

**BRANDMOTION**  
seamless vehicle personalization

# ADAS+

ADVANCED DRIVER ASSISTANCE SYSTEM



## Install Guide

rev. 1.0



**Version 2**

## Driver Assist ADAS CAM

Thank you for purchasing 『ADAS CAM 』 .

This manual contains the functional explanation and operating method of ADAS CAM.

Please read instructions carefully before attempting to operate.

This manual may be subject to change without any prior notice

『 ADAS 』 or Advanced Driver Assistance System is an advanced safety assist system that can help a driver to avoid or mitigate any accidental collisions by utilizing vision sensor.

\* ADAS functions are designed to assist the driver, however, it is not a substitute for careful driving and we take no responsibility for any damage caused by careless driving .

## Main Features of ADAS CAM

- ADAS Functions Verified by Automakers
- Intelligent Lane Departure Warning via Vehicle's Turn Signal Connection!
- Low-speed Front Collision Warning !
- Easy But Professional Installation Mode !
- Full HD Crystal Clear Image Quality !
- Overheating Prevention System !
- Driving DIT data Collection and Management
- Specialized B2B Fleet Management Tool !



## Optional Features

	<b>Display Module</b>		<b>RS232/U-ART Communication</b>
	<b>Vibrator</b>		<b>Security Lock Cover &amp; Key</b>



# Contents

## 1. Safety Caution

- Warning
- Caution

## 2. Accessories & Functions

- Check Accessories
- Main Body & Functions
- Pin Map Guide
- Secondary(extra) Camera

## 3. Product Installation

- Precautions
- Installation Mode
- Basic Installation
- Camera Settings

## 4. Main Functions

- FCW
- PD
- LDW
- DVR
- FCDA
- DIT( Digital Image Tachometer )

## 5. Start

- Booting Up
- Screen Types & Explanation

## 6. Menu Guide

- Basic Menu
- ADAS CAM
- DVR
- Video Playback
- Configurations
- Vehicle Type Settings
- Voice Settings

## 7. Data Manager

- Installation Method
- Screen Composition
- Main Buttons
- Main Functions

## 8. Maintenance

- Micro SD Card Maintenance
- Troubleshooting

## 9. Optional Devices

- Display
- Vibrator
- Cover Lock

## 10. Appendix

- Certificate
- Product Spec.

## Safety Caution



### [Warning!]

If user does not comply with manual instructions , severe injuries or damages can be caused.

! Do not use modified power-supply cables , use only genuine products supplied by the manufacturer . Modification may cause vehicle damage or physical injury due to explosion or fire.

! Apply only the rated voltage otherwise it may cause vehicle damage or physical injury due to explosion or fire.

! Remove the cable when not using for a long period of time otherwise it may cause battery discharge or fire . User is responsible for the damage in this case.

! Do not install the product in a location where it interferes with driver's vision.

! Do not change settings while driving on the road as it may cause traffic accident.

! Do not remove or insert the power cable with wet hands as it may cause electric shock .

! Keep product accessories away from children to prevent children from swallowing small accessories otherwise it may cause severe injury.

! Do not install in a place where there is flammable gas or high humidity as it may cause explosion or fire.

! Do not place the product in enclosed vehicle or expose to heat stress for a long period of time as it may cause fire or malfunctions.



**[Caution!]**

If user does not comply with manual instructions , severe injuries or damages can be caused.

! Do not connect cable wires randomly as it may cause product or vehicle damages. Connect vehicle wires under the guidance of professional installing technician.

! Install the product when parked on the flat ground. Carefully read manual instructions prior to installation.

! Do not use force to adjust lens as it may cause product damage.

! Do not press the LCD display with sharp objects as it may damage the LCD surface or touch panel.

! Use only tested and approved Micro SD Card from the manufacturer for automotive applications. Do not use other SD cards manufactured for normal consumer electronics.

! Do not remove SD card when the product is operating as it may cause product damage. Only remove the Micro SD card when the product is powered off completely.

! Remove and Keep Micro SD card with care after accidents being recorded. Incident video files may be overwritten by new video files if not removed from the product.

