GREAT - WILL

广瑞科技

GREAT WILL TECHNOLOGY

GW-GR02
Installation Guide

CONTENTS

- 1. Introduction of product list

1. GR02 List

GR02 Host

ADAS

DMS

power suply

4G antenna

GPS antenna

ADAS extension line

1、GR02 accessories list

Surveillance camera

Reversing camera

display screen

SOS Button

pickup

TTS speaker

SD card

2、GR02 device interface description

NO.	Interface	Explain
1	SIM	Insert SIM card
2	SD1	Insert SD card, max. 128G
3	SD2	Insert SD card, max. 128G
4	USB	Connect phone or pad for parameter and AI calibration settings, etc.

NO.	Interface	Explain
1	AV1 /DMS	Connect DMS camera
2	AV2 /ADAS	Connect ADAS camera
3	AV3	Connect AHD camera (720P)
4	AV4	Connect AHD camera (720P)
5	4G	Connect 4G antenna
6	GNSS	Connecting antenna
7	POWER	Connect the power cord
8	RS232	Used to connect peripherals.
9	AV OUT	Connect the AV display screen to display real-time images.
10	SPK/TTS	Pick-up and speaker

3、GR02 Wire definition description

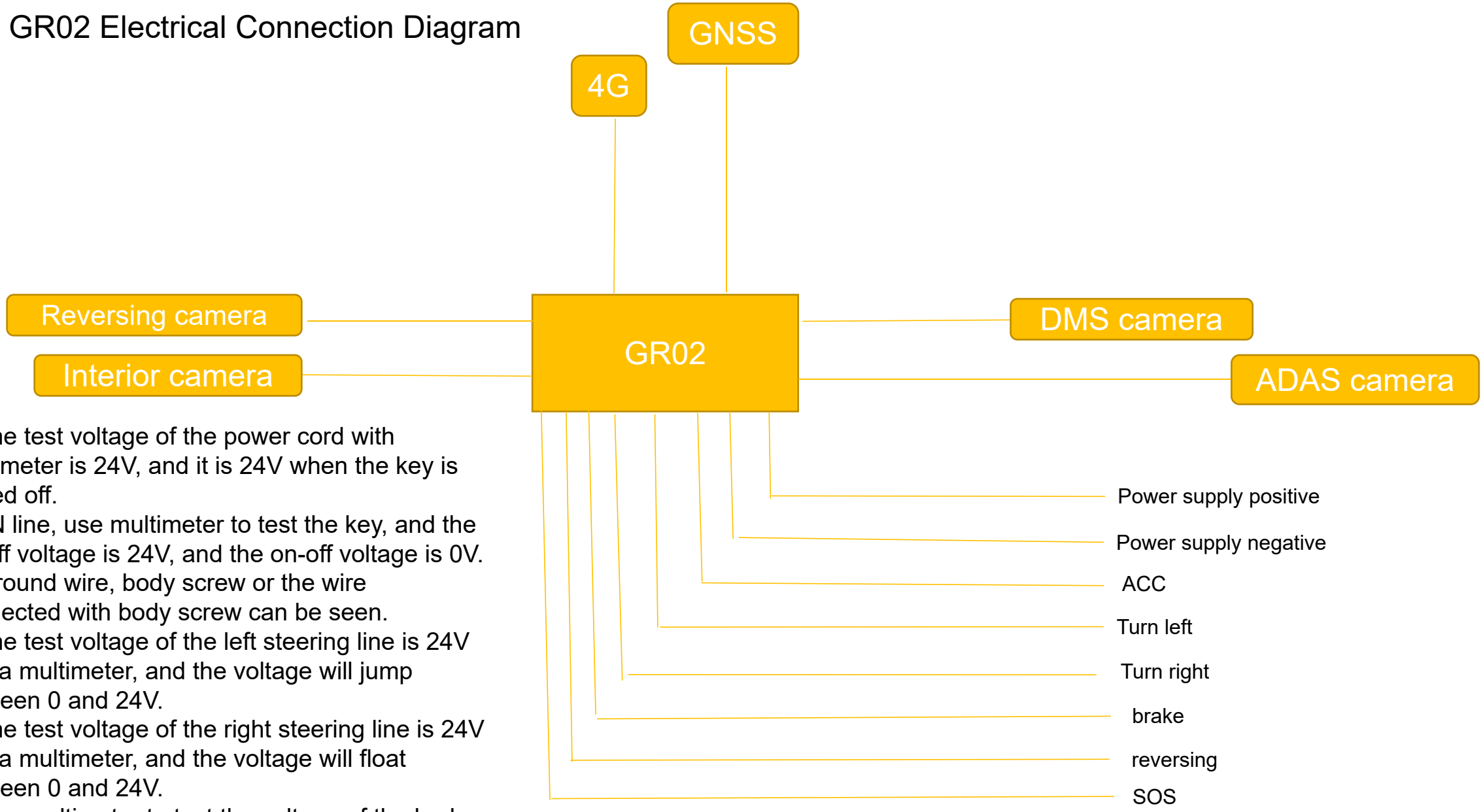
power wires

plug

Note: there is a logo on the power cord, so it is necessary to wire according to the logo, and a corresponding camera should be set for reversing images.

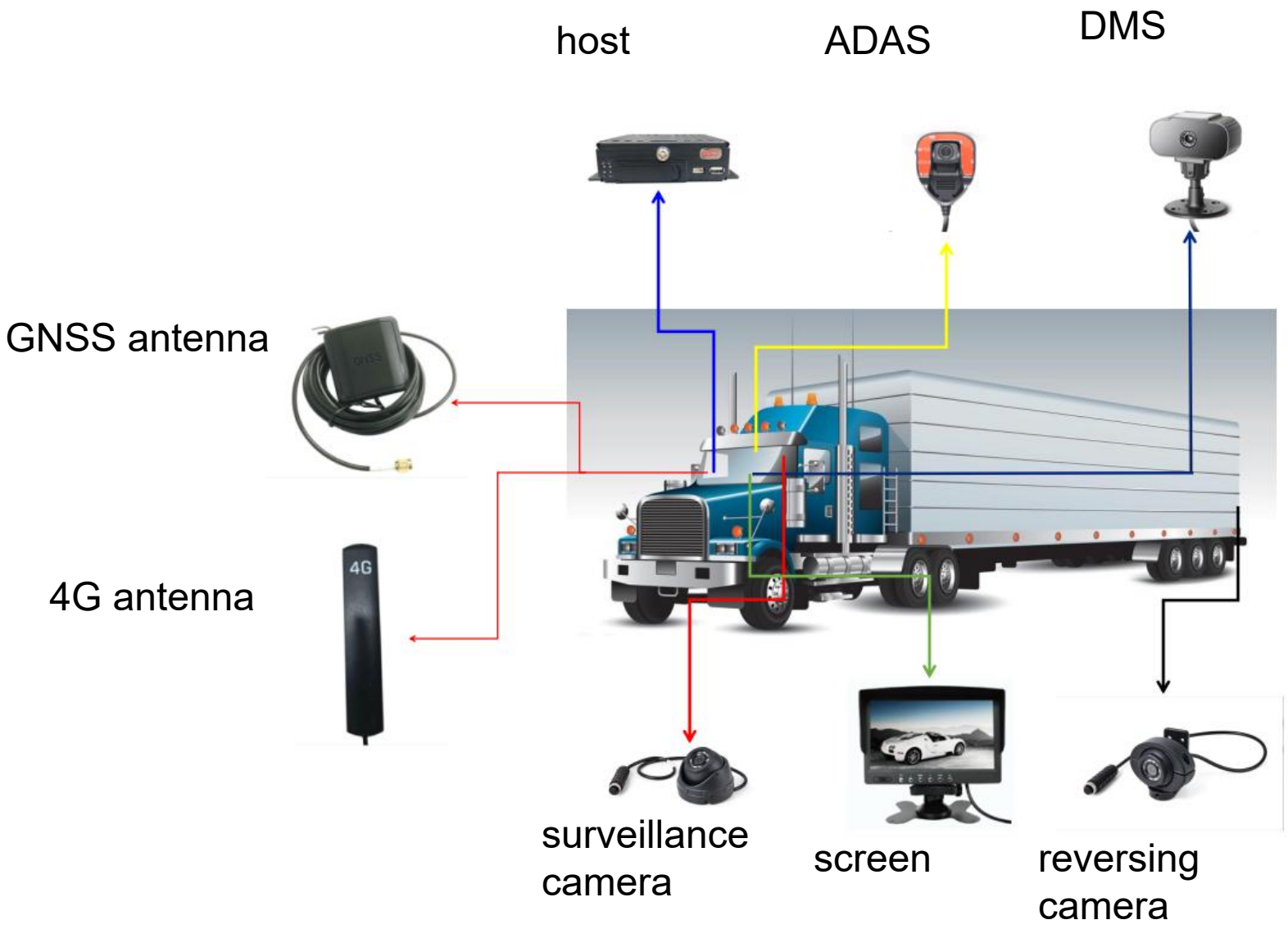
Pins	Features	Explanation	Pins	Features	Explanation
1	Negative power supply	black	2	Positive power supply	red
3	NC	NC	4	ACC	orange
5	Reversing	white	6	SOS	pink
7	Speed cable	white and black	8	left turn signal	red and black
9	Brake	black and white	10	right turn signa	red and white

4. GR02 Electrical Connection Diagram



1. The test voltage of the power cord with multimeter is 24V, and it is 24V when the key is turned off.
2.ON line, use multimeter to test the key, and the on-off voltage is 24V, and the on-off voltage is 0V.
3. Ground wire, body screw or the wire connected with body screw can be seen.
4. The test voltage of the left steering line is 24V with a multimeter, and the voltage will jump between 0 and 24V.
5. The test voltage of the right steering line is 24V with a multimeter, and the voltage will float between 0 and 24V.
6. Use multimeter to test the voltage of the brake line, and the voltage is 24V when stepping on the brake and 0V when not stepping on the brake.

5. Brief introduction of equipment installation location map



2. GR02 Installation and Construction Guidance

1. installation of SIM card and SD card

Open the SIM /SD card door.

Get the SIM card /SD card ready.

Insert SIM card

Insert SD card

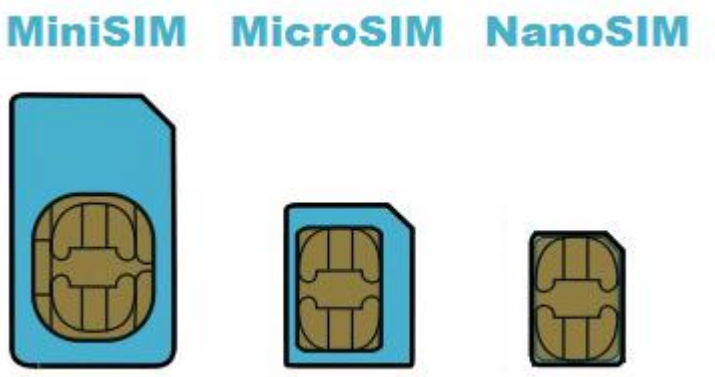
Confirm that the SIM card
and SD card are installed OK.

