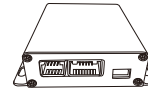
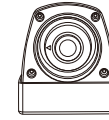


DVS 2024 AI Camera System
Installation Manual

Package Content



ECU×1



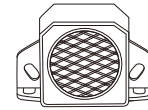
BSIS Camera×2



MOIS Camera×1



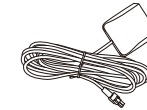
LED DISPLAY×1



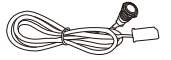
External speaker×1



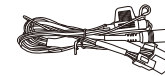
A pillar Led×1



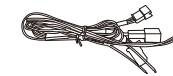
GPS module With gravity sensor×1



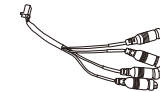
Mute switch×1



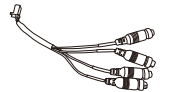
Power harness×1



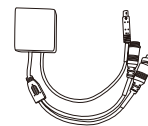
Display Cable×1



Video input×1



Video output×1

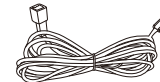


Wifi calibration Module ×1

Wifi calibration module is not included in every kit, it can be used for many times



3m Camera Extension cable×3



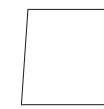
2.7m display extension cable×1



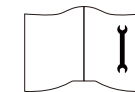
Bracket for led display×1



Alarm extension cable×1



3m tape×1



Installation Guide×1

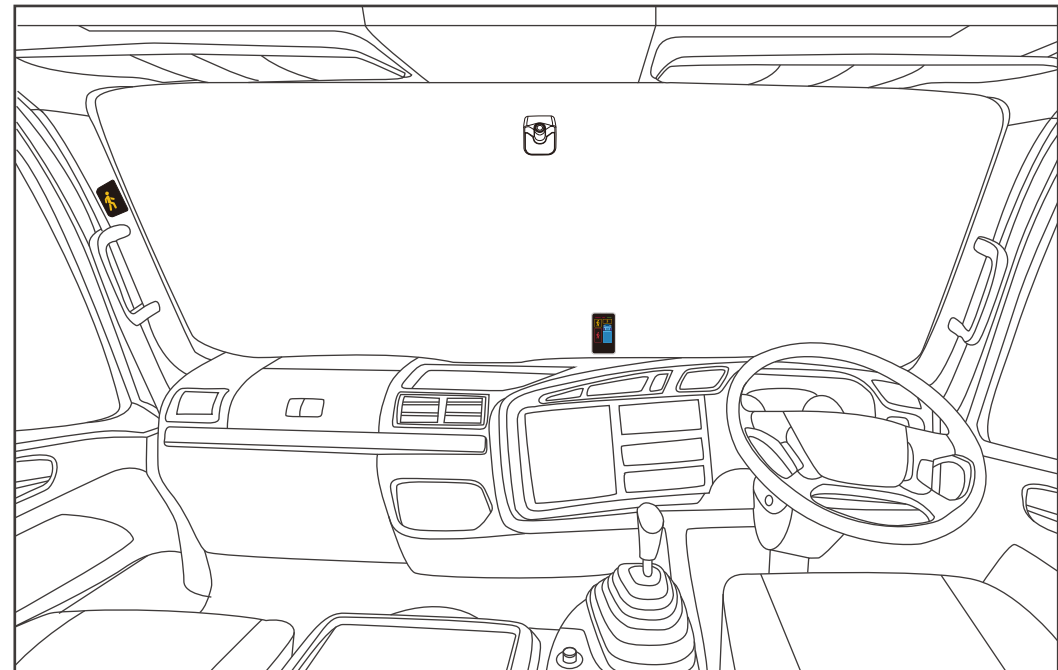
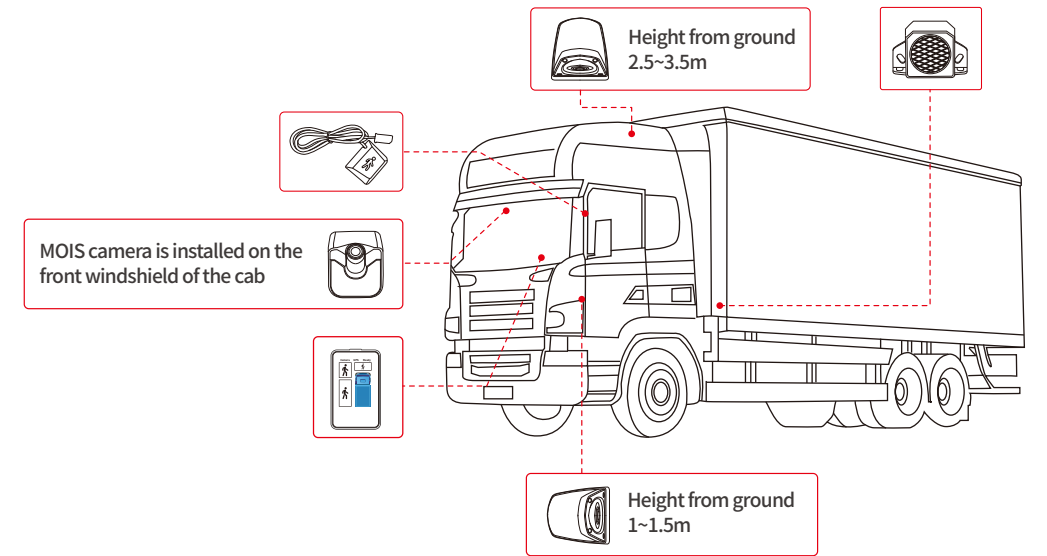
AI camera Specification

