User Manual

Quick Guide

MDAS -10

KC Certified : MSIP-CMM-MVN-MDAS10

(Movon Driver Assistance System – 10)

MOVON
MOVON CORPORATION

Thank you for purchasing Movon Advanced Driver Assistance-10(MDAS-10).

Please read the manual carefully before installing and using MDAS-10.

- Any inappropriate or illegal activities or violation of traffic rules on the roads are drivers' responsibility. Movon Corp. 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.
- MDAS-10 only gives warnings to drivers. The final decision to maneuver/control shall be made by drivers themselves.
- Customer service incurred by controlling while driving or damaging/revamping will not be guaranteed by Movon's policy.
- The manual can be modified without notification. Explanations and images may not be up-to-date on the user manual for upgrading or editing purposes.
- The product software is able to be modified for upgrading for better performance without informing in advanced. Please refer to the **http://www.movon.co.kr or http://www.mdas.co.kr** for latest updated information.

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* Precaution

- Do not modify nor disassemble the product.
- Do not install in disregard of installation instructions. It is recommended to go to a professional installation shop.
- Do not operate while driving, it is prohibited by law. If it is necessary, operate after stopping at a secure area.
- Do not separate micro SD card from MDAS-10 while the power is on. Separate after turning off MDAS-10 if it is necessary. If recorded videos are broken due to users mishandling, the damaged video is not guaranteed to recover.
- Do not touch the screen directly with sharp objects. Movon is not liable for damage of the screen.
- Operating temperature is -20~65℃(4~149 ℉). MDAS-10 may not operate properly and be damaged in excess of the temperature parameters.
- Lane departure warning system may not work properly due to camera locations and angle, excessive tint, etc.

Table of contents

MDAS-10 is a single camera-based driver assistance system. The product focuses on assisting drivers by preventing drowsy or reckless driving, and recording driving information with the three functions listed below

Major functions

Lane departure warning(LDW)

Provides Lane Departure Warning (LDW) for safe driving.
It alerts the driver with sound and visual warnings and helps to regain direction if the driver departs lanes unintentionally. (*activated at 60 km/h (38 mph))

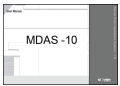
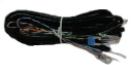
2 Channel HD Dash cam

Records scenes before and after an accident along with imminent crash situations based on gravity sensor and 720P recording performance. MADS-10 can record rearview scenes (480P) with an external back-up camera and the screen can be used as a rearview display.

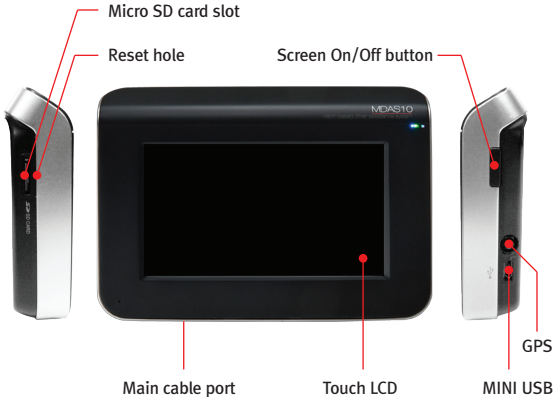
Digital Tacograph

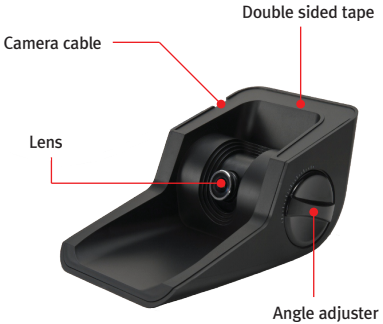
Logs 10 types of data related to driving information such as speed, break usage, RPM, GPS location, accumulated mileage, daily mileage, etc. Can benefit fleet managements and improve drivers' driving behavior as a result of reducing accidents and saving fuel.