Close and lock the door.

SIM precautions

Industrial MP2 ceramic integrated SIM card

recommended



MP1 SIM卡

Not recommended.

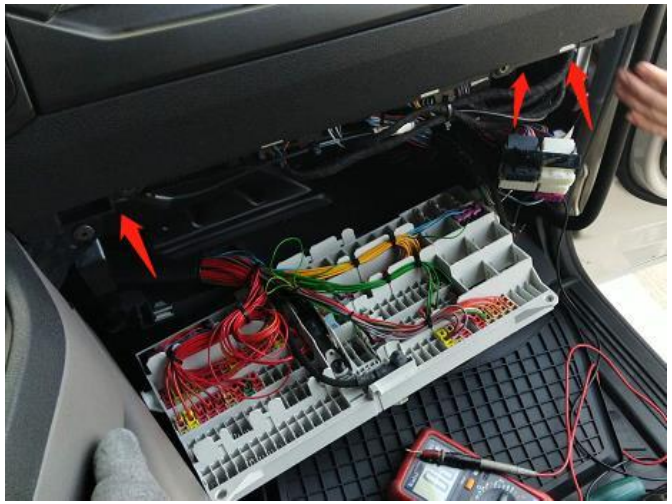
not support

Note: Do not touch the metal part of SIM card with your fingers to avoid dust and sweat stains.

2、2.1. Installation of main engine: GR02- Remove decorative plate

1. Disassemble the panel

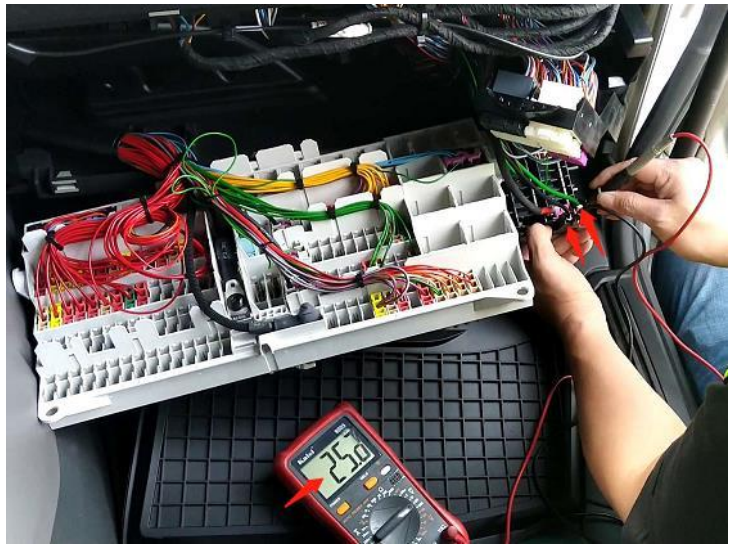
2. Unpack the terminal box.



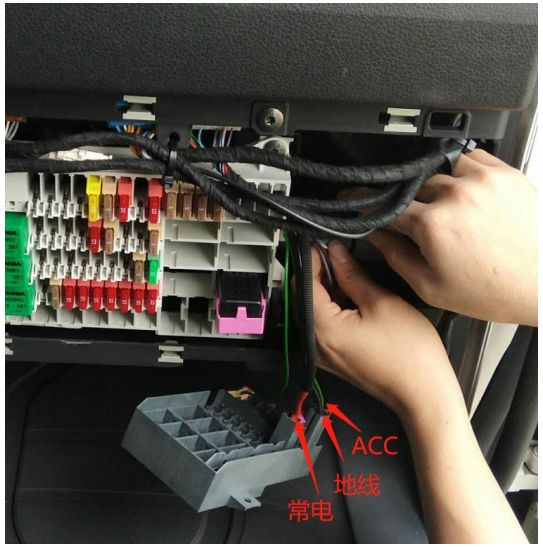
3. Disassemble the fuse box

1. Check the instrument to make sure there is no trouble before implementation, determine the installation position of the main engine, and disassemble the co-pilot panel. (Figure 1)
2. Disassemble the spare plug or fuse box of the original car. Each car is different. Find the needed wiring bunch. (Figure 2)
3. Disassemble the fuse box and test the voltage of the bunch. The vehicle in this case is Scania. (Figure 3)

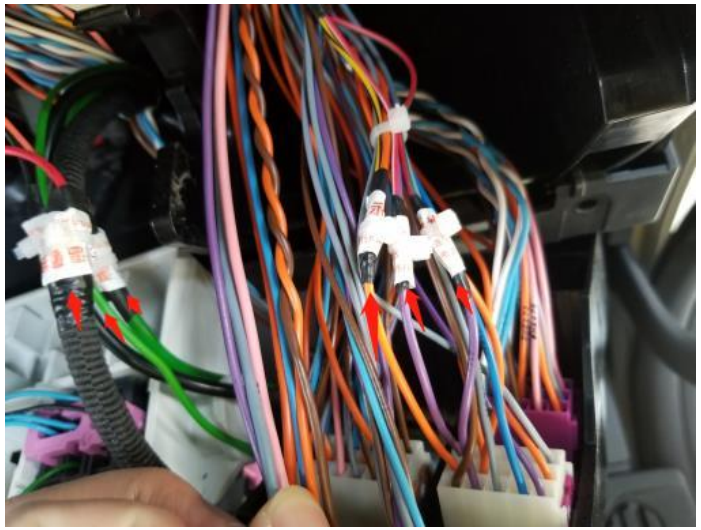
2.2.2 Installation of main engine: GR02- Vehicle wiring bunch search and wiring



1. Disassemble the panel



2. Wiring bunch



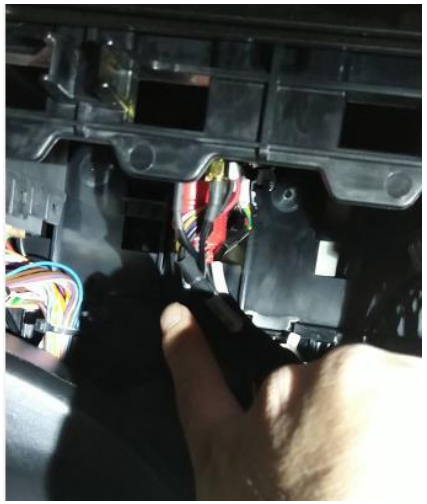
3. Wiring

1. Disassemble the car panel, and find the positive power supply, negative power supply, ACC, left steering and right steering brake lines at the switch box.
2. Measure the bunch voltage with a multimeter, and connect the main power line of GR02 equipment to the positive power supply, negative power supply and ACC to the vehicle ignition line.
Wiring electrical adhesive tape+fragile adhesive tape+cable tie. Please disconnect the main power supply when wiring.
3. The wiring position of each car is different, and the actual situation shall prevail.

2.2.3. Host installation: hidden

1. Connect the plug properly.

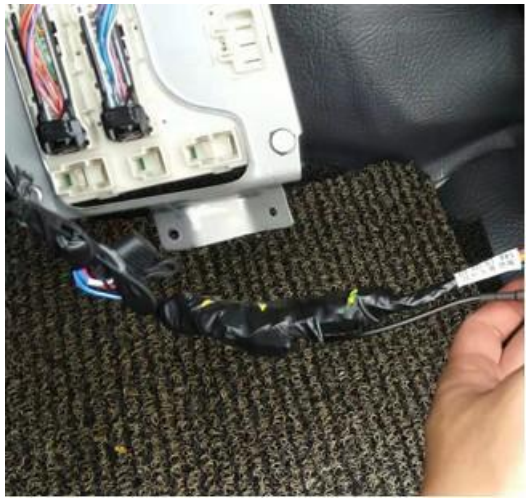
2. Fixed position of the host



3. Tie fixing

1. The installation location of GR02 host takes priority to hide the installation. (Refer to the above installation position)
2. Connect all plugs first (Figure 1), and then fix the host after debugging.
3. The main machine is fixed with cable ties (Figure 3) to ensure that the equipment will not be loosened or dropped.
4. Make sure the key lock is closed, and the SD card should be installed in the order of 1-2.
5. Pay attention to the antenna installation. GNSS and 4G cannot be connected reversely.

2, 2.4, wiring bunch and antenna fixation

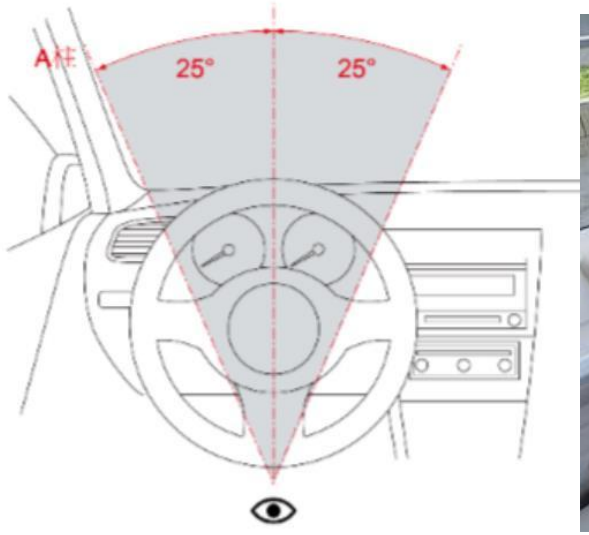


1. Wrap the main power cord.

2.GNSS, 4G antenna

1. The main power cord must wrap the redundant wiring bunch with insulating tape, and be fixed on the car body hardware with cable ties.
2. There are redundant wire harnesses in the middle of GNSS and 4G antennas, which must be fixed with two cable ties, and then fixed on the car body hardware with cable ties.
Note: In order to reduce interference, the distance between antenna and antenna and between antenna and host is more than 80CM, and the antenna cannot be shielded by metal.

