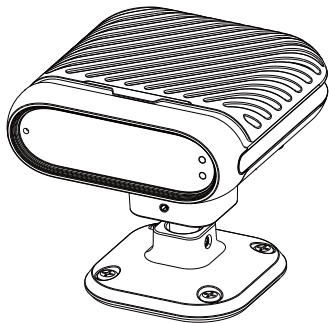


# MDSM-7

## User Manual



**MOVON**

MOVON CORPORATION

## ※ Thank you for purchasing MOVON Driver Status Monitoring System.

Please read the manual carefully before using MDSM-7.

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- **Any inappropriate or illegal activities or violation of traffic rules on the roads are drivers' responsibility.** MOVON Corporation will not compensate any damage nor accept responsibility related to behaviors mentioned.
- Please be aware of MOVON's policy that private information and traffic related laws are users' responsibility. **MDSM-7 only gives warnings to drivers. The final decision to maneuver / control shall be made by drivers themselves.**
- The safety function performance might be affected by driver status, road environments, weather conditions and installations.
- Customer service incurred by controlling while driving or damaging / revamping will not be guaranteed by MOVON's policy.
- MOVON shall NOT be responsible for any problems and/or damages that may occur from not using genuine or MOVON authorized parts and accessories. It is strongly recommended to use parts and accessories (including micro SD card) provided by MOVON or MOVON authorized seller to avoid any problems and/or damages.
- The information may not be up-to-date on the user manual for upgrading or editing purposes. The manual can be modified at any time without notification in order to enhance software.
- The product software may be modified for better performance without informing in advance. Please refer to the <http://www.movon.co.kr> for latest information.

**Warnings / Cautions : Violating the following precautions may result in personal injury, death, or property damage.**








- Do not install in disregard of installation instruction. It is recommended to go to authorized workshop.
- Do not use damaged/modified cables or voltage out of the rated voltage.  
It may cause injury, death or property damage.
- Do not modify nor disassemble the product and cables. It can cause explosion or fire resulted in injury or property damages.
- Do not use chemical on the device. It can cause fire or electric short, or malfunction of the device.
- Do not attach MDSM-7 in which it can obstruct the driver's view.
- Do not operate while driving, it is prohibited by law. If necessary, operate after stopping at a secure area.  
Do not apply excessive force when pushing the buttons on the device.  
Do not leave the product where infants, children or pets can reach it.
- Operating temperature is  $-4^{\circ}\text{F} \sim 158^{\circ}\text{F}$  ( $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$ ).  
MDSM-7 may not operate properly and be damaged in excess of the temperature.
- The functions may not work properly due to camera location and angle, windshield tint, and weather conditions.
- Recorded videos are only for personal use purpose. The video quality is not guaranteed to prove specific images.
- If the product is damaged or the power supply is cut due to an accident, video may not be recorded.
- Foreign substance or finger print on the lens may cause improper safety function performance.  
If recorded videos are broken due to users mishandling, the damaged video is not guaranteed to recover.
- Do not separate micro SD card from MDSM-7 while the power is on. Separate after turning off MDSM-7 if necessary.

# 1. About Product

## 1.1 Main Features

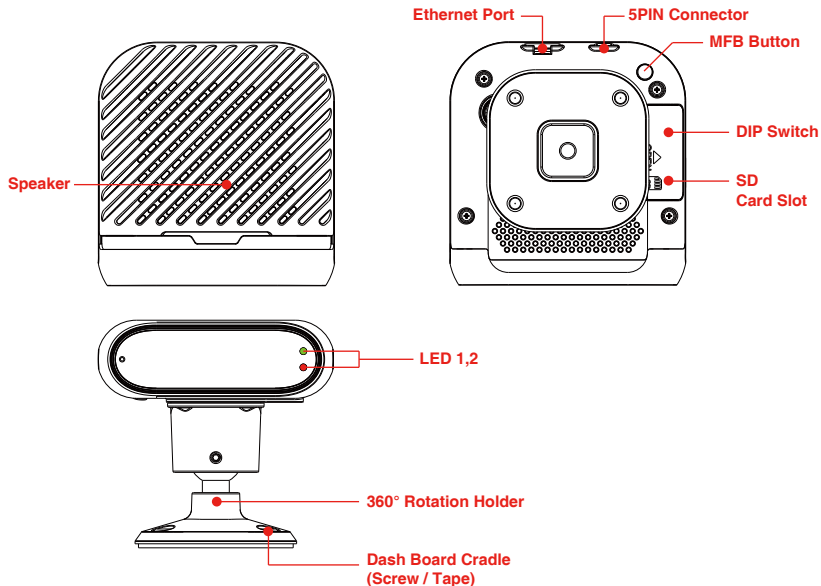
MOVON Driver Status Monitoring System (MDSM) helps drive safely by using a machine vision recognition technology to prevent drowsy or reckless driving