Working Voltage:	12~36V
Working Current:	<500mA
Operating Temperature:	-40~85 degrees
Camera Angle:	Front camera : 140 degree BSIS near side camera : 140 degree BSIS rear view camera : 140 degree
Clarity:	1080P 30pfs
Detection Range:	Front 2 meters (l) * 3 meters (W) Side 9 meters (l) * 2.2 meters (W)

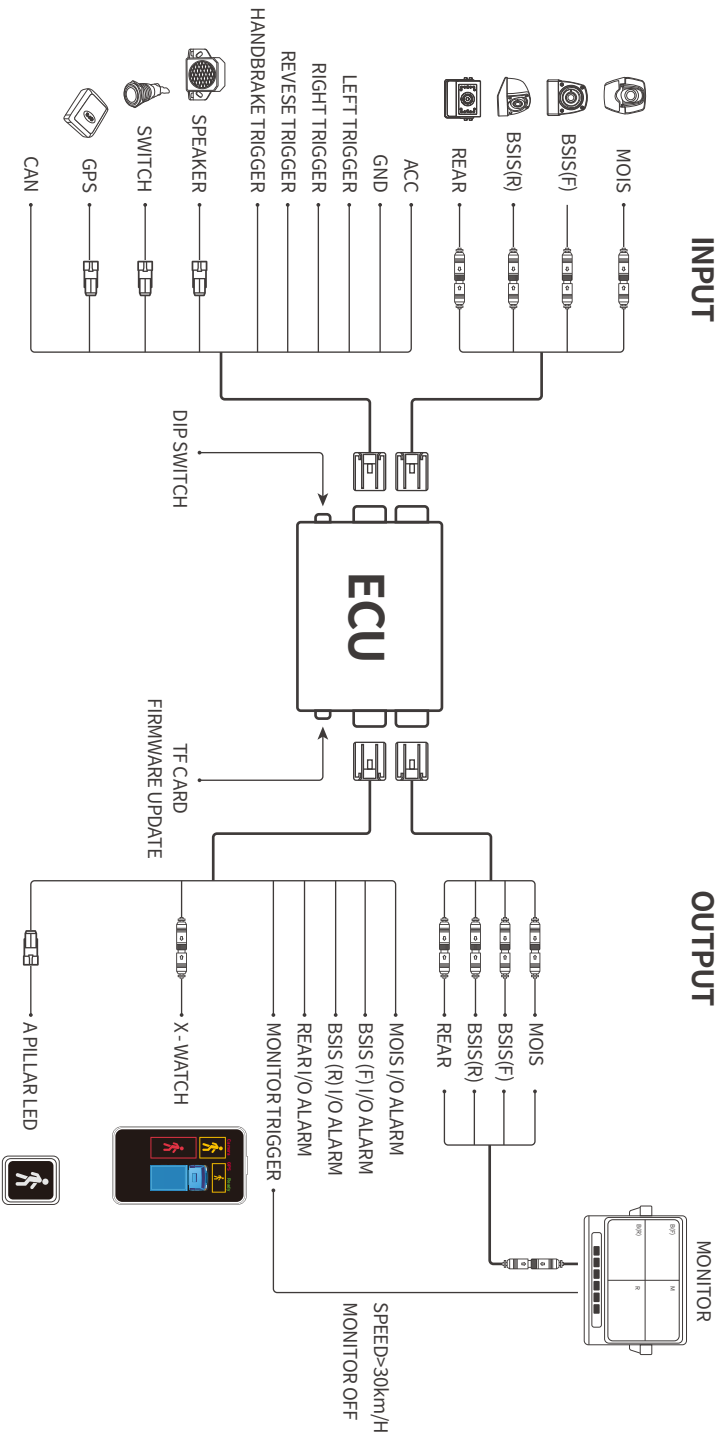
External Alarm Specification

Rated Voltage:	DC 12 / 24V
Working Voltage:	12 ~ 36V
Working Current:	< 500mA@24V
Operating Temperature:	- 40 ~ 85°C
Storage Temperature:	- 40 ~ 85°C
Sound Frequency:	500Hz ~ 7KHz
Duty Cycle:	3.0S/T(Vocal Reverse Warning) 3.3S/T(Vocal Left Turn Warning) 3.3S/T(Vocal Right Turn Warning)
Waterproof IP Rating:	IP69
Volume:	80-85 dB at 1m
Function:	With On/Off switch and mute function, mute time: at 23:30pm and 07:00am
Certification:	CE/E-mark

