C6 Lite 2.0 Solution

Installation Guide

Catalog

Preface

To better guide engineers in the correct and efficient installation of C6 Lite 2.0 and its accompanying products, and to improve installation efficiency, this "C6 Lite 2.0 Solution Installation Guide" has been compiled.

This document mainly includes: Preface, System Overview, Installation Preparation, Installation Introduction, and Acceptance and Cleanup Phase.

This document is intended for: Installation Engineers

Our company reserves the final interpretation right of this document and the right to make corrections or changes to the information and instructions herein without prior notice.

Important Notes

1. Before installation, please park the vehicle on a level surface and turn off the engine (parking on slopes and inclined surfaces is prohibited).
2. Please carefully read the packaging list section and carefully inspect the contents when unpacking.
3. Please carefully read the tools list section and prepare the installation tools before product installation.。
4. Before installation, first observe the vehicle environment and follow these principles:

   a. The installation position and wiring of the product should not affect the driver's view, and should not affect the adjustment of the rearview mirror and sun visor.

   b. The camera monitoring the front road conditions of the vehicle must be within the working range of the wipers.

   c. The installation position of the camera monitoring the driver inside the vehicle should comply with local regulations.

   d. The installation position should facilitate the maintenance of Micro SD cards and SIM cards.
5. Select an appropriate installation location based on the vehicle environment, this document is for reference only.
6. Select an appropriate power supply method based on the vehicle environment. **If using a loose wire connector, connect the vehicle power supply and signal lines, which should be executed by professionals. Unauthorized use of the vehicle's power system by non-professionals may be dangerous**, this document is for reference only.

7. In case of problems with the installation on special vehicles, please contact the product supplier for support in a timely manner.

8. The C6 Lite 2.0 product needs to use the "Veyes" APP for device installation debugging and configuration.

9. Please scan the QR code below or log in to the app store, search for and download the "Veyes" APP. After downloading, follow the prompts on the APP interface to connect the APP to C6 Lite 2.0 for related operations.

IOS (Apple Store)

Foreign Android (Google Store)

1. System Overview

1.1 Product Overview

The C6 Lite 2.0 is a dual-camera integrated smart dashcam designed for driving monitoring and safety risk control. It has advantages such as easy installation, comprehensive functionality, and low cost.

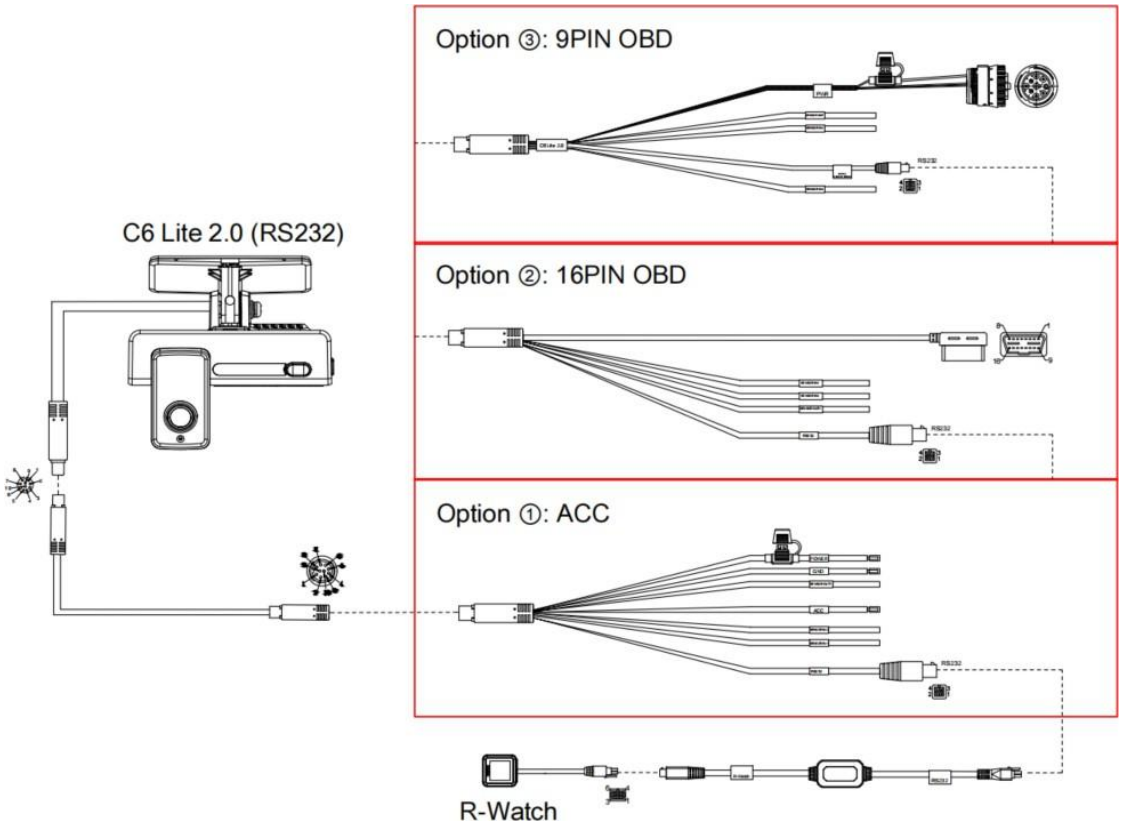
The intelligent algorithms of C6 Lite 2.0 use deep learning technology. It inherently features advanced driver assistance system and intelligent cabin, capable of effectively recognizing hazards like front vehicle collisions, close following distances, and lane departures. It can also intelligently identify unsafe driving behaviors such as using a mobile phone or not wearing a seatbelt while driving. With the addition of a DMS camera, it can also achieve driver status monitoring or blind spot pedestrian detection functions. The intelligent assistance functions it possesses can identify potential risks in real time and promptly remind the driver to avoid them, effectively reducing accident risks.

The C6 Lite 2.0 comes in both dual-camera and single-camera versions, with the single-camera version removing the inward-facing camera. All other structures are identical.

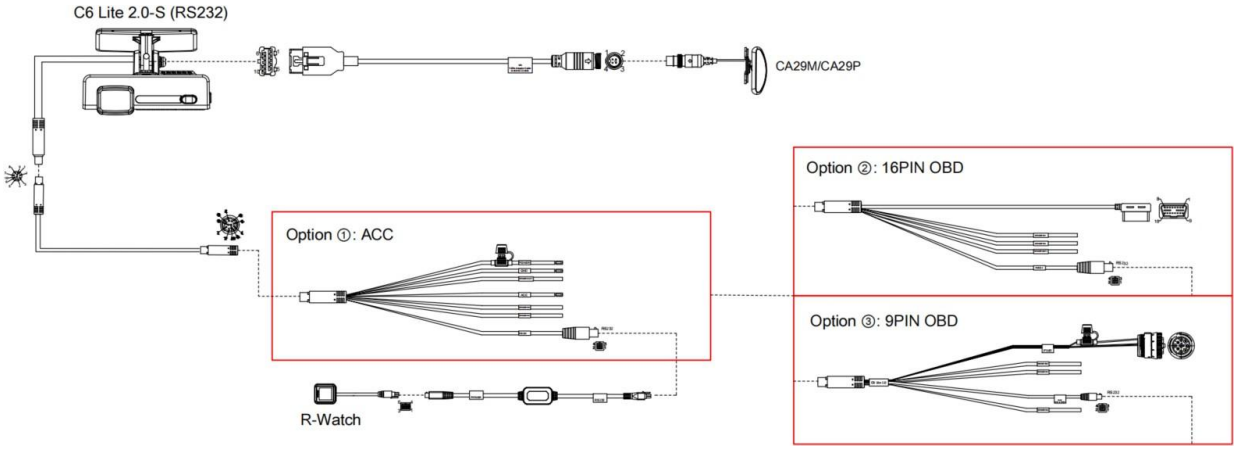
This product operates effectively under various weather conditions, including day, night, rain, and snow. It can be installed on various vehicle types such as buses, taxis, private passenger cars, passenger coaches, cargo trucks, hazardous material transport vehicles, school buses, dump trucks, and sanitation vehicles.

1.2 System Connection Diagram - RS232 Model

- Dual-Camera Version

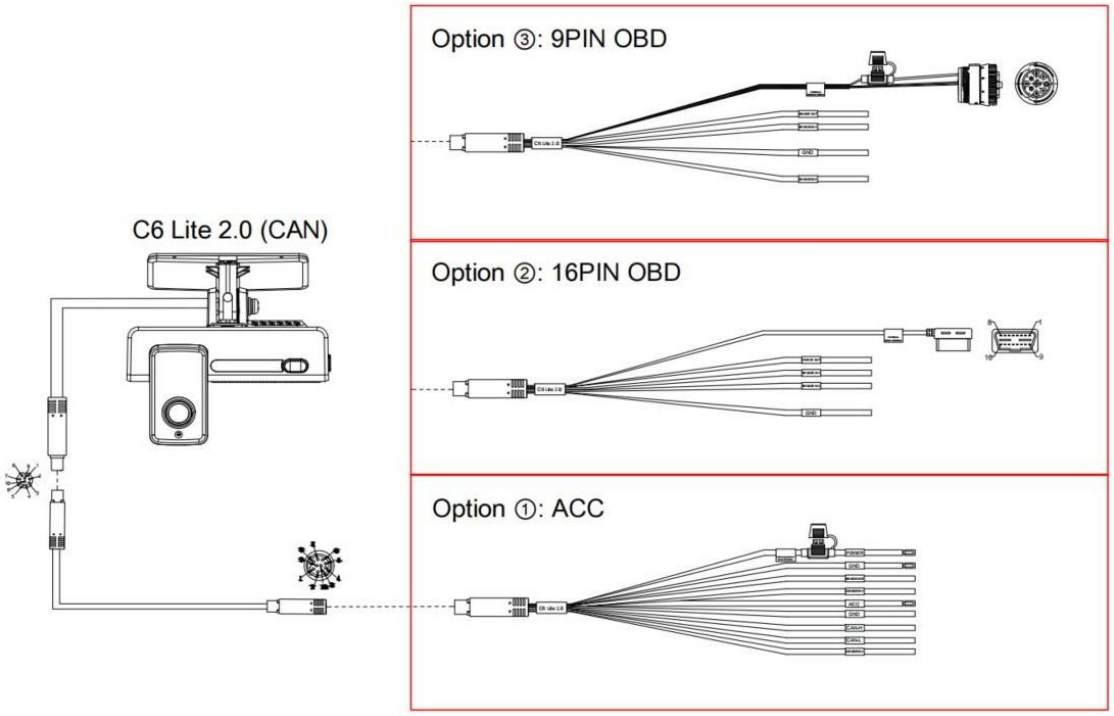


- Single-Camera Version

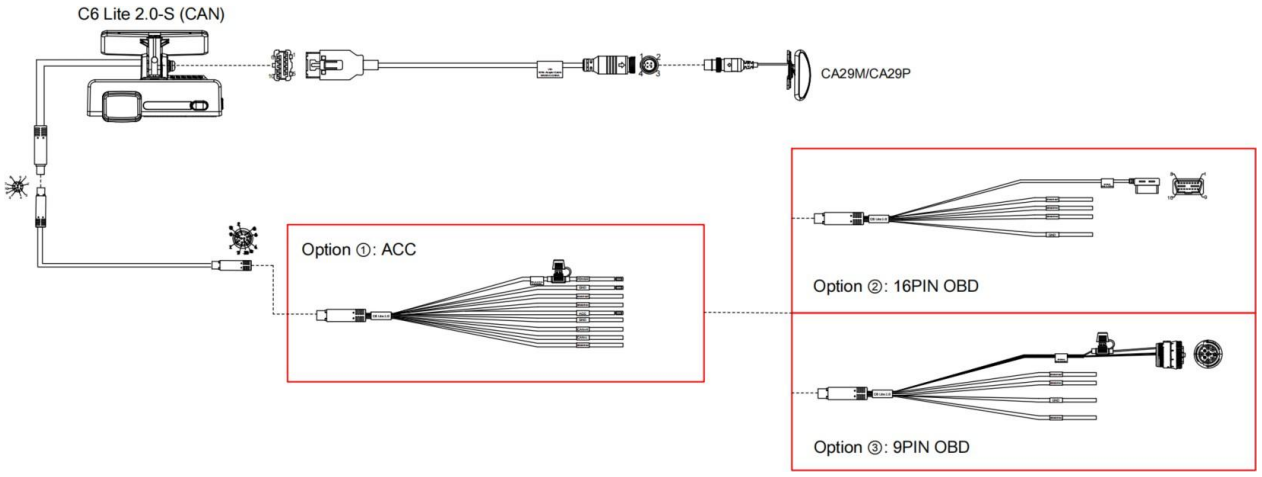


1.3 System Connection Diagram - CAN Model

- Dual-Camera Version



● Single-Camera Version



2.Installation Preparation

2.1 Installation Technical Requirements

Familiar with product functions and applications, and familiar with the overall composition of the product.

Understand vehicle electrical circuits and vehicle structure, and know the common installation methods of in-car devices.

2.2 Understanding the Installation Environment

Before installing the equipment, have a clear understanding of the vehicle model, the installation position of the dashcam main unit and auxiliary cameras, the types and lengths of cables required for each vehicle model, and the list of common auxiliary materials. Ensure the smooth completion of equipment installation and debugging.

2.3 Vehicle Condition and Electrical Information Confirmation

Confirming vehicle information is the basic prerequisite for a successful installation and ensures the responsibility for avoiding vehicle damage. Each component must be clearly confirmed before proceeding to the next step, and each operation must be jointly confirmed by the vehicle owner and the installation personnel.

