2+2/1+2 Channel AI Dashcam

AD Plus 2.0 (V1.1)

Specification

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Preface

About the Specification

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Product Name Explanation

AD Plus 2.0 is the dual-lens model with one built-in road-facing camera and one built-in cabin-facing camera. **AD Plus 2.0-S** is the single-lens model with one built-in road-facing camera. In this specification sheet, please differentiate between the two products.

Abbreviation Explanation

Acronym	Full Name
ADAS	Advanced Driver Assistance System
DSC	Driver Safety Cockpit
DMS	Driver Monitoring System
LDW	Lane Departure Warning
HMW	Headway Monitoring Warning
FCW	Forward Collision Warning
BSD	Blind Spot Detection System

Product Overview

Product Introduction

The AD Plus 2.0 & AD Plus 2.0-S is an AI-powered dashcam designed to enhance driver safety and improve fleet management efficiency. Leveraging advanced AI technology, it actively detects risky driving events and unsafe behaviors, providing real-time alerts to drivers to help avoid potential hazards. The system also uploads event data to the fleet management platform for driver training purposes. Additionally, it transmits real-time vehicle location and operational data to the platform, offering high-quality remote communication and video playback to streamline fleet management and boost overall efficiency.

Product Features

- Built-In front road ultra-wide-angle lens, supports up to 1920P HD video recording
- Built-In cabin ultra-wide-angle lens, supports up to 1080P HD video recording (AD Plus 2.0-S not supported)
- Supports external connection of one AHD channel and one IPC channel, with a maximum of 4 channels of video recording
- Supports H.264/H.265 encoding
- Supports up to 2*1TB dual Micro SD card storage, allowing simultaneous storage of both main and sub-streams
- Built-in Wi-Fi, Bluetooth, 4G communication module, and inertial navigation module
- Audio and video data supports AES256 encryption, data transmission uses encrypted TLS1.3 protocol
- Supports 3 channels of IO input, 1 CAN channel, and 1 RS232 channel
- Compact design, does not obstruct the driver's view on both large and small vehicles
- Supports OBD power supply, convenient and quick installation
- Built-in ADAS features, supports lane departure warning, forward collision warning, and headway monitoring warning
- Built-in DSC function, supports detection of poor driving behavior (AD Plus 2.0-S not supported)
- Supports echo suppression algorithm to improve two-way intercom quality

- Supports sleep mode and remote wake-up
- Built-in 6-axis gravity sensor, supports detection of rapid acceleration, rapid deceleration, sharp turns, and collisions
- Supports expansion of OBD data reading, video channels, and AI capabilities by replacing the standard power box with Power Box Plus or Power Box Max

AI Features

The AD Plus 2.0 & AD Plus 2.0-S uses advanced video analysis technology and machine vision to automatically detect road hazards and unsafe driver behaviors. The system continuously monitors and triggers both visual and auditory alerts to remind the driver to pay attention to safety. Additionally, relevant alarm footage is automatically uploaded to the cloud for real-time monitoring and review

➢ **ADAS Features Diagram**

		
LDW	**HMW**	**FCW**

➢ **DSC & DMS Features Diagram**

			
Lens Covering	**Yawning**	**Phone**	**Smoking**

			
Distraction	**No Driver**	**Seat belt**	**Fatigue Driving**

	The built-in DSC algorithm (AD Plus 2.0-S not supported) may be slightly less accurate than the DMS algorithm in detecting Fatigue Driving. To use the DMS algorithm, a compatible DMS camera, such as the C29N, is required

Specification

General	
System	Embedded Linux
Language	Options: Chinese, English, Spanish (Latin American), Portuguese (Latin American), French, Russian and Japanese Default: English * The language includes both interface language and voice reminders. TTS supports only Chinese and English
Video & Audio	
Video & Audio Recording	● AD Plus 2.0: 4-channel video (default: 2 channels; extension: 2 channels) + 1-channel audio ● AD Plus 2.0-S: 3-channel video (default: 1 channel; extension: 2 channels) + 1-channel audio
Max. Capability	● AD Plus 2.0: 2-Channel AI (ADAS+DSC or ADAS+DMS) ADAS+DSC: 1080P@20fps (Built-in ADAS) +720P@20fps (Built-in DSC) +720P@20fps (Optional AHD) +720P@20fps (IPC) ADAS+DMS: 1920P@20fps (Built-in ADAS) +1080P@20fps +1080P@20fps (Optional AHD) +800P@20fps (Optional IPC with DMS)

