

CEN101-AHD SPECIFICATION



Overview

The CEN101-AHD is a cost-effective device specifically designed for mobile and remote video surveillance, offering high functional scalability. Equipped with a high-speed processor and an embedded operating system, it integrates advanced H.265 video compression/decompression technologies, 3G/4G network capabilities, GPS/BD positioning, and Wi-Fi technology from the IT industry.

This device supports various recording formats including 1080p, 720p, WD1, WHD1, WCIF, D1, HD1, and CIF. It not only records vehicle driving information but also allows for remote video uploading. Additionally, when used with center software, it supports alarm linkage and provides central remote video surveillance, intelligent vehicle dispatch management, and playback analysis based on a central database.

Furthermore, the CEN101-AHD supports extended AI intelligent algorithms. It provides features such as the Advanced Driver Assistance System (ADAS) alarm, Blind Spot Detection (BSD), and Driver Status Monitor (DSM), effectively assisting drivers in improving safety and reducing pedestrian and vehicle accidents.

Strengths

- ✓ Embedded Linux operating system
- ✓ Extended AI intelligent algorithms
- ✓ H.265/H.264 encoding and decoding to improve the memory space utilisation
- ✓ 2.5-inch hard disk storage, hard disk heating & hard disk power-off protection technologies
- ✓ Good anti-vibration performance, simple design, and flexible & easy installation
- ✓ Comprehensive functions and high reliability

Specifications

Model: CEN101-AHD

| Function Overview | |
|---|---|
| Preview, video recording, playback, network transmission, and positioning | |
| System | |
| Operating System | Linux 4.9 |
| Control Mode | Monitor with Mouse, EasyCheck, Network (3G/4G/Wi-Fi) |
| Video | |
| Input | 4-channel AHD (1080p) + 1-channel IPC (1080p) |
| Output | 1-channel (CVBS) |
| Total Resources (equipped with 2-channel AI) | PAL: 1*1080P@25fps (ADAS) +1*720P@25fps (DMS) +2*720P@15fps (AHD) + 1*1080P@15fps (IPC) Or 4*720@25fps (AHD) +1*1080P@15fps (IPC) NTSC: 1*1080P@30fps (ADAS) +1*720P@30fps (DMS) +2*720P@15fps (AHD) + 1*1080P@15fps (IPC) Or 4*720@30fps (AHD) +1*1080P@15fps (IPC) |
| Total Resources (not using self-equipped AI or using 1-channel AI) | PAL: 4*1080P@15fps (AHD) +1*1080P@25fps (IPC) Or 4*720@25fps (AHD) +1*1080P@25fps (IPC) NTSC: 4*1080P@15fps (AHD) +1*1080P@30fps (IPC) Or 4*720@30fps (AHD) +1*1080P@30fps (IPC) |
| Video Signal Standard | Level: 1 Vpp; impedance: 75 ohm NTSC/PAL (optional) |
| Audio | |
| Input | 5 channels (1-channel IPC audio) |
| Output | 1 channel |
| 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 Compression Format | ADPCM, G.711U |
| Video Compression Format | H.264/H.265 |
| Image Quality | Levels 1–8 adjustable (preferably Level 1) |
| Recording Mode | Startup/Manual/Scheduled/Alarm event recording |
| Alarm Prerecording | 0–60 min |
| Alarm Recording Delay | 0–30 min |

Playback

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

Network

| | |
|--------------------|--|
| 2G/3G/4G(Optional) | Supported For North America EC25-AF LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71 WCDMA: B2/B4/B5 For Europe and Asia EC25-EC LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8 For Latin America EC25-AU LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE TDD: B40 WCDMA: B1/B2/B5/B8 GSM: B2/B3/B5/B8 |
| WiFi(Optional) | 802.11a/b/g/n/ac |
| IPC Ethernet | 6-pin aviation plug (1 × 100M, PON power supply) |

