

MDSM-22SA

Installation Guidebook

MOVON CORPORATION

1. General Information

It is an AI-powered edge-level fleet camera system designed for Driver Safety and Monitoring, providing Distraction Warning functionality.

It features a compact DMS camera that is separate from the main control box to accommodate narrow vehicle spaces.

2. Product Specification

AP	Quad Cortex-A7@1GHz
Image Sensor	1/2.8 inch CMOS Image Sensor
Interface	CAN GPIO Trigger (Vibrator)
SD Card	For system calibration only
Power Consumption	Max. 8.4W (12V/24V)
Operating temperature	-20°C to 70°C (-4°F to 158°F)

3. Product Components (Standard)

Control(Main) Box



DSM Camera



Main Cable



Power Cable



4. Other Accessories

CAN Cable



5. Connection Diagram





Component Overview

MDSM-22SA

1. Control Box

The Control Box implements real-time tracking and analysis of the driver's face.



2. DSM Camera

It is an FHD 1080p (TVI) camera with a built-in speaker and microphone.



3. Main Cable

A connector between DSM Camera and Control box (10-pin connector).



4. Power Cable

It consists of two wires:

① IGN (ACC)

② GND



Color	Label	Description
Red	IGN	To ignition (ACC) power (Turns off when key is at OFF)
Black	GND	To ground source

5. Accessories



Main Accessory	Q'ty
One screw for tightening a camera joint fastener.	1
Two screws for fixing a control box on the top of dashboard.	2
Two 3M Tapes for attaching a control box on the top of the dashboard.	2
Hex Key to screw anti-tamper for a SD card.	1
Additional Camera Joint for Truck/Bus.	1

6. CAN Cable

By connecting the CAN cable and the vehicle's CAN, the vehicle's speed value required for product operation can be received, and signals for distraction warnings and operation errors can be exchanged through two-way CAN communication.



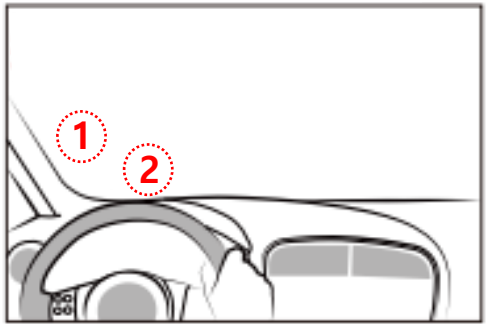


Recommended Mounting Position

MDSM-22SA

1. DSM Camera position

The DSM camera is recommended to be attached next to the ①A-Pillar or ② on the center of dashboard. Positioned slightly below the driver's face, angled upwards towards the driver's face by about 1º - 20º.

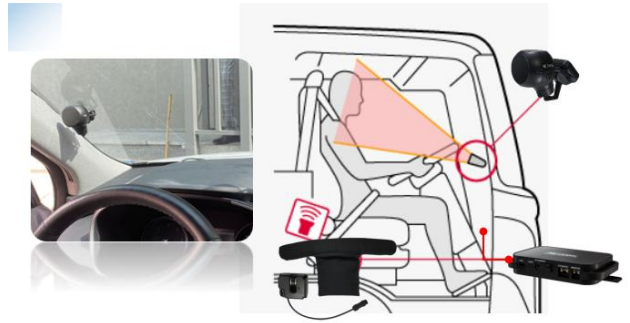


2. Control Box position

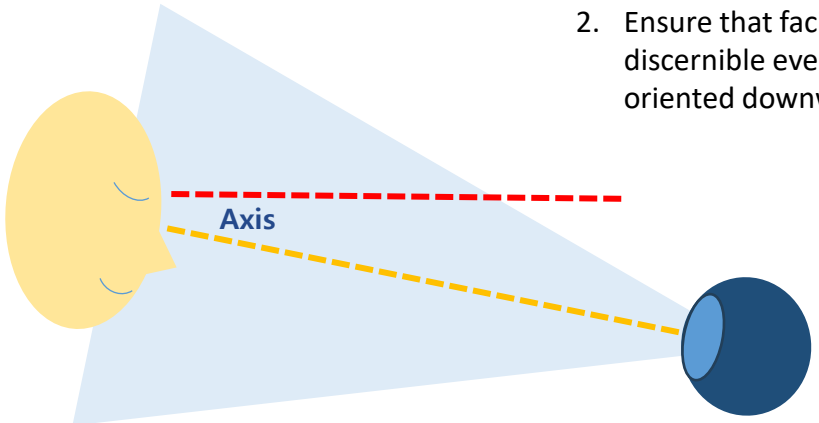
The control box should be positioned under the dashboard. However, if you prefer to place it on top of the dashboard, you can secure it using screws and 3M tape.