	● AD Plus 2.0-S: 2-Channel AI (ADAS+DMS) 1920P@25fps (Built-in ADAS) +1080P@25fps (Optional AHD) +800P@20fps (Optional IPC with DMS)
Image Setup	Adjustable brightness, chroma, contrast, color saturation, and sharpness
Video Coding	Options: H.264 and H.265 Default: H.265
Audio Compression Standard	Options: ADPCM, G.711, and G.726. Default: ADPCM
Encoding Standard	Options: VBR and CBR. Default: VBR
Microphone	Built-in
Loudspeaker	Built in. Power: 3W, with adjustable volume, not less than 70 dB at 1 m distance
Parameters of road facing lens	
Sensor Type	1/2.7" 5-megapixel CMOS sensor
Shutter Speed	1/30s~1/100000s
Lens	Focal length: 2.8 mm HFOV: 123°; VFOV: 65°; DFOV: 140°; Deviation: ±5°
Minimum Illuminance	Color: 0.05 Lux/F1.2
Lens Mount	Built-in lens
Wide Dynamic Range (WDR)	Digital WDR
Backlight Compensation	Supported
Signal-to-Noise Ratio (S/N)	≥48dB
Parameters of driver facing lens (AD Plus 2.0-S not supported)	
Sensor Type	1/2.9" 2-megapixel CMOS sensor
Shutter Speed	1/30s~1/100000s
Lens	Focal length: 2.2 mm HFOV: 151°; VFOV: 84°; DFOV: 170°; Deviation: ±5°

Lens Mount	Built-in lens
Wide Dynamic Range (WDR)	Digital WDR
Backlight Compensation	Supported
Signal-to-Noise Ratio (S/N)	≥45db
Infrared	Supported. The built-in environmental light sensor turns on/off the infrared automatically * Threshold: 4 lux from daytime to night, and 8 lux from night to daytime. There may be slight variations depending on the device. Please refer to actual measurements
LED Indicator Status	

Indicator Light	Icon	Off	On / Flashing
Power Indicator		No power supply	Power supply normal
Alarm Indicator		No alarm currently	(Flashing) Alarm triggered
GPS Signal Indicator		GPS positioning normal	Positioning error (Flashing) Poor positioning quality
Network Status Indicator		Connected to server	Not connected to server (Flashing) Airplane mode
WiFi Status Indicator		WiFi is in Disable or Client mode	AP mode WiFi error
Recording Status Indicator		Normal recording	Recording stopped / Malfunction

Storage	
Micro SD card	Micro SD card×2, (SDXC 32GB/64GB/128GB/256GB/512GB/1TB) Read/write rate: Class 10 or above is recommended
Sensor	
Six-axis Sensor	Harsh acceleration, Harsh deceleration, Harsh cornering, and accident detection
Environmental Light Sensor	Supported, used as the cockpit camera, subject to day/night switching
Port	
RS232	1-channel
I/O Port	3-channel input