（1） Check whether the vehicle's exterior and interior are damaged.

（2） Check if the vehicle can start normally.

（3） Check if the vehicle's power system is intact.

*Note: Confirming the above information is crucial. Proceed with the installation only after confirming that everything is normal.

2.4 Vehicle Power Supply

The C6 Lite 2.0 has two power supply methods:

1. Quick OBD interface plug-in power supply: This method is suitable for quick self-installation by users.

2. Loose wire connection power supply: This method requires professional installers. The following mainly introduces this power supply method according to the principles required by the product power cable.

（1） Required tools: Multimeter.

（2） Power supply location selection

In the vehicle's off state, use an electric pen to detect if the circuit is live. If live, determine if it is a constant power source and measure the voltage.

In the vehicle's off state and in the ACC position or ignition state, use a multimeter to detect the circuit's live status. If it is not live when the vehicle is off but live in the ACC position or ignition state, then determine this position as the ACC power line and measure the voltage.

（3） Power supply voltage measurement

Constant power: Use a multimeter to measure whether the voltage of the constant power line is around 24V or 12V when the vehicle is off. If multiple lines meet this criterion, choose the one with the higher current as the constant power supply line.

ACC: Use a multimeter to measure whether the voltage is around 24V or 12V when the vehicle is in the ACC position or ignition state. If the voltage is 0 when the vehicle is off and 24V or 12V in the ACC position or ignition state, then use it as the ACC power supply line.

*Note: When connecting the power, first use a multimeter to measure the positive and negative positions of the power to avoid incorrect connections.

2.5 Necessary Signal Line Connections

To use the intelligent driver assistance functions of the C6 Lite 2.0, the following signal lines must also be connected:

(1) Vehicle speed CAN data line - to obtain accurate vehicle speed (if using GPS speed, the CAN line is not needed, and the 232 model does not support the CAN functionality).

(2) Left turn signal line and right turn signal line - to obtain the vehicle's left and right turn information.

Consult a professional vehicle repair engineer for the specific location of the vehicle speed CAN data line. The specific location of the left and right turn signal lines is generally under the steering wheel or the fuse panel under the co-driver's dashboard and can be measured with a multimeter.

*Note: If the measured signal is a pulse signal, set the source of the left turn/right turn/brake signal to pulse in the main unit settings. If the measured signal is a continuous high or low level signal, set the source of the left turn/right turn/brake signal to level in the main unit settings.

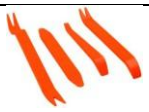
3. Installation Materials and Tools Preparation

3.1 Packing List Check

After opening the product packaging, please confirm whether the dashcam is intact and whether all accessories are complete.

3.2 Installation Tools Preparation

Before installation, you need to prepare the following auxiliary materials and tools.

Installation Tools and Auxiliary Materials List				
No.	**Image**	**Tool Name**	**Purpose**	**Quantity**
1		Common Screwdriver Set	For screwing, optional	1pcs
2		Pry Bar	For prying vehicle panels	1pcs
3		Zip Ties	For bundling cables	Several
4		Dry Cloth	For cleaning the surface	1pcs

5		Smartphone/pad	For installing and using operational software, video preview, and parameter configuration	1pcs
6		Steel Tape Measure	For measuring the installation height of the front ADAS camera and other installation aids	1pcs
7		Marker Pen	For marking the installation position of the main unit	1pcs
8		Wire Cutter/Pliers	For cutting and stripping wires	1pcs
9		Electrical Tape	For wrapping connected wire ends	1pcs
10		Scissors	For cutting electrical tape or wire clips	1pcs
11		USB Drive	Spare	1pcs
12		Multimeter	For finding vehicle power Measuring wire continuity Measuring pulse signals	1pcs
13		3M Tape	For fixing the DMS camera	1pcs
14		Tripod Ladder	For installing the BSD camera	1
15		Waterproof Sealant	For filling waterproof after drilling	1
16		Waterproof Tape	For waterproof protection of outdoor wire joints	1

If the DMS camera needs to be installed, the following additional installation tools are required:

DMS Camera Installation Tools				
No.	**Image**	**Tool Name**	**Purpose**	**Quantity**
1		Torque Drill	Assisting in screwing	1pcs
2		L-shaped Hex Wrench	Adjusting and fixing the angle of the DMS camera lens (included in the DMS camera package)	1pcs
3		3.5mm*25mm Self-tapping Screws	Fixing the camera (included in the DMS camera package)	4pcs

3.3 SIM Card and Micro SD Storage Card Preparation

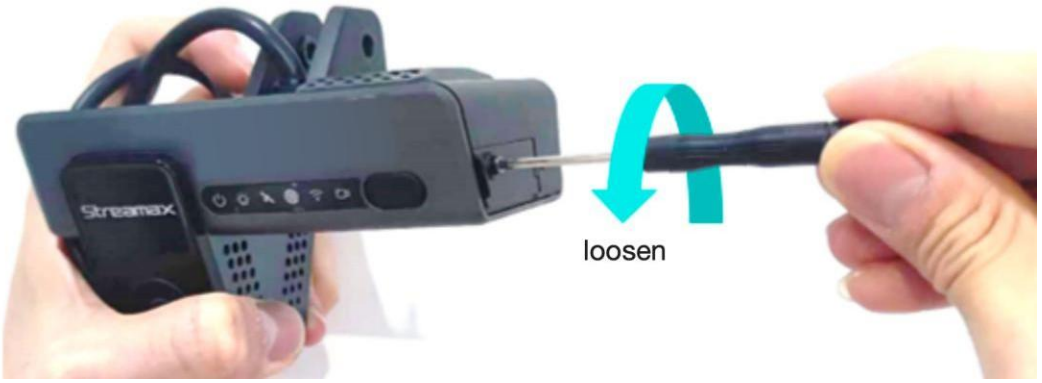
To ensure normal internet communication and data storage of the device, please prepare a matching Micro SIM card and a high-quality Micro SD storage card before installation

4.C6 Lite 2.0

Installation

4.1 Installing the SIM Card and Storage Card

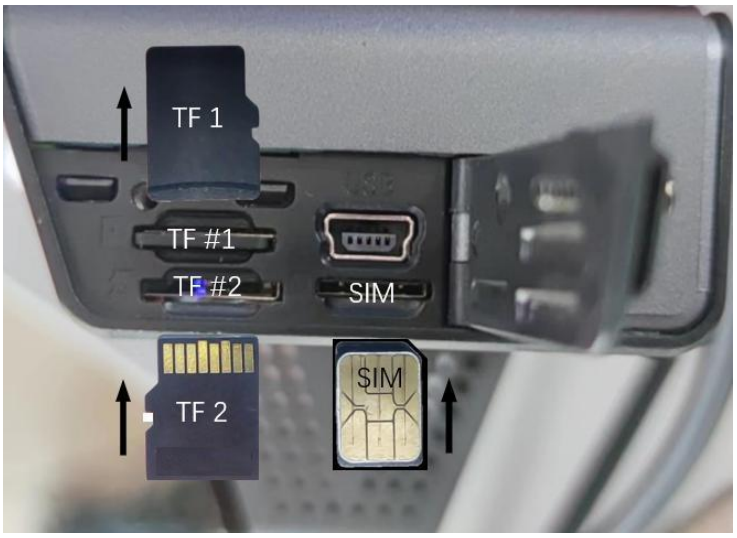
Remove the main unit (do not power on), and use the hex wrench from the set to turn counterclockwise and open the card slot panel on the right side of the main unit.



Insert the SIM card and Micro SD card as shown in the image below (note the card insertion direction):

If you feel a smooth elastic response and need to push the card in completely, it indicates the correct insertion direction. If you feel significant friction resistance during insertion, it indicates the wrong direction. Please remove it promptly to avoid damaging the card and the device's card slot.

If the Micro SD card and SIM card are too small to be fully pushed into the slot by hand, insert the card into the slot and use the pry bar included in the package to push the card into the slot.



*Note:

（1） Due to the device's operating temperature range of -40℃ to +70℃, Micro SD cards and SIM cards should also be able to work normally in such environments for prolonged periods. Specifically, in high-temperature, high-humidity, or salt mist environments, the metal contacts on consumer-grade Micro SD cards and SIM cards are prone to oxidation, and frequent plugging and unplugging can lead to contact wear. Ordinary cards can also deform and bend under prolonged pressure in the card slot, causing poor contact. Therefore, for SIM cards, it is recommended to use industrial equipment IoT M2M cards made of industrial plastic or ceramic (MP2/MP3/MS1 grade, operating temperature range of -40℃ to 105℃). For Micro SD cards, industrial-grade Micro SD cards are required to adapt to a wide range of operating temperatures (-40℃ to 85℃) and have strong stability. It is recommended to use Micro SD cards recommended by Streamax. Using inappropriate cards can risk damaging accessories or even the device.

（2） When handling and installing the SIM card, do not touch the SIM metal contact surface to avoid contamination from dust, sweat, or oils on your hands.

（3） Before installing the SIM card, check the SIM metal contact surface for any stains (dust, fingerprints, water stains, etc.). If there are stains, clean the SIM metal contact surface with non-woven fabric or an eraser.

（4） For TF Slot 1, insert the Micro SD card with the metal strip facing down. For TF Slot 2, insert the Micro SD card with the metal strip facing up.

After installing the SIM card and Micro SD card, reattach the card slot panel and tighten the screws.

After installing the SIM card and Micro SD card, remove the lens protection stickers from the front and rear lenses of the dashcam, and peel off the protective film from the LED lights on the front panel, as shown in the image below.

4.2 Selecting the Dashcam Installation Area

C6 Lite 2.0 Installation Area Requirements:

（1） The dashcam must be installed in the center of the front windshield. It is generally installed in the area above the rearview mirror along the centerline of the windshield. If it cannot be installed in the center, the offset to the left or right should not exceed 5 cm (measured from the centerline of the forward-facing camera relative to the centerline of the windshield).

（2） If conditions allow, the height of the DSC camera should not exceed the driver's eye level. The installation position should be as low as possible without obstructing the driver's view, and the direct distance from the DSC camera to the driver's face should not exceed 116 cm.

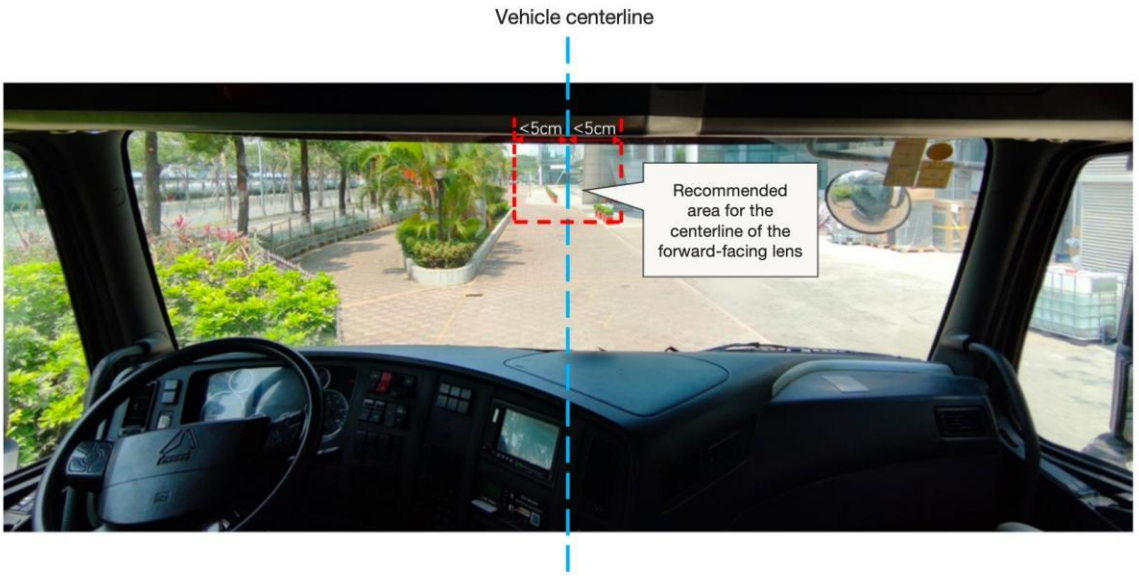
（3） The external camera of the dashcam must be within the working range of the windshield wipers (to ensure the camera's view is clean and free from dirt).

（4） The optimal vertical height of the dashcam's external camera from the ground is between 130 cm and 240 cm.

（5） Avoid placing other electronic devices, such as ETC devices, smart rearview mirrors, or electronic tags, around the dashcam, as they may interfere with the device's GPS signal.

