ZenduCAM ADAS D+1

Specification

Document Type		Confidentiality	
Product Specifications		Direct to customers	
Version			
V 1.0		* pages in total	

Drafted By	
Approved By	

Revision History

Date	Version	Description	Author
2022/4/26	V1.0	First draft	Zhang Dao

Overview

As a professional, user-friendly and cost effective dash camera with built-in AI processor, ZenduCAM ADAS D+1 detects risky driving events such as lane departure warning, forward collision warning and headway monitoring warning, as well as unsafe driving behaviors such as unfastened seatbelt, using mobile phones, yawning, distraction and smoking. In addition, it can remind drivers of unsafe driving behaviors in real time and upload driving events to a monitoring platform that can be reviewed by fleet managers to help fleets guide drivers and reduce traffic risks.

Highlight

- 1080P resolution with 96° DFOV for ADAS, 1080P resolution with 170° DFOV for DSC
- Support up to 3-channel video recording, H.264/H.265 video coding
- Dual Micro 256G SD card storage, supporting dual-stream recording
- Built-in Wi-Fi and 4G module
- Support 4-channel I/O input, 1 channel CAN and 1 channel RS232
- Compact Design
- Support OBD powering, easy installation
- Built-in ADAS and DSC, supporting AI event detection (up to 2-channel)
- Support sleep mode, remote wake-up(power consumption less than 0.1W)
- Support echo suppression algorithm to improve the quality of two-way voice intercom
- 6-axis gravity sensor detects intense driving behaviors (Harsh Acceleration, Deceleration & Sharp turn)

Active Safety Features

ZenduCAM ADAS D+1 uses machine vision-based on Video Analysis technology to automatically identify road risks and drivers' unsafe driving behaviors. Detected events will trigger audible and visual reminders to alert drivers in real time, event recordings will be uploaded to the cloud simultaneously.
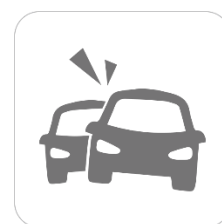
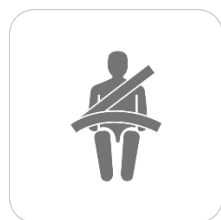**ADAS Features**
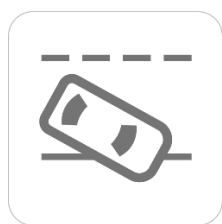
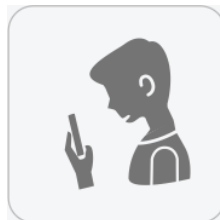LDW(Lane Departure Warning) HMW(Headway Monitoring Warning) FCW(Forward Collision Warning)

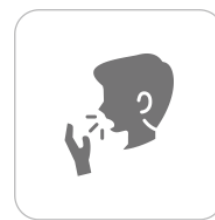**DSC Features**

Unfastened seat belt Using mobile phone Yawning

Distraction   Smoking

Optional accessories for active safety
DMS Features

DMS   **Driver Notifier (R-Watch)**
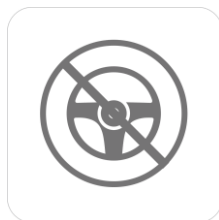
2.5

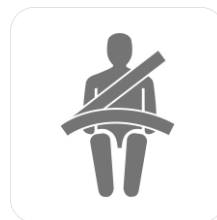Lens Covered   Fatigue   Phone Call   Smoking