! Micro SD card is a consumable product. Errors may occur if used for long periods. It is recommended to format data regularly for maintenance and replace the SD card if it is unable to restore card damages.

! Do not separate product cable while operating as it may cause product or Micro SD card damage .

! Video data cannot be recorded if power is OFF or Micro SD card is broken . Check carefully before driving on the road.



**[Caution!]**

If user does not comply with manual instructions , severe injuries or damages can be caused.

! ADAS functions are designed to assist the driver, however, it is not a substitute for careful driving and we take no responsibility for any damage caused by careless driving . Under following conditions the ADAS functions may not perform properly.

- Extreme weather
- Extremely curved roads
- Roads without painted lanes
- When the camera image is compromised due to reflected light from an object on the dashboard .
- When installed incorrectly
- When settings are changed improperly
- When the horizon line calibration is incorrect

! The ADAS functions only work when the speed rate received from GPS signal is above the set operating speed threshold. If the speed data cannot be received properly, it may cause ADAS malfunctions.

! Tinted windscreens will affect the brightness and clarity of recorded videos. Windscreen metallic films may cause GPS signal loss.

! Keep the camera lens and windscreen clean to ensure clear video and proper ADAS functions.

! Camera lens calibration can be affected by excessive impacts such as driving over speed bump or colliding with other objects. The affected angle change can cause ADAS malfunction.

! Do not disassemble or modify ADAS CAM as it will result in data loss, damage and will void the warranty cover.

## Accessories & Functions

[Check Accessories ]