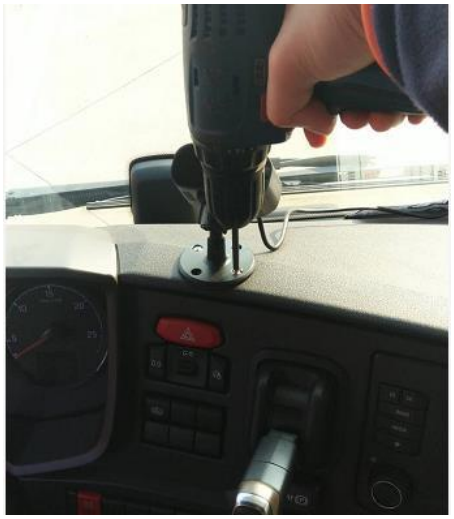
3. Camera installation -DMS installation location selection



Note: The fixed position of DSM equipment is in the 25 area around the driver's eyes, usually installed on the right side of the steering wheel, calibrated and fixed by AD debugging assistant!
The distance between the camera and the face is 60CM-120CM, and 80CM is recommended as the best distance.

1. Tear the lens protective film and 3M glue

2. Paste the camera



3. Screw the DSM

1. Determine the installation position of DSM anti-fatigue camera.
2. Tear off the 3M glue of the base, position the anti-fatigue camera, and fix the base with screws, which need 4 screws.
3. Adjust the angle, and the calibrated locking screw should be sealed with fragile paste. Connect the line to the host face interface (AV1/DSM).
4. The height of the base is adjustable, which needs to be adjusted to the best portrait acquisition effect.

DMS calibration

Figure 1

Figure 2

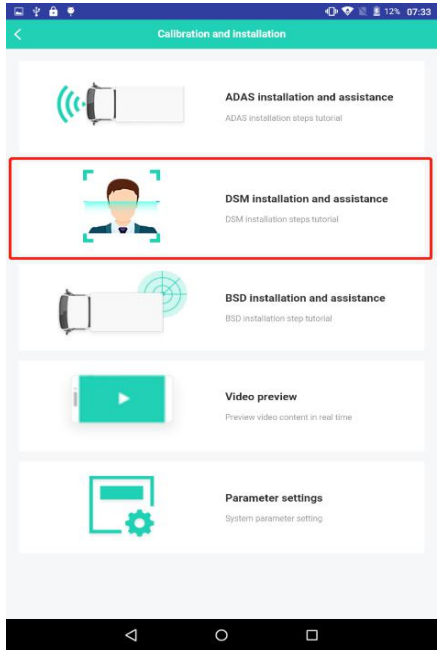
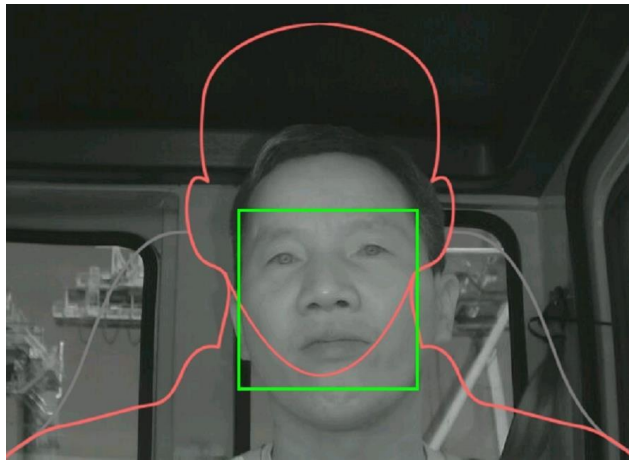
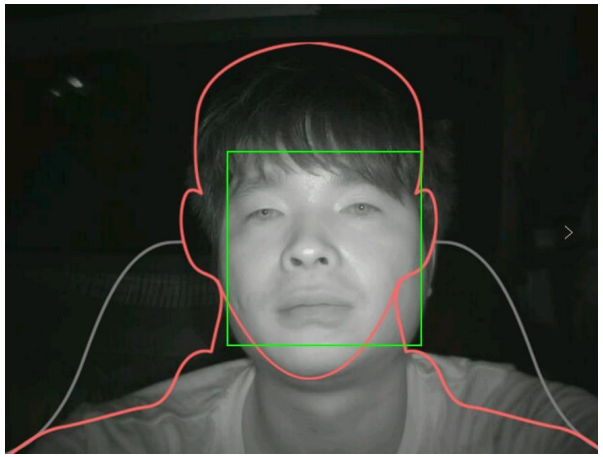


Figure 3



wrong

Figure 4



correct

Calibration steps and precautions:

1. Adjust the steering wheel to the best position of driving state.

2. Before calibration, the driver should sit upright.

3. The distance between the camera and the face is 60CM-120CM. It is recommended to look straight ahead and to the right at the best eye of 80CM, as shown in Figure 1 4. After the host and the tablet are connected, the AD assistant will pop up automatically, and then click DMS calibration, as shown in Figure 2 5. Make sure the face is in the center of the red frame of DMS camera, as shown in Figure 4.

DMS Display

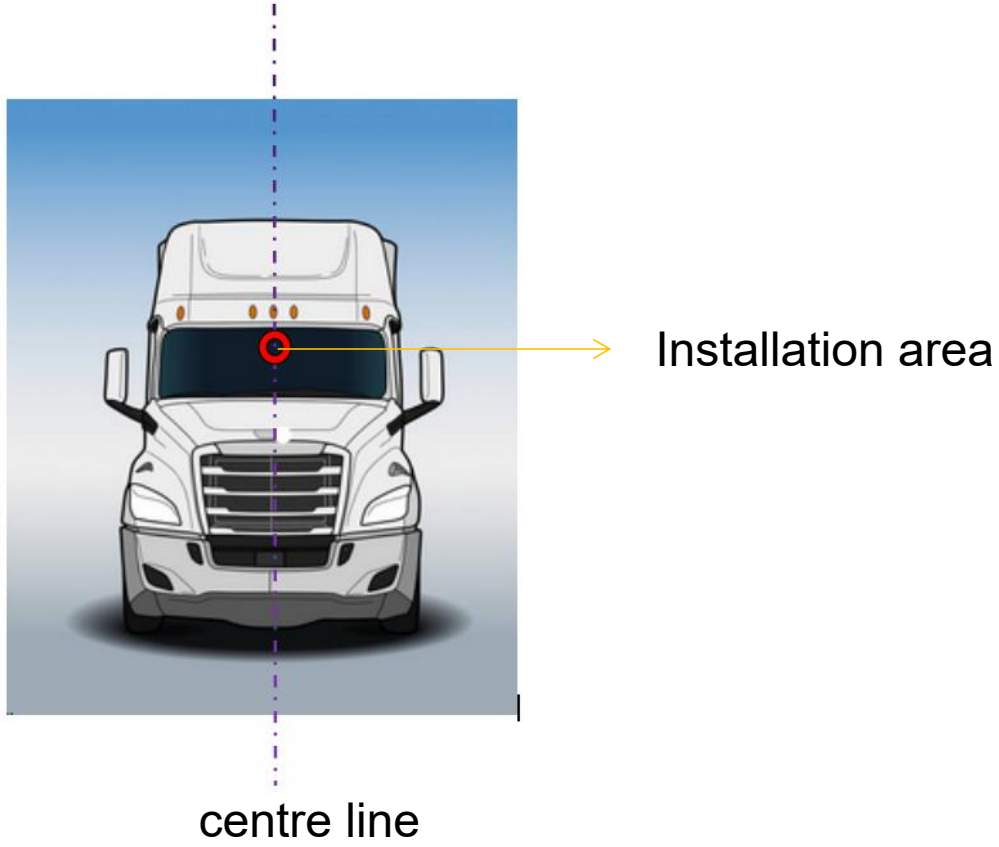
fatigue

make phone call

smoking

distracted

4.4.1 Camera installation -ADAS installation location selection



Host: DMS has the same interface as ADAS, so be careful not to plug in the wrong interface.

Step 1 clean the glass

2. Plug in the extension cord.

Step 3 paste the camera

1. Determine the installation position of the camera, and clean the dirt and dust on the glass surface before installation. (Figure 1)
2. Connect the ADAS camera with the camera extension cable (Figure 2), and fix it at the center of the front windshield witha wiper.
To, and paste perpendicular to the vehicle table position! Please hide the wiring harness from installation.
3. After adjusting the angle, the adjusted locking screw should be sealed with fragile paste. Connect the line to the host ADAS interface.
Note: If there is a black line on the center line of the windshield, the camera should avoid the black line.。

4、4.2.1 ADAS Calibration

Calibration diagram

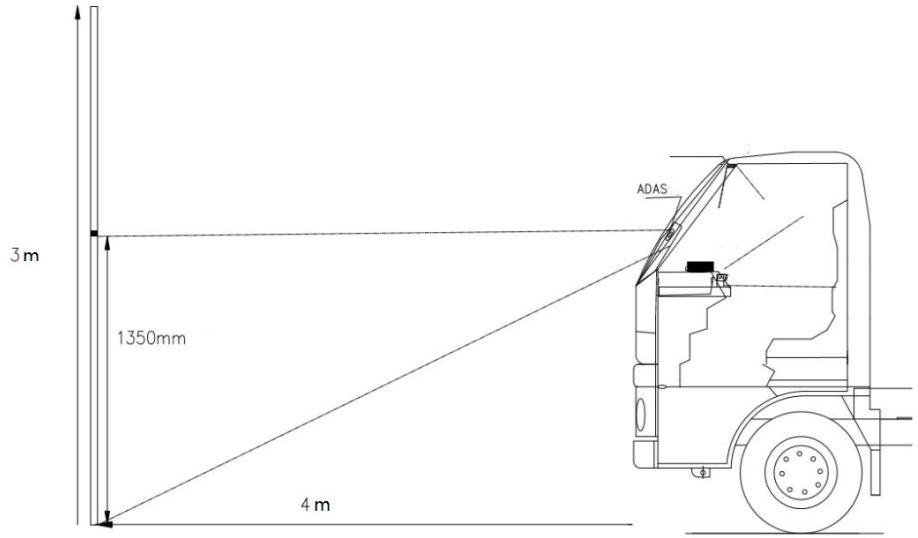


Figure 1

1. Prepare a 3-meter-long tower and stand 4 meters away from the camera, as shown in the figure.
2. Adjust the height of the benchmark to be consistent with the height of the ADAS lens. (Figure 1)
3. Compare the adjusted benchmark with ADAS lens to ensure the same height.
4. Put the adjusted benchmark 4 meters away.
5. Pay attention to placing the benchmark in front of the front of the car, and ensure that the benchmark is placed in the middle of the axle.
6. According to Figure 1, Figure 2, Figure 3, Figure 4 and Figure 5
Measure the corresponding parameters.
7. According to the installation height of ADAS of different models, the calibration data should be adjusted appropriately.