CPU	Cortex A8 Series	
Screen	4.3 inch, 480x272 pixel, touch screen panel	
Camera	1M pixel, Diagonal 103.2˚ C	
Power	DC 12V/24V support (Consumption: 900mA)	
Format	Video	MP4(H.264 codec: Front–720P, 30fps, Rear: 480P, 15~30fps)
	Audio	AAC/MP3
Storage	4~32GB Micro SD card support	
Input	Power port (Micro USB or Rear Connector), Camera port(micro USB)	
Size	Camera	110 x 85 x 70 mm
	Body	135 x 85 x 20 mm
Operating Temperature	–20~65 ˚ C	
Etc	Built–in G–sensor, Mic, Speaker, Wi–Fi(Option), External GPS,	

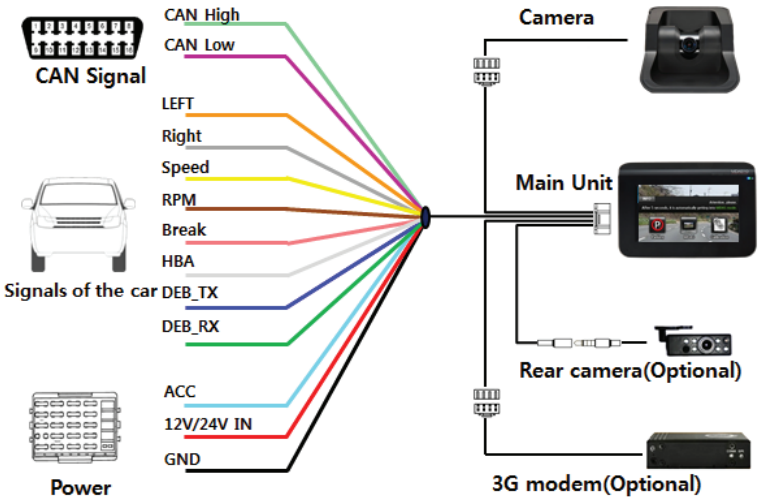
				
MDAS camera	MDAS main	User manual	Micro SD card 8G & reader	MDAS cable

		
GPS module (Option)	Universal 4–pin mount (Option)	Rear–view camera (Option)

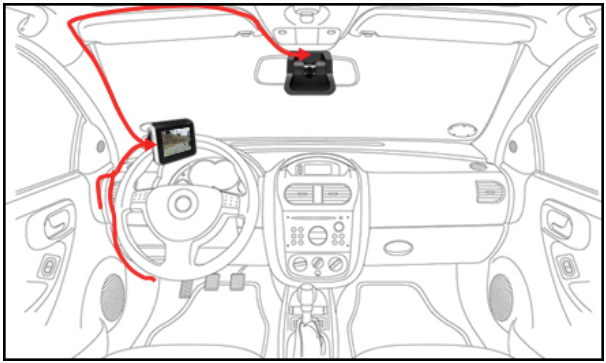

Micro SD card slot
Reset hole
Screen On/Off button
MDAS10
Main cable port
Touch LCD
MINI USB
GPS


Double sided tape
Camera cable
Lens
Angle adjuster

2.Installation – 1) Cabling overview



2.Installation – 2) Installing



Step : 1 Remove the adhesive tape from the camera and attach to the center of front windshield from inside. And connect camera cable to the main cable
* The location of camera that should be within +/−5cm from the center.

▼

Step 2 : Remove the adhesive tape from MDAS−10 body and attach to a preferred location or attach to the mount using 4 pin connector.

▼

Step 3 : Connect CAN High/Low cables to those corresponsive cables. If CAN signal is unavailable, connect speed, left/right turn signals, RPM(if needed) directly into corresponsive vehicle cables.

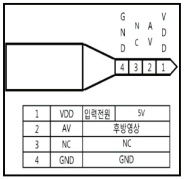
▼

Step 4 : Find accessory/ignition power(ex: clock, cigar) in fuse box and connect to ACC cable and fix the ground(GND) cable on a uncoated metallic part of the car body.

▼

Step 5 : Connect the main cable to MDAS−10 after finishing connecting signals with the car and GPS.

2.Installing – 2.1) Installing rear-view cameras



1	VDD	입력전원	5V
2	AV	후방영상	
3	NC	NC	
4	GND	GND	

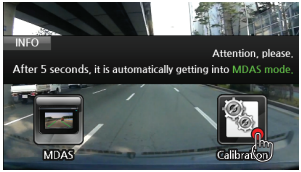
- After attaching the optional rear camera to preferred location on the rear windshield, connect camera cable to the main cable's 2.5ø slot.