Main Body



Micro SD card (32GB) /  
Adapter



Dual HUB



6p mount



Power/ Vehicle Signal  
Cable



Secondary Camera

## Optional Accessories



Display Module



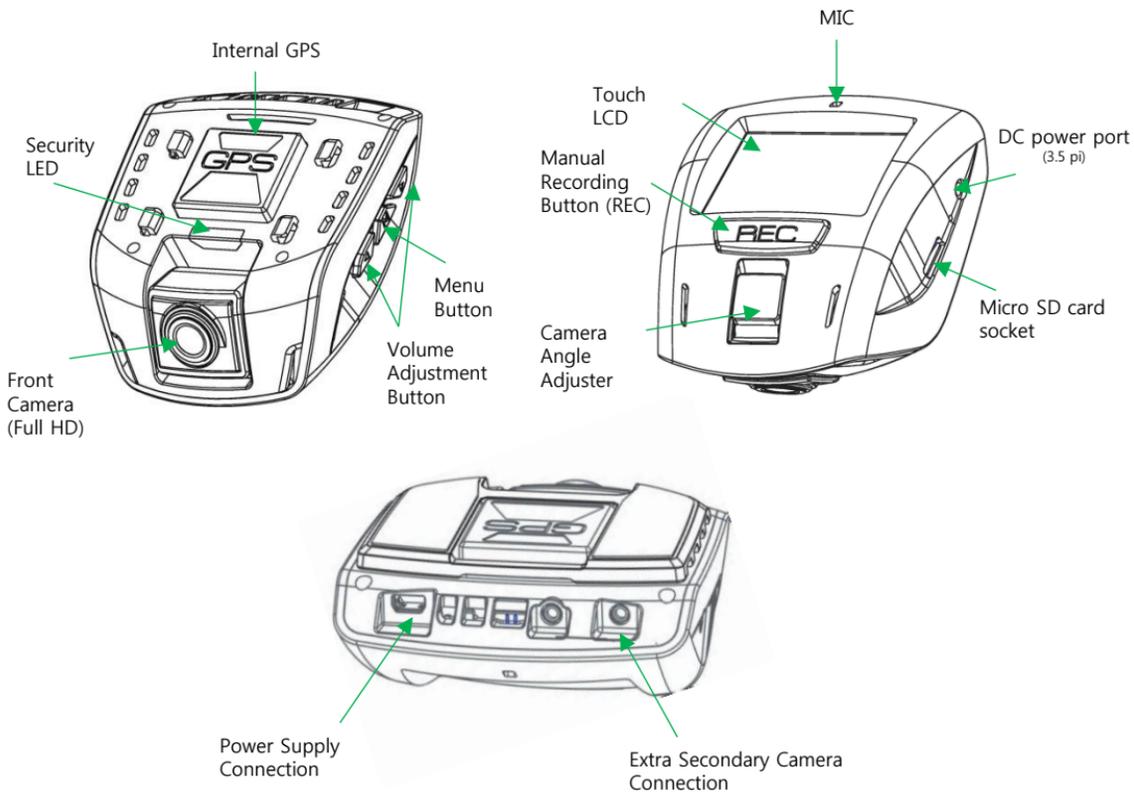
Vibrator



Security  
Cover Lock

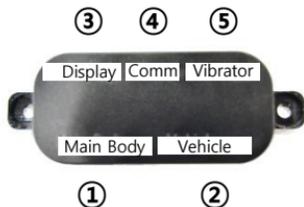
- Specifications of the above accessories are subject to change according to the components supply.
- Above images are just to help user's understanding; actual components may look a little different .

## [Main Body & Functions]



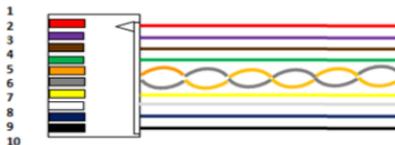
# [Vehicle Wire Connection via Dual HUB]

- Display module and Vibrator can be connected via HUB



① Main Body	② Vehicle Signal	③ Display	④ Comm	⑤ Vibrator
Product↔HUB Cable	HUB↔Vehicle Cable	Display Module	External Device Communication (RS232 or TTL)	Vibrator
				

- Dual HUB to Vehicle Wire Pin Map



No.	Signal	Cable Color
1	ACC(IG)	RED
2	B+	VIOLET
3	BRAKE	BROWN
4	WIPER	GREEN
7	TURN_R	YELLOW
8	TURN_L	WHITE
9	SPEED	BLUE
10	GND	BLACK

•to deactivate Parking (CCTV) Mode, connect twisted RED and VIOLET wires to ACC( IG ) .

•to activate Parking (CCTV) Mode, connect corresponding RED and VIOLET wires to ACC(IG) and B+

•B+, Speed and Brake wire connections are optional

## [Secondary Camera]

- A Secondary Camera can be attached to the rear / inside/ side of the car to record videos.
- A 10m power cable is provided

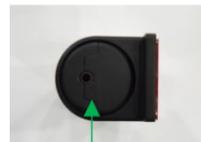


Integral Bracket

Indicating LED



N/R Button



DC Power Port



### • Normal(N) :

Rear images are shown in an opposite direction to those shown in the rear mirror, but the number plate of the car in the rear appears normal.



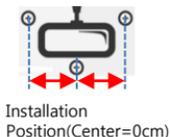
### • Reverse(R) : Mirror Screen

Rear images are shown in the same direction as those shown in the rear mirror, but the number plate of rear-side car is in an opposite direction.

## Product Installation

### [Precautions]

- Prior to installation, turn off vehicle ignition when parked on flat ground
- When installing in passenger vehicles, avoid installing in a place where it interferes with movement of rear mirror .
- Install within 20cm range from the center of windscreen for stable ADAS performance
- Install near the rear mirror in Sedan or RV .
- Install near the bottom center area of windscreen in Bus or Truck .



- Reflections of objects may affect the video quality and ADAS performance , avoid placing or installing reflective objects on the dashboard.
- Metallic films or tinted windshield may affect GPS receiving , avoid installing closer to the metallic films or tinted areas.
- When using speed wire connection instead of GPS speed reading , please change 'GPS' to 'Pulse' in PC manager program. Afterwards, please input the vehicle pulse value.
- Notice that recorded image quality of rear camera may not be as good as expected due to rear window tinting .

-If the calibration is not done on flat ground , ADAS functions may not perform properly.  
Ensure to calibrate camera on flat ground.



- **Correct Angle Adjustment :**  
Horizon guide line matches with the actual horizon.