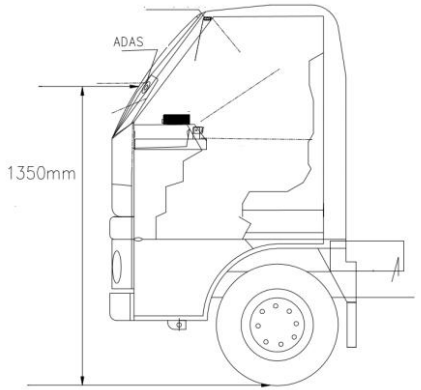


Figure 2

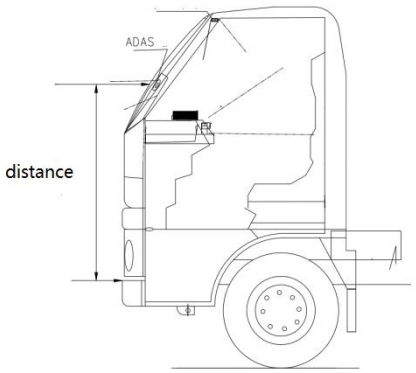


Figure 3

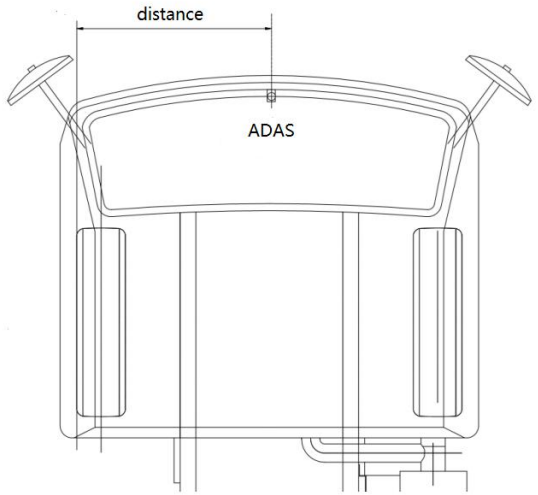


Figure 4

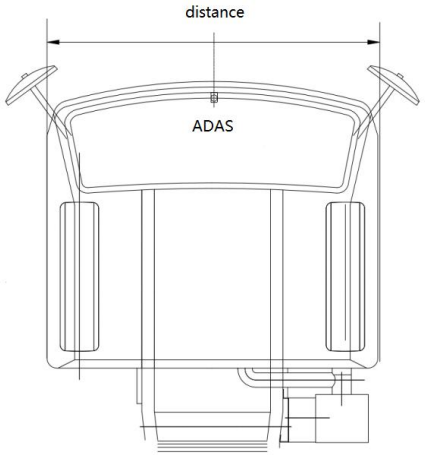
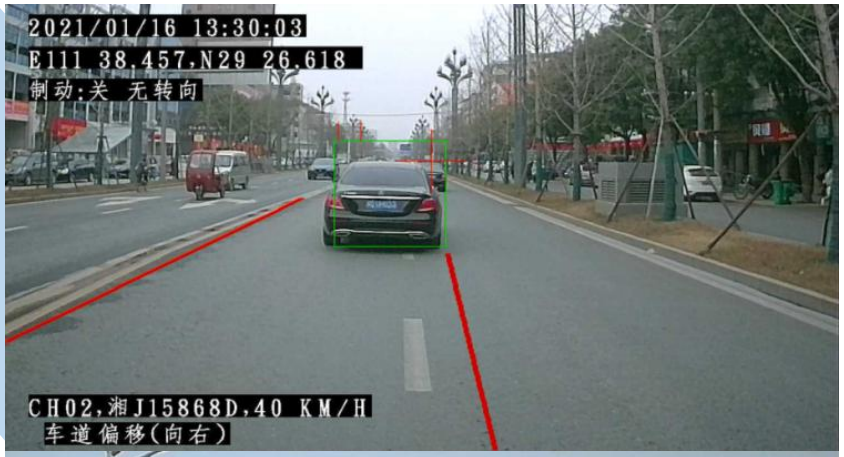


Figure 5

ADAS effect display The accuracy rate is over 95%, which can greatly reduce the possibility of accidents!

Lane departure warning

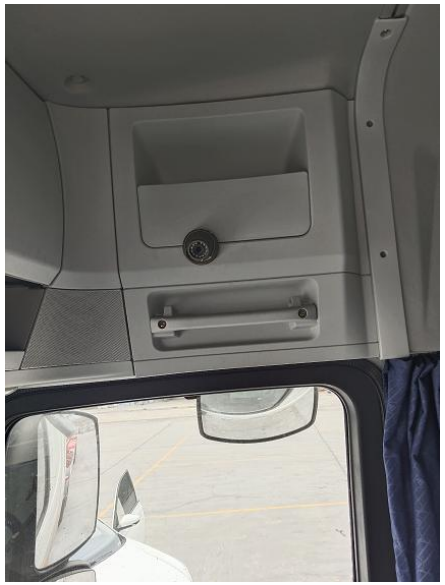


Front vehicle collision warning

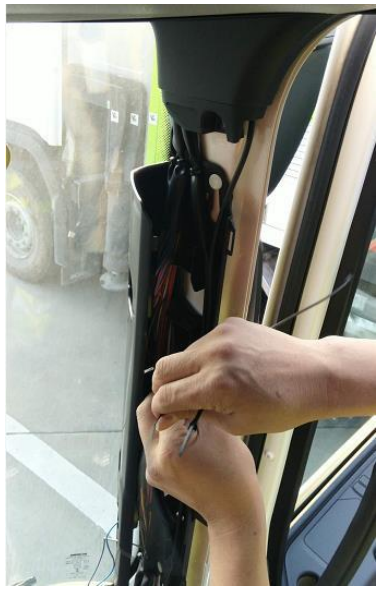
Vehicle proximity warning

Pedestrian anti-collision warning

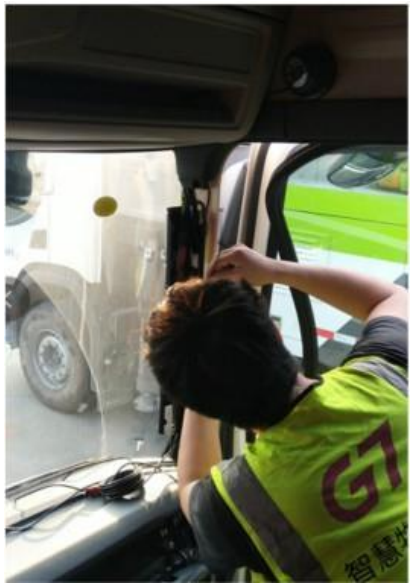
5. Camera installation: indoor camera (2 out of 4)



1. Surveillance camera



2. Camera wiring



3. Camera fixing effect

1. The surveillance camera should be installed above the co-driver's seat, fixed by screws, and the infrared point should be at the bottom. (Figure 1)
2. Dismantle the A-pillar or B-pillar, enter the video extension cable from the A-pillar or B-pillar into the instrument panel, and fix the wiring harness. (Figure 2)
3. The video extension cable is fixed on the car body with a cable tie, and threaded from the A-pillar or the B-pillar (depending on the actual loading situation) to the AV3 port on the host. (Figure 3)

6. Camera installation: reversing camera (2 out of 4)

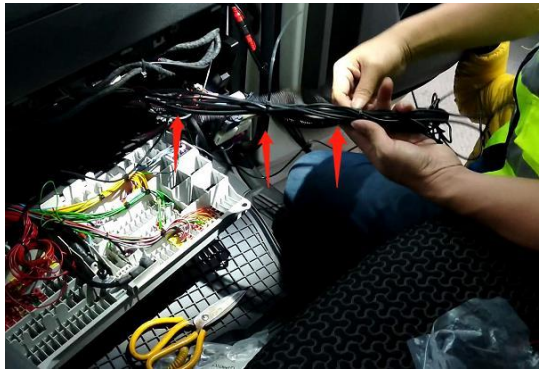
1. Camera

2. Camera selection

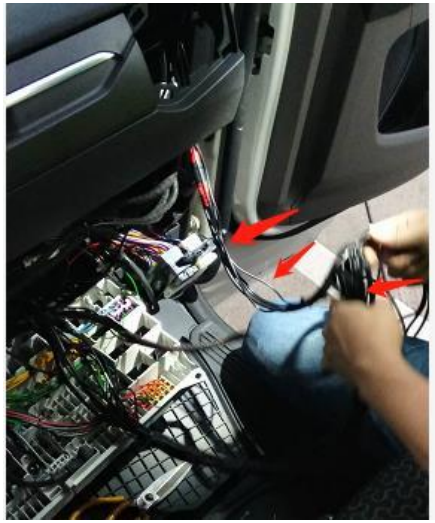
1. The rear road condition camera shall fix the rear of the car and fix it with bolts.
2. Connect the video extension cable to the AV4 interface of the host.
3. To use the reversing image, an AV display screen should be installed on the cab instrument.

1. Connect the rear road condition camera with video cable extension, and wrap the aviation head with insulating tape.
2. Route the video extension cable along the trailer girder, and fix the harness with cable ties.

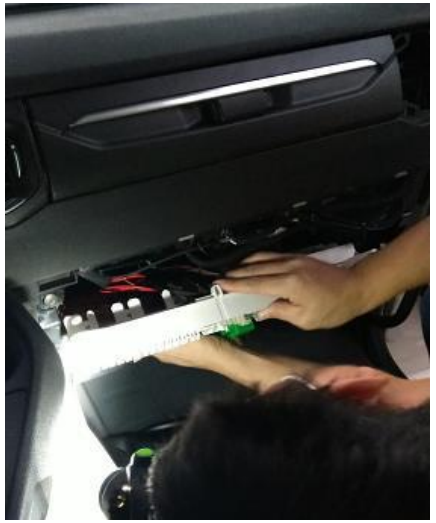
7. After the installation is completed: tidy up the wires and restore it.



1. Fix with cable ties.



2. Fix the redundant wires.



3. Recovery

1. Use cable ties to fix it every 30CM, and then fix it with the hardware parts of the vehicle.
2. Cut off the excess cable ties to ensure that the harness is not scattered.
3. Restore the removed panel after the installation. Note: Snap the buckle into place.

3. Host parameter setting

The 1.1.1.AD debugging assistant APP download guide

1. Android phones scan the above QR code with a browser, download it to the phone, and then use USB data cable to link the host to set it.