Distraction   No driver detected   Unfastened seat belt   Yawning

Specifications

Product Model: ZenduCAM ADAS D+1	
System	Embedded Linux
Language	Support Chinese, English, Spanish, Portuguese, French, Russian, Japanese
Video/Audio	
Video/Audio Recording	3-channel video (default: 2 channels; extensible: 1-channel IPC) + 1-channel audio
Maximum Resources	2MP@25fps(ADAS)+1080P@25fps(DSC)+1080P@30fps(IPC)
Image Setup	Adjustable brightness, chroma, contrast, color saturation, and sharpness
Video Coding	H.264 /H.265 (default: H.265)
Audio Compression Standard	ADPCM/G.711/G.726 (default: ADPCM)
CBR/VBR	Supported. VBR or CBR (optional), VBR by default
Audio	Built-in MIC
Loudspeaker	Built-in 3W loudspeaker
ADAS Camera Parameters	
Sensor Type	1/2.8" 2-megapixel CMOS sensor
Shutter Speed	1/30s-1/100000s
Lens	4mm HFOV: 84° VFOV: 45° DFOV: 96°
Minimum illumination	Color: 0.05Lux/F1.2
Lens Mount	MDVR built-in lens
Wide Dynamic Range (WDR)	Digital WDR
Backlight Compensation	Supported
Signal-to-Noise Ratio (S/N)	≥48dB
Cabin Camera Parameters	
Sensor Type	1/2.9" 2-megapixel CMOS sensor
Shutter Speed	1/30s-1/100000s
Lens	2.2mm HFOV: 154° VFOV: 84° DFOV: 170°
Lens Mount	MDVR built-in lens
Wide Dynamic Range (WDR)	Digital WDR
Backlight Compensation	Supported
Signal-to-Noise Ratio (S/N)	≥45db

| LED Indicator Status				
1. Power Status Indicator	Off/Blue	4. Network Status Indicator	Off/Red	
2. Alarm Indicator	Off/Red	5. WiFi Status Indicator	Off/Red/Green	
3. GPS Signal Indicator	Off/Red	6. Recording Status Indicator	Off/Red	

Storage	
Micro SD card	Support two Micro SD cards, with the maximum capacity of a single card is 256 GB

Sensor	
Six-axis Sensor	Supported

Engine Data Page	
CAN Data Collection	Supported

Port	
RS232	1
IO Port	4-channel input
CAN	1
USB	1 × mini USB port

Network	
WIFI	Support 2.4G (IEEE Std.802.11a/IEEE Std.802.11b/ IEEE Std.802.11g /IEEE Std.802.11n)
4G	Supported For North America: EC25AFXGA-128-SGAS 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: EC25AUXGA-128-SGNS LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE TDD: B40 WCDMA: B1/B2/B5/B8 GSM: B2/B3/B5/B8

Positioning	
GPS	Supported GPS L1 1575.42MHz BDS B1 1561.098MH GALILEO E1B/C1 GLONASS L1OF 1602MHz SBAS: WAAS, EGNOS, MSAS, GAGAN

Protocol	
Network Protocol	HTTP,TCP,ARP,UDP,FTP,DHCP,DNS,IPV4,NTP

Power Related	
Power Supply	9-36V
Built-in Battery	Not supported
Power	Typical power consumption <7 W, maximum power consumption <11 W

| Consumption	
General Specifications	
Dimensions	113.0 mm (length) × 67.8 mm (width) × 88.2mm (height, without bracket)
Weight	MDVR:306g MDVR + bracket + screw + power supply box + power tail cable: 590 g
Operating Temperature	-40°C - +70°C (-40°F - +158°F)
Storage Temperature	-40°C - +85°C (-40°F - +185°F)
Humidity	15% - 90%