- **Camera angle is wrongly adjusted**  
: Guide line is above the horizon



- **Camera angle is wrongly adjusted**  
: Guide line is below the horizon

! After the calibration , if the view angle is different with Correct Angle Adjustment in the image above,  
please rotate the camera adjuster to recalibrate correctly .

## [ Basic Installation Guide ]

This instruction shows how to install the main body and basic components .Please read carefully before installation.

How to tighten the bracket

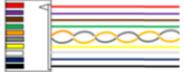


Place the bracket as shown in the image;  
hang the bracket on the GPS module.



Press the bracket and slide it upwards until it  
is fixed with a click sound

**\*ADAS+ must be installed in a professional installation shop**  
**\*Before attempting to install, please read instructions carefully**  
**[ Main-body installation ]**

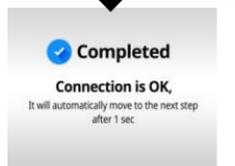
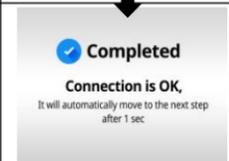
1		Clean installation surface of windscreen (windshield)	6		If powered on , follow the installation guide to start setup.
2		Remove tape off bracket and install in a suitable place horizontally	7		If setup process finishes , a Live -view screen will appear .
3		After connecting to Dual HUB , connect and arrange the main body - to-Dual HUB cable .	<p><b>* Installation Notice2.</b></p> <p>! Turn off vehicle power completely before</p> <ol style="list-style-type: none"> <li>① connecting product to Dual HUB</li> <li>② and connect optional devices( display &amp; vibrator ) to Dual HUB</li> <li>③ at the finish , connect the vehicle cable</li> </ol> <p>! If the product and optional devices are connected when turned-on vehicle power is applied to Dual HUB , it may cause internal product damages.</p> <p>! It is recommended to change settings when vehicle power is switched to IG status. If Camera Reset is done in an unstable shaking condition , ADAS functions may not perform properly.</p>		
4		Connect power cable to vehicle wires (refer to Dual HUB Pin Map)			
5		Connect optional devices to Dual HUB, afterwards , connect the vehicle cable			

## [ Secondary Camera Installation ]

1	 	<p>*Ensure to connect a secondary camera after turning off the power of the main body.</p> <p>* When connecting the cable of the secondary camera, firmly push the connection jack to the main body until the jack hides inside.</p>	2	 <p>* When attaching the secondary camera to the rear window, place the holder at right side.</p> <p>* When attaching the secondary camera to the rear window, avoid installing directly on heat wires.</p>
<p><b>* Caution!</b></p> <p>! Ensure to connect the secondary camera after turning off the power of the main body. The secondary camera may not be sensed if the camera is connected with the power of the main body on.</p> <p>! After mounting the camera, check through a monitoring screen if the direction of the image is in a correct way.</p> <p>! * Secondary camera screen, PIP screen, and front screen can be switchable by pressing the monitoring button in Monitoring mode </p>				

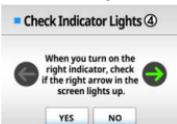
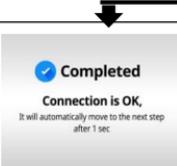
## [Installation Mode]

- \* Install Mode is to support easy setup for proper ADAS performance .
- \* Install Mode appears when booting up for the first time. If Installation finishes, it will not appear again.
- \* If setup values are inputted differently in menu screen or manager program , the latest inputted values will apply.

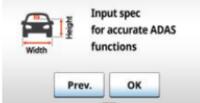
* Check Power Connection			
	<p>It's the starting screen of Install Mode .</p> <p>Press OK to continue</p>		<p>②Check whether power is connected properly, Switch to ACC On status , and press OK</p>
	<p>Choose the desired connection method,</p> <p>Vehicle Power &amp; wire Connection- Press OK Cigar Jack Connection – Press No</p>		<p>The notice screen will appear if the connection is correct.</p>
	<p>①Check whether power is properly connected , Turn off engine completely and press OK</p>		<p>The error message will appear if connection is incorrect. Start installation from the beginning after the product turns off</p>
	<p>The notice screen will appear if the connection is correct.</p>		

\* 'Press Prev. button to return to previous screen .