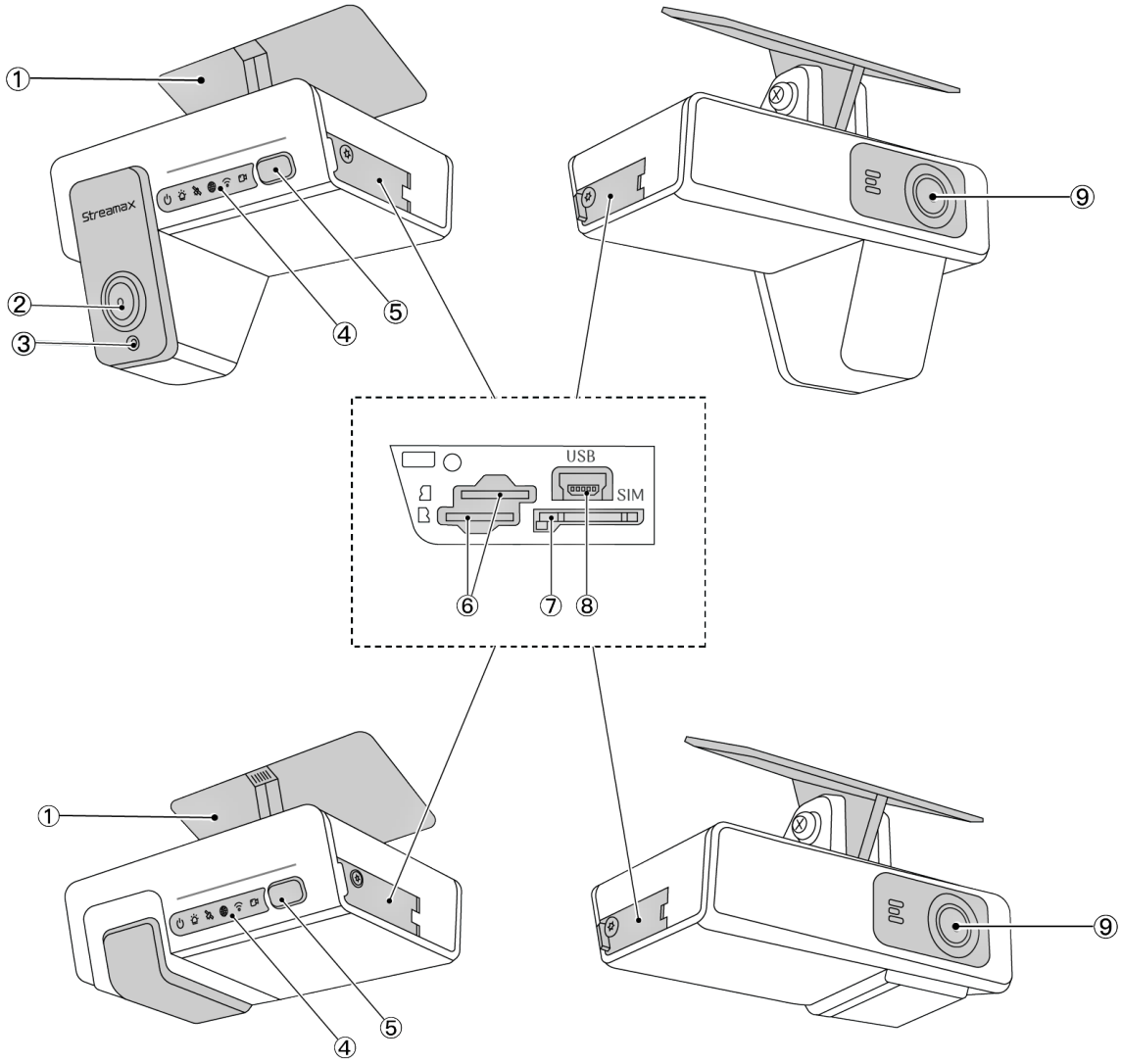
CAN	1-channel (standard J1939 protocol)  Vehicle manufacturers may customize data fields, so the final data depends on actual measurements. If data is unsupported, a protocol can be provided for integration
iButton	1-channel
USB	1 × mini-USB port
Function button	1 To switch Wi-Fi to AP mode, press the button twice within 2 seconds * For more details on the use of this button, please refer to the product's user manual
Network	
Wi-Fi	Support 2.4G (IEEE Std.802.11b/IEEE Std.802.11g/IEEE Std.802.11n)
Bluetooth	Support Bluetooth 2.1/4.2
4G	Plug-in SIM card (Nano SIM card), V1.1 version reserved eSIM patch position, can support pre-burn-in eSIM. ● For North America: LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71 WCDMA: B2/B4/B5 ● For Europe and Asia: LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 GSM: B3/B8 ● For Latin America: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE TDD: B40 WCDMA: B1/B2/B5/B8 GSM: B2/B3/B5/B8  An industrial SIM card (MP2) is required. The use of a standard SIM card (MP1) is prohibited. We are not responsible for any issues caused by the use of a standard SIM card
Positioning	

GNSS	Supported GPS L1 1575.42MHz GALILEO E1B/C1 GLONASS L1OF 1602MHz SBAS: WAAS, EGNOS, MSAS, GAGAN
Power related	
Power supply	12V and 24V vehicles (self-adaptive)
Power consumption	● AD Plus 2.0: ● In standby mode: 13.5V@5.8mA, 27V@3.1mA ● In sleep mode (4G and MCU powered):13.5V@24-139mA, 27V@12-57mA ● Typical power consumption (with dual SD cards installed and SIM card for dialing): about 7.5W ● Full-load power consumption (with dual SD cards installed, SIM card for dialing, Wi-Fi turned on, IPC and AHD connected, and infrared lamp turned on): about 13W ● AD Plus 2.0-S: ● In standby mode: 13.5V@5.8mA, 27V@3.1mA ● In sleep mode (4G and MCU powered):13.5V@24-139mA, 27V@12-57mA ● Typical power consumption (with dual SD cards installed and SIM card for dialing): about 5.17W ● Full-load power consumption (with dual SD cards installed, SIM card for dialing, Wi-Fi turned on, IPC and AHD connected, and infrared lamp turned on): about 12.11W * The above data are test data obtained in a specific environment in the laboratory, and may vary with the individual product differences, service environment, and testing methods
Environment	
Operating Temperature	-40°C ~ +70°C (-40°F ~ +158°F)
Storage Temperature	-40°C ~ +85°C (-40°F ~ +185°F)