certification Information

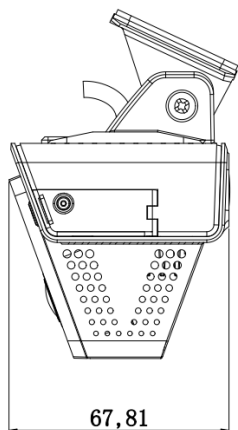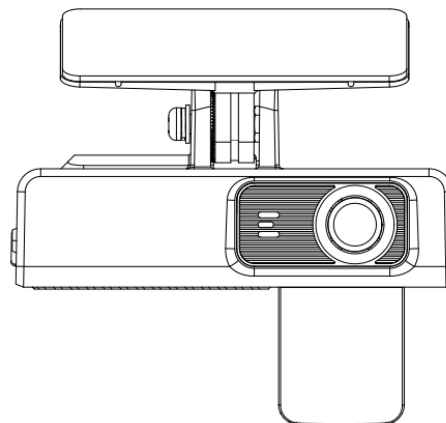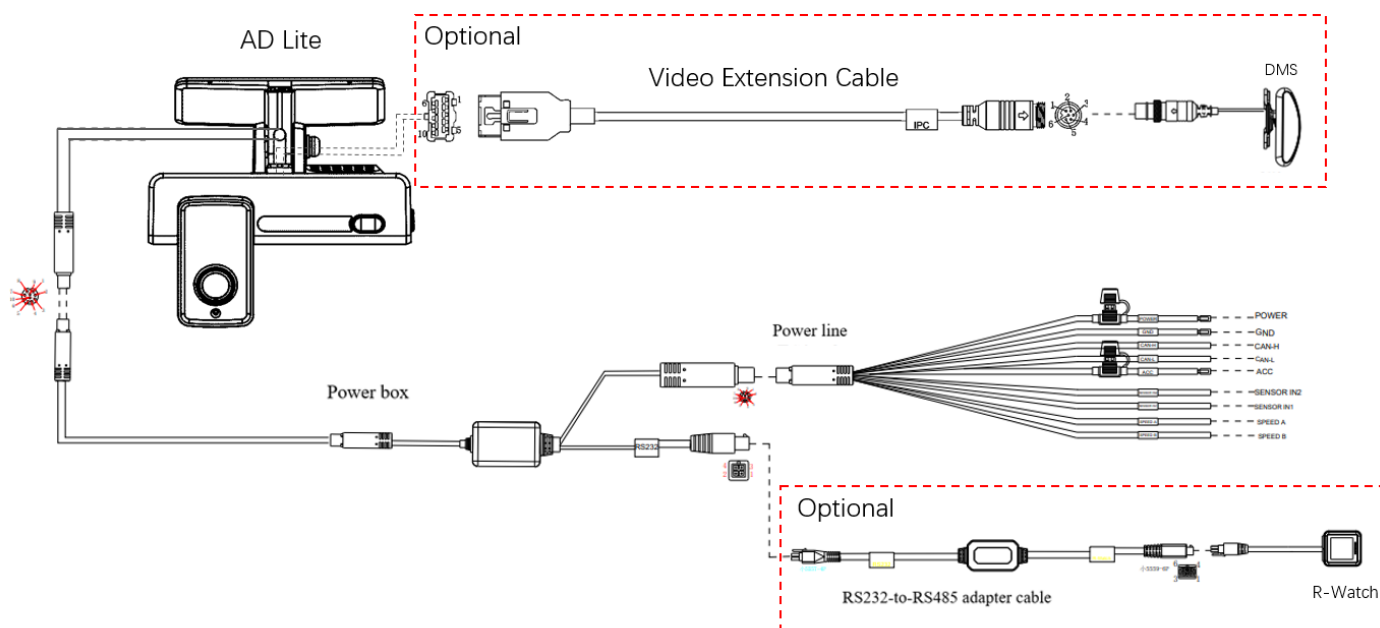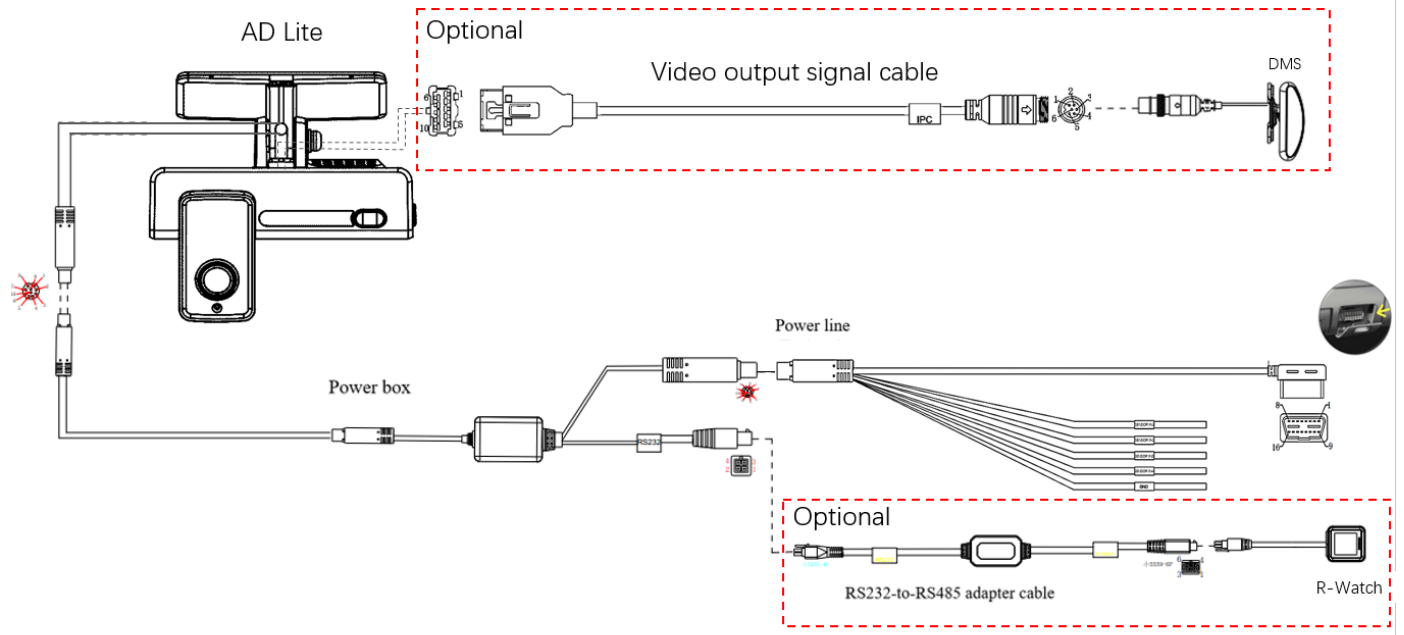| Certification	Time
Emark	
CE-EMC	
FCC-ID	
PTCRB	
ROHS	
REACH	
EN50155	
AT&T	
Verizon	
CE-RED	
UKCA	