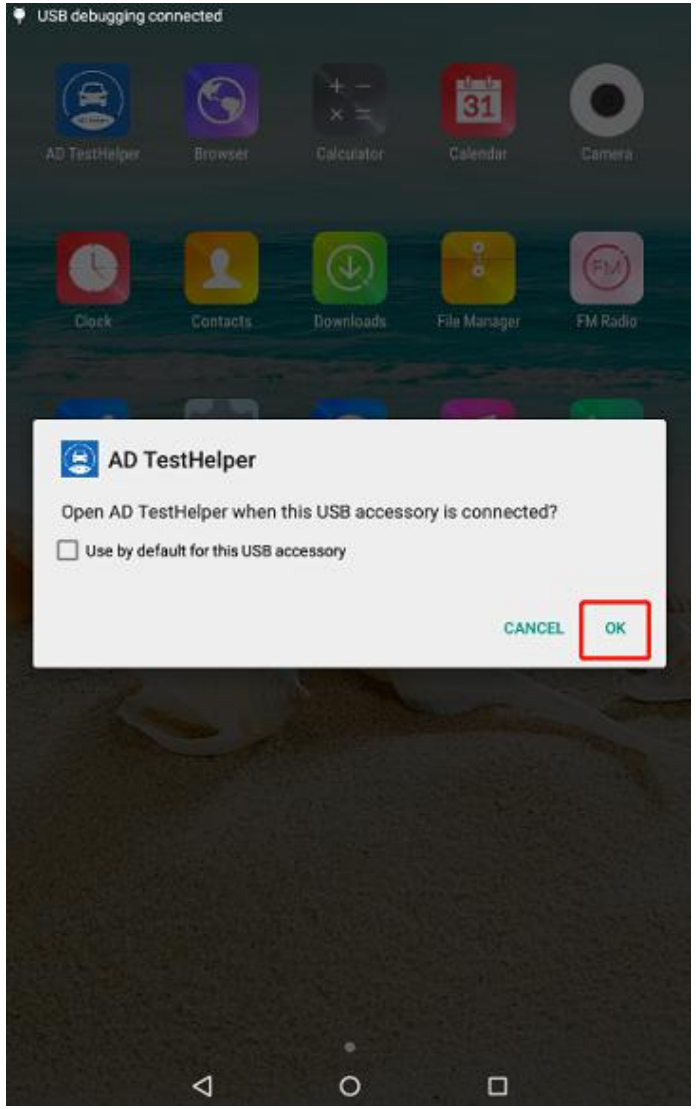
1.1.2. link of ad debugging assistant and APP application (only Android phones are supported)

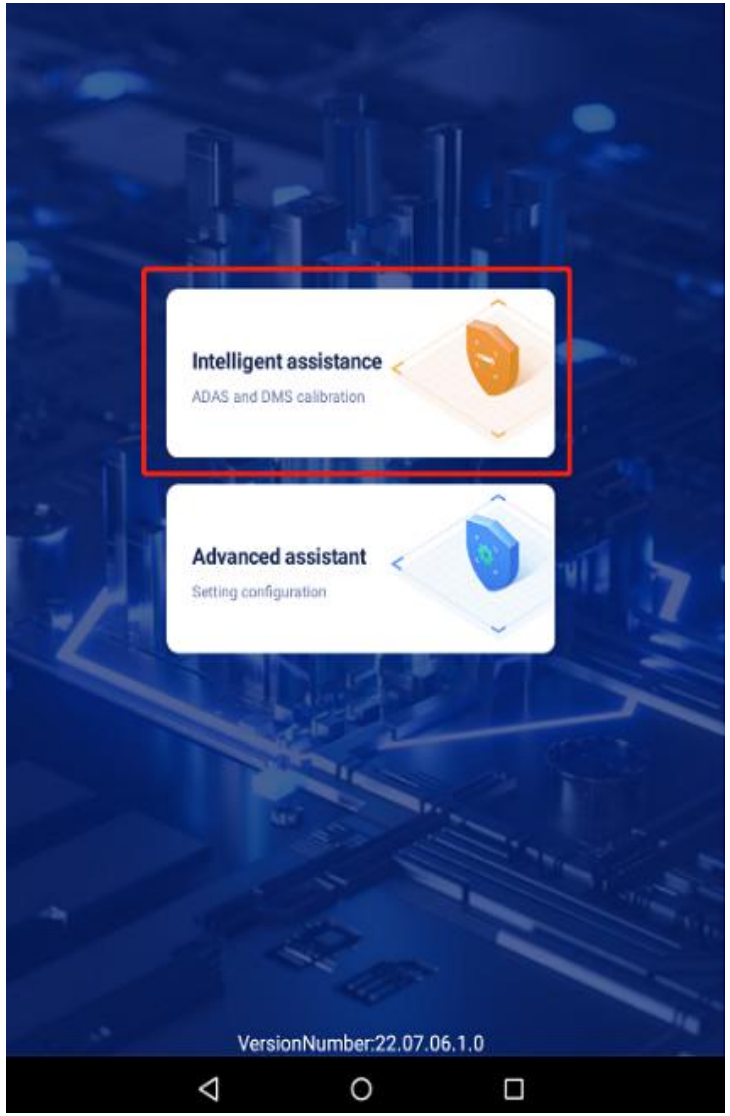
Operation and steps:

1. First insert the data cable of the mobile phone into the USB port of the front panel of the host device (Figure 1).

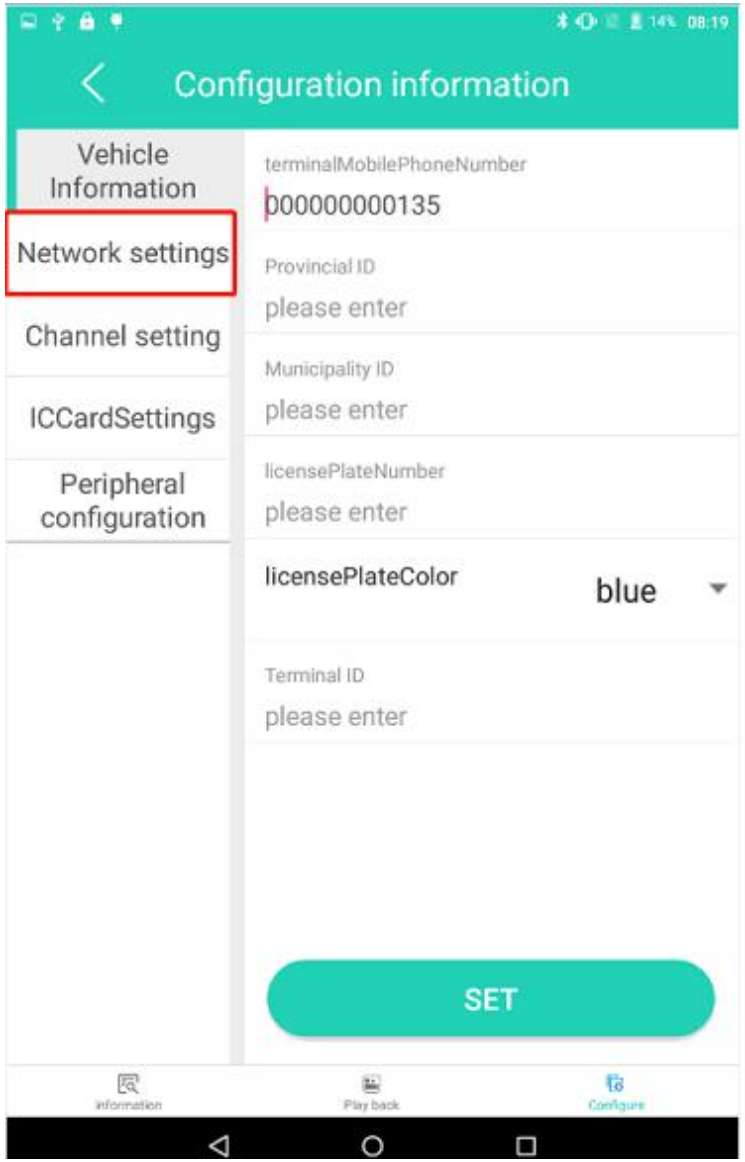
2. Open the AD debugging assistant on your mobile phone and start setting.