Operating Humidity	15~95% non-condensing
Storage Humidity	15~95% non-condensing
IP Rating	IP30 (The Dashcam is non-waterproof)
Dimensions and Weight	
Dimensions L×W×H	● AD Plus 2.0: Dashcam: 117.25 mm×67.8 mm×88.2 mm (excluding bracket); Deviation: ±2 mm Package: 176 mm×150 mm×114 mm; Deviation: ±3 mm ● AD Plus 2.0-S: Dashcam: 117.25 mm×67.8 mm×57 mm (excluding bracket); Deviation: ±2 mm Package: 176 mm×150 mm×114 mm; Deviation: ±3 mm
Weight	● AD Plus 2.0: Net weight (device only): 315g Gross weight (including accessories and package): 734.5g Deviation: ±10g ● AD Plus 2.0-S: Net weight (device only): 271.5g Gross weight (including accessories and package): 695g Deviation: ±10g
* The actual dimensions and weight may vary with the individual product differences, manufacturing processes, and testing methods.	
Package Contents	
● AD Plus 2.0: AD Plus 2.0 ×1, power box ×1, standard power cable ×1, hex wrench ×1, mounting bracket ×1, bracket bolt ×1, pry tool ×1, desiccant ×1, alcohol wipe ×1 ● AD Plus 2.0-S: AD Plus 2.0-S ×1, power box ×1, standard power cable ×1, hex wrench ×1, mounting bracket ×1, bracket bolt ×1, pry tool ×1, desiccant ×1, alcohol wipe ×1 * Contents may vary depending on the region and specific requirements	

Product Appearance and Component Names

➢ AD Plus 2.0 (Top) & AD Plus 2.0-S (Bottom) Front & Side View

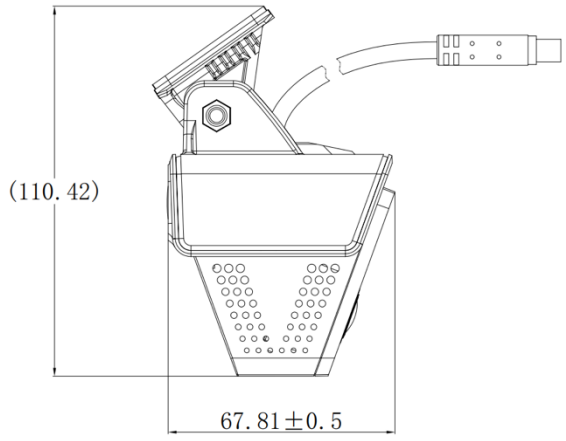


No.	Components	No.	Components
1	Installation Bracket	6	Micro SD Card Slot
2	Cabin-facing Camera	7	SIM Card Slot
3	Infrared Light	8	Micro USB Port
4	Status Indicator Light	9	Road-facing Camera
5	Function Button		

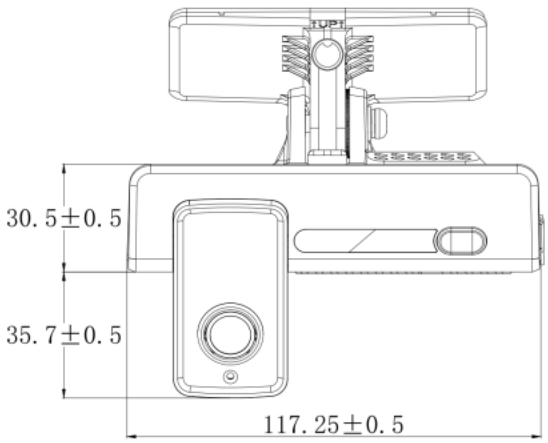
Dimension Diagram

(Unit: mm)