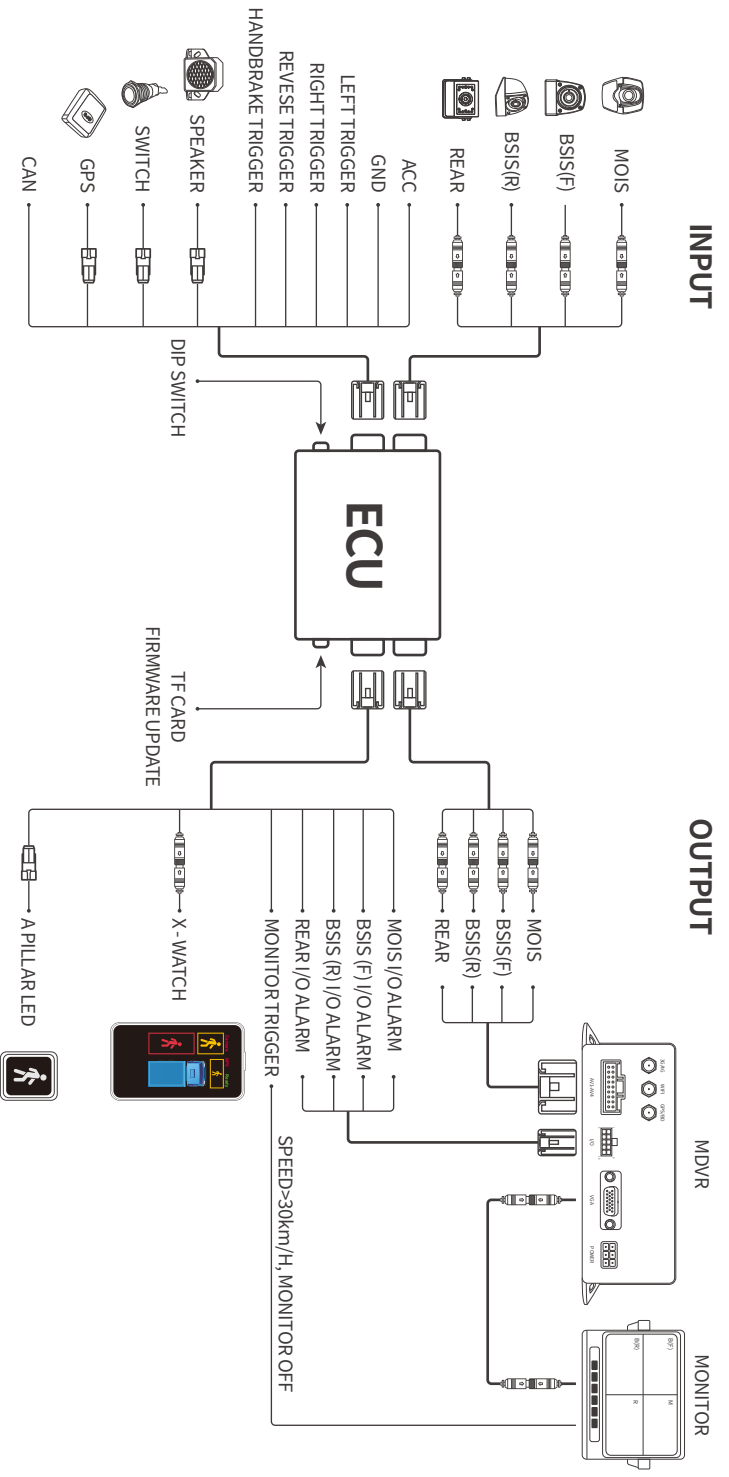
System Layout



Monitor Combined System Wiring



Mdvr Combined System Wiring



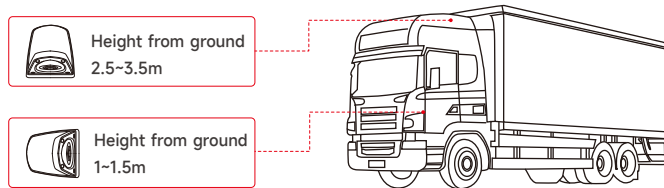
Camera installation

1. MOIS Camera :

- Ensure that the camera's line of sight can cover the bottom of the front windshield while also having the farthest line of sight possible (see the edge of the front windshield)
- Be careful not to have projections or reflections
- The camera should be in the middle and within the wiper range

2. BSIS Camera:

- The installation height is about 1-1.5 meters
- The installation degree of the camera's vertical angle is 0 or slightly downward (the installation height determines the downward angle, and when the installation height is high, the angle towards the underground is increased, ultimately determined by the actual perspective)
- The horizontal installation angle of the camera is around 40-50, and the viewing angle is based on the edge of the car compartment.



3. Calibration:

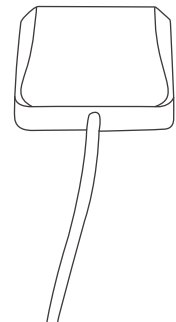
The scale line on one side of the vehicle must overlap or extend beyond the body of the vehicle, There should be no gap with the vehicle body (which may result in missed alarm when the target is very close)