Dimensions (mm)
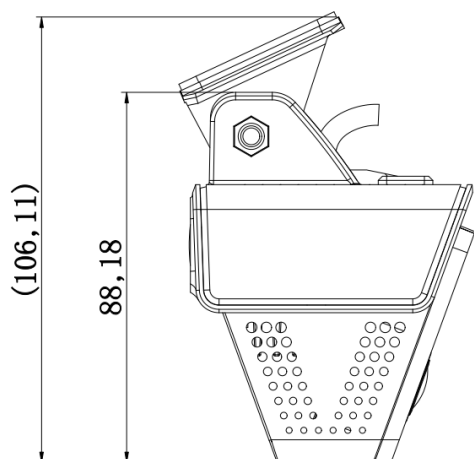
Left view
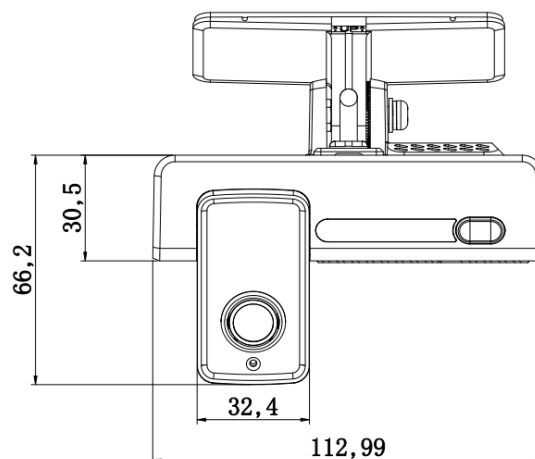
Front view