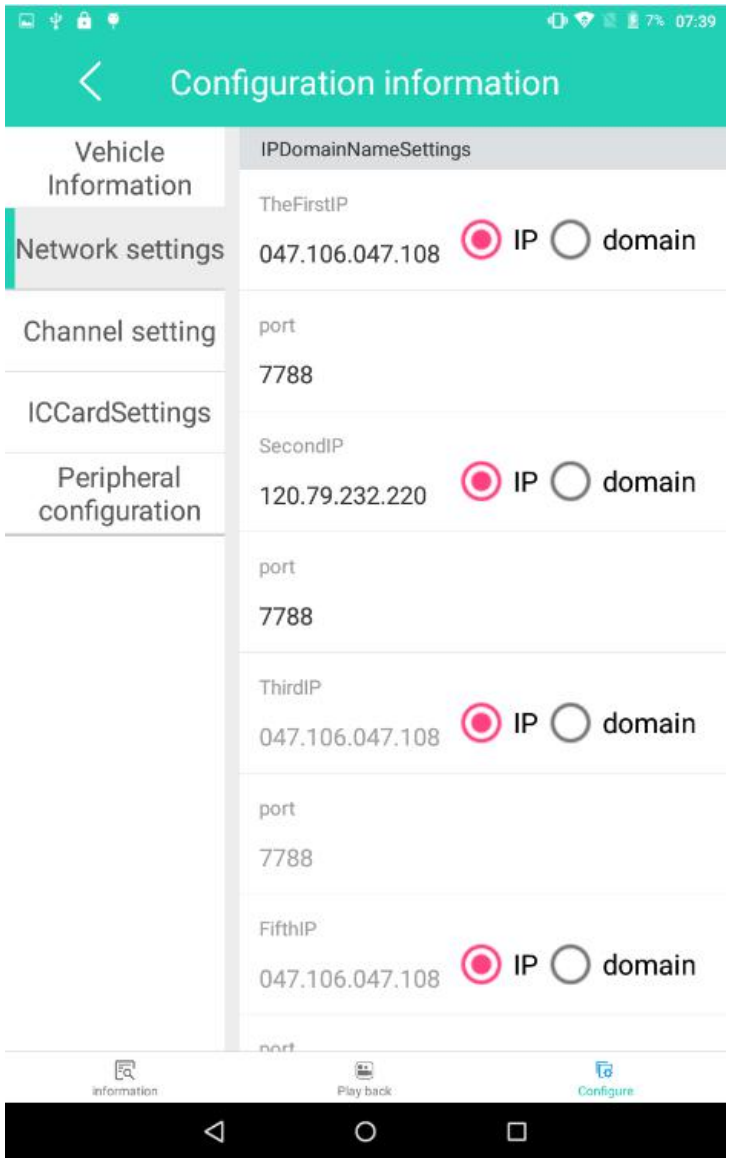
1.1.4 Interface operation process



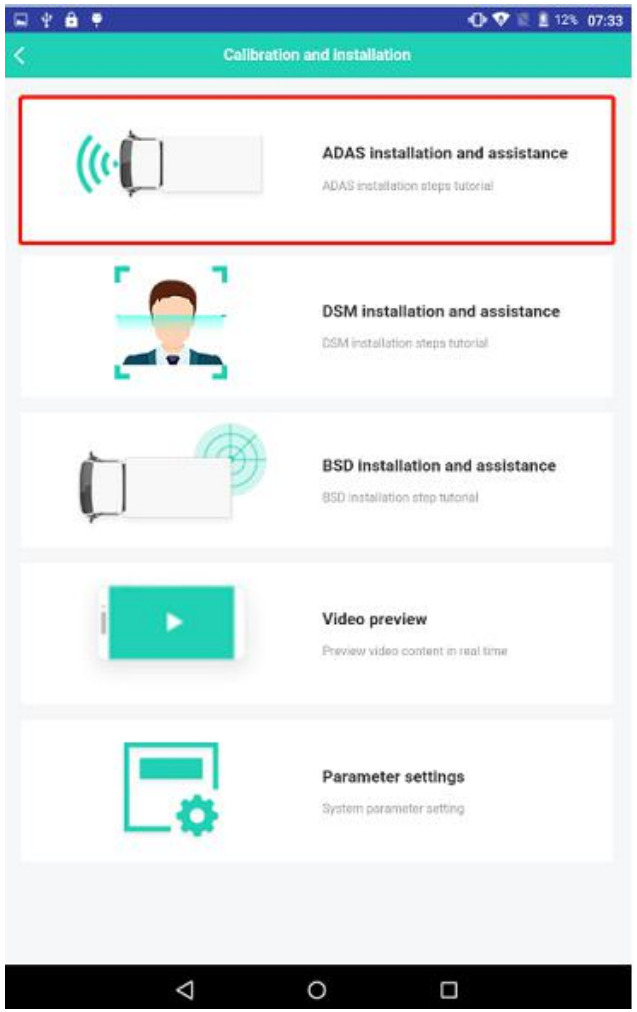


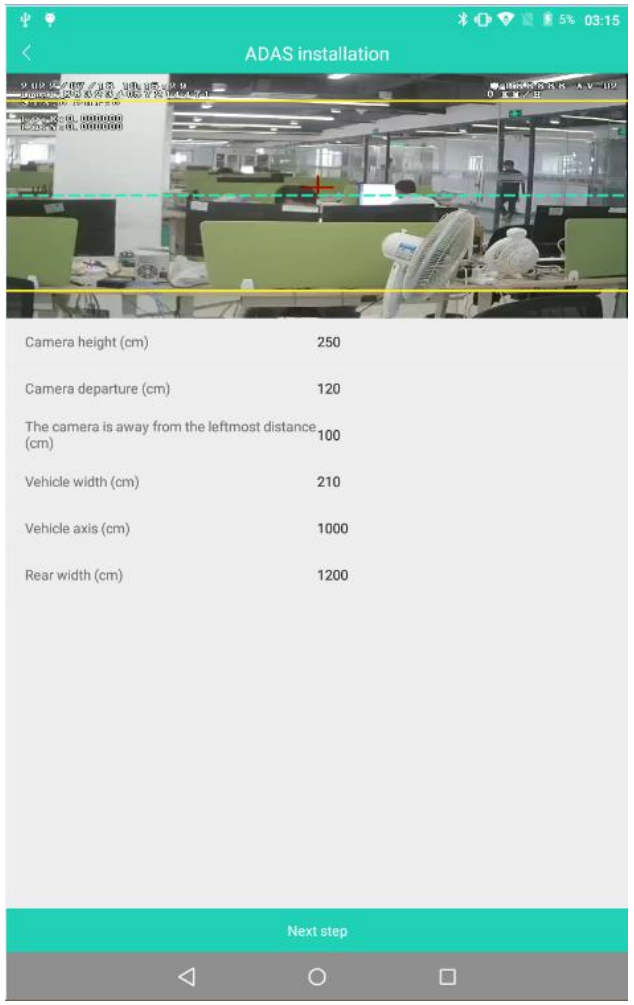
2. Parameter setting





3. AI calibration: ADAS setting



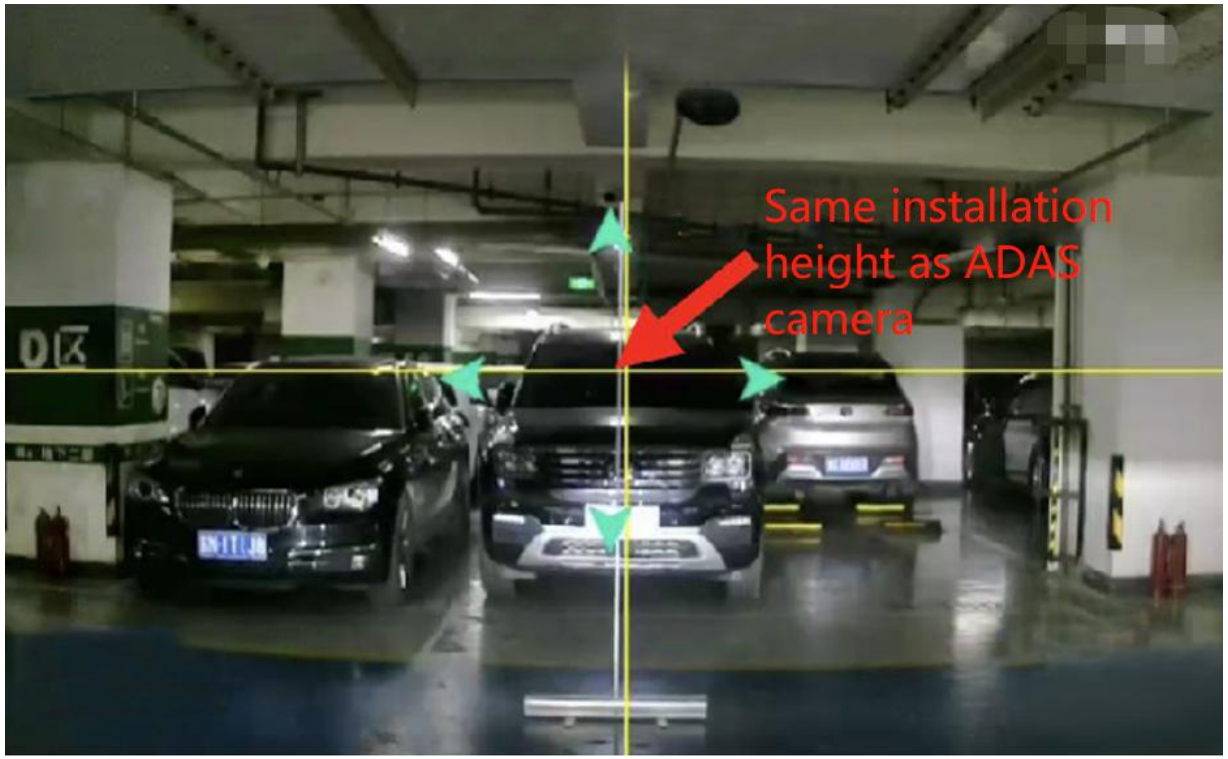


Remarks: There will be differences in the calibration parameters of different models, and the actual installation situation shall prevail.

3.2、AI Calibration: Contour ADAS Calibration

It is suitable for customers who are limited by the actual venue and cannot find a suitable venue. The car can be parked in the parking lot with a clear space of approximately 5 meters in front of the vehicle.

After inputting the corresponding parameters, place the calibration rod (or equivalent pole, ruler, etc.) at a position 4m (±0.5m) away from the ADAS camera, facing the middle of the front of the car, and at the position where the calibration rod and the ADAS camera are the highest Good mark (stick red cloth strips or tape), mark it as the calibration point (the vanishing point of heaven and earth). Align the yellow cross with the marked point.



(2.1)Enter following parameters (Be sure to measure the actual vehicle parameters!)

① Camera height,Unit:cm (Note: The vertical height between the camera installation position and the ground)

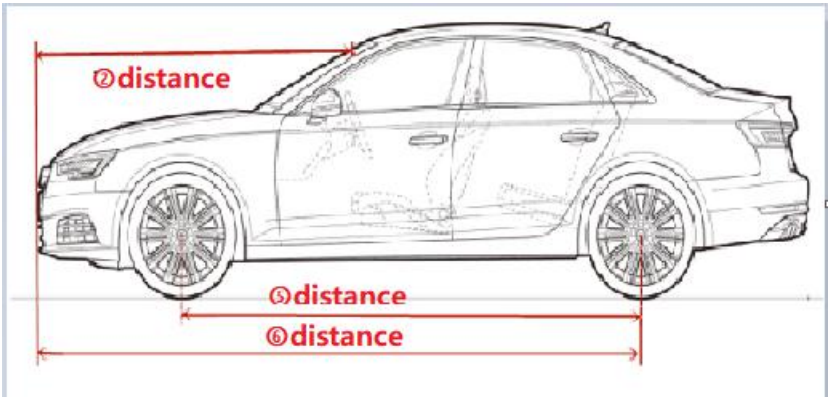
② The distance between the camera and the front of the car,Unit:cm (Horizontal distance between the camera and the front bumper)

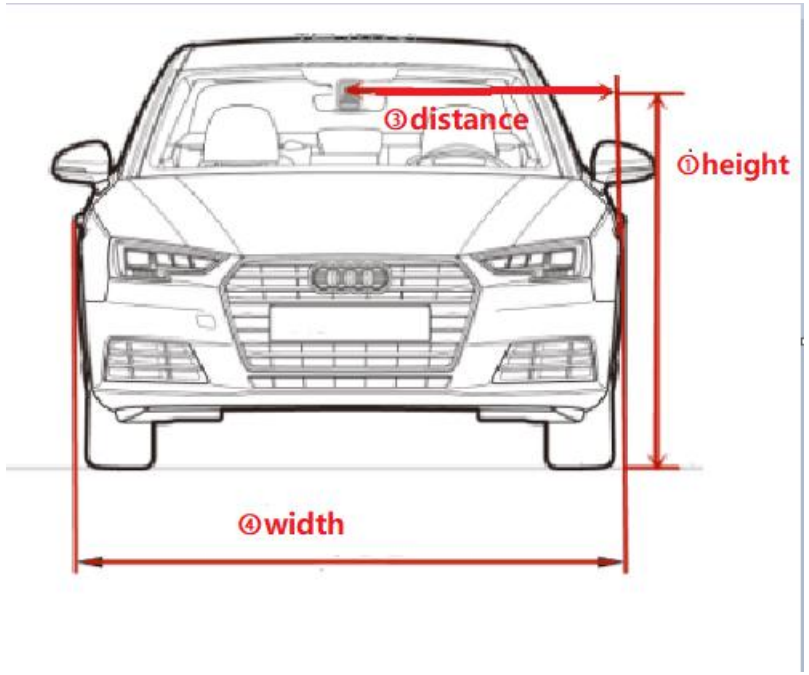
③ Distance between camera and far left ,Unit:cm (Note: The distance between the camera and the front left wheel of the vehicle)

④ Vehicle width ,Unit:cm (Note: Distance from the outside of the left front wheel of the vehicle to the outside of the right front wheel of the vehicle) ;

⑤ wheelbase of a vehicle ,Unit:cm (Note:Distance from front axle to rear axle of a vehicle)

⑥ Rear wheelbase of vehicle ,Unit:cm (Note: The distance from the front bumper to the rear axle of the vehicle)





(2.2)Enter following parameters (Be sure to measure the actual vehicle parameters!)