Positioning

| | |
|---------------|---|
| GPS(Optional) | Positioning, speed detection, and time synchronization GPS L1 1575.42 MHz BDS B1 1561.098MH GALILEO E1B/C1 GLONASS L1OF 1602MHz SBAS: WAAS, EGNOS, MSAS, GAGAN |
|---------------|---|

| Sensor | |
|-----------------------------------|--|
| G-Sensor | Built-in 6-axis inertial sensor |
| Storage | |
| Hard Disk | 1 × 2.5-inch SATA hard disk |
| Port | |
| USB | 1 × USB2.0 |
| 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 |
| Power Supply | |
| Input | DC 8 - 36 V |
| Output | 5V@500 mA |
| Maximum Typical Power Consumption | 35 W(5 Channels with IR on connected, CP4 connected, 5V_OUT connected) |
| Standby Power Consumption | 0.7 W |
| Physical Characteristics | |
| Dimensions (mm) | 206.0 × 190.0 × 70.5 |
| Weight (with hard disks) (kg) | 1.2 |
| Environment | |
| Operating Temperature | -40°C to +70°C (heated, without hard disks) |
| Operating Humidity | 8% to 90% (non-condensing) |

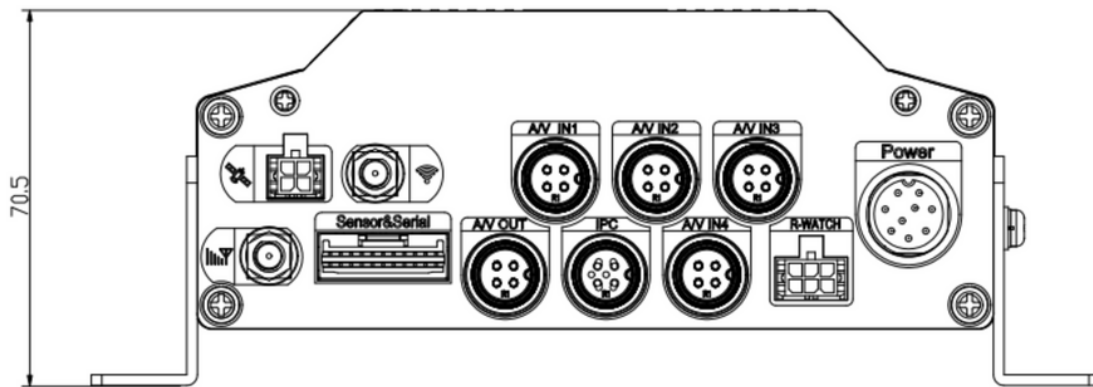
AI Capability and Video Resource Configuration of CEN101-AHD

| Solution Configuration | AI Portfolio | Channel Resources | | | | |
|--|---|--|--|--|--|--|
| | | Channel 1 | Channel 2 | Channel 3 | Channel 4 | Channel 5 |
| CEN101AHD | ADAS+DMS | ADAS 1080P, 30fps, image quality 3 | DMS 720P, 30fps, image quality 3 | AHD 720P, 15fps, image quality 3 | AHD 720P, 15fps, image quality 3 | IPC 720P, 30fps, image quality 1 |
| | DMS | Ordinary monitoring 720P, 30fps, image quality 3 | DMS 720P, 30fps, image quality 3 | AHD 720P, 30fps, image quality 3 | AHD 720P, 30fps, image quality 3 | IPC 720P, 30fps, image quality 1 |
| | ADAS | ADAS 1080P, 30fps, image quality 3 | Ordinary monitoring 720P, 30fps, image quality 3 | AHD 720P, 15fps, image quality 3 | AHD 720P, 15fps, image quality 3 | IPC 720P, 30fps, image quality |
| | ADAS + Top View BSD (either left /right/front) | ADAS 1080P, 30fps, image quality 3 | BSD 720P, 30fps, image quality 3 | AHD 720P, 15fps, image quality 3 | AHD 720P, 15fps, image quality 3 | IPC 720P, 30fps, image quality 1 |
| | DMS + Top View BSD (either left/ right/front) | BSD 720P, 30fps, image quality 3 | DMS 720P, 30fps, image quality 3 | AHD 720P, 15fps, image quality 3 | AHD 720P, 15fps, image quality 3 | IPC 720P, 30fps, image quality 1 |
| | 2* Top View BSD (any two of left/ right/front) | BSD 720P, 30fps, image quality 3 | BSD 720P, 30fps, image quality 3 | AHD 720P, 15fps, image quality 3 | AHD 720P, 15fps, image quality 3 | IPC 720P, 30fps, image quality 1 |
| 1* side- mounted BSD (either left or right) | BSD 1080P, 30fps, image quality 3 | AHD 720P, 30fps, image quality 3 | AHD 720P, 15fps, image quality 3 | AHD 720P, 15fps, image quality 3 | IPC 720P, 30fps, image quality 1 | |