## \* Check Indicator Lights

 <p>Check indicator wire connection</p> <p>Have you connected indicator wires?</p> <p>YES NO</p>	<p>Check indicator signal connection,</p> <p>To connect turn indicator signal , press YES</p>	<p>&lt;NO&gt;</p> <p>Move to the [Camera Setup] screen, Refer to next page</p>	
 <p>Check Indicator Lights ①</p> <p>Turn off the indicator lights of your vehicle.</p> <p>Prev. OK</p>	<p>&lt;YES&gt;</p> <p>Check turn signal wire connection,</p> <p>Turn off indicator lights and press OK</p>	 <p>Check Indicator Lights ③</p> <p>Check if the lights of Left &amp; Right display arrows are all on ?</p> <p>YES NO</p>	<p>&lt;NO&gt;</p> <p>If both Left &amp; Right arrows are turned on , Press YES. If only 1 arrow is turned on , Press NO.</p>
 <p>Check Indicator Lights ②</p> <p>Check if Left &amp; Right arrows in the display are off</p> <p>YES NO</p>	<p>If both lights are off – Press Yes</p> <p>If one light is ON or both lights are ON – Press No</p>	 <p>Press the button to change indicator signal</p> <p>HIGH LOW</p> <p>OK</p>	 <p>Check Indicator Lights ④</p> <p>Check if only 1 arrow light is on ?</p> <p>YES NO</p>
 <p>Check Indicator Lights ③</p> <p>When you turn on the left indicator, check if the left arrow in the screen lights up.</p> <p>YES NO</p>	<p>&lt;YES&gt;</p> <p>Turn on Left indicator light , and check if the left arrow in the display is On . Press YES if the left arrow light turns on</p>	<p>&lt;YES&gt;</p> <p>The vehicle signal is incompatible with product signal.</p> <p>Change the signal by changing High/Low, LOW-HIGH // HIGH-LOW</p>	<p>&lt;NO&gt;</p> <p>* If only 1 arrow is on, check the cable connection again . * If both arrows are off , return to the turn signal check screen②.</p>
 <p>Check Indicator Lights ④</p> <p>When you turn on the right indicator, check if the right arrow in the screen lights up.</p> <p>YES NO</p>	<p>&lt;YES&gt;</p> <p>Turn on Right indicator light , and check if the right arrow in the display is On. Press YES if the right arrow light turns on</p>	 <p>Error!</p> <p>Indicator connection is incorrect.</p> <p>Please check the cable.</p> <p>OK</p>	<p>&lt;NO&gt;</p> <p>Turn signal connection is incorrect, check the cable connection again.</p> <p>Restart the procedure after product turns off</p>
 <p>Completed</p> <p>Connection is OK,</p> <p>It will automatically move to the next step after 1 sec</p>	<p>&lt;YES&gt;</p> <p>This Notice screen will appear if the connection is correct.</p>		

## [Camera Settings]

* Input Spec		* Camera setting	
<p><b>Input Spec</b></p> 	<p>To perform ADAS properly, input your vehicle specifications. Press OK to continue</p>	<p><b>Reset Camera ①</b></p> 	<p>To calibrate camera angle correctly, make sure the vehicle is parked on the flat ground, Press OK to continue</p>
<p><b>Input Spec ①</b></p> <p>Input the height of the Installation position and press 'OK'</p> 	<p>Input the installed height from the ground by pressing the arrow button . Press OK after inputting the value</p>	<p><b>Reset Camera ②</b></p> 	<p>Adjust the camera lens angle by following the arrow guide   : turn upward .   turn downward</p>
<p><b>Input Spec ②</b></p> <p>After inputting the vehicle width, press 'OK'</p> 	<p>Input the exterior width of vehicle by pressing the arrow button . Press OK after inputting the value</p>	<p><b>Reset Camera ③</b></p> 	<p>OK button will be ON with the acoustic alarm when calibration is done correctly. Press OK to continue</p>
<p><b>Input Spec ③</b></p> <p>Input the installation position and press 'OK'</p> 	<p>From the driver's point of view, select the installation position, Press OK to continue</p>	<p><b>Completed</b></p> <p>Installation has been completed, Thank you!</p>	<p>Setup has been completed</p>
<p><b>Input Spec ④</b></p> <p>Input the distance from the windshield center to the installed position</p> 	<p>Input the distance from the center of windshield to the installed position by pressing the arrow button. Press OK to continue</p>	<p><b>Caution!</b></p> <p>Incorrect spec input can cause ADAS malfunctions.</p> 	<p>If spec input is not properly done, it may affect ADAS performance. If inputted correctly, press OK to continue .</p>