3. Example

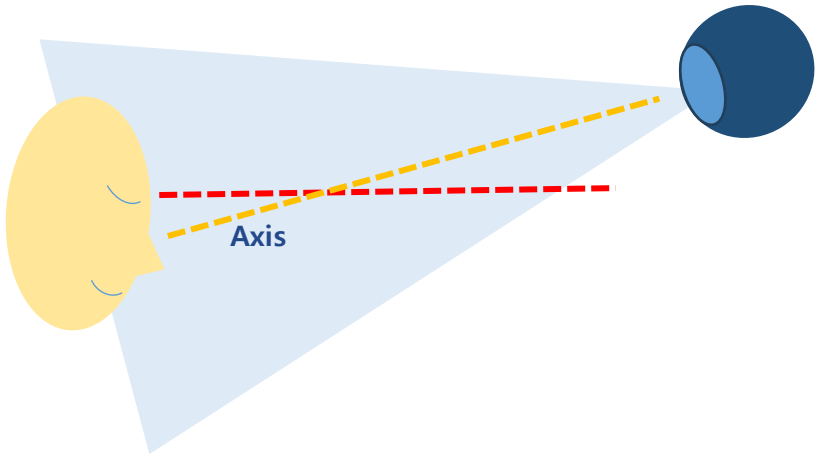


4. Camera Angle (Optimal)



1. Position the MDSM-22A camera at an angle of 10 to 15 degrees below the driver's eye level.
2. Ensure that facial features remain discernible even when the head is oriented downwards.

5. Camera Angle (Incorrect)





LED Status



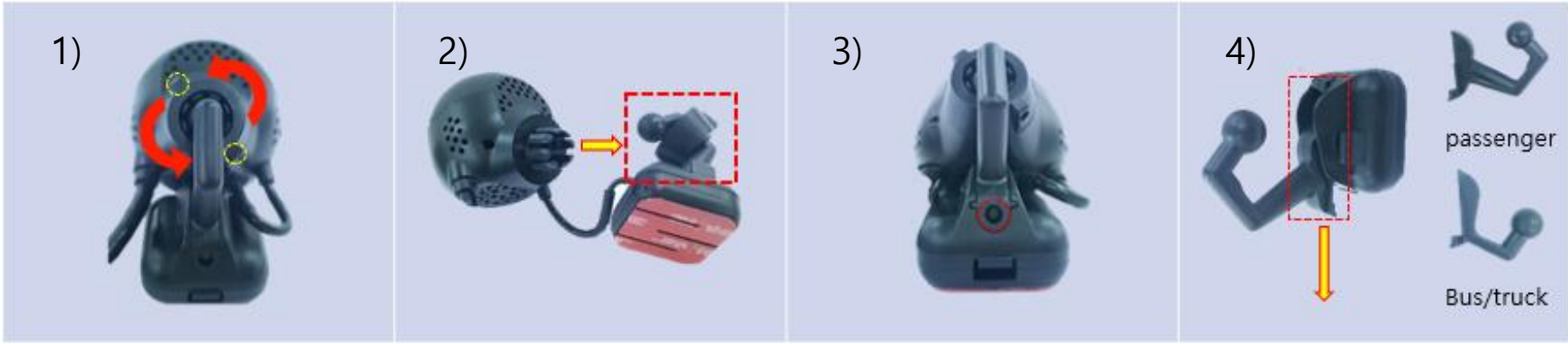
Section	System Status	Camera LED				Speaker		Remark
					Status	Sound	Duration	
Power On	Power On	o			solid		5 seconds	Green LED on control box
	Power On			o	solid			After Red LED on for 5 seconds
Standby Mode	System loading			o	solid			
	Malfunction occurs	o			solid			
	Camera blocked	o			solid			
	Booting completed					booting sound	1 second	
	Below activation speed			o	solid			
	Above activation speed		o		solid			
	Non-nominal		o		blink			
Distraction Warning	Distraction detected	o			blink	1st warning sound	1 second	Until it releases from the distraction
	Detected for more than 5 seconds	o			blink	2nd warning sound	1 second	
Drowsiness Warning	Drowsiness & Yawning detected			o	blink			



Appendix

MDSM-22SA

1. How to change DSM camera's Joint?



1) Loosen a cradle joint bolt in counterclockwise direction
2) Take apart a camera from a cradle
3) Unscrew the bolt at the bottom of a cradle
4) Push the cradle joint down and take it apart and then replace it.

MDSM-22A has two types of camera joint, one is fitted into a passenger car or SUV or VAN. The other is fitted into a bus and truck.

2. How to detach DSM camera from the mounting plate ?



1) Please press the locking key of a cradle in the opposite direction.
2) If pushing upwards the camera, the cradle mounting plate is detached from the camera and cradle.