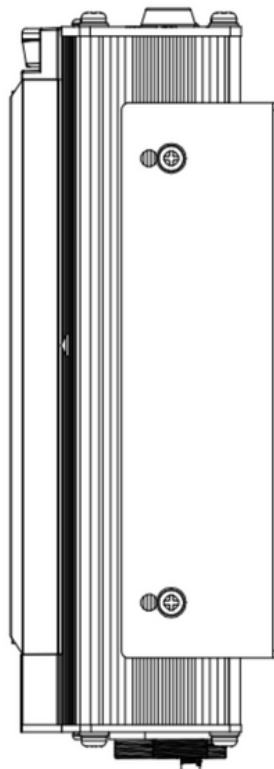
| Solution Configuration | AI Portfolio | Channel Resources | | | | |
|---|--------------|---|---|---|--|--|
| | | Channel 1 | Channel 2 | Channel 3 | Channel 4 | Channel 5 |
| CEN101AHD+ADKIT (If ADAS and DMS algorithms are applied, they shall be processed in ADKIT) | ADAS+DMS | AHD 1080P, 25fps, image quality 1 | AHD 1080P, 25fps, image quality 1 | AHD 1080P, 25fps, image quality 1 | ADAS 1080P, 25fps, image quality 1 | DMS 960P, 25fps, image quality 1 |

Dimensions (unit: mm)