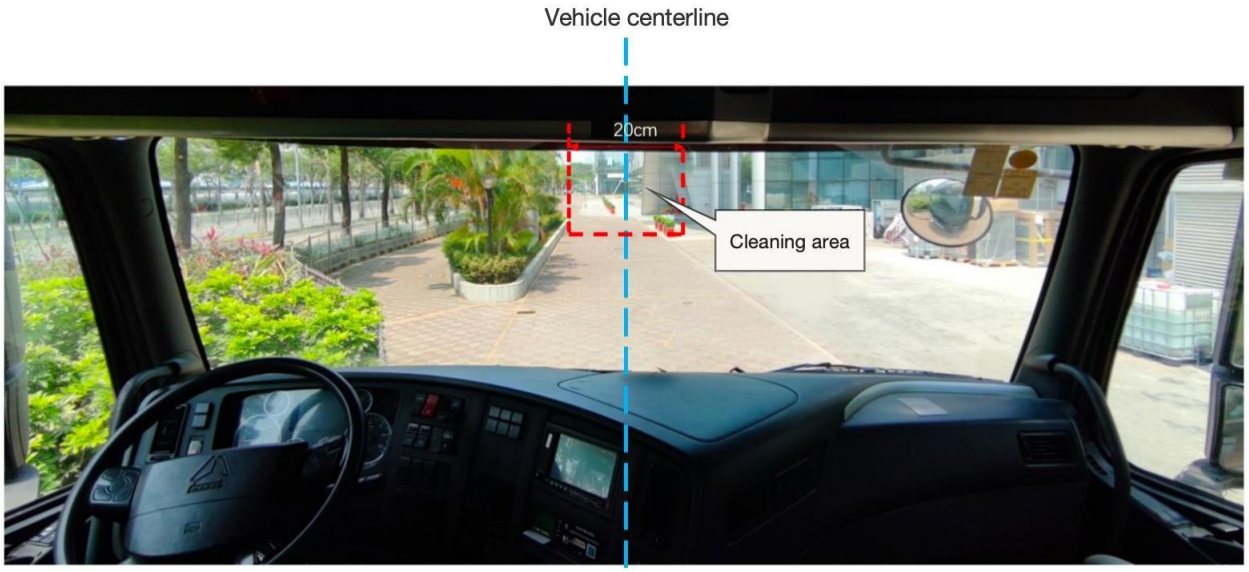
When determining the installation position, ensure that the dashcam does not obstruct the driver's view of the front blind spot mirror and that there are no visual obstructions in front of or around the internal and external lenses (such as the vehicle's rearview mirror or glass coating).

General Installation Area Selection:



4.3 Installing the Dashcam Bracket

Park the vehicle on a level surface. Use an alcohol wipe to clean the interior and exterior glass in the target installation area, ensuring that the glass is free of dirt that could affect the external camera's view, and ensure the area is dry.



Peel off the 3M adhesive film from the installation bracket. Following the direction indicated by the arrow on the bracket, attach the bracket horizontally to the target installation area on the front windshield (align the upper edge of the bracket parallel to the upper edge of the windshield). Press the bracket for 10 seconds to ensure there are no air bubbles between the bracket and the glass.

Note: When installing the bracket, ensure the toothed side is facing right, as indicated on the bracket.

4.4 Installing the Dashcam

Connect the dashcam to the installation bracket with the front facing inward (mesh the teeth on the right side of the bracket with the teeth on the right inside of the dashcam). Use a PH2 Phillips screwdriver to screw the bracket's stud in a clockwise direction (do not tighten it yet, adjust the dashcam to a vertical position first, then tighten it).

4.5 Adjusting the Dashcam Angle and Securing

Adjust the dashcam back and forth to ensure it is in a vertical position.

Tighten the bracket stud to ensure the dashcam's angle cannot be easily changed, completing the dashcam installation.

When securing, ensure the cabin camera view meets the following conditions:

1）The center of the cabin is at the center of the image 2）

The cabin image is level.

3）The left/right bottom corners of the image show the vehicle's steering wheel.

After adjusting the internal camera, the cabin effect should look like this:

Then use the screwdriver to tighten the bracket stud in a clockwise direction, ensuring the main unit is firmly secured and does not wobble easily.

***Please Note:**

Ensure the connection between the bracket and the main unit is secure (the device and the vehicle should be rigidly connected) to prevent the main unit from wobbling easily. This helps avoid GPS positioning issues.

Power on the device after securing the main unit to the vehicle.

If the device is powered on before being secured, power it off and back on again before testing or using it.

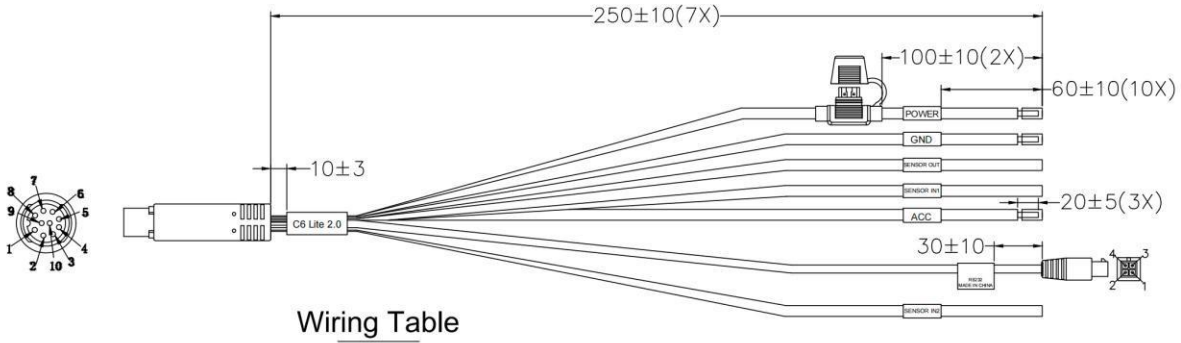
The C6 Lite 2.0's built-in GPS module is an standard navigation module, and these requirements ensure the normal operation of the product.

4.6 Power Supply, Signal Line Connection, and Wiring

4.6.1 Power Supply

（1） If using the OBD quick interface for power supply, locate the vehicle's OBD interface and directly plug in (use 16PIN as an example):

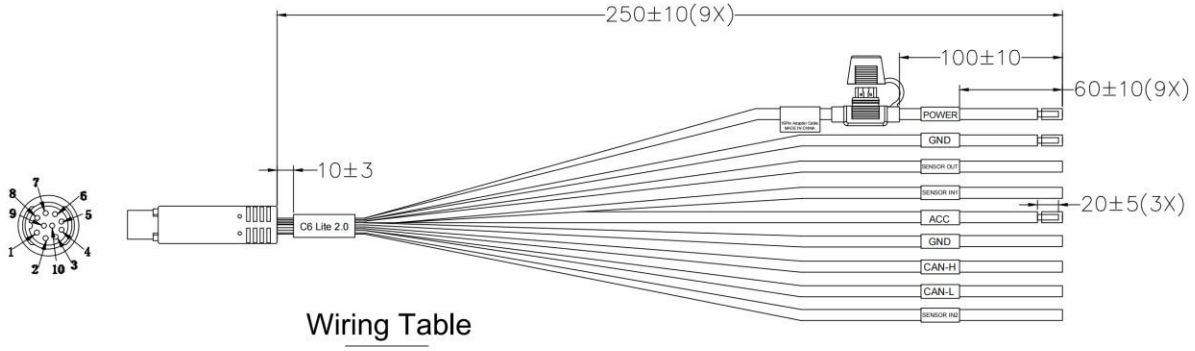
（2） If using loose wires for power supply, connect the POWER/ACC/GND wires to the vehicle's power lines according to the power wire definitions. The wire interface definitions for the RS232 model and CAN model are as follows：



Wiring Table

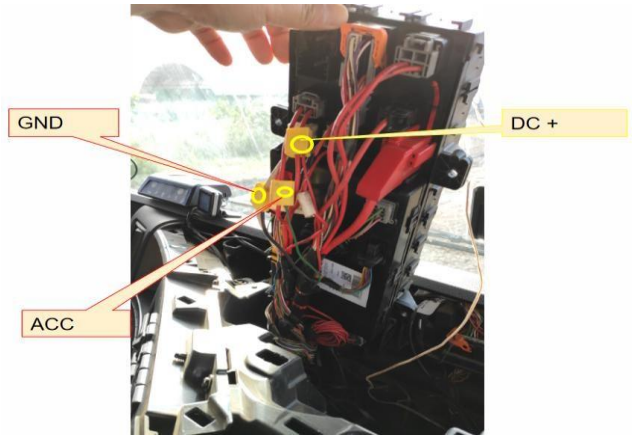
		Suspension wire		10P BMW male port	
Half Stripped	ACC	Orange wire	——	1	0.35 mm²
SENSOR	OUT	Blue wire	——	2	0.35 mm²
SENSOR	IN2	Green-yellow wire	——	5	0.35 mm²
SENSOR	IN1	Grey wire	——	6	0.35 mm²
Half Stripped	POWER	Red wire	3A Fuse Box ——	10	0.5 mm²
Half Stripped	GND	Black wire	——	9	0.5 mm²

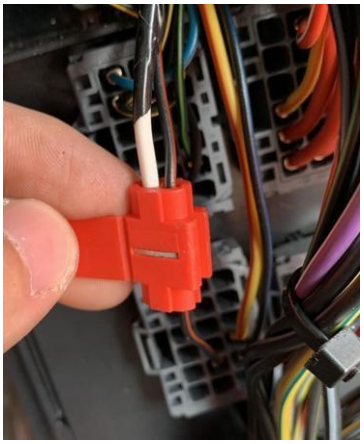
Small 5559-4P		10P BMW male port	
Black wire	4 ——	9	GND
Red wire	1 ——	3	+12V
White wire	2 ——	7	RX(L)
Yellow wire	3 ——	8	TX(H)



Wiring Table

		Suspension wire		10P BMW male port	
Half Stripped	ACC	Orange wire		1	0.35 mm²
SENSOR	OUT	Blue wire		2	0.35 mm²
SENSOR	IN2	Green-yellow wire		5	0.35 mm²
SENSOR	IN1	Grey wire		6	0.35 mm²
Half Stripped	POWER	Red wire		10	0.5 mm²
Half Stripped	GND	Black wire	3A Fuse Box	9	0.5 mm²
	GND	Black wire		9	0.5 mm²
	CAN-L	Green wire		7	0.35 mm²
	CAN-H	Yellow wire		8	0.35 mm²





*Note:

When connecting power lines, use "special non-breaking wire connectors" whenever possible to avoid breaking wires and reducing the risk of leakage. After connecting the wires, wrap them with electrical insulation tape to prevent leakage/short circuits.

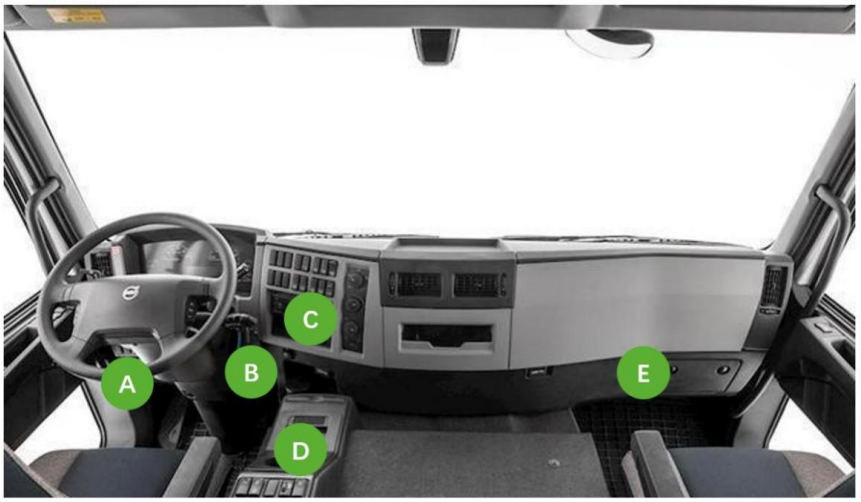
If special non-breaking wire connectors are not available, you can connect by breaking the wire, but the wiring process must meet standard specifications. After connecting the wires, wrap them with electrical insulation tape to prevent leakage/short circuits.

4.6.2 Connecting Signal Lines (CAN/Left Turn/Right Turn/Reverse)

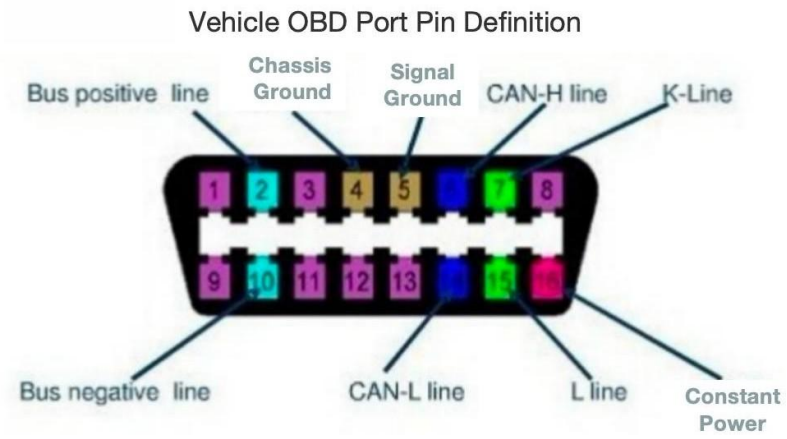
Consult a professional vehicle repair engineer to locate the vehicle's OBD interface. The position of the vehicle's OBD interface is generally as shown in the diagram below. Find the vehicle's CAN-H and CAN-L lines at the back of the OBD interface. For a standard 16-pin trapezoidal OBD interface, the CAN-H and CAN-L lines are typically pins 6 and 14, respectively (this is just an example; the pinout may vary for different OBD interface shapes).