### [Main functions]

|  |  |
|--|--|
|  | <b>Drowsiness</b><br>Provides alarms when the driver's eyes are closed.  |
|  | <b>Distracted</b><br>Provides alarms when the driver looks away.   |
|  | <b>Yawning</b><br>Detects when the driver yawns. Provides alarms when the driver yawns twice within 1 minute.  |
|  | <b>Phone use (Optional)</b><br>Detects when the driver uses mobile phone. Provides alarms every 30 seconds.  |
|  | <b>Smoking (Optional)</b><br>Provides alarms when the driver smokes.   |
|  | <b>Driver ID detection</b><br>Stores (maximum) 5 driver IDs and identifies which driver is on board.   |
|  | <b>Recording</b><br>Supports 3 different recording modes: Normal / G-sensor event / DSM event.<br>Transmits real-time video via Ethernet (ONVIF) or stores in SD card (Maximum 32G). |

# 1. About Product

## 1.2 Parts Description

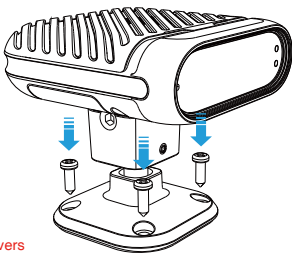


## 2. Installation

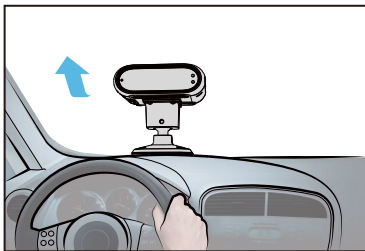
### 2.1 Installation Position

- Center of the driver is most recommended. If not available, the maximum angle from the center is 15° to the left and the right.
- Below the driver's eyes is mandatory, about 15° - 30°.
- 80 – 100cm from the driver's face is recommended.
- The installation location and angle are very important to MDSM-7's performance. For the best, following instructions above is highly recommended.

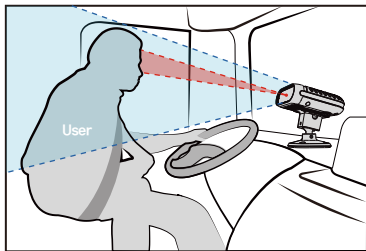
\* Notes: Please make sure the unit is fixed on the dashboard with screw drivers to prevent potential accidents.



FRONT VIEW



SIDE VIEW

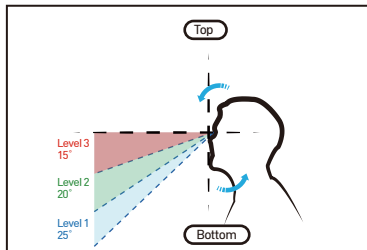
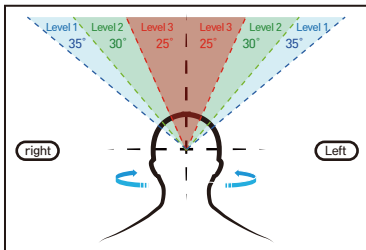


## 3. Settings

### 3.1 DSM Warning Settings

- \* Each warning condition depends on sensitivity level settings (Level 1-3).
- \* The vehicle speed must be faster than the activation speed to activate the warnings.

| Features           | Features   | Level (Seconds) |   |     | LED 2 (Blinking) |
|--------------------|--|-----------------|---|-----|------------------|
|                    |  | 3               | 2 | 1   |                  |
| <b>Drowsiness</b>  | When the driver closes eyes for certain period                             | 1.5             | 2 | 2.5 | ●                |
|                    | If the driver closes eyes again within 30 seconds                          | -               |   |     | ● & ●            |
| <b>Distraction</b> | When the driver looks outside of warning range below                       | 3               | 4 | 5   | ●                |
|                    | If the driver remains distracted for certain period                        | 5               | 6 | 7   | ● & ●            |
| <b>Yawning</b>     | When the driver yawns for 3 seconds twice within 1 minute                  | 3               |   |     | ●                |
| <b>Phone use</b>   | When the driver talks over the phone for certain period (Every 30 seconds) | 2               | 3 | 4   | ●                |
| <b>Smoking</b>     | When the driver smokes for certain period                                  |                 |   |     | ●                |



## 3. Settings

### 3.2 Recording Settings

\* Recording modes

| Mode     | Trigger            | File name                                      | Folder |
|----------|--------------------|--|--------|
| Normal   | 1 minute in a loop | Date_Time_NOR (20200601_063903_NOR)            | NOR    |
| G-sensor | G-sensor event     | Date_Time_EVT (20200601_063903_EVT)            | EVT    |
| DSM      | DSM event          | Date_Time_DSM event type (20200601_063903_PHO) | DSM    |