- Connect WiFi signal, WiFi signal name: XFD_ai camera calibration.
- Select the corresponding camera to be calibrated: front, back, left, right.
- Mark the alarm area on the ground (we can use the traffic cone to set the detection zone).
- Move the ruler line on the mobile app to coincide with the ground marking.
- After clicking **WRITE**, check whether the ruler line on the test monitor is consistent with the position on the application app.
- If consistent, the calibration is completed.



Installation of Inertial Navigation GPS

- Installed on the surface of the vehicle dashboard, the surface should be flat, and the GPS mold should be tightly fitted without any overhang.
- There should be no metal obstructions above the GPS.
- The GPS output line needs to be directly behind, as shown in the figure:



AI camera working logic

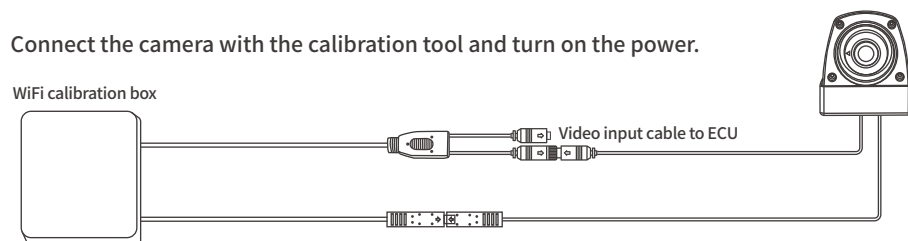
Self Test

When the system detects the camera blocked by an object, damaged, or poor connection, or crash. The LED display will show the red camera character and give a voice alert to remind the driver which camera has a problem.



Ai Camera Calibration

- Connect the camera with the calibration tool and turn on the power.

