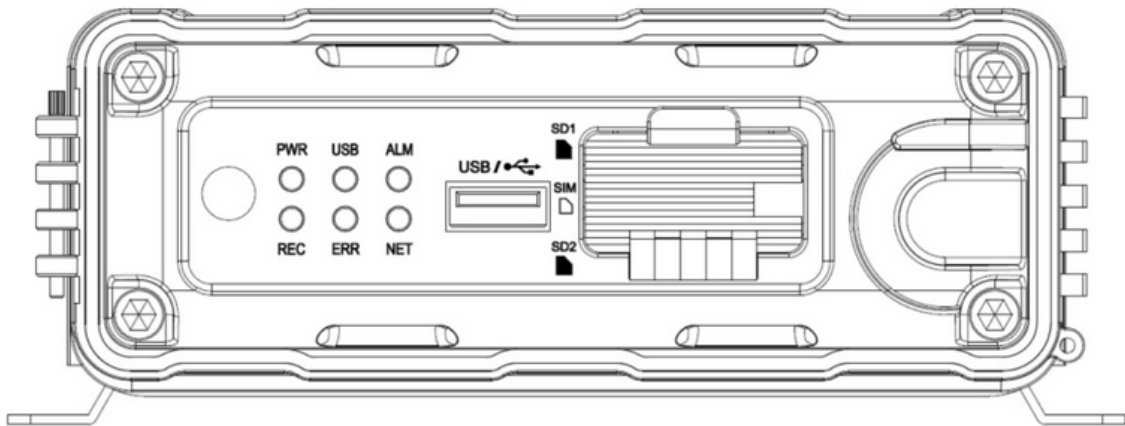
Rear panel:
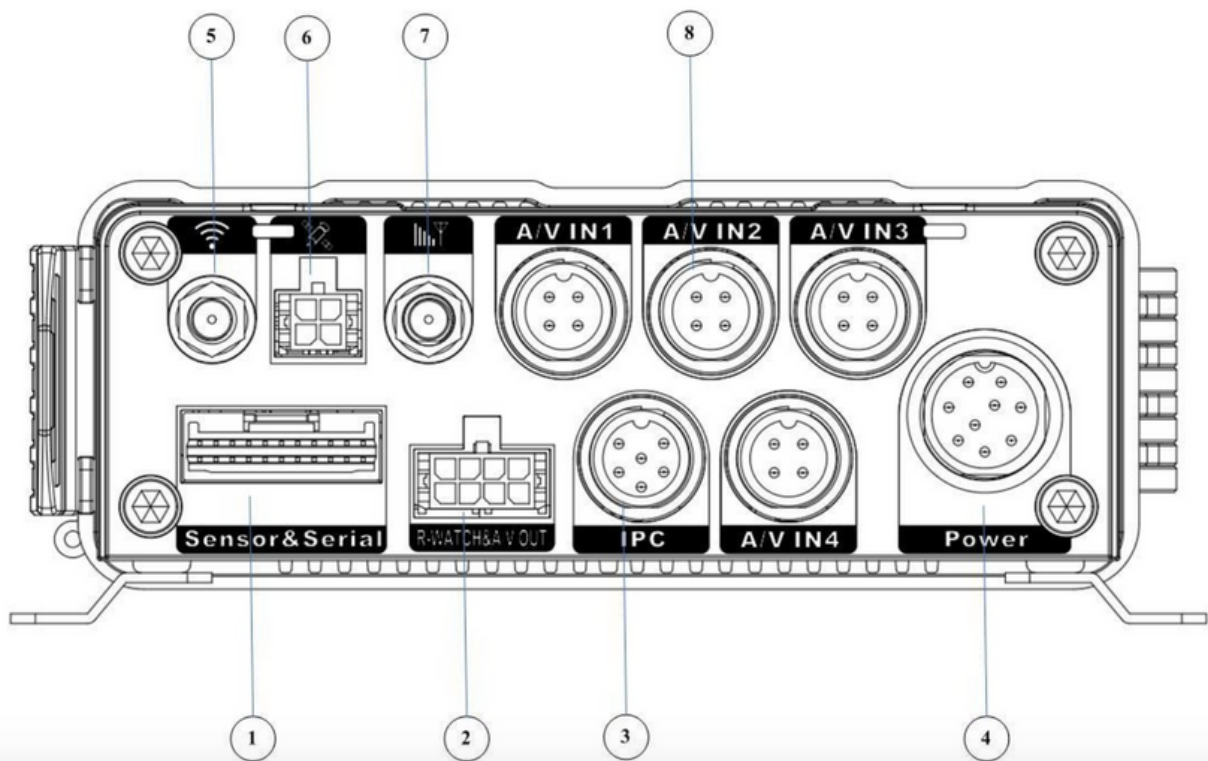
S/N	Silk Screen	Description
1	Sensor & Serial	Serial port and IO port
2	R-WATCH & A/V OUT	R-WATCH and A/V OUT port
3	IPC	PON-powered IPC port
4	Power	8–36 V DC power input
5	📶	Wi-Fi antenna connector
6	🛰	GPS/BDS antenna connector
7	📶	3G/4G antenna connector
8	A/VIN1 1~4	Analog audio/video input ports 1 to 4