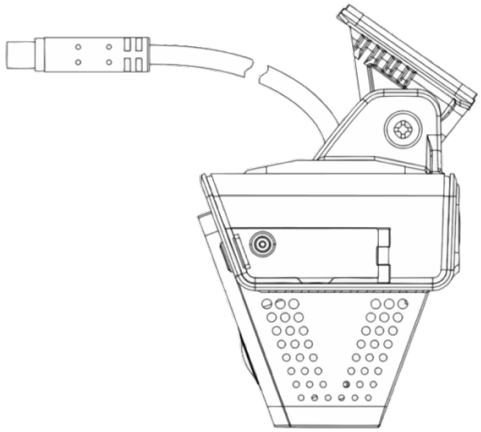
AD Plus 2.0:



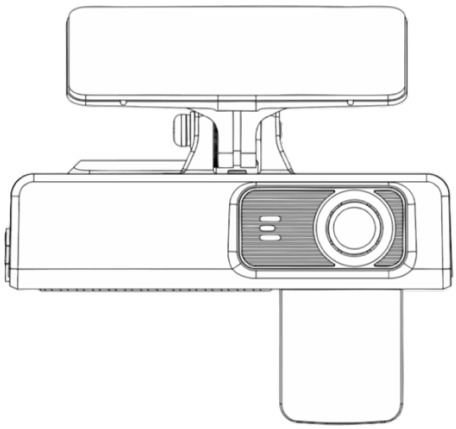
Left View



Front View



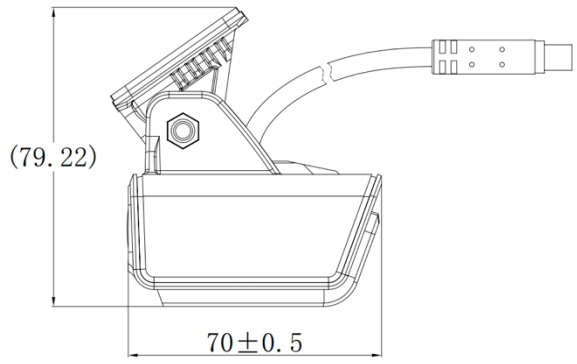
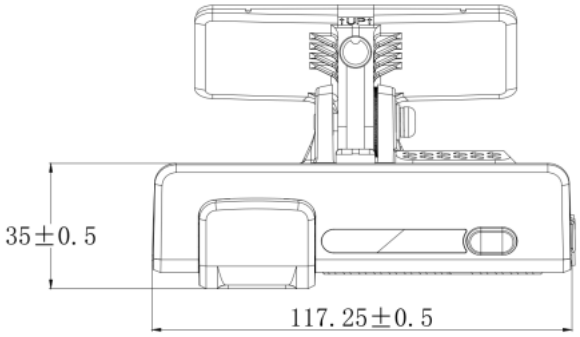
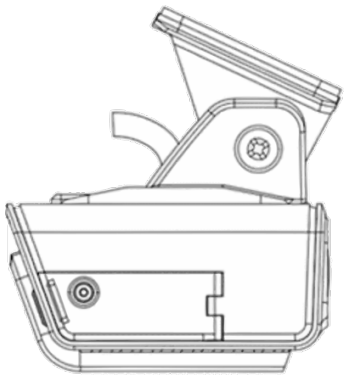
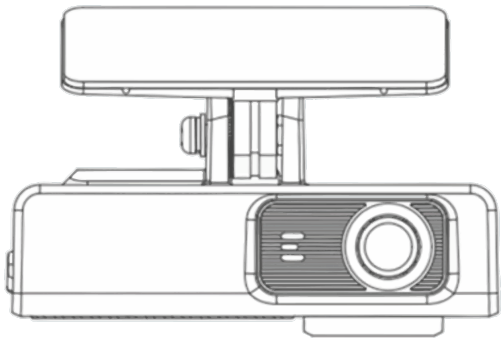
Right View