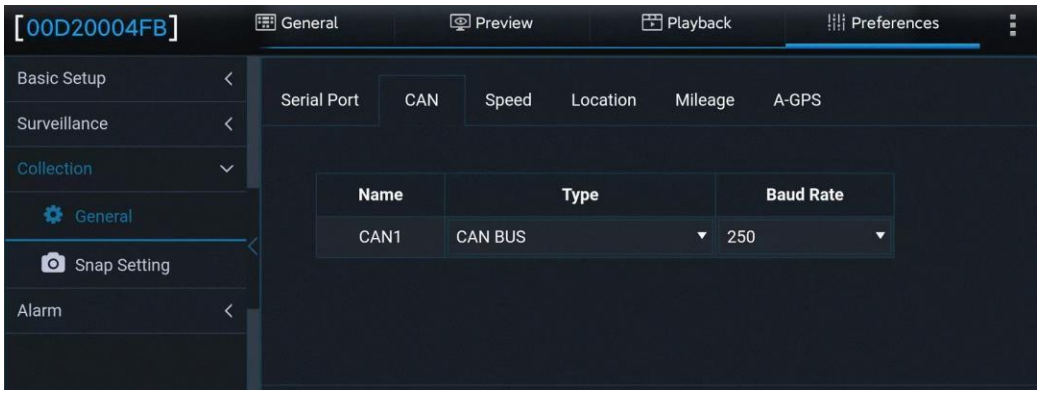
After completing the wiring, use the Veyes APP to connect to the C6 Lite 2.0. Enter the configuration interface to set the device's CAN type and baud rate, and set the speed source to "OBD". Test the speed pulse data accuracy by moving the vehicle a short distance on site.

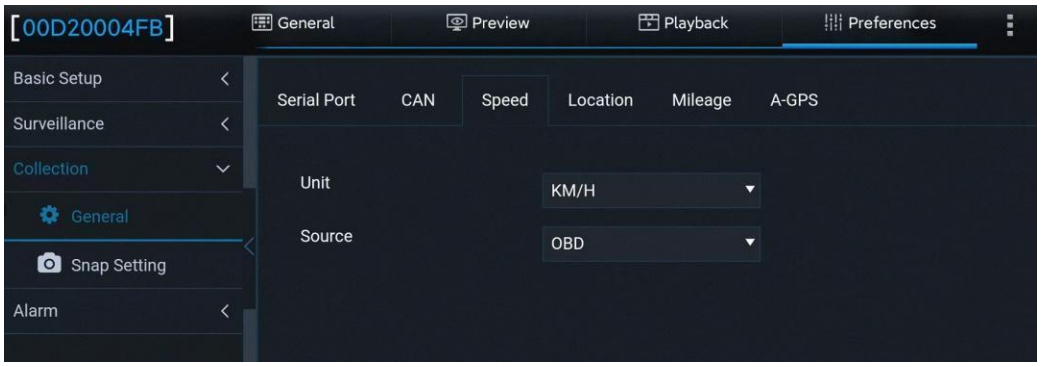
Typical locations of OBD ports in various vehicle models



Vehicle OBD Port Pin Definition



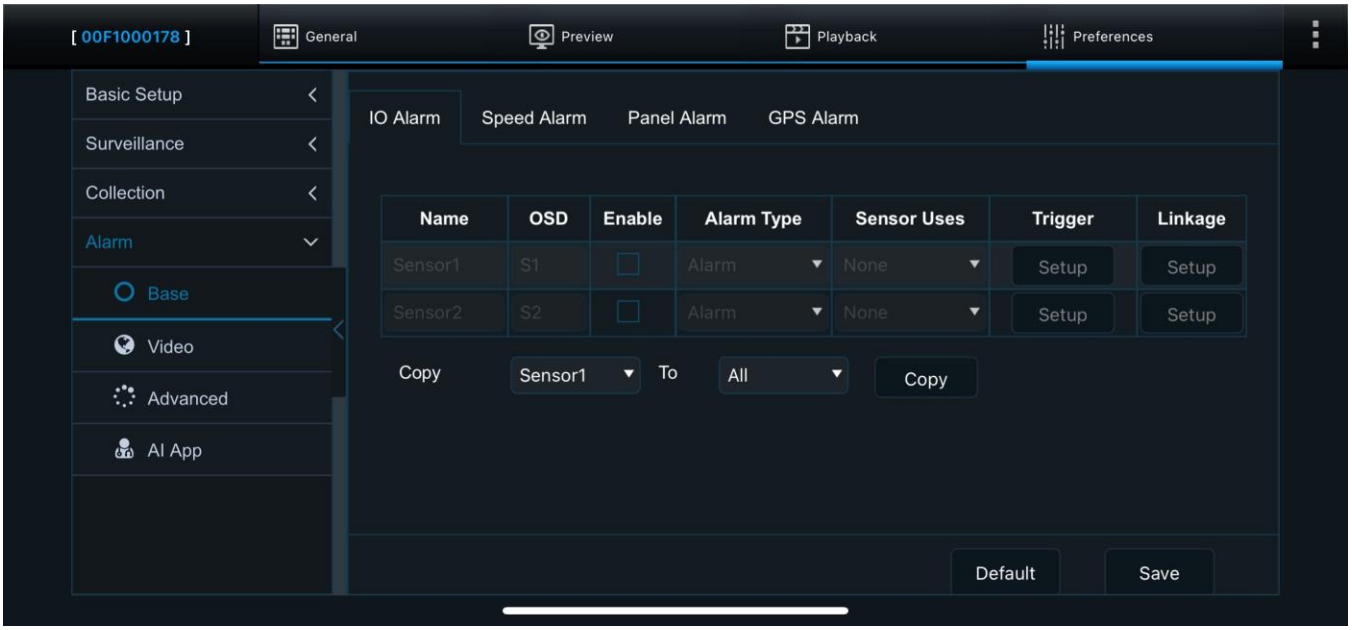


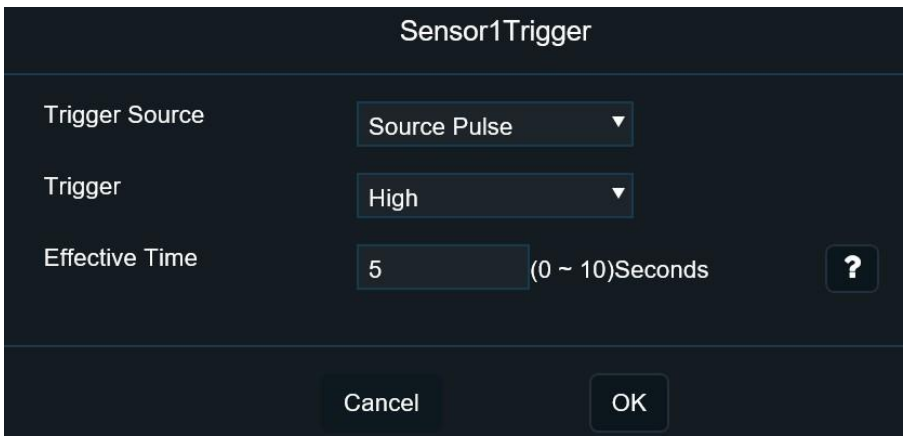


2.Left Turn/Right Turn/Reverse Signals

After locating the vehicle's fuse panel under the steering wheel or the passenger-side dashboard, use the hints on the back of the fuse panel cover or a multimeter to find the wires corresponding to the left turn, right turn, and reverse signals.

There are two IO signal lines in the standard loose wire cables, so the left turn, right turn, and reverse signals can all be connected. After connecting, set the corresponding IO signal line parameters through Veyes.





*Note:

If the measured signal is a pulse signal, set the source of the left turn/right turn signals to pulse in the main unit settings. If the measured signal is a continuous high or low level signal, set the source of the left turn/right turn signals to voltage in the main unit settings.

4.6.3 Wiring

After connecting the main wires according to the system connection diagram and completing the power supply and signal line connections, use a pry bar to route and hide the wires under the trim panels or dashboard, as shown in the illustration below (concealed wiring).

If the DMS camera is to be installed, route the DMS camera cable along with the other wires, leaving enough length for the DMS camera.

（1） Using the OBD interface for quick power access or using loose wire connections, one possible wiring method is as follows:

Note: C6 Lite 2.0 does not have a power box, which differs from ADPLUS 2.0.

Due to varying OBD interface locations across models, the wiring method also differs. Installation can be done based on the aesthetic preference for routing hidden wires.

5.C6 Lite 2.0 Calibration

5.1 ADAS Calibration

5.1.1 Connecting to the APP

Start the car and wait for the dashcam's power status light to turn on. When the power status light shows a steady green and the WiFi status light is green, the dashcam is working normally, and WiFi is in AP mode.

Within 3 minutes of turning on the main unit, use a smartphone or pad to log into the Veyes APP. Before connecting the device with the Freight Maintenance App, turn on the phone's WiFi and GPS.

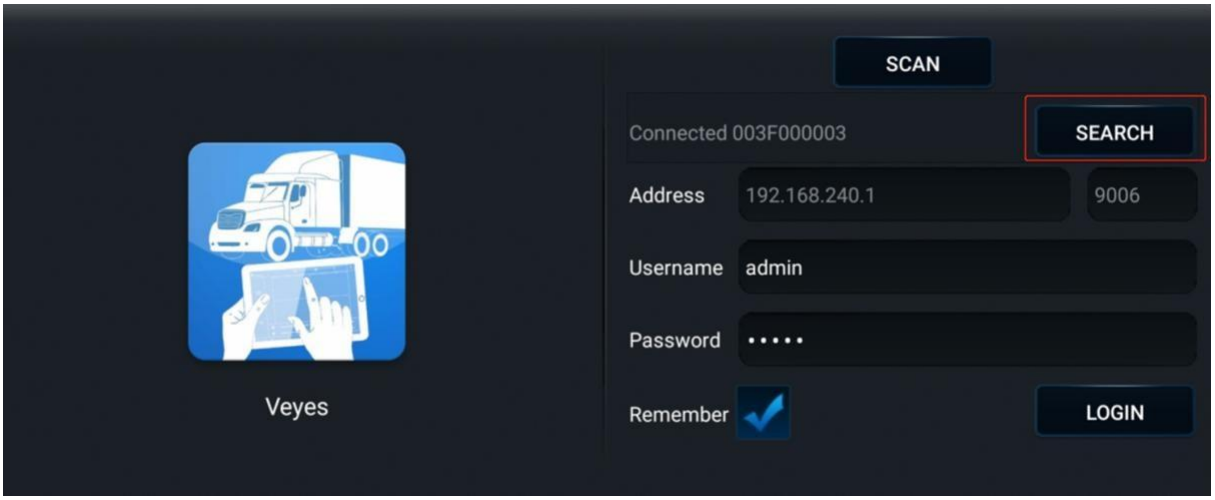
After powering up, the C6 Lite 2.0 will stay in AP mode for 3 minutes by default. During this time, run the Freight Maintenance App on your phone, click the "Search" button to enter the WiFi hotspot

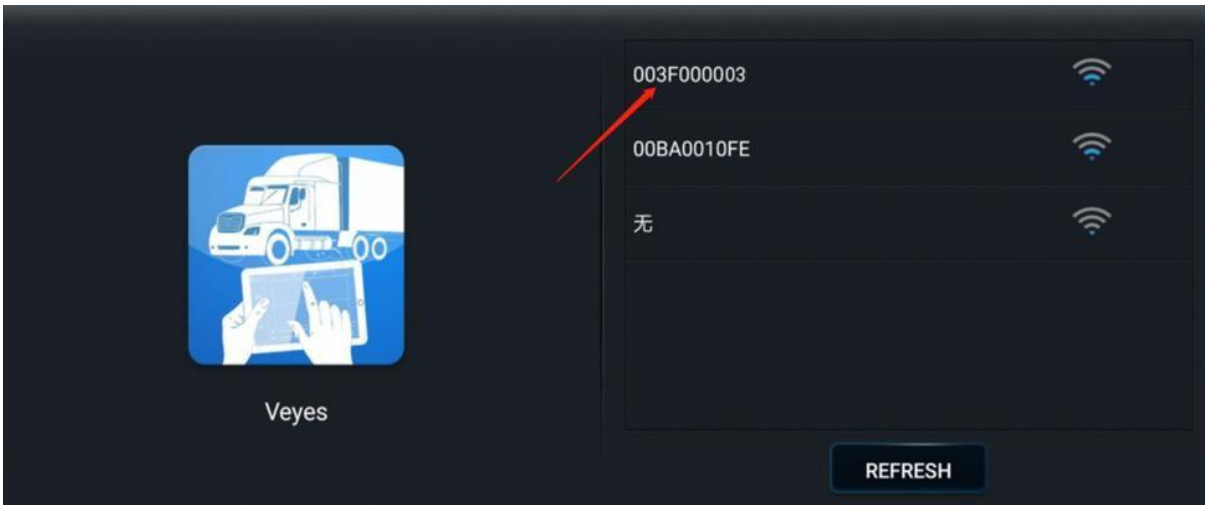
search interface. Initially, the WiFi hotspot name is the C6 Lite 2.0 encryption chip number (usually ST-xxxxxxxxxx). If the license plate number was modified, the hotspot name will be the license plate number. Search for the WiFi hotspot named after the C6 Lite 2.0 encryption chip number or the input license plate number to enter the login interface.

*Note:

The dashcam will automatically enable WiFi transmission mode within 3 minutes of startup for debugging APP connection. If no APP connects within 3 minutes, the WiFi hotspot will turn off.

On the login screen, enter the corresponding username and password, then click "Login" to enter the operation interface. The default username/password is: admin/admin.