Right view

Rear view

System Connection Diagram

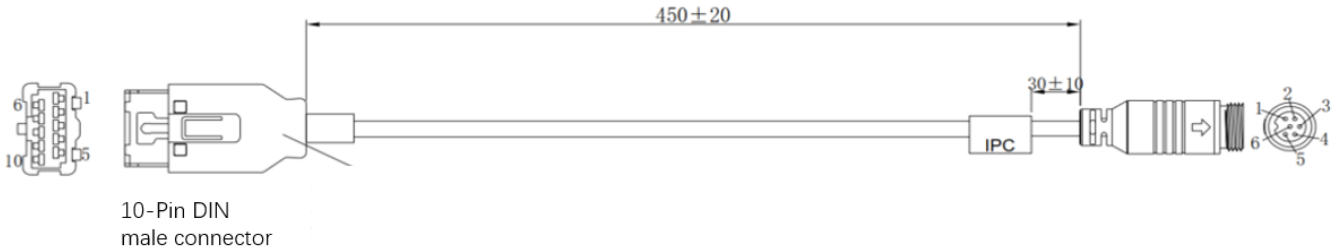(1) System connection diagram for power supply through loose wire

(2) OBD wiring diagram

AD Lite

Optional

Video output signal cable

DMS

IPC

Power line

Power box

RS232

Optional

RS232-to-RS485 adapter cable

R-Watch

Definition of Cable Connector Pinouts

(1) Video output cable connector pinout

450±20

30±10

IPC

10-Pin DIN
male connector

Pinout

10-pin GWM male connector		RS765-6 aviation female connector	
2		1 (TXN)	Black
7		2 (TXP)	White
1		4 (RXN)	Brown
6		5 (RXP)	Orange
10		3 (VCC)	Red
3		6 (GND)	Gray
Shell		Shell (Ground) × 3	

(2) Power supply box connector pinout

10-pin DIN
female connector

10-pin DIN
male connector

Small 5559-4P

RS232
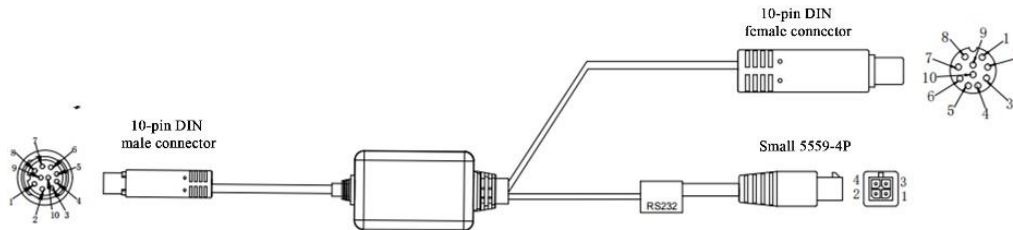
Pinout

TJC3-12PIN-P1.25		10-pin DIN male connector	
1+2		10 DC+	Red + Red/White
3+4		9 DC-	Black + Black/White
5		8 TX	White
6		7 RX	Brown
7		6 SIN1	Purple
8		5 SIN2	Blue
9		4 3.3V	Gray
10		3 CANH	Green
11		2 CANL	Yellow
12		1 ACC	Orange

Pinout

TJC3-12PIN-P1.25		10-pin DIN female connector	
1+2		10 GND	Black + Black/White
3+4		3 24V+	Red + Red/White
7		5 SIN1	Purple
8		7 SIN2	Brown
10		2 CANH	Green
11		1 CANL	Yellow
12		8 SPEED A	Blue
13		9 SPEED B	Gray
14		6 ACC	Orange
15		4 OBD-CHK	White

Pinout

TJC3-2PIN-P1.25		Small 5559-4P	
1		1 +12V	Pink
2		NC +5V	Blue/White

TJC3-15PIN-P1.25		Small 5559-4P	
9		4 GND	Black
6		3 232TX	Green
5		2 232RX	Yellow