## Main Functions



### Forward Collision Warning(Dual FCW)

1. The FCW function generates a warning signal when there is a potential risk of collision with a vehicle ahead by calculating distance and relative speed .
2. Types of Warnings /**Dual Warning Logic**
  - ① HMW( Headway Monitoring Warning ) :
    - To keep a safe distance with a front vehicle while driving on the road
    - The variables are host vehicle's speed and the distance to a preceding vehicle
    - Warning : One-off Audible Alarm / Timing Indication (ex:0.7, 0.9... in monitoring/ display mode)
  - ② FCW (Relative Speed Warning) :
    - To alert the driver to an impending crash while driving on the road
    - The variables are the relative speed and the distance to a preceding vehicle.
    - Warning : Consecutive/Series of Audible Alarms/ Vehicle Icon blinks ( in monitoring display mode )
    - Warning Sensitivity can be adjusted in manager program.
3. FCW function works when the vehicle is moving at the speed which is above the operating start speed threshold

Default Operating Start Speed: 20km/h

  - Operating Speed threshold can be adjusted from **1 to 80(km/h)** in 「ADAS CAM」 menu.



## Lane Departure Warning(LDW)

1. The LDW function generates an audible signal if the vehicle departs from the driving lane while driving above the set operating speed. LDW will help avoid or mitigate any lane departure accidents caused by drowsiness or carelessness on the road.
2. The LDW function only works when the driving speed is over the set operating start speed .
  - Default Operating Start Speed : 60km/h
  - Operating Start Speed can be adjusted from 40~80(km/h) in 「ADAS CAM」 menu .
3. Continuous lane changing within 2 seconds will not activate the alarm.

\* For cigar jack connection , notice that the LDW function will generate a warning signal every time the driver changes the driving lane even with the blinker turned on . (In LDW ON Mode )



## Front Car Departure Alert(FCDA)

1. The FCDA function can detect the movement of a vehicle in front while waiting for the traffic light to change in a traffic jam, and will inform the driver of any front movement through a warning tone. It is only activated when the host vehicle is stationary and the front vehicle starts moving.
2. After the 1<sup>st</sup> FCDA alarm , the 2<sup>nd</sup> FCDA alarm can only be generated after 5 seconds .
4. FCDA works as a helpful driver assist function while waiting at traffic lights or in traffic congestion.

**Driver is responsible for careful driving**

- \* ADAS functions are designed to assist the driver in avoiding or mitigating accidental collisions.
- \* ADAS functions are not a substitute for careful driving and we take no responsibility for any damage caused by careless driving .
- \* Drivers should pay full attention to forward-looking and avoid any careless driving behaviors.



## Pedestrian Detection ( PD )

1. PD alerts the driver to any possible collision with a pedestrian ahead on the road .
2. PD function helps prevent or mitigate a collision with a pedestrian on urban road or in crossroad
3. Operating Start Speed : 05~30km/h

### 4. PD function works in following conditions

- ✓ When the pedestrian has an average adult height ( approximately 160~180cm tall )
- ✓ When the full body of pedestrian is visible
- ✓ When the pedestrian is within the range of 15m in front,

### 5. PD may not work in following conditions

- Rainy adverse weather
- Not able to see the shape of pedestrian clearly
  - 1) Pedestrian is covered or overlaid by other object or background
  - 2) in extreme reverse lighting or shadowed condition
  - 3) Pedestrian is moving fast (running)
  - 4) People on bicycles which cannot be detected

\*the system is designed to deactivate PD function at night or in dark conditions.