\* Recording hours

| SD Card Storage | Maximum recording hours (Normal mode) |
|-----------------|---------------------------------------|
| 16G             | Approx. 12 hours                      |
| 32G             | Approx. 24 hours                      |

#### **Caution & Note:**

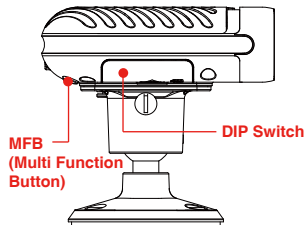
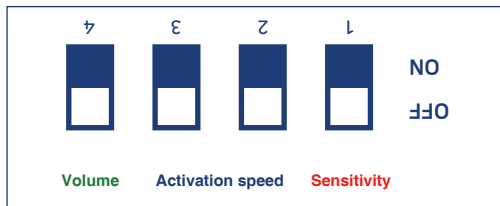
- Depending on your environment, actual recording duration and micro SD card lifespan may vary.
- For stable performance, it is recommended to format the micro SD card every 2-3 weeks.
- Formatting will delete all data in micro SD card. If you want to keep the data, please back up in advance.
- If MDAS fails to format the micro SD card more than twice, please try with PC.
- When you remove the micro SD card, please make sure MDAS is completely off.
- Micro SD card is a consumable accessory. MOVON does not guarantee a certain period of lifespan of micro SD card. It is recommended to check the status of micro SD card on a regular basis and if micro SD card is not working properly, please contact the seller and purchase a new micro SD card.



## 3. Settings

### 3.3 DIP Switch / MFB Settings

\* To use DIP Switch on the main unit, the function should be activated on the calibration page first.



| Settings                | Switch | Description  |                            |
|-------------------------|--------|--|----------------------------|
| <b>Sensitivity</b>      | 1      | ON: Sensitivity level 3<br>OFF: Sensitivity level 2 (Default)        |                            |
| <b>Activation speed</b> | 2 - 3  | OFF - OFF (Default)<br>60km/h ≈ 40mph                                | OFF - ON<br>40km/h ≈ 25mph |
|                         |        | ON - OFF<br>20km/h ≈ 15mph   | ON - ON<br>Test mode       |
| <b>Volume</b>           | 4      | ON: Volume level 4<br>OFF: Volume level 2 (Default)                  |                            |
|                         | MFB    | Volume level changes on a loop<br>(Current volume.. →3→4→1→2→3→4→..) |                            |

## 4. Limitations & Limited Warranty

### 4.1 Limitations

MDSM-7 doesn't guarantee 100% accuracy in detecting driver status or providing warnings for all potential accident causes behind the wheel.

MDSM-7 doesn't give alerts until it recognizes the driver's face. If the driver closes eyes or opens them little on purpose during face detection process, it will trigger false alerts while driving. Depending on the driver's facial characteristics, MDSM-7 may not detect/recognize the driver properly.

Direct sunlight to the camera lens or the driver's face can adversely affect MDSM-7's recognition performance. In case of partial or full blockage of the vision sensor, its ability to detect may be limited or MDSM-7 may not work properly.

The glasses or sunglasses could reflect the sunlight or surroundings. This will prevent MDSM-7 from detecting eyes and lower MDSM-7's performance accuracy. Also, any object that covers the driver's face, such as a eyepatch, hat, cap, mask, muffler, or other items could affect the performance as well.

The dirt, scratch, or a fingerprint on the camera part can affect recognition performance. Do not touch this part with bare hands or anything sharp. If there is dirt or fingerprint, wipe it up gently with soft and dry cloths.

## 4. Limitations & Limited Warranty

### 4.2 Limited Warranty

The term of this product warranty is 1 year from the purchase date.

This MDSM-7's Limited Warranty is non-assignable and covers the original purchaser of the MDSM-7 installed on the vehicle for which the MDSM-7 was purchased against defects in material or workmanship for a period of one year from the date of purchase.

The sole obligation of MOVON Corporation under this Limited Warranty is to repair or replace, at MOVON's discretion, any MDSM product that is determined by MOVON to have been defective in materials or workmanship. MOVON will not be responsible for conditions arising as a result of installation.

The following are excluded from warranty coverage: (a) Damage from misuse, negligence, improper installation or accident, (b) Installation on a vehicle other than the vehicle for which this MDSM product was designed, (c) Repair or alteration of this MDSM product by any party other than MOVON.

Micro SD card is a consumable accessory. MOVON does not guarantee a certain period of lifespan of micro SD card. It is recommended to check the status of micro SD card on a regular basis and if micro SD card is not working properly, please contact the seller and purchase a new micro SD card.