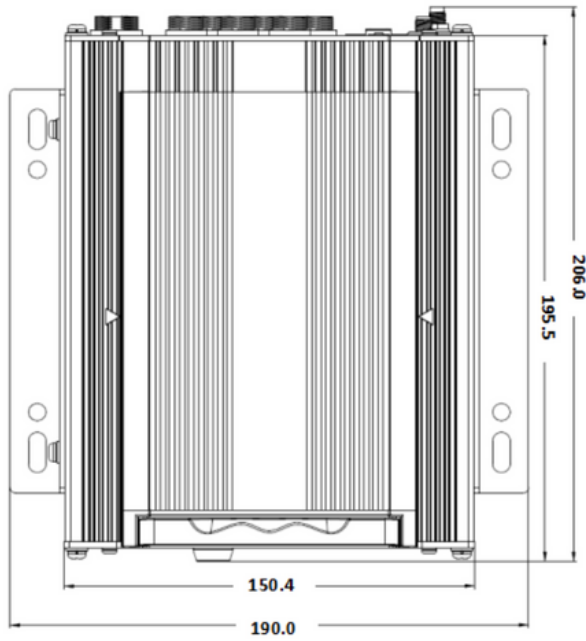
Front View



Left View

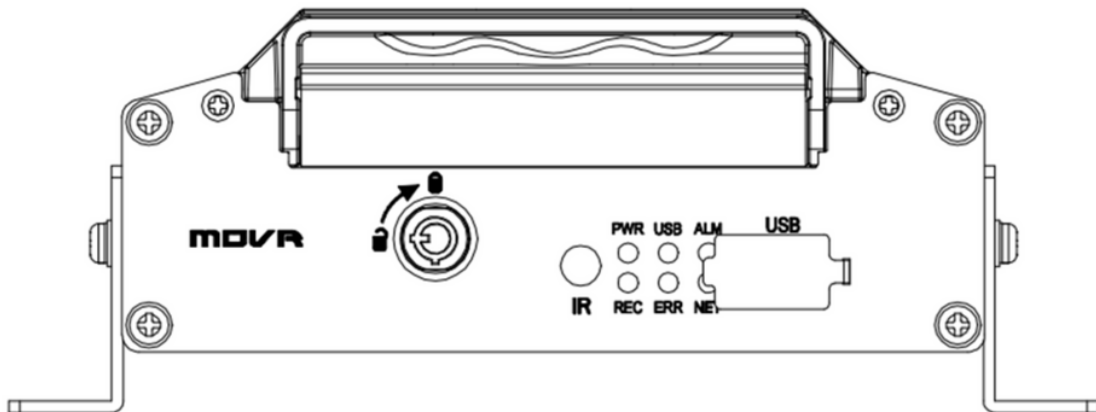


Top View

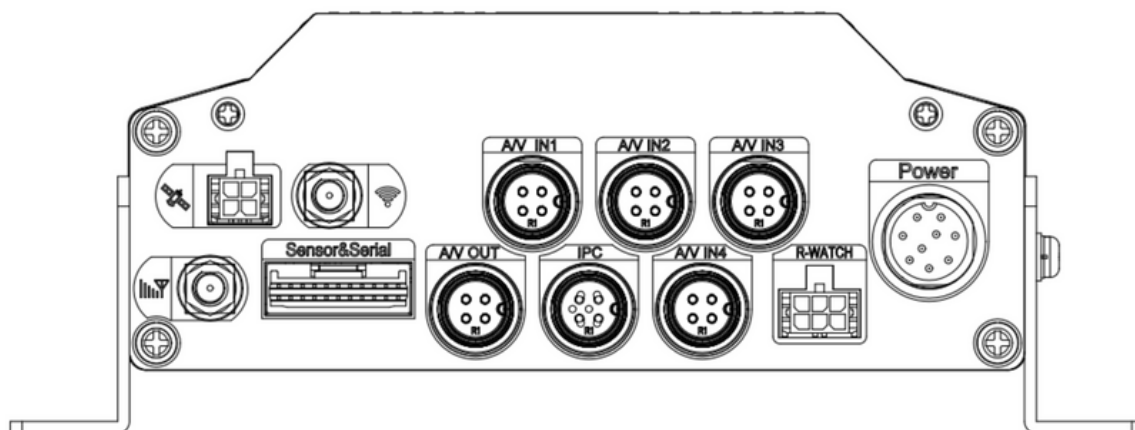





Panel Ports

Front Panel



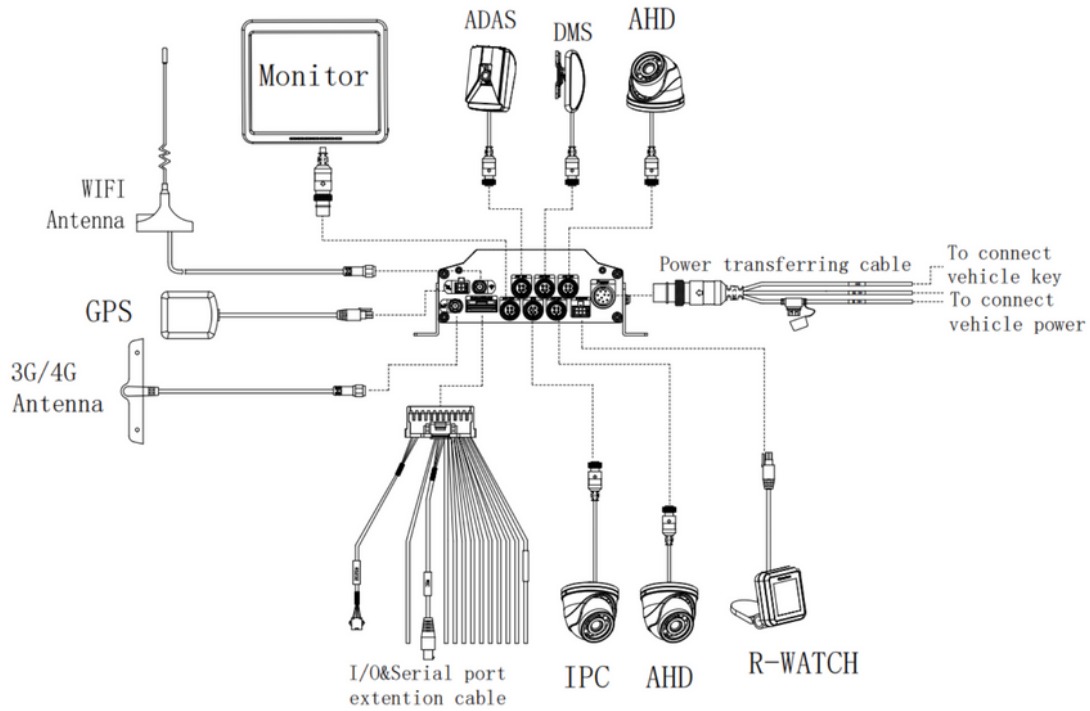
Rear Panel



| S/N | Silk Screen | Description |
|-----|---|---------------------------------------|
| 1 | Power | 8–36 V DC power input |
| 2 | Sensor & Serial | Serial port and IO port |
| 3 | A/V IN 1~4 | Analog audio/video input ports 1 to 4 |
| 4 | A/V OUT | Analog audio/video output port |
| 5 | IPC | PON-powered IPC port |
| 6 | R-WATCH | R-WATCH port |
| 7 |  | GPS/BD antenna connector |
| 8 |  | 3G/4G antenna connector |
| 9 |  | Wi-Fi antenna connector |

