

2+2 Channel AI Dashcam

VX4AIPLUS

Specification (Version 1.0)



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Product Name Explanation

VX4AIPLUS / IPWSAICAM is the dual-lens model with one built-in road-facing camera and one built-in cabin-facing camera.

Symbol Explanation

The following symbols are used to categorize and explain potential hazards that may arise from improper operation

Symbol	Explanation
	Warning: Conditions that could jeopardize the safety of the user or cause injury
	Important: Conditions that may lead to data corruption or damage to the device's firmware or hardware
	Note: Additional information, explanations of terms, and other relevant details

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 VX4AIPLUS & IPWSAICAM 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.

The difference is that IPWSAICAM can be used in conjunction with MDVR and serves as an IPC with 4G functionality.

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 (VX4AIPLUS-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, 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 (VX4AIPLUS-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 **VX4AIPLUS** 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 (VX4AIPLUS-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

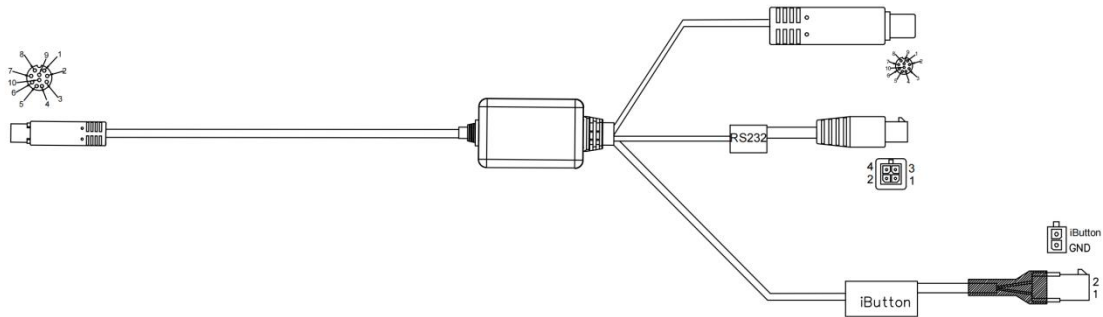
General	
System	Embedded Linux
Language	Options: Chinese, English, Spanish (Latin American), Portuguese (Latin American), French, Russian and Japanese Default: English * The language includes both interface language and voice reminders. TTS supports only Chinese and English
Video & Audio	
Video & Audio Recording	● VX4AIPLUS: 4-channel video (default: 2 channels; extension: 2 channels) + 1-channel audio
Max. Capability	● VX4AIPLUS: 2-Channel AI (ADAS+DSC or ADAS+DMS) 1920P@25fps (Built-in ADAS) +1080P@25fps (Built-in DSC) +1080P@25fps (Optional AHD) +800P@20fps (Optional IPC with DMS) Recommended configuration (1920P@20fps+1080P@15fps+1080P@20fps (AHD) +800P@20fps (IPC))
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																													
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																													
<table><tr><th>Indicator Light</th><th>Icon</th><th>Off</th><th>On / Flashing</th></tr><tr><td>Power Indicator</td><td></td><td>No power supply</td><td> Power supply normal</td></tr><tr><td>Alarm Indicator</td><td></td><td>No alarm currently</td><td> (Flashing) Alarm triggered</td></tr><tr><td>GPS Signal Indicator</td><td></td><td>GPS positioning normal</td><td> Positioning error  (Flashing) Poor positioning quality</td></tr><tr><td>Network Status Indicator</td><td></td><td>Connected to server</td><td> Not connected to server  (Flashing) Airplane mode</td></tr><tr><td>WiFi Status Indicator</td><td></td><td>WiFi is in Disable or Client mode</td><td> AP mode  WiFi error</td></tr><tr><td>Recording Status Indicator</td><td></td><td>Normal recording</td><td> Recording stopped / Malfunction</td></tr></table>		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
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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																												