Installation

Typical Wiring Diagram
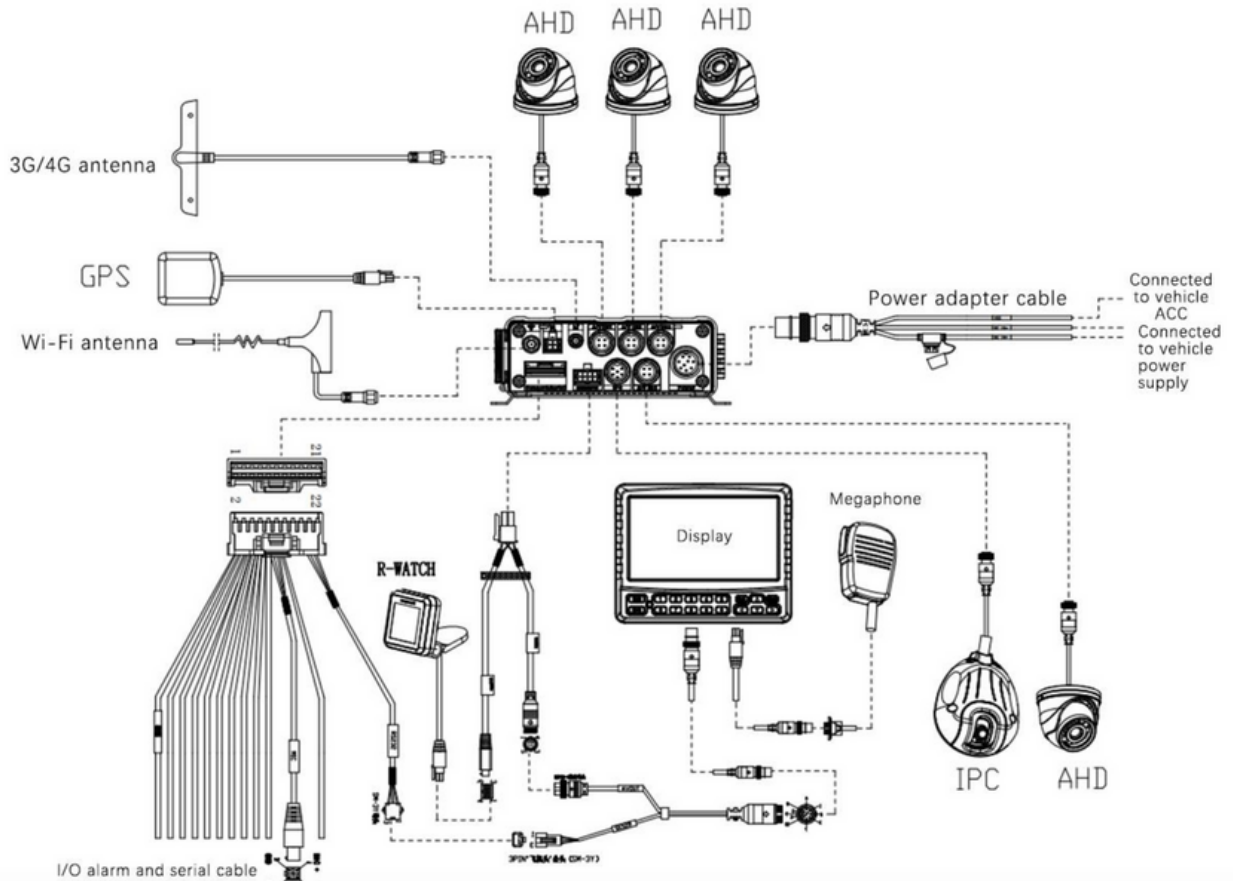
External Cable Connector Pinouts