Rear View

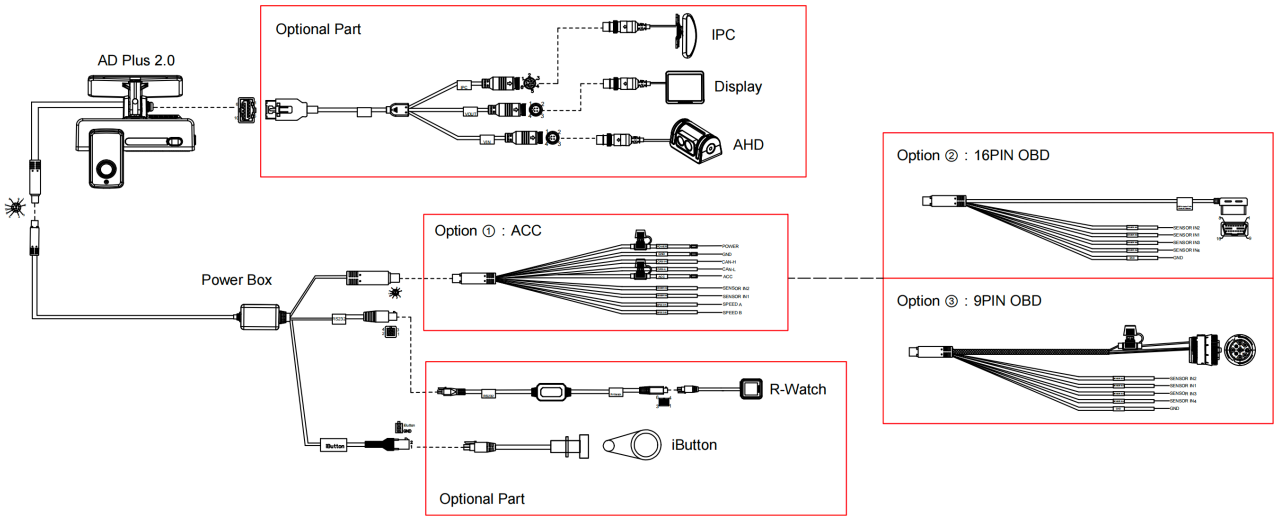
AD Plus 2.0-S:

(Unit: mm)