① Camera height,Unit:cm (Note: The vertical height between the camera installation position and the ground)

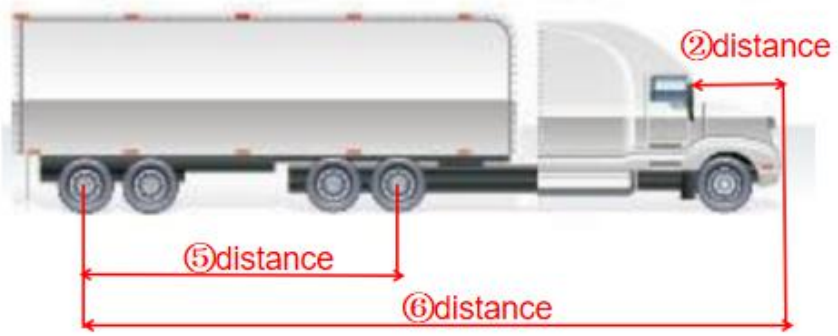
② The distance between the camera and the front of the car,Unit:cm (Horizontal distance between the camera and the front bumper)

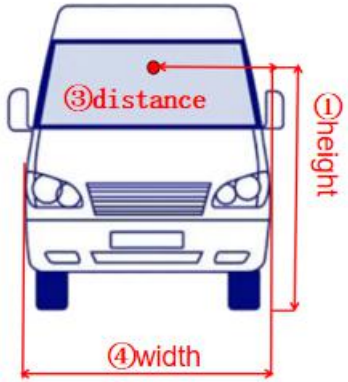
③ Distance between camera and far left ,Unit:cm (Note: The distance between the camera and the front left wheel of the vehicle)

④ Vehicle width ,Unit:cm (Note: Distance from the outside of the left front wheel of the vehicle to the outside of the right front wheel of the vehicle) ;

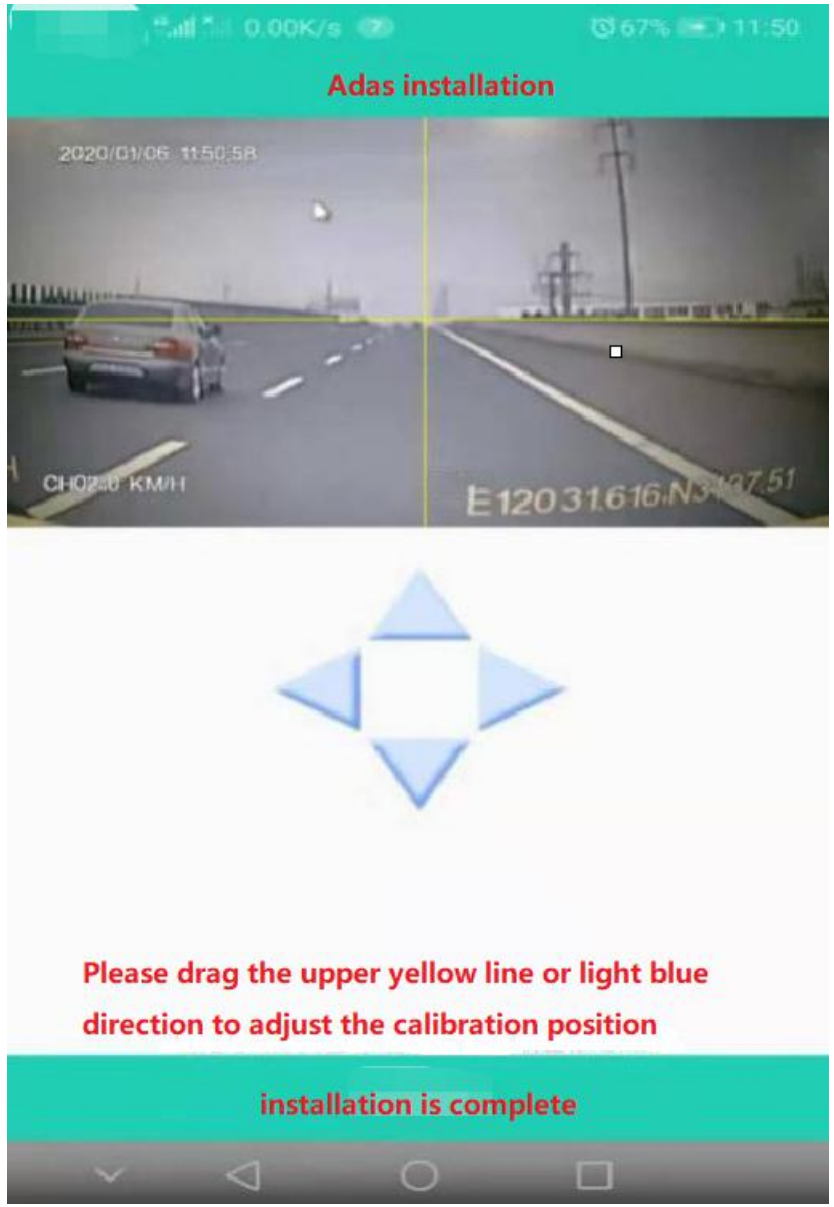
⑤ wheelbase of a vehicle ,Unit:cm (Note:Distance from front axle to rear axle of a vehicle)

⑥ Rear wheelbase of vehicle ,Unit:cm (Note: The distance from the front bumper to the rear axle of the vehicle)

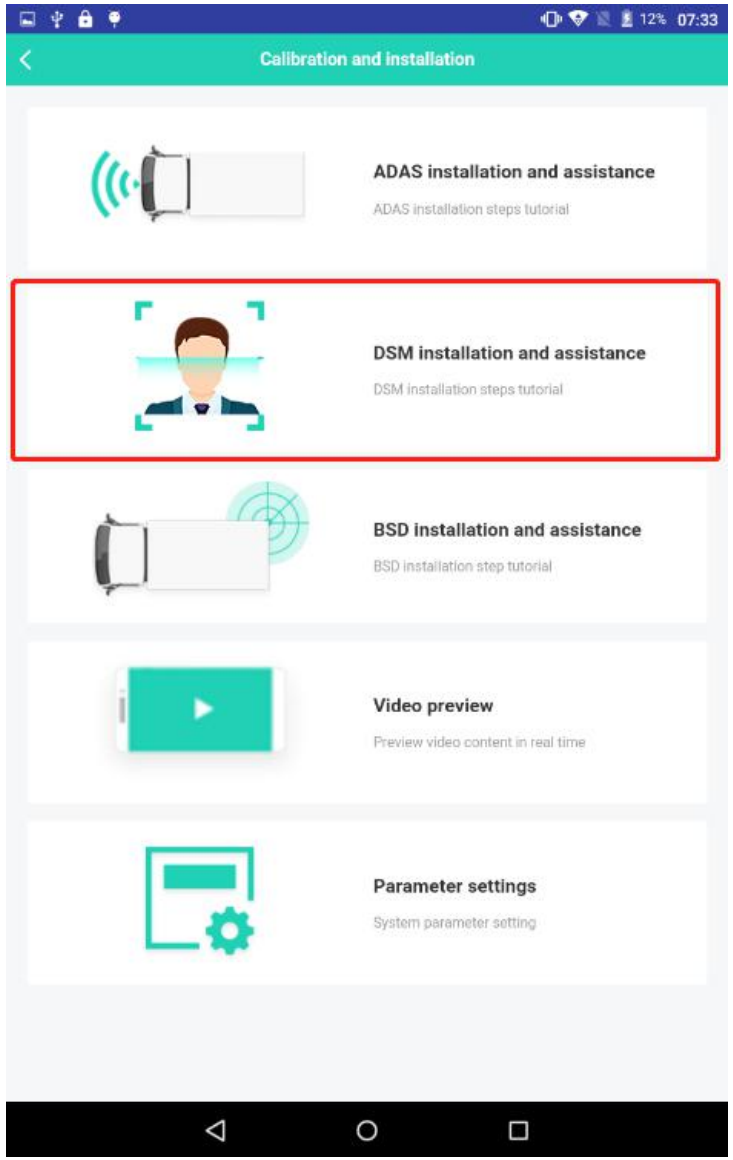


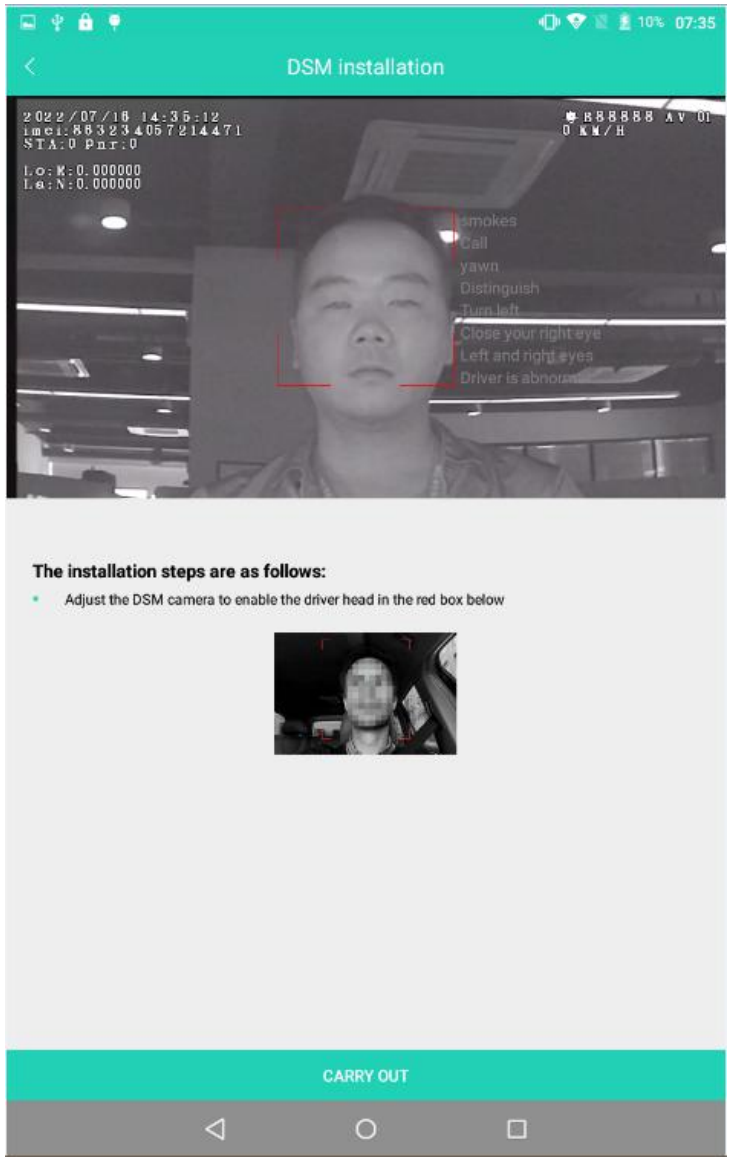


(3)After entering the above parameters, click Next, and move the yellow cross according to the camera position, so that the center point of the cross is at the vanishing point of the sky and the earth (commonly speaking, it is the intersection of the horizon and the center of the lane); the solid yellow line can be dragged directly. The movement can also be fine-tuned with the four arrow keys. After adjusting the position of the yellow cross, click Finish to complete the ADAS calibration.