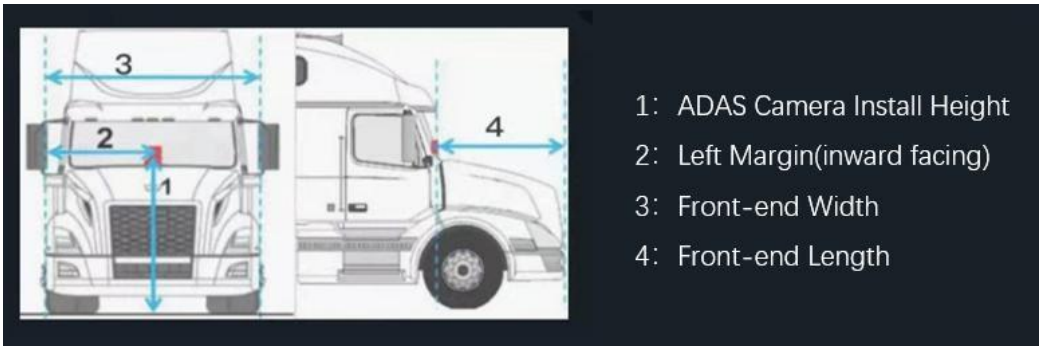
Click the "Login" button to enter the operation interface.

5.1.2 Measuring ADAS Camera Installation Parameters

Use a measuring tape or ruler to measure the vertical height from the ground to the C6 Lite 2.0 front camera (accurate to cm/inch) as the ADAS camera installation height.Measure the horizontal distance from the C6 Lite 2.0 front camera to the outer edge of the left side tire (standing outside the vehicle facing the front), as the ADAS camera left margin.Measure the vehicle's width (outer edge of

both tires) and the length of the front (horizontal distance from the ADAS camera to the license plate). Refer to the illustration below for distance measurement examples.

Note: When measuring the vertical height from the ground to the C6 Lite 2.0 front camera, ensure the tape or ruler is perpendicular to the ground before reading the height value.

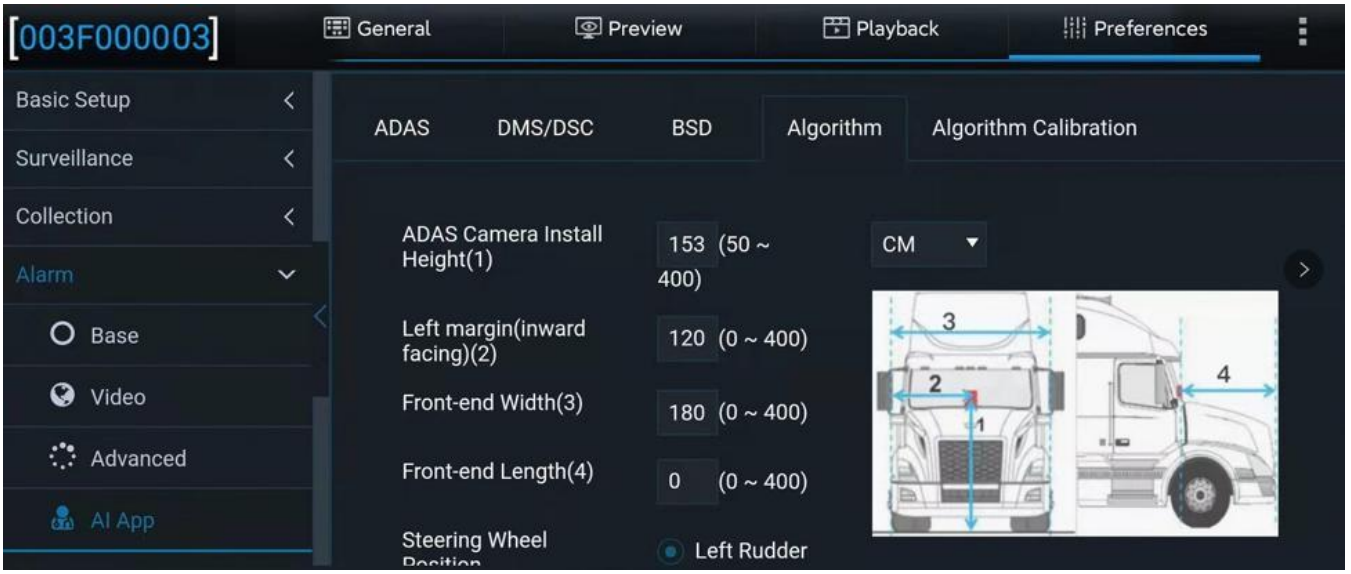


5.1.3 Calibrating the ADAS Camera

5.1.3.1Calibration Parameter Settings

After entering the Veyes operation interface, click "Preferences" > "Alarm" > "AI App" > "Algorithm," as shown below:

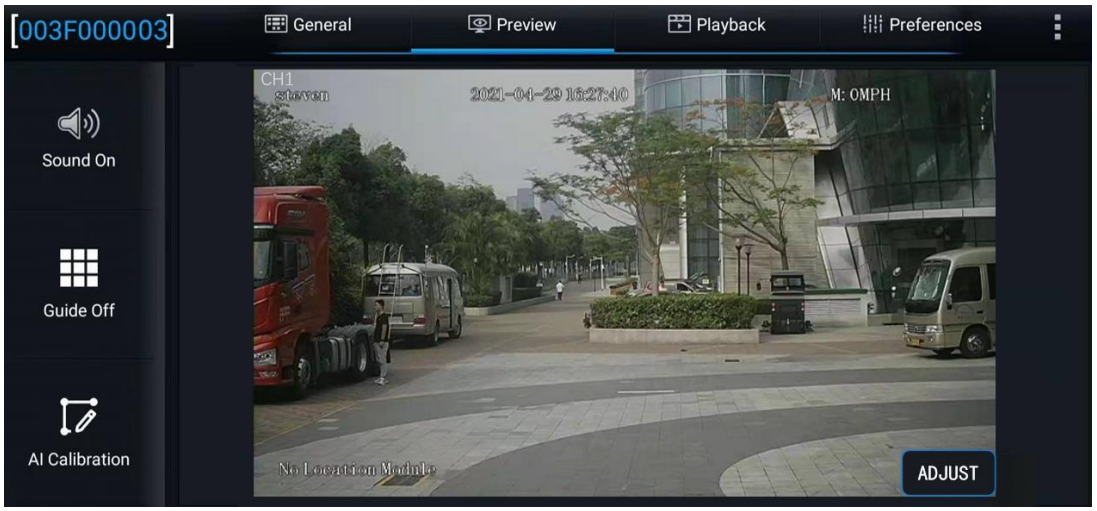
The ADAS calibration height unit can be selected as centimeters or inches. In the parameter input boxes, respectively enter the ADAS camera install height, ADAS camera left margin, vehicle front-end width, and front-end length values obtained in the previous step. After inputting, click "Save."



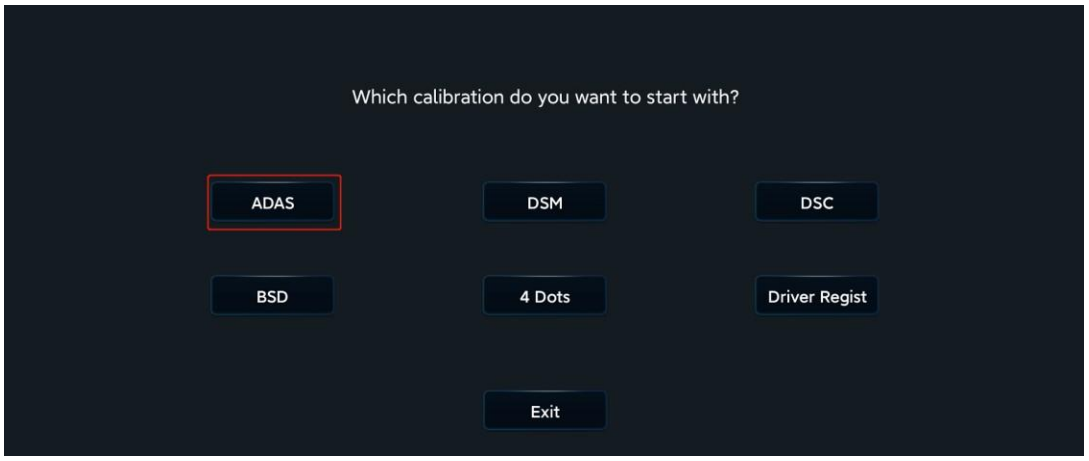
5.1.3.2 Automatic Calibration

In the manual calibration method, there are two ways: long-distance calibration and short-distance calibration. However, since the C6 Lite 2.0 supports automatic calibration, you only need to enter the relevant parameters in the manual calibration process, and there is no need to follow the long-distance and short-distance calibration procedures fully. The steps are as follows:

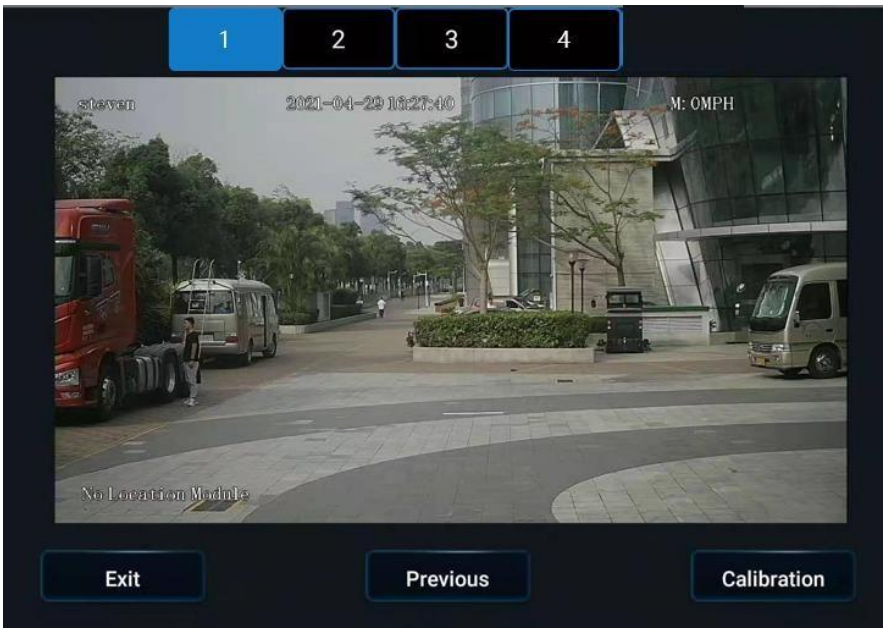
1. On the main page, click "Preview" to enter the preview interface. Click "AI Calibration" in the lower left corner to enter the calibration selection.



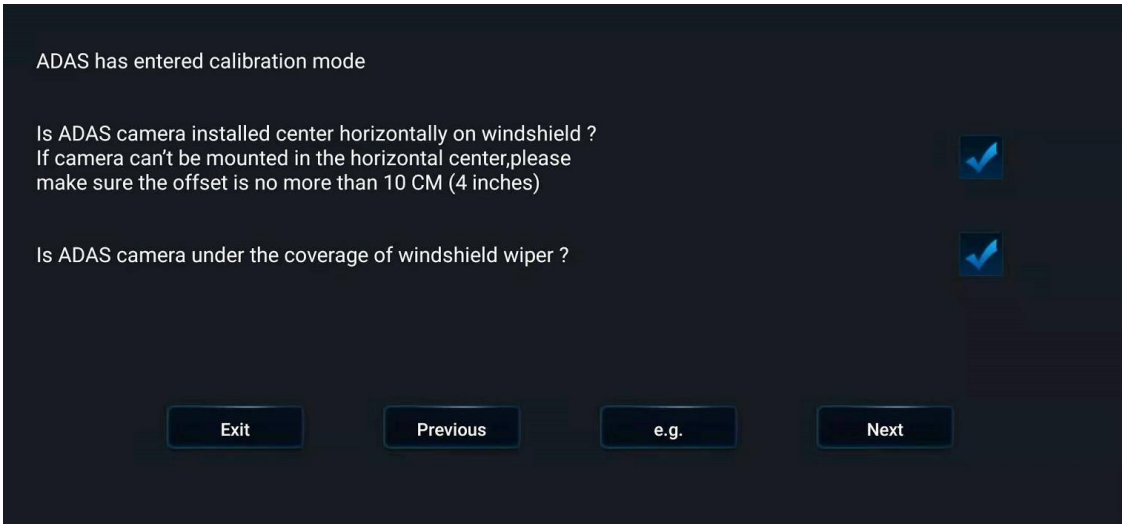
Enter the real-time preview interface, double-click the ADAS channel screen to enter the main stream; click "AI Calibration" in the lower left corner to enter the AI calibration selection interface for ADAS calibration.



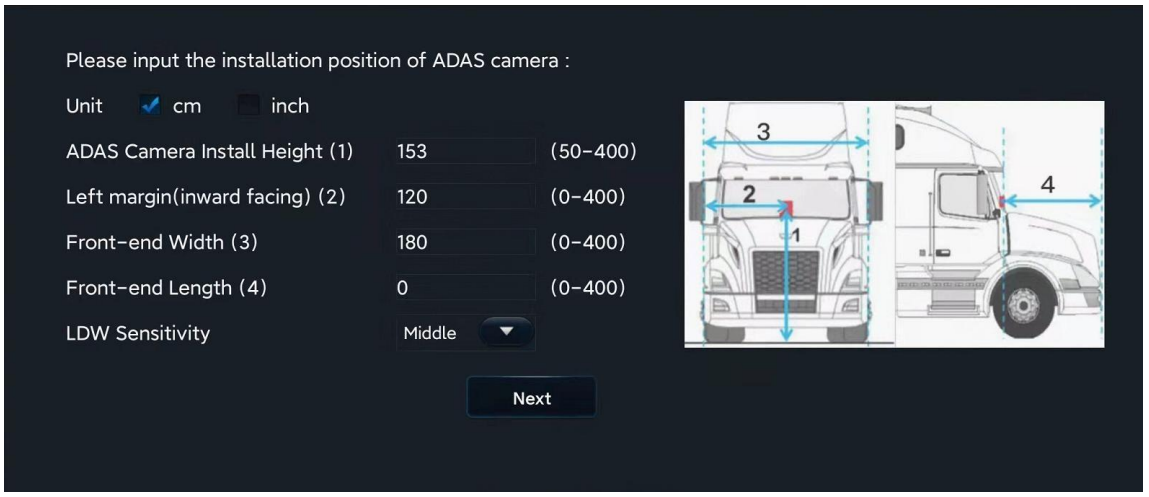
2. Select the calibration channel. The ADAS camera is installed on channel 1, so choose channel 1. Then click "Calibration" in the lower right corner to enter the calibration process.