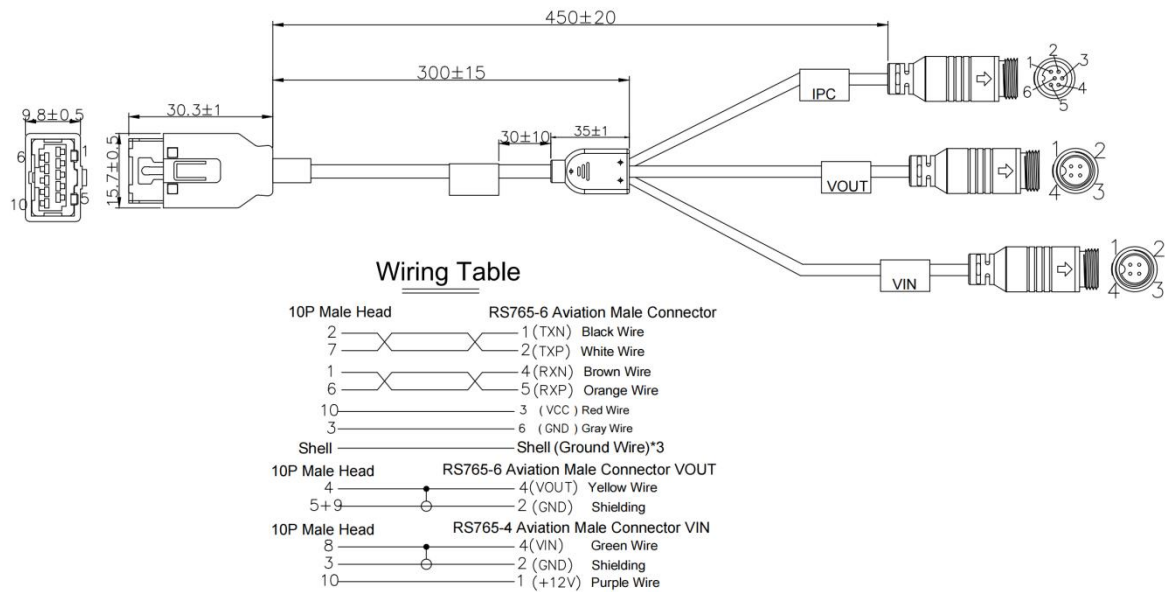
Port	
RS232	1-channel
I/O Port	3-channel input
CAN	1-channel (standard J1939 protocol)
iButton	1-channel
USB	1 × mini-USB port
Function button	1 To switch Wi-Fi to AP mode, press the button twice within 2 seconds * For more details on the use of this button, please refer to the product's user manual
Network	
Wi-Fi	Support 2.4G (IEEE Std.802.11a/IEEE Std.802.11b/IEEE Std.802.11g /IEEE Std.802.11n)
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	● VX4AIPLUS: ● In standby mode: 13.5V@7.03mA, 27V@4.09mA ● In sleep mode (4G and MCU powered):13.5V@80mA, 27V@36.5mA

	● 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 * 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	● VX4AIPLUS: Dashcam: 116.5 mm×67.8 mm×88.2 mm (excluding bracket); Deviation: ±2 mm
Weight	● VX4AIPLUS: Net weight (device only): xxxg Gross weight (including accessories and package): xxxg
* The actual dimensions and weight may vary with the individual product differences, manufacturing processes, and testing methods.	
Package Contents	
● VX4AIPLUS: VX4AIPLUS ×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	