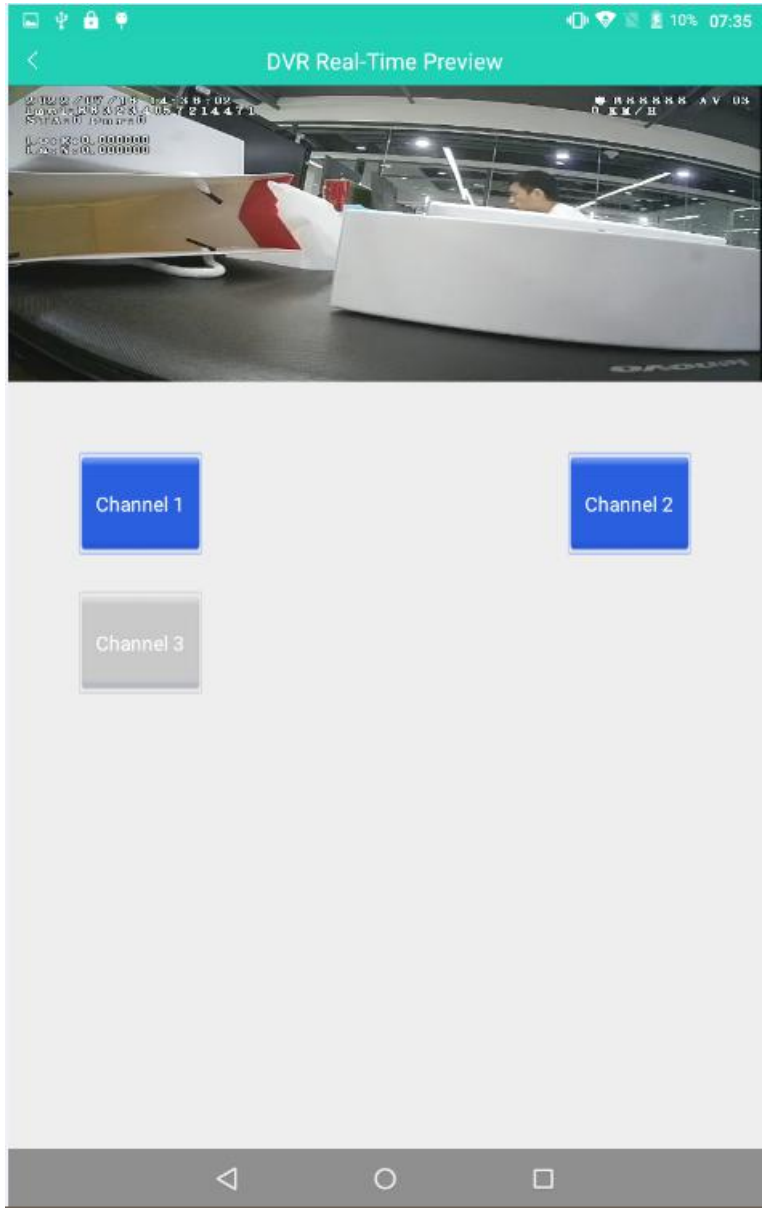


DMS settings

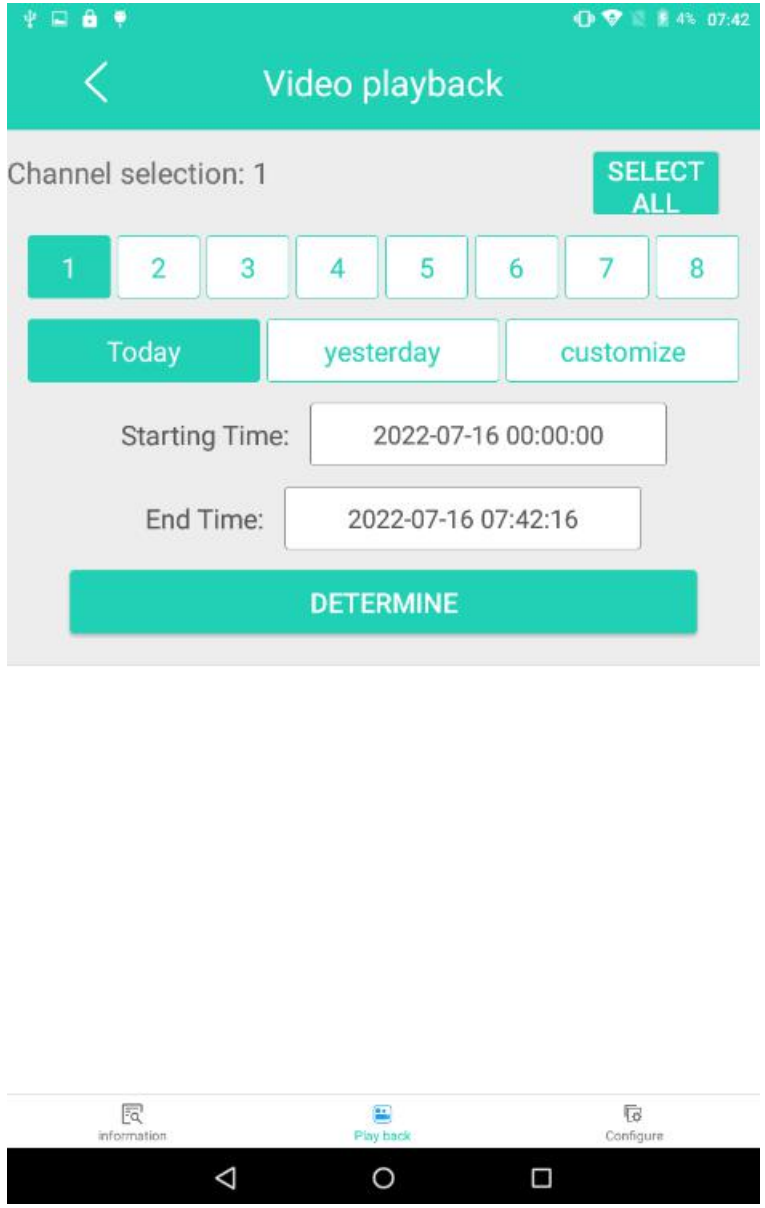


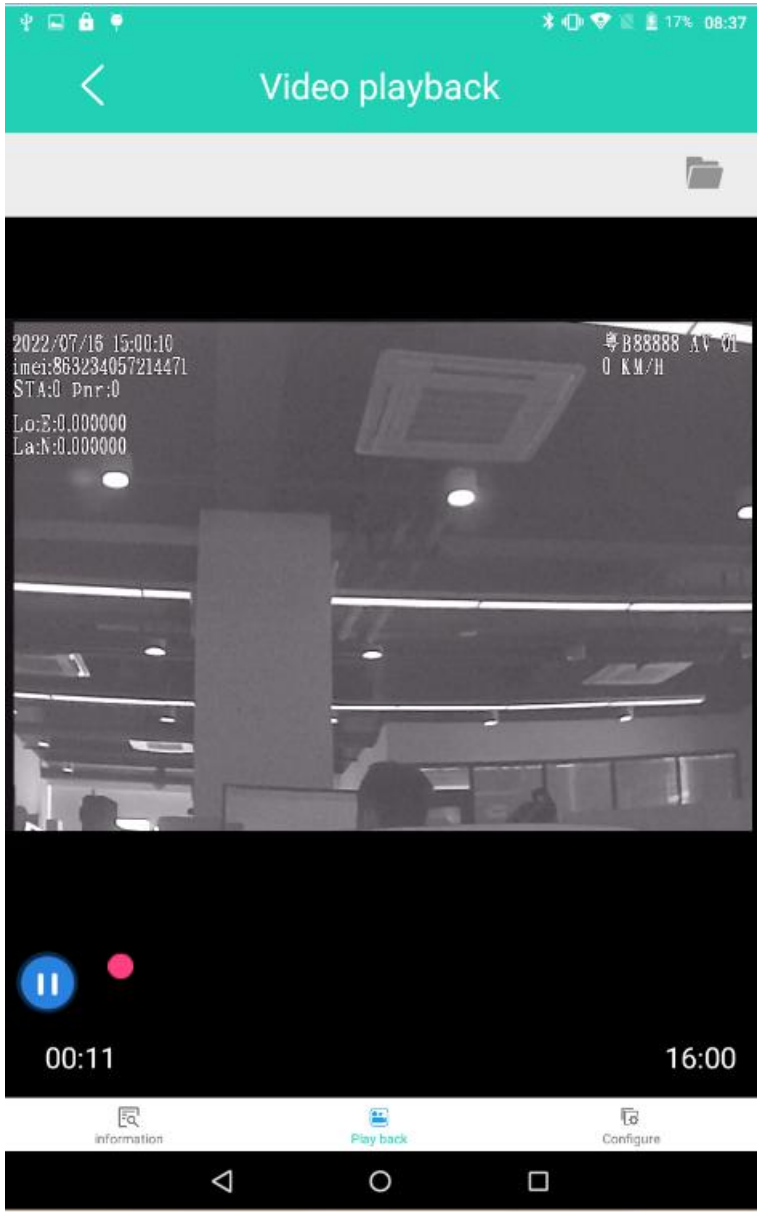


Camera angle adjustment



Video viewing





Thanks

Huizhou Great Will Industrial Co.,Ltd