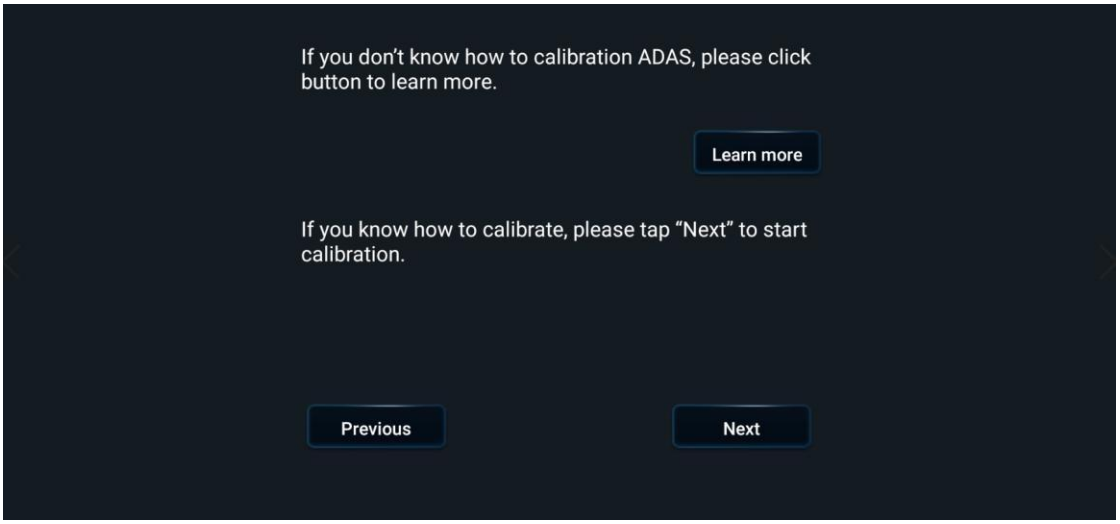
3. Confirm the ADAS is installed in the proper position on the front windshield and within the wiper's working range, then click "Next."



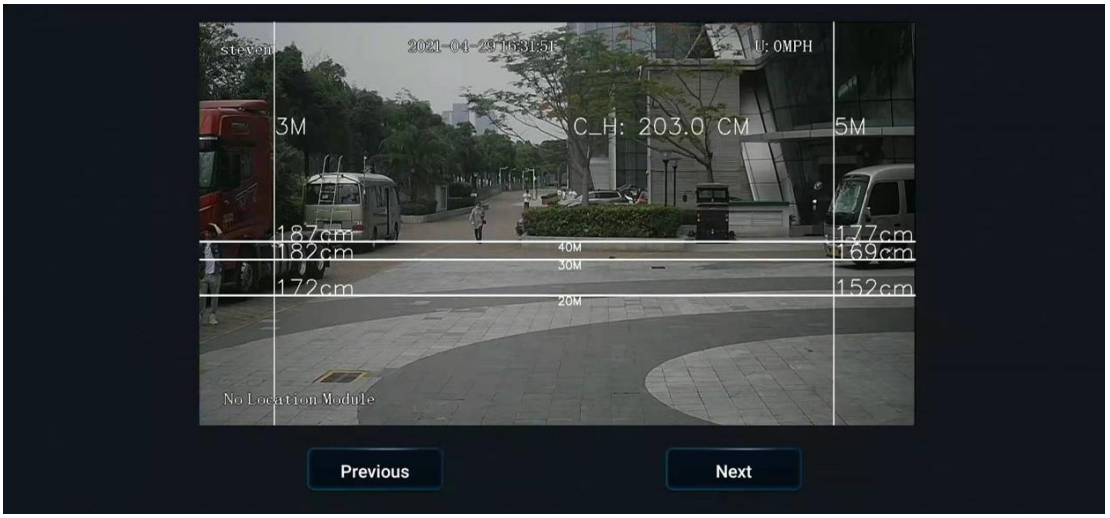
4. In the parameter input boxes, enter the ADAS camera installation height, ADAS camera left margin, vehicle front-end width, and front-end length values obtained in section 5.1.2. Refer to the example on the right for measurements, and the parameter numbers correspond to the illustration numbers, as shown below.



Continue clicking "Next" to proceed.

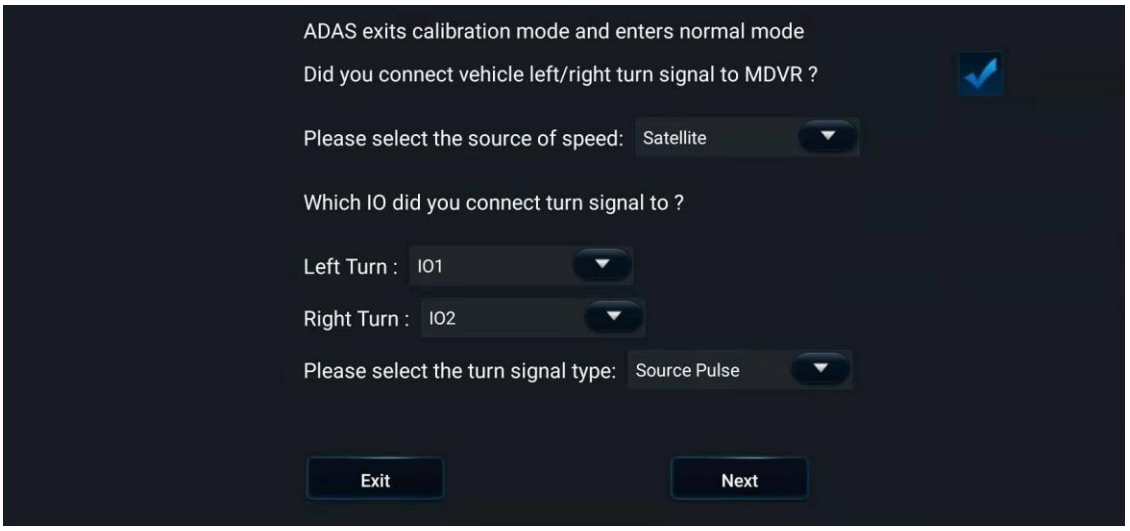


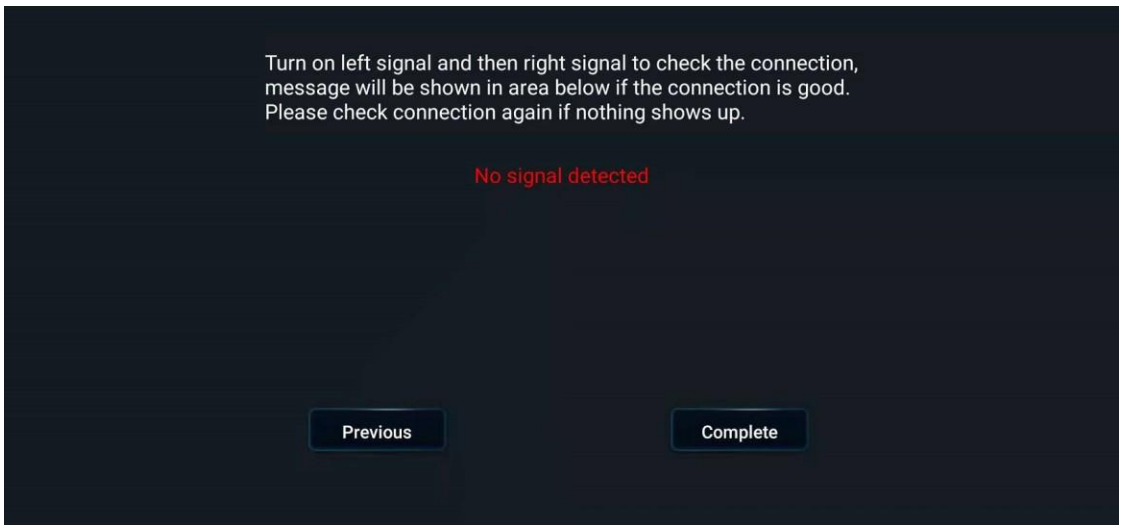
5. Continue clicking "Next" to proceed to the following interface. Since the C6 Lite 2.0 supports automatic calibration, you can skip adjustments in this interface and directly click "Next."



6. Then proceed to the following interface. Based on the actual installation situation, select the speed source, set the left/right turn signal parameters, and then click "Next." Follow the prompts in the

subsequent interface to check if the left/right turn signals are effective. After checking, click "Complete" to exit the calibration interface.





7. Return to the real-time preview interface of the ADAS channel (double-click the ADAS channel to enter the main stream) and ensure that there are no calibration lines overlaying the screen. This indicates that the ADAS channel has returned to normal mode.

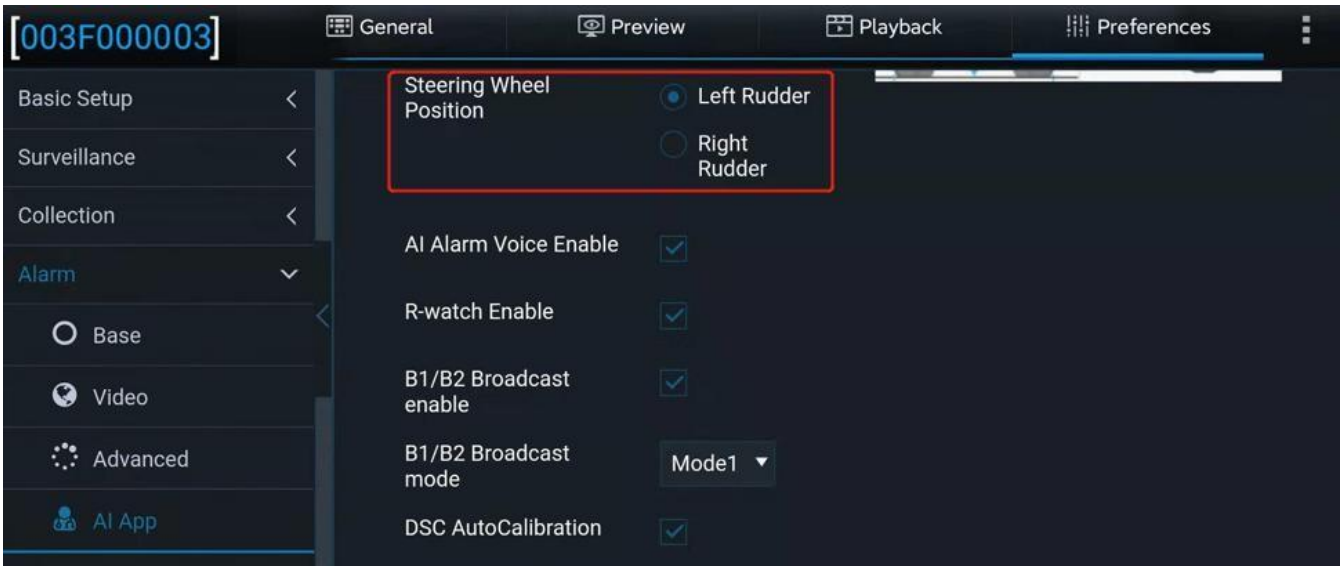
This completes the ADAS calibration operation for the C6 Lite 2.0 from the preview interface.

5.2 DSC Calibration (Only for Dual-Camera Version of C6 Lite 2.0)

5.2.1 Left/Right Steering Wheel Setting

In the Veyes operation interface, click "Preferences" > "Alarm" > "AI App" > "Algorithm," as shown below:

Select left or right steering wheel under "Steering Wheel Position." When the driver sits in the driving position facing forward, if the steering wheel is on the left side of the entire cabin, it is left-hand steering; if it is on the right side, it is right-hand steering.



5.2.2 Cabin Camera Angle Adjustment

In the Veyes operation interface, click "Preview" to enter the preview interface, and double-click channel 2 to enlarge the cabin view.

If the dashcam was fixed during installation and the cabin view angle is skewed or does not show the driver's upper body and face, loosen the fastening screws and readjust the camera angle.

6. Optional Components Installation and Calibration

6.1 DMS Camera

For different usage scenarios, the C6 Lite 2.0 supports three types of external DMS cameras: side-mounted on the A-pillar, adhesive-mounted on the A-pillar glass, and dashboard-mounted, with models CA29M/CA29P.

CA29M is a professional-grade DMS camera. It supports both A-pillar and dashboard mounting and can automatically adjust the image to suit different installation states. It covers scenes where the camera is 50~100 cm away from the face, meeting the installation requirements of various vehicle models.

The three camera types are as follows:

A-pillar Side-mounted CA29M (3mm focal length)	A-pillar Glass-mounted CA29M (3mm focal length)	Dashboard-mounted CA29M (4mm focal length)
		

Customers can generally choose between A-pillar side-mounting or dashbaord mounting based on their situation. However, some customers' vehicles have airbags in the A-pillar, making it unsafe to fix the camera on the A-pillar. In this case, they can choose the CA29M with a glass-mounted bracket and fix it next to the A-pillar.