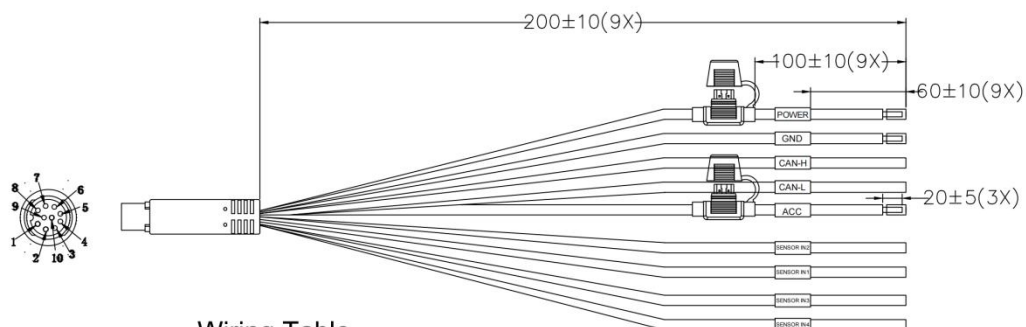
Cable Details



Standard Power Box



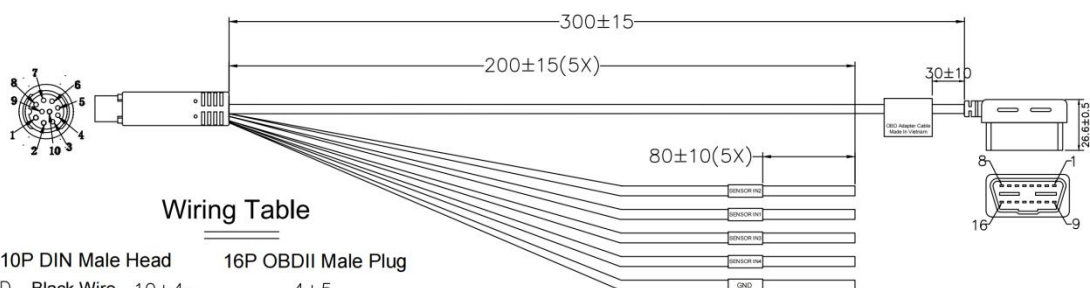
Video Output Cable



Wiring Table

Hanging Wire		10P DIN Male Head	
Half Stripped ACC	Orange Wire	3A Fuse Box	6 0.35 mm ²
CAN-L	Green Wire		1 0.35 mm ²
CAN-H	Yellow Wire		2 0.35 mm ²
SENSOR IN3	Blue Wire		8 0.35 mm ²
SENSOR IN2	Green-Yellow		7 0.35 mm ²
SENSOR IN1	Gray Wire		5 0.35 mm ²
SENSOR IN4	Green-Black		9 0.35 mm ²
Half Stripped POWER	Red Wire	3A Fuse Box	3 0.5 mm ²
Half Stripped GND	Black Wire		10 0.5 mm ²

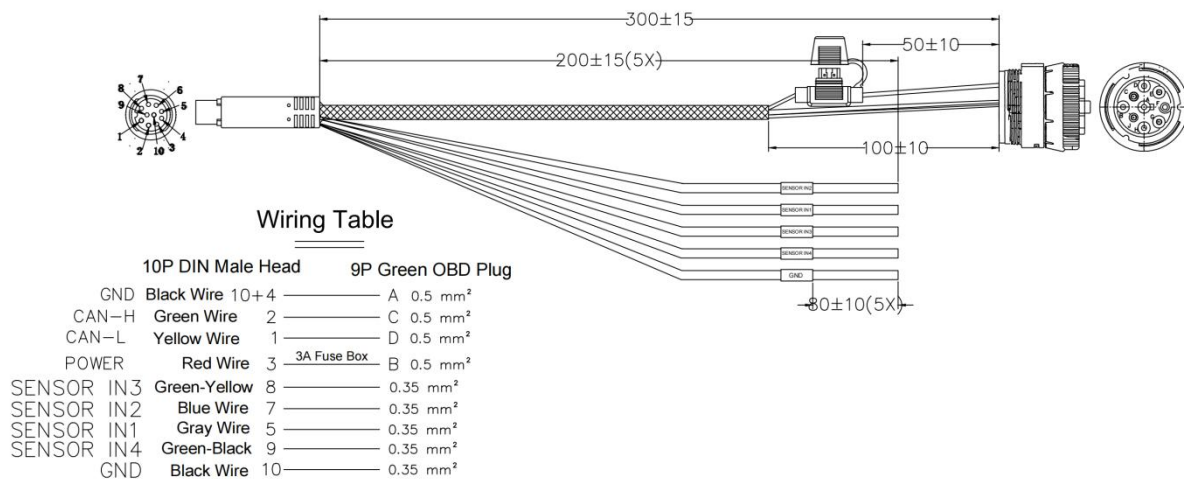
ACC Power Cable



Wiring Table

10P DIN Male Head		16P OBDII Male Plug	
GND	Black Wire	10+4	4+5
CAN-H	Green Wire	2	6
CAN-L	Yellow Wire	1	14
POWER	Red Wire	3	3A Self-resetting Fuse 16
SENSOR IN3	Green-Yellow	8	0.35 mm ²
SENSOR IN2	Blue Wire	7	0.35 mm ²
SENSOR IN1	Gray Wire	5	0.35 mm ²
SENSOR IN4	Green-Black	9	0.35 mm ²
GND	Black Wire	10	0.35 mm ²

16PIN OBD Power Cable



9PIN OBD Power Cable

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.

FCC Warning Statement

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - (1) this device may not cause harmful interference, and
 - (2) this device must accept any interference received, including interference that may cause undesired operation.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference

to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- - Reorient or relocate the receiving antenna.
- - Increase the separation between the equipment and receiver.
- - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- - Consult the dealer or an experienced radio/TV technician for help.
- This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.