Caution : If using an external rear camera outside of the car, ensure that the external rear camera's connector is following MDAS-10's cable pin specification indicated on the picture.

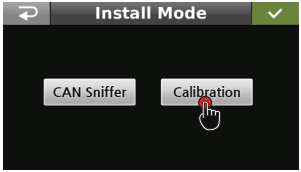
In addition, if the camera's power consumption exceeds 5V, it will be powered from a separate power source(eg. rear lamp cables)

2.Installation – 3) calibration

Entering calibration mode



- After the car engine's on, press Calibration icon after MOVON logo disappears



- Initial calibration screen is the same as the picture on left.
  Press Calibration once more to proceed to configuration.

2.Installation – 3) calibration

Select the auto maker (ex: GM, Ford, etc.), and then select the vehicle model in accordance with year of manufacture. If the vehicle model is not listed, go to www.mdas.co.kr and register/sign-up in order to download the appropriate data file for the vehicle. Then, insert micro SD card after copying the data file on it.

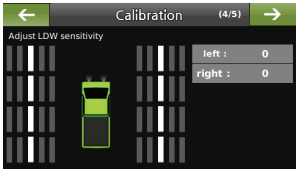
* Turn off power before inserting/separating micro SD card.

Adjust yellow dot line to locate on the vanish line

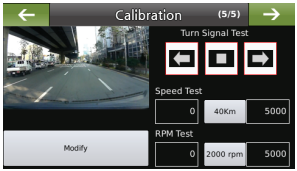
Adjust the camera knob to locate the yellow line on the horizon or between the red lines. You can enlarge the image by clicking the scene frame.

Adjust the hood line to locate the boundary between the road and vehicle hood. Then input the vehicle width (From the edge of right tire to the edge of left tire on the road) and Input the camera height (From the road to the camera lens)

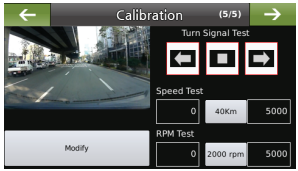
If the camera is attached away from the center line of the vehicle, please adjust how far it is located from the center. Its unit is centimetre. (– is left side, + is right side)



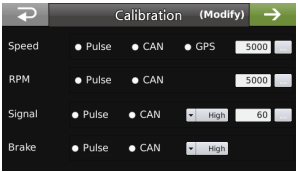
Lane departure warning(LDW) sensitivity adjustment.
If you want to change the warning timing, please click the lane marker. Default value is 0 (at 3) and every unit changes 10 CM length from its side.



Test signal connections
Turn on right/left turn signal and check if red light is on the screen. And press brake pedal and check if the red light is on the screen.



Test signal connections
In order to correct speed value, please press “40km” at 24mph(40km/h). Likewise, for RPM, press “2000rpm) at 2000rpm



* If the vehicle's signal is not correct, you can modifty the data by clicking "modify" in the final screen. So, if a car signal is not received from the supposed data connection, you can select a different type of data you need.

3.Function – 1) Lane Departure Warning

Lane Departure Warning

Speed

Distances between the wheels

1. LDW alerts the driver with sound and visual warnings when the vehicle departs from its lane unintentionally when driving over 60km/h(38 mph).

2. When MDAS-10 recognizes the lane markings in the environment while driving over 60km/h, the LCD of main body displays green lines when the car stays in its lane and displays red lines when the car departs its lane.

3. You can change the distance between the vehicle and the lane markings through sensibility adjustment. (Refer to Set-up menu in Operation chapter)

4. If you want to turn off a function of LDW, you can disable in ADAS mode in Set-up menu in Operation.

5. LDW will not be activated if you turn on left or right blinkers. (If the LDW is activated, please read the direction light connection of FAQ)

3.Function – 2) 2CH Dash cam

1. Normal mode: Records front and rear driving scenes simultaneously in real-time and recorded videos can be found in ory_rec folder. If REC button shows blue color  , it indicates video is not recorded. So, please ensure that the icon is red before using.
2. Event mode: When the impact is detected by G-Force sensor, the videos 10 seconds before and after of the event are saved in evt_rec folder.
3. Manual mode: If you press  on the screen, the videos are recorded for 30 seconds from the time and saved urs_rec folder.
4. Rear camera: Rear scene can be checked through optional camera and the rear screen can be checked by PIP (Picture in Picture) through  button on the LCD of main body.(Press the PIP screen to switch into the full screen)

• If the rear screen converts into the full screen in the PIP situation, LDWS should be not activated.