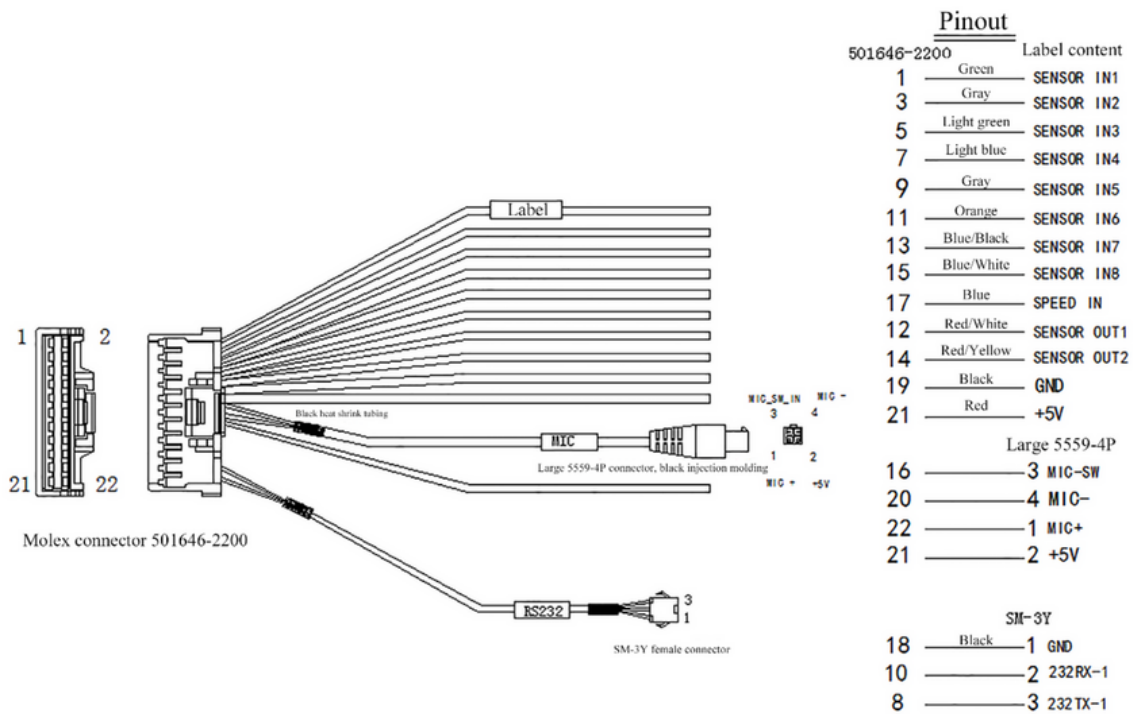
Installation

Typical Wiring Diagram

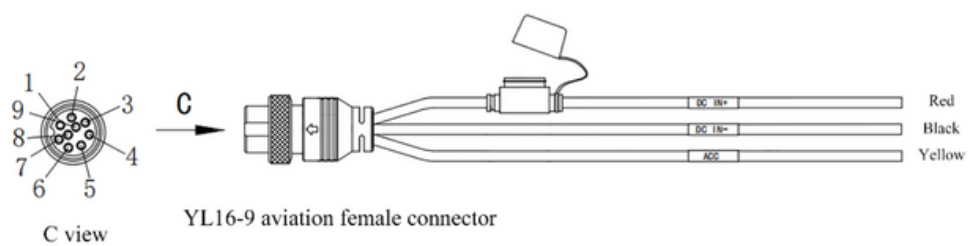


External Cable Connector Pinouts

(1) Alarm cable connector pinout



(2) Power cable connector pinout



Pin definitions

| | | | | |
|---|---|----------------|---|--------------|
| 1 | — | Red (DC IN+) | — | UL1015 16AWG |
| 2 | — | | | |
| 3 | — | Yellow(ACC) | — | UL1007 18AWG |
| 6 | — | | | |
| 7 | — | Black (DC IN-) | — | UL1015 16AWG |