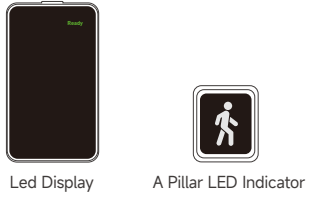


Handbrake function

When handbrake is on, it gives 12-24v output, Speaker on the led display was silent when VRU are detected
 When handbrake is off, it gives 0v or GND output, speaker on the led display gives audio alarm when VRU are detected

System Working Condition

The system starts working when speed is < 30km/h(18mph),
 the system stand by when speed is > 30km/h,
 both led display and A pillar indicator show like the picture.



BSIS Working Method

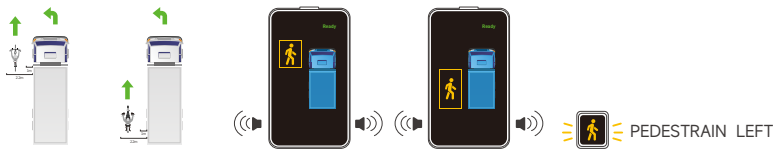
① If there are no VRU detected by left AI camera, there will be no visual and audio alarm.



② When VRU are detected, detection distance is from 1m to 2.2m, the display shows a yellow icon in the corresponding obstacle direction, and left A-Pillar led indicator shows a yellow icon warning, and no audio warning.



③ When VRU are detected, detection distance is from 1m to 2.2m, and left turn signal are turned on, the display shows a yellow icon in the corresponding obstacle direction, and left A-Pillar led indicator gives a yellow flashing and audio warning.

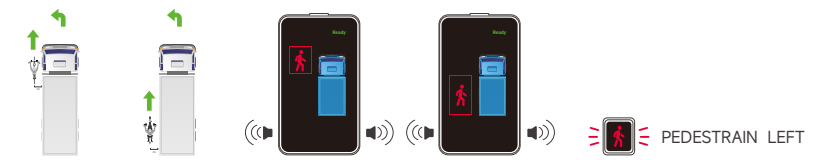


BSIS Working Method

④ When VRU are detected, detection distance is less than 1m, led display shows a red icon and A pillar led indicator shows a red warning.



⑤ When VRU are detected, detection distance is less than 1m, and left turn signal are turned on, the led display shows a red icon and audio warning, A pillar LED gives a red flashing warning.



MOIS Working Method

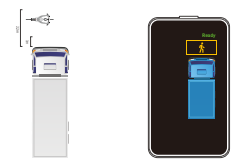
System Working Condition

The MOIS camera gives the alarm when speed is 0~5km/h, the MOIS camera still working but not gives the alarm when speed is > 5km/h.

① When no vru are detected in front, led display shows like picture.



② When vru are detected in front of the vehicle, and detection distance is 1-2.2m. Led display gives a yellow warning and audio warning.



③ When vru are detected in front of the vehicle, and detection distance is less than 1m. Led display gives a red warning and audio warning.



System Trouble-Shooting

Problem	Solution
Inertial navigation cannot locate	<ul style="list-style-type: none"> a) The inertial navigation GPS module should be installed in a flat position on the car dashboard, with a flat surface and the line facing straight back, without metal obstruction b) For the first time, after starting the engine, the car should be stationary for 10 seconds before starting c) Complete the calibration of the gyroscope after driving for about 3 minutes d) Check for poor connections or loose plugs in the wiring
AI camera malfunction	<ul style="list-style-type: none"> a) Check for poor connections in the wiring b) Power on again c) Connect the monitor to check if the image display is normal
False alarm Missed alarm	<ul style="list-style-type: none"> a) Clean the stains on the surface of the lens, and the front camera head also needs to clean the stains on the windshield b) When installing the front camera, avoid the reflection and ghosting of the windshield glass c) The installation and fixation of the camera should be firm to avoid misalignment of the calibration area caused by loose installation after calibration. d) The image cannot be tilted
External speakers cannot automatically mute at night or at high speeds	<ul style="list-style-type: none"> a) GPS damage b) GPS no positioning
Display Malfunction	<ul style="list-style-type: none"> a) No display: <ul style="list-style-type: none"> i. Check if the ECU power supply is normal ii. Check for poor connection between the display screen and the ECU's connecting wire
	<ul style="list-style-type: none"> b) No sound <ul style="list-style-type: none"> i. Is the car in a 0Km/h state ii. Is the turn signal activ