6.1.1 Installation Position Requirements

1、When using the CA29M camera for A-pillar side-mounting or A-pillar glass-mounting, the camera should be adjusted to a vertical position. When using the CA29M camera for dashboard mounting, the camera should be adjusted to a horizontal position.

2、DMS lens distance to face: Regardless of the installation method, the lens-to-face distance should be between 50~100 cm, addressing the issue of selecting different cameras based on distance requirements.

3、The installation height of the above three types of DMS cameras must be lower than the driver's face, and the camera must have an upward viewing angle.

Ideally, the DMS camera installation height should be as close to the dashboard as possible (maximizing the upward view), but to avoid being blocked by the steering wheel, the DMS camera installation height can be adjusted upwards appropriately.

For large trucks, the recommended installation height range for the DMS lens on the A-pillar or windshield is from the highest point of the steering wheel to 10 cm above the highest point of the steering wheel.

6.1.2 Installation Angle Requirements

Adjust the device using the real-time preview screen after powering it on. Use auxiliary lines to help determine the position.

1. Ensure the DMS camera has an upward viewing angle.
2. Adjust the DMS camera's vertical and horizontal angles to ensure the driver's face is centered in the video frame, with the driver's face and body straight and vertical in the frame. The bottom edge of the frame should be below the driver's chest.
3. Ensure the DMS camera's supplemental lighting is on the face (avoid lighting the seatbelt to prevent overexposure in the video).
4. Ensure no other objects (e.g., steering wheel) block the driver's face or seatbelt features in the DMS video frame.

6.1.3 Installation Details Requirements

1. If using A-pillar installation or A-pillar glass adhesive mounting bracket installation, the DMS camera label must face the A-pillar (the curved surface facing the driver).

2. If using dashboard installation, the DMS camera label must face down (the curved surface facing up).

3. After adjusting and calibrating the angle, remove the protective film from the DMS camera, and use the hex wrench to lock the DMS so that it cannot move up, down, left, or right.

Left A-pillar installation: curved surface facing the cabin, wire end facing down.

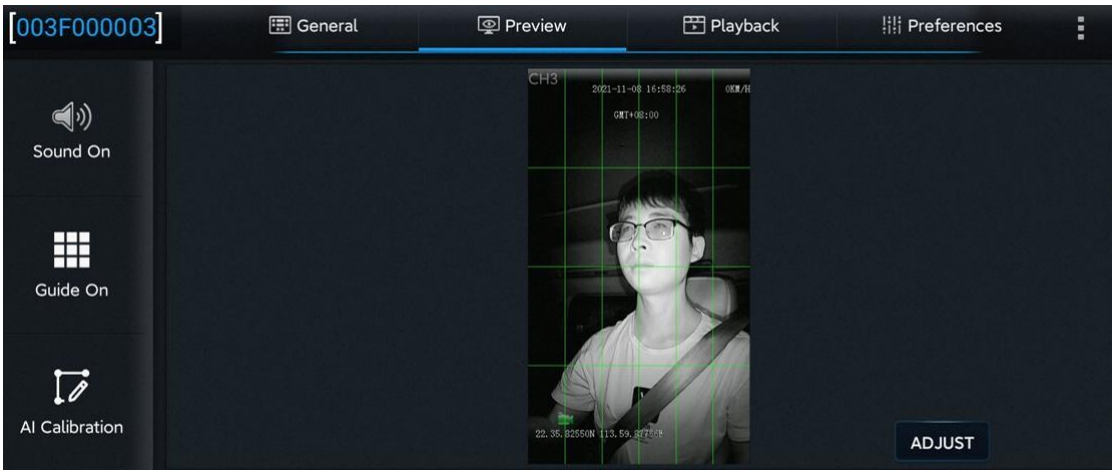
Dashboard installation: curved surface facing up.

Right A-pillar installation: curved surface facing the cabin, wire end facing up.

6.1.4 Installation Steps

6.1.4.1 A-pillar Side-mounted Camera Installation Steps

1. Power on the device, connect through the APP, and enter the real-time preview screen. First, check if the driver is correctly oriented in the image when the camera label faces the A-pillar (curved surface facing the driver) at the target installation position.



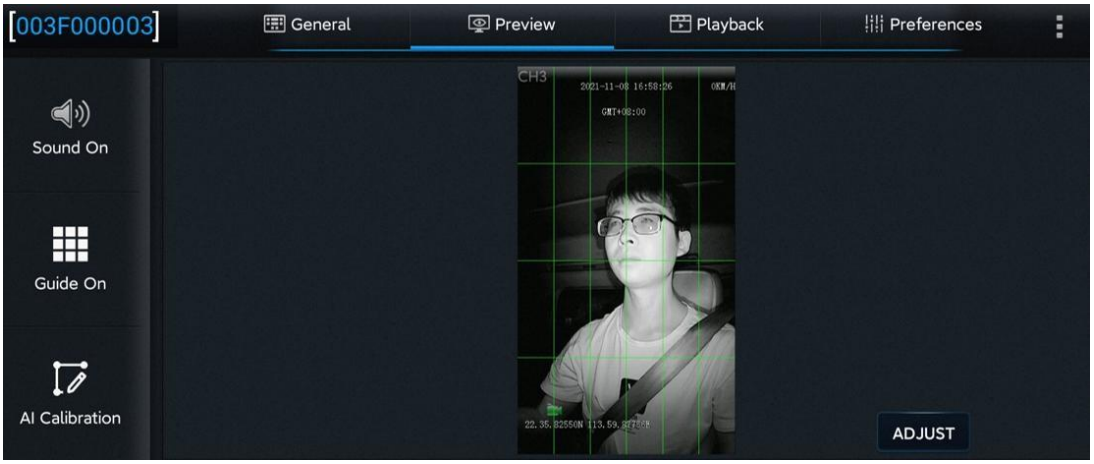
2. After determining the appropriate installation position that meets the above requirements through the DMS image, first fix the screw on the top of the DMS camera base (do not fix the screw on the bottom of the base yet to facilitate vertical angle adjustment).

3. Use a hex wrench to adjust the left-right angle of the DMS camera by tightening or loosening the joint.

4. After adjusting the vertical and horizontal angles of the DMS camera, ensure that the driver's face is centered in the video frame in a normal driving posture, with the following conditions:

（1） The DMS camera must be installed at an upward angle.

（2） The driver's face should be centered in the video frame, with the face and body straight and vertical in the frame, and the bottom edge of the frame below the driver's chest.



（3） The DMS camera's supplemental light should be on the face (do not light the seatbelt, as it may cause overexposure).

（4） No other objects (e.g., steering wheel) should obstruct the driver's face or seatbelt features in the DMS video frame.

5. Fix the screw on the bottom of the DMS camera base and the left-right angle joint screw, ensuring the camera does not move up, down, left, or right.

6.1.4.2 Glass Adhesive-mounted Camera Installation Steps

If the vehicle's A-pillar has an airbag, making it unsafe to install the camera on the A-pillar, choose the glass adhesive mounting bracket. The installation method is as follows:

1. Power on the device, connect through the APP, and enter the real-time preview screen. Without peeling off the 3M adhesive on the glass adhesive camera base, roughly determine the camera installation position. Ensure the following:

（1） The glass adhesive bracket should not be too far from the A-pillar to avoid obstructing the driver's view, and the base should be parallel to the A-pillar.

（2） The installation position must ensure the camera has an upward viewing angle.

（3） After installing the glass adhesive camera, ensure the view includes the driver's chest and above, showing seatbelt and face features, with the face centered in the frame.

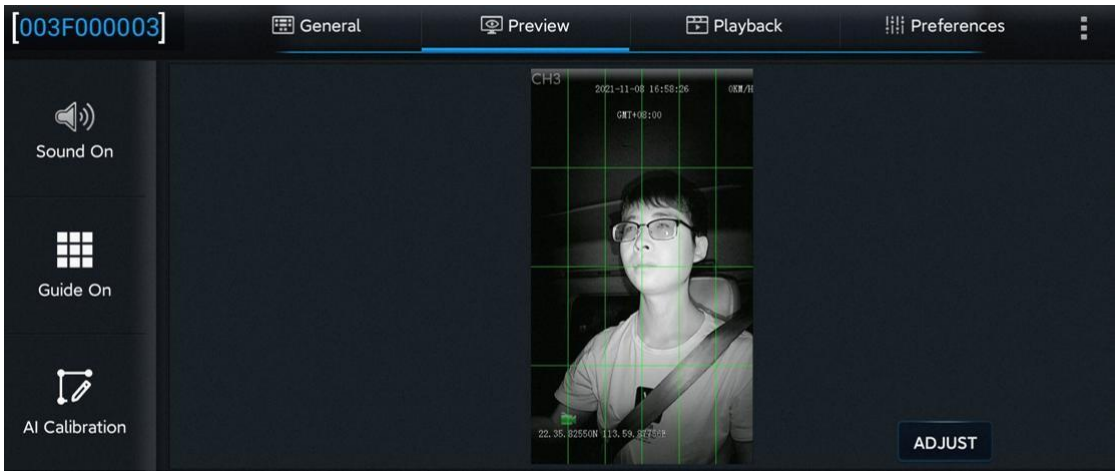
2. After determining the rough position, adjust the camera label to face the A-pillar (curved surface facing the driver), then peel off the 3M adhesive on the base and firmly attach the bracket to the windshield parallel to the A-pillar.

*Note: Ensure the side with the notch on the bracket faces up for easy adjustment of the camera's vertical and horizontal angles after installation.

3. After attaching the base to the glass, adjust the camera's vertical and horizontal angles using the ball joint to ensure the driver's face is centered in the video frame in a normal driving posture, with the following conditions:

（1） The DMS camera must be installed at an upward angle.

（2） The driver's face should be centered in the video frame, with the face and body straight and vertical in the frame, and the bottom edge of the frame below the driver's chest.



（3） The DMS camera's supplemental light should be on the face (do not light the seatbelt, as it may cause overexposure).

（4） No other objects (e.g., steering wheel) should obstruct the driver's face or seatbelt features in the DMS video frame.

4. Tighten the screw on the right side of the DMS camera bracket to ensure the camera does not move up, down, left, or right.

6.1.4.3 Dashboard-mounted Camera Installation Requirements

If the DMS camera is dashboard-mounted, the CA29M must be fixed on the top of the dashboard. The installation method is as follows:

1. Power on the device, connect through the APP, and enter the real-time preview screen to preliminarily determine the camera installation position. Ensure the following:

（1） The surface is flat and easy to fix.

（2） The driver's face is not obstructed by the steering wheel in the DMS channel image, and the view includes the driver's chest and above, showing seatbelt and face features, with the face centered in the frame.

（3） Ideally, the DMS camera should be fixed in the center of the dashboard. If not possible, it can be installed with a maximum left or right deviation angle of no more than 30°.

2. After determining the installation position, use self-tapping screws to fix the DMS camera bracket base to the dashboard.

3. After fixing the base, adjust the DMS camera angle to ensure the driver's face is centered in the video frame in a normal driving posture, with the following conditions:

（1） The driver's face should be centered in the video frame, with the face and body straight and vertical in the frame, and the bottom edge of the frame below the driver's chest.

（2） The DMS camera's supplemental light should be on the face (do not light the seatbelt, as it may cause overexposure).

（3） No other objects (e.g., steering wheel) should obstruct the driver's face or seatbelt features in the DMS video frame.

4. Tighten the screws on the DMS camera bracket to ensure the camera does not move up, down, left, or right.

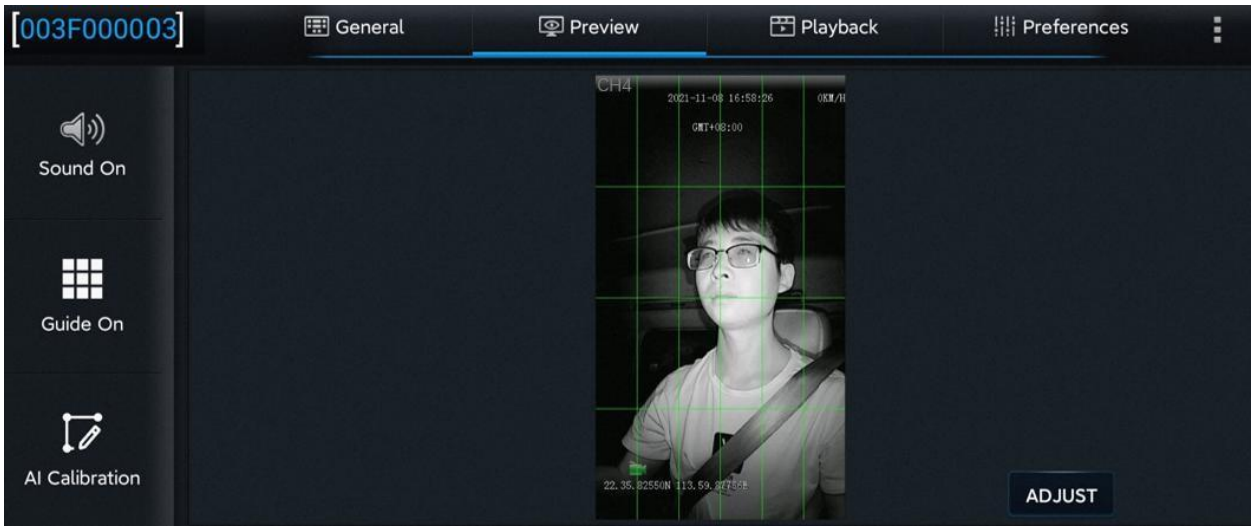
6.1.5 Calibration Requirements

Login to the "Veyes" APP:

1. **On the main page, click "Preview" to enter the preview interface.**

   Double-click the driver channel to view the main stream in full screen.