(3) Power output cable connector pinout
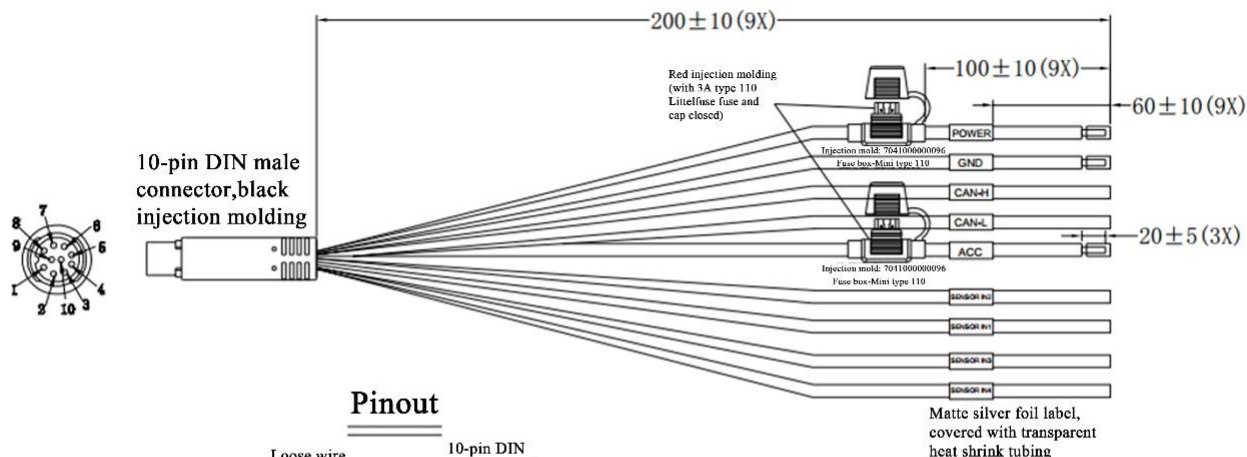
Pinout

	Loose wire		10-pin DIN male connector
Semi-stripped ACC	Orange	3A fuse boxtt	6
CAN-L	Yellow		1
CAN-H	Green		2
SENSOR IN3	Blue		8
SENSOR IN2	Green/Yellow		7
SENSOR IN1	Gray		5
SENSOR IN4	Green/Black		9
Semi-stripped POWER	Red	3A fuse boxtt	3
Semi-stripped GND	Black		10

(4) OBD cable connector pinout
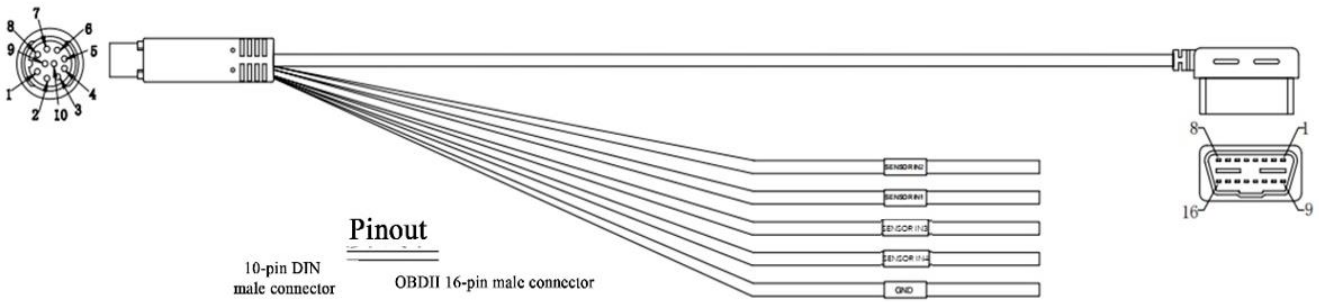
Pinout

10-pin DIN male connector		OBDII 16-pin male connector
GND Black	10+4	4+5
CAN-H Green	2	6
CAN-L Yellow	1	14
POWER Red	3	3A resettable fuse 16
SENSOR IN3 Green/Yellow	8	
SENSOR IN2 Blue	7	
SENSOR IN1 Gray	5	
SENSOR IN4 Green/Black	9	
CND Black	10	