(1) R-Watch&A/V OUT

Pinout			
Small 5557-8P	Small 5559-6P		
7	5	Yellow	485B
3	4	White	485A
2	3	Black	GND
1	6	Red	+12V
Small 5557-8P	RS765-4 aviation male connector		
6	3	White	AUDIO
5	4	Natural color	VIDEO
2	2	Black+Wrap	GND
1	1	Red	+12V
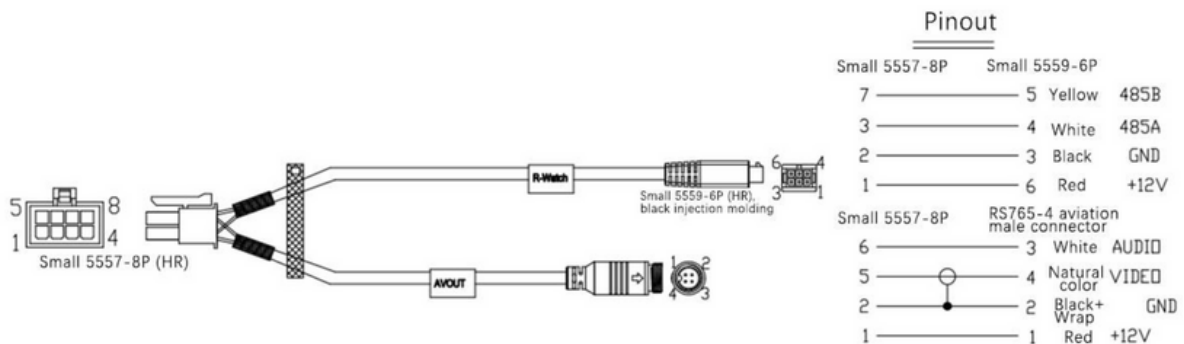
Installation

External Cable Connector Pinouts

(2) Sensor&Alarm Cable

Pinout		
501646-2200		Label content
1	Green	SENSOR IN1
3	Gray	SENSOR IN2
5	Light green	SENSOR IN3
7	Light blue	SENSOR IN4
9	Gray	SENSOR IN5
11	Orange	SENSOR IN6
13	Blue/Black	SENSOR IN7
15	Blue/White	SENSOR IN8
17	Blue	SPEED IN
12	Red/White	SENSOR OUT1
14	Red/Yellow	SENSOR OUT2
19	Black	GND
21	Red	+5V

Large 5559-4P

16	3 MIC-SW
20	4 MIC-
22	1 MIC+
21	2 +5V

SM-3Y

18	Black	1 GND
10		2 232RX-1
8		3 232TX-1

Label

Black heat shrink tubing

MIC

Large 5559-4P connector, black injection molding

MIC_SW_IN MIC -
3   4
1   2
MIC +   +5V

RS232

SM-3Y female connector

3
1

Molex connector 501646-2200

1 2

21 22