5. Recording time(**Normal+Event videos**) Users can change recording time in DVR Setting.

8G	6 hours	16G	13 hours	32G	26 hours

6. Recorded video play: You can play recorded videos through MDAS-10, MV(MDAS Viewer), VLC player, and players that play avi files. (MV is included in SD card also it can be downloaded in Notice on www.mdas.co.kr. You can find the player in Notice board.)
7. MDAS DVR viewer works normally on computers with 2Ghz CPU and 2GB RAM.
8. File name can be expressed like ORY_20131201_205940_D (Type, date, time, D:dual S:single camera). (ORY : Ordinary video recorded in real-time, EVT: Event video recorded, USR: Manual video)

Users can allocate recording spaces of the normal mode/event mode/manual mode and format the SD card.

* Icon explanation

	SD card is not inserted		SD card has a problem		Voice recording is unavailable

• **Caution**

Before inserting or separating micro SD card, please turn off MDAS-10. If you do not, the recording images can become corrupted.
It is recommended for micro SD card's reliability to low-level format the SD Card periodically (approximately every 3-4 months).

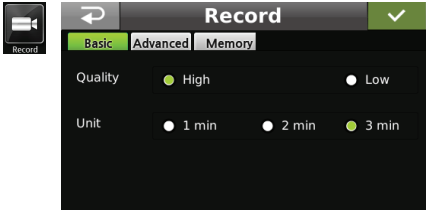
3.Function – 3) Digital Tachograph

Digital Tachograph

1. MDAS-10 digital tachograph is designed in compliance with national standard and has obtained certification.
2. The driving information such as speed, mileage, time, RPM and GPS location can be transferred to MDAS-10 via CAN or analog communication.
3. The driving information can be displayed after touching the DTG button as shown above.
4. DTG viewer needs to be downloaded from **http://www.mdas.co.kr in order** to check the stored driving information.
5. You can check the moving route and location in real time via Fleet Management Service by MOVON provided.
   If you need the Fleet Managements Service, please call (+82) 2-2050-4676
6. All driving data can be recorded up to six months and the last ten seconds of the event data will be also recorded automatically.

The image shows all available menu settings. However, You may have limited access to menu settings on MDAS-10.

Record Setting

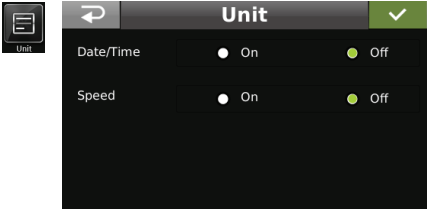


Basic : Video quality and recording hour unit change.
Advanced : Ordinary or event recording On/Off.
Voice recording On/Off.
Memory : Memory-size setting for recording hours.
You can format SD card in this menu.

Time Setting

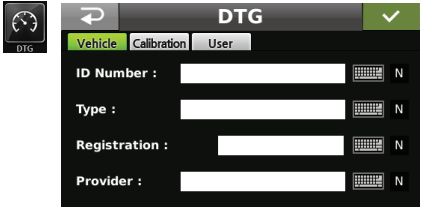
Checking if GPS data/ time is functionoing and setting time.

OSD Setting



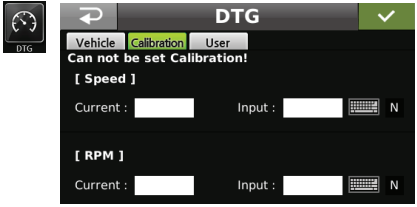
Data/time, speed are displayed on MDAS-10's LCD.
Select speed unit, Km/h or mph (Initial value is Km/h)