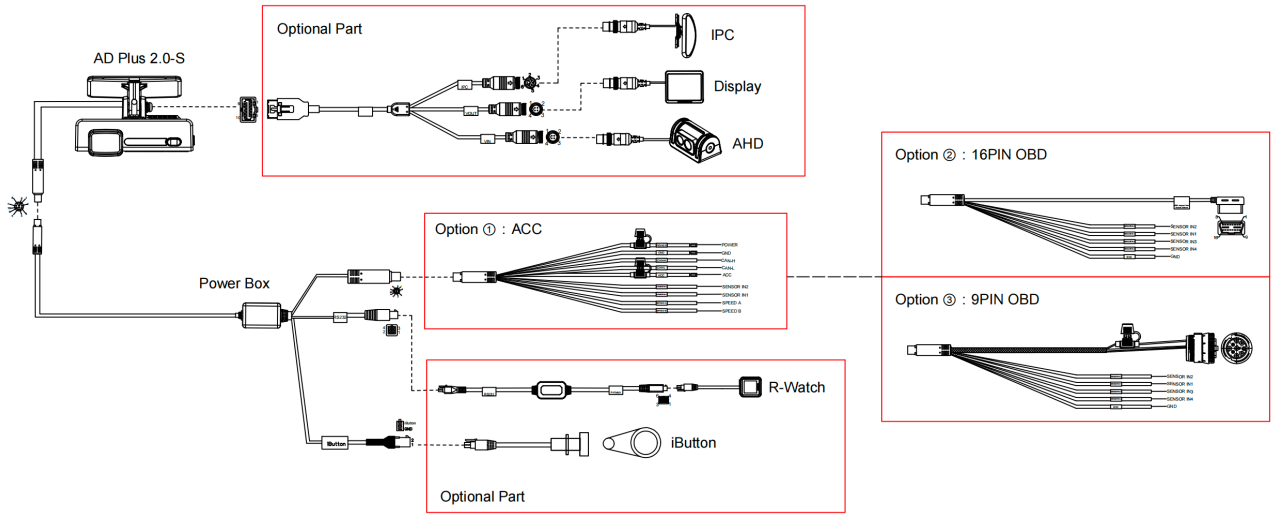
	
Left View	**Front View**
	
Right View	**Rear View**

System Connection Diagram

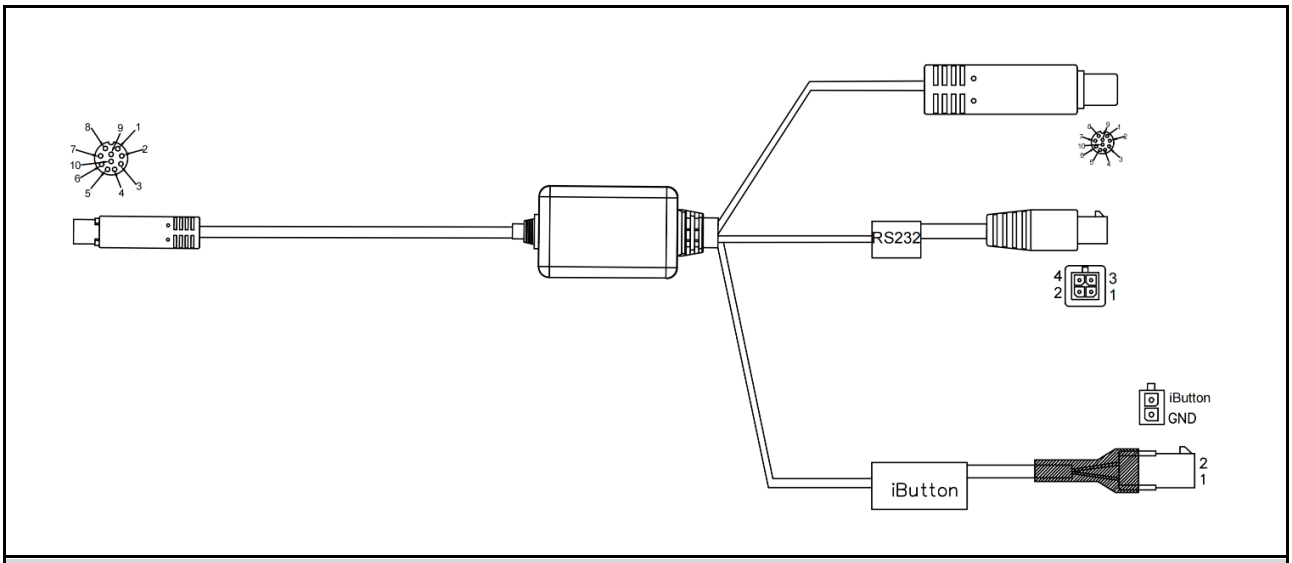
AD Plus 2.0:



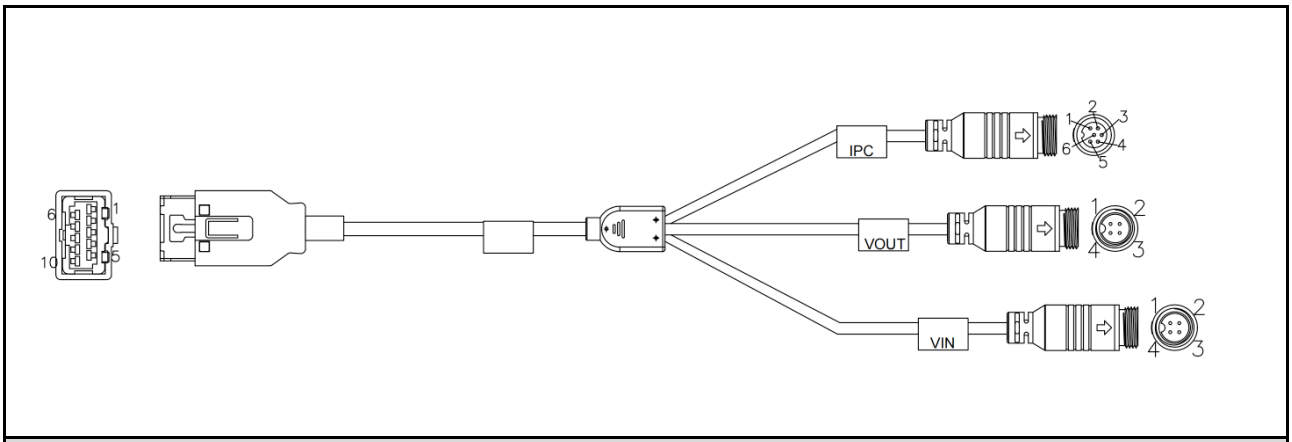
AD Plus 2.0-S:



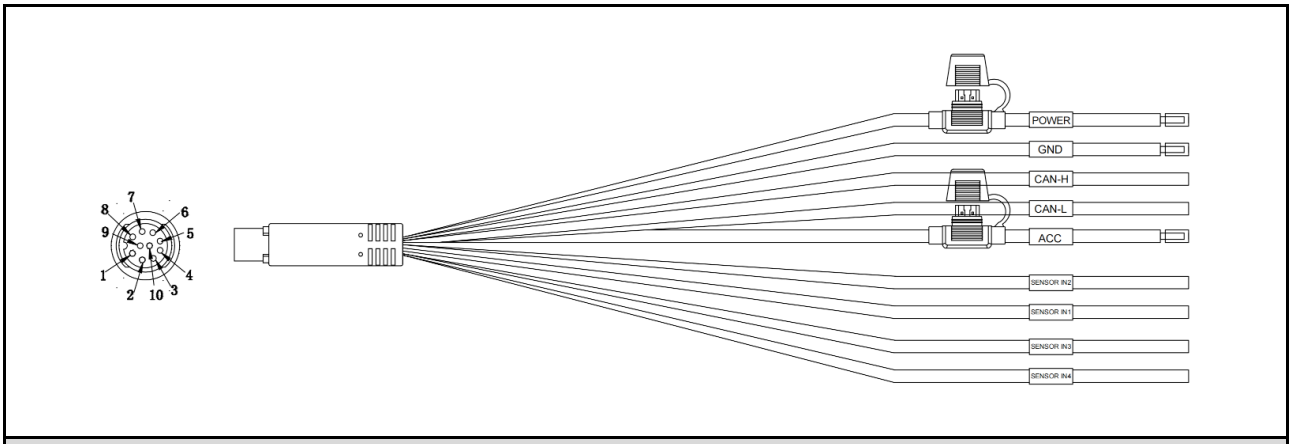
Cables



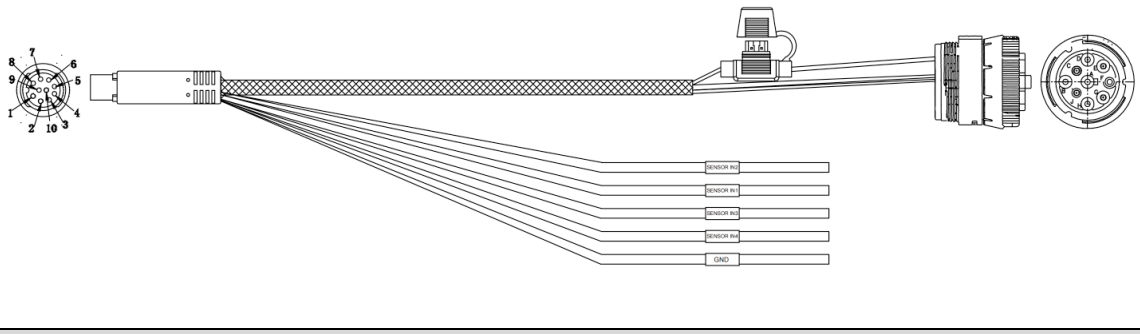
Standard Power Box



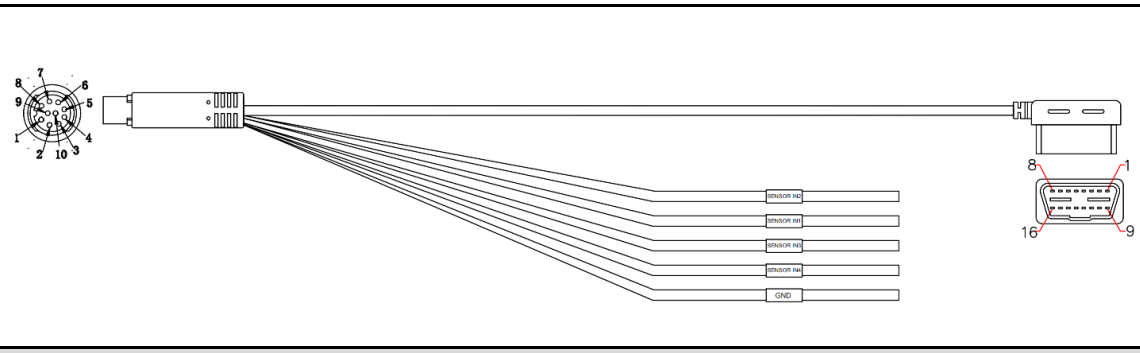
Video Output Cable



Open Wire ACC Power Cable



9PIN OBD Power Cable – Optional



16PIN OBD Power Cable – Optional

Special Instructions

- This product requires installation by professionals; otherwise, there is a risk of electric shock, damage to the vehicle wiring, impact on AI performance, and device detachment.
- When used under direct sunlight, the surface temperature of this product may exceed 60°C. Please avoid touching the sun-exposed surface to prevent burns.
- The extended AHD channel does not support audio input.
- The extended screen output does not support audio and does not support IPC channel image preview.