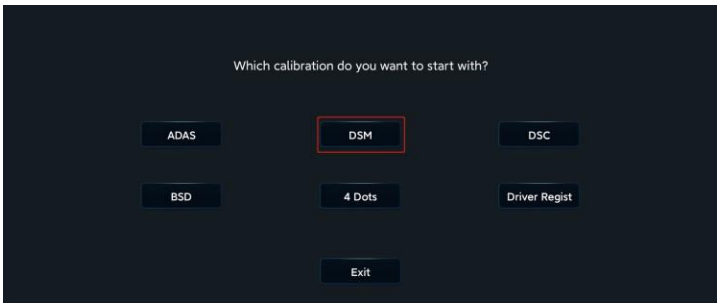
2. **Click "AI Calibration" to enter the calibration selection.**



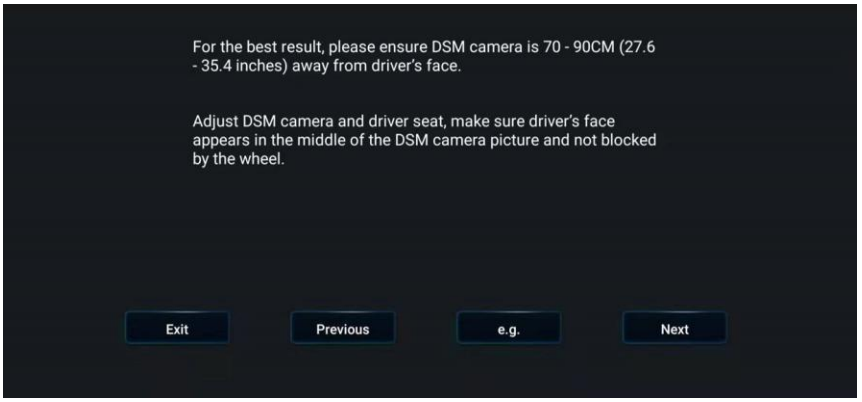
3. Select "DMS" for calibration.

4. Choose the corresponding channel for the DMS camera (select channel 3 here).

5. Click "Calibration" to proceed to the next step.



6. Confirm the prompt and click "Next" to proceed

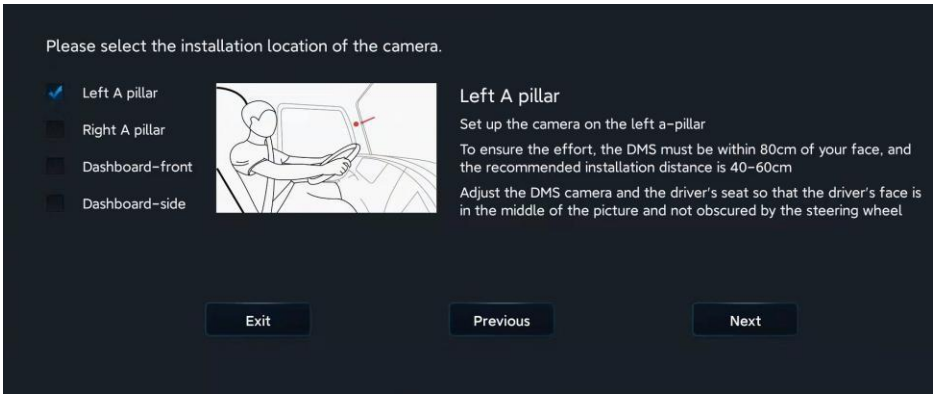


7. Select the DMS camera installation position

Options include Left A-pillar, Right A-pillar, Dashboard Front, and Dashboard Side. If unsure, click each option and refer to the example image and description on the right.

After selecting the corresponding installation method, the software will automatically associate the calibration method with the installation method. No manual selection of the calibration method is required (Left A-pillar, Right A-pillar, and Dashboard Side are all side calibrations, Dashboard Front is front calibration).

This step is crucial. Ensure the installation method selected matches the actual installation method.



*Note:

Before clicking "Next" to enter the formal calibration, the driver should sit in a normal driving posture and look straight ahead.

8. Click "Next" to proceed to automatic facial calibration:

During calibration, maintain a normal driving posture, look straight ahead at the road, and remain still.

The intelligent algorithm will automatically learn the driver's face angle and facial feature positions during side calibration. If the face moves during calibration, the process will automatically restart.

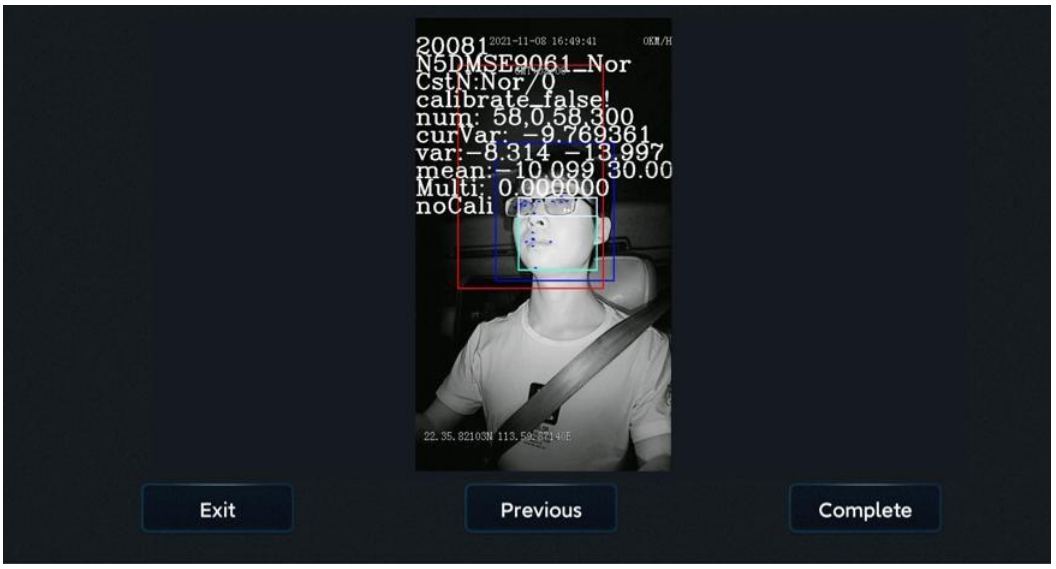
*Note:

For Left A-pillar, Right A-pillar, and Dashboard Side installations, there must be an angle between the face and the camera to complete the calibration.

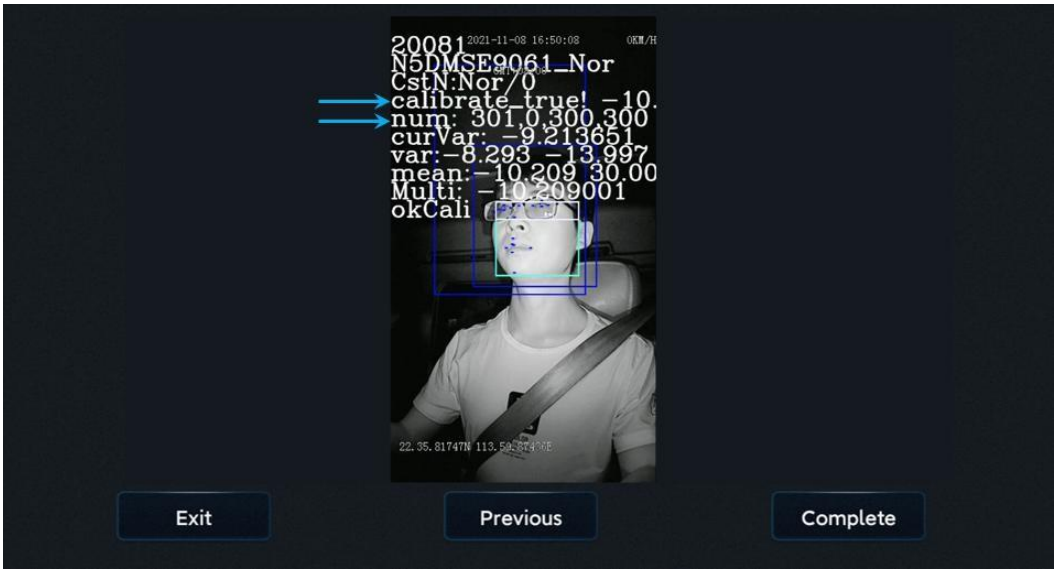
For Dashboard Front installation, the face must be directly in front of the camera to complete the calibration.

Sit still and wait for the device to complete automatic calibration. For side calibration, when the NUM value reaches 301 (for front calibration, when the value reaches 51), and the calibration frame changes from red to blue, the calibration is complete.

During Calibration:



After Calibration:



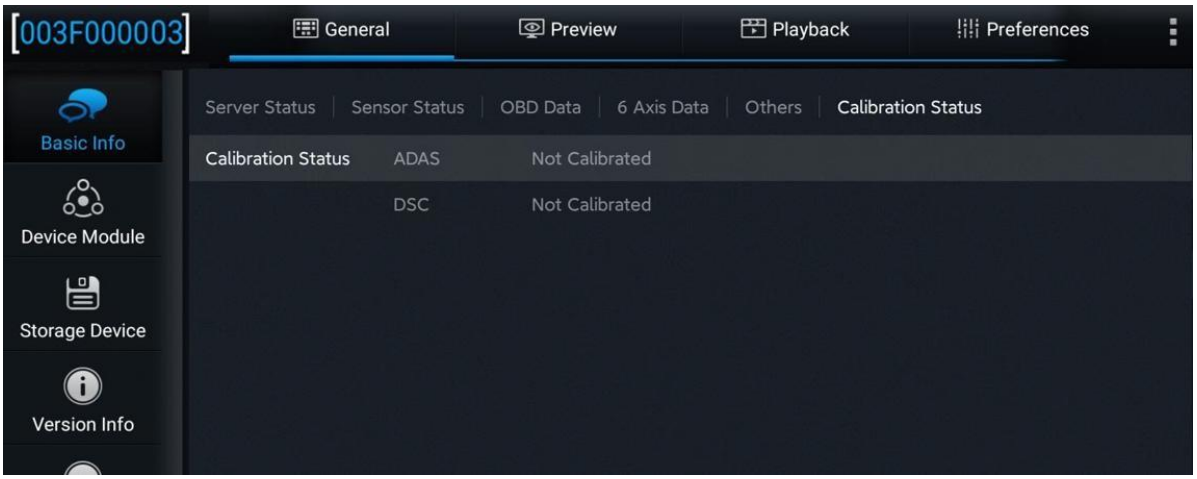
Click the "Complete" button to complete the calibration and exit calibration mode.

After the actual calibration of each algorithm channel, you can check the calibration success through Veyes. Click "General" > "Basic info" > "Calibration Status" in the Veyes interface to see if each channel has been successfully calibrated.

Note:

1) Only channels with enabled algorithms will display calibration status. The calibration status can be "Not Calibrated" or "Calibration Successful".

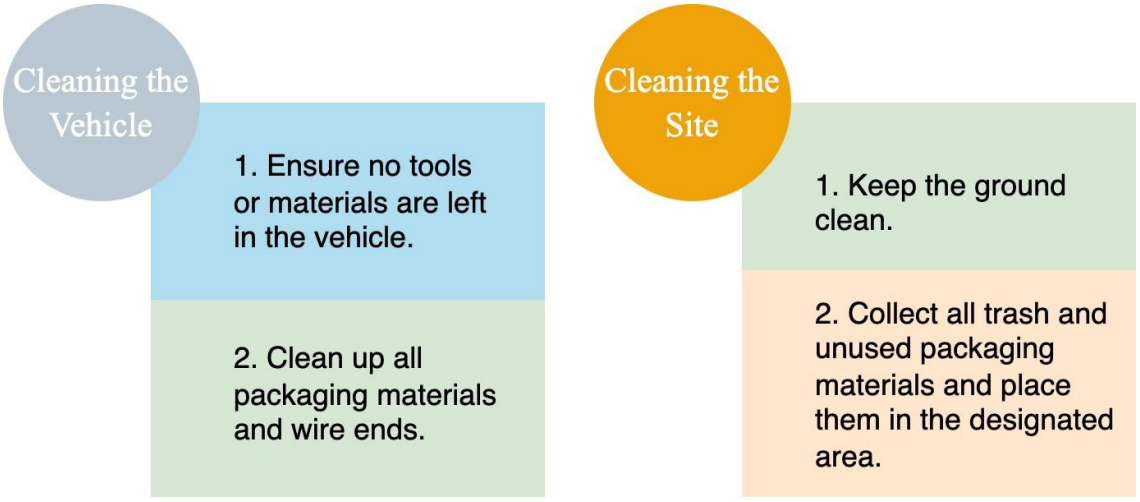
2) Since both ADAS and DSC are automatically calibrated and require the vehicle to actually drive for a period to complete, you may not immediately see the calibration success status prompt even after configuring the parameters.



7.Acceptance and Cleanup

7.1 Tidying and Cleaning

Clean the installation site, separating tools and trash for collection and removal. Restore the original placement of items in the car to complete the installation work.



7.2 Installation Acceptance

1.Perform acceptance checks according to the checklist provided by the customer, verifying each installation detail and parameter setting.

（1） Focus on checking parameter settings, take screenshots, and save them.

（2） Focus on checking video images, capture and save video clips.

2.Take photos of all equipment and the dashboard after installation is completed.

（1） Photograph the installation positions of all materials.

（2） Photograph the interior of the cab showing the final installation effect.