Tachograph Setting – 1



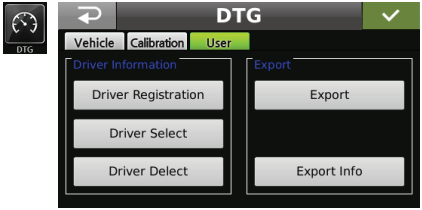
ID Number : Car VIN Number
Type : Car type
Registration : Car registration no.
Provider : Registration no. of Transport Operator

Tachograph Setting – 2



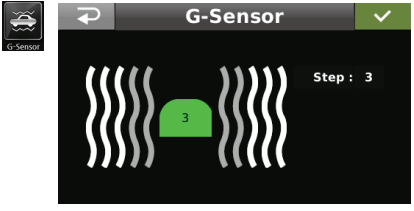
Calibration
If the current car data(Speed, RPM) is not correct, users can modify changed values.

Tachograph Setting – 3



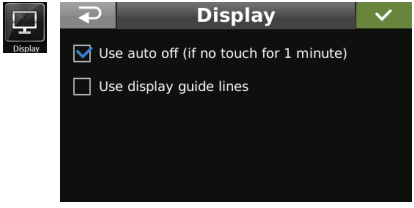
Driver Registration : Registering a driver
Driver Select : Selecting a driver
Driver Delete : Deleting a driver
Export : Exports driving information to an external device
Export Info : Exported Information

G-Force sensor setting



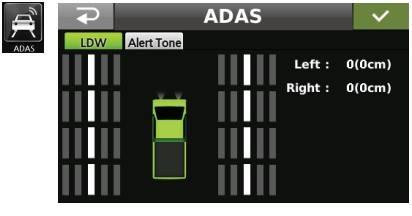
Change sensitivity of G-Force sensor. The lower numbers in Step, the more sensitive.

LCD's display setting / MDAS-10's Main Screen



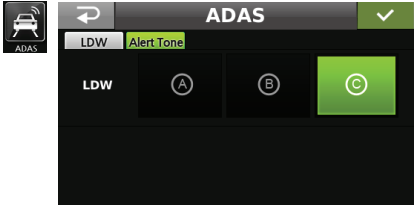
Use auto off : Turns off the LCD display 1 minutes after MDAS-10 is powered on.
Use guide Line : Checks if LDW-related virtual Line is displayed.

LDW setting – 1



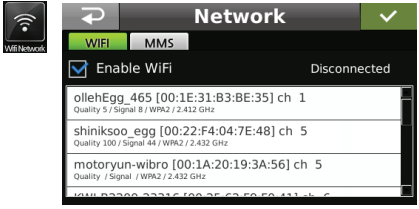
Sensitivity setting for LDW.
The closer each line is towards a car, the more sensitive.

LDW setting – 2



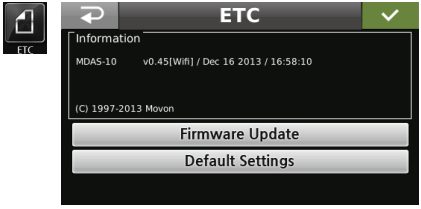
Setting for LDW-alerting sound.
Multiple choices available from A to C.

Wi-Fi Setting – 1



Enable WiFi : Checks if Wi-Fi is activated.

Miscellaneous Setting



Firmware Update : Updates a Firmware.
Default Setting : Initializes MDAS-10.

Product Warranty

- The warranty period applies from the date of purchase by the first customer and is transferable only between end-users. The product warranty card and a copy of dated receipt "Proof of Purchase" are required. Otherwise, MDAS-10 is not covered by the limited product warranty.
- The warranty covers only manufacturing defects only which are occurred within warranty period.
- Warranty Period / MDAS-10 : 1 year : 20,000Km / Movon-providing microSD card : 3 months
  Movon-providing rear view camera : 6 months
- Please download and back up all saved data before sending MDAS-10 to our After-sales Service center. We exclude all liability for loss of data.
- After-sales Service center location : Movon Corp. (T. +82 (02) 2050 4640)

We confirm this product warranty complies with Consumer Laws under Korea Consumer Agency.

Product Warranty Card				
Model		MDAS-10		
Serial No.				
Purchasing Date				
Customer	Name		Phone	
	Address			
Seller	Name		Phone	
	Address			

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is con-nected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information : This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

IMPORTANT NOTE:

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.