**Driver is solely responsible for careful driving**

- \* OPTIAN7 is the driver assist device that is designed to assist the driver in careful driving in order to prevent or mitigate possible accidents on the road .
- \* OPTIAN7 is not a substitute for careful driving and we take no responsibility for any damage caused by reckless driving .
- \* All drivers should pay full attention to forward-looking while driving , driver attention should remain focused on the road at all times .

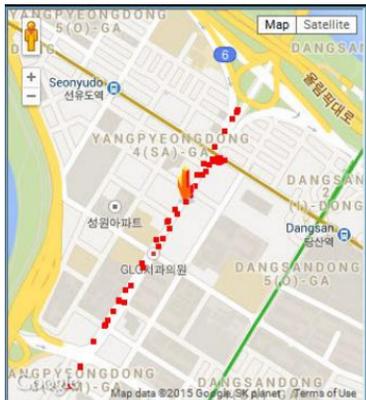


## CAR\_DVR

1. The DVR function supports 2 different resolution modes ;Full HD/ HD
2. Types of Recording
  - ① Continuous Recording : Records video data with 30-second segment in the Continuous File folder of SD card.
  - ② Event Recording: Records video data automatically into the Event File folder when an impact is detected, it will immediately save the previous 15 seconds prior to impact and start recording video for next 15 seconds.
    - \* Driving over speed bump, manhole or uneven road at high speed may also be recorded as Event files
  - ③ Manual Recording : Records the event data when pressing the external REC button . it can record for 30 seconds ( 15 seconds before and 15 seconds after ) as of the time when the button is pressed.
  - ④ Parking Event Recording : Parking event can be continuously recorded. If an impact is detected, it will record data into Event folder.
3. Parking Mode
  - Parking Mode can be activated when the vehicle is turned off and will be deactivated when the ignition is turned on.
  - If an impact is detected in parking mode , it will record the event into the Event folder.
  - If a motion is sensed in parking mode, it will record the event into the Parking folder.
  - Battery Discharge Prevention
    - Discharge Prevention : the system will automatically turn off if the vehicle battery voltage drops under the set voltage level . 「DVR 」 Menu : possible to adjust from 11.5 ~13.5V)
      - \* Low voltage setting can cause battery discharge . Appropriate voltage level setting is needed.
    - High Temperature Cut-off Function: In order to prevent damage , the system will be automatically cut off when the internal temperature of the vehicle exceeds excessive temperature. .



# DIT Data Management



## 1) Explanation

- stores driver's route coordinates data and image files .
- In the DIT folder , GPS and CAPTURE folders will be generated
- GPS folder : GPS data will be recorded every 10 seconds and will be saved as a file daily.
- CAPTURE folder : Image files will be captured and saved every 10 minutes .

※ **It is possible to store data for around 60 days, if over 60 days, the oldest files will be overwritten by the newly recorded files.**  
Dependent on the recorded image file size, the recorded data of 60 days may not be stored properly . (60 days based on 8 hrs of recording per day )

## 2) DIT Function Settings

- Turn ON DIT in 「Special」 tab of manager program

## 3) DIT Check

- Press  in the manager program to switch to DIT mode to check date and time by each file ,coordination and distance
- In DIT mode, press  to retrieve file list , select the file and press Play to check route information .

## Start

### [Booting up]

When power is applied , the intro loading screen will appear followed by a voice message - "Hi, have a nice and safe trip today."



Loading Image

\* Even power is connected to B+ , the product will automatically restart when starting vehicle engine .

## [Screen Types & Explanation]

### ➤ Front Monitoring Live-view Mode



• REC	shows the video is being recorded
Center Number	If a front vehicle is detected , HMW time will be indicated in Green . When warning signal is generated, TTC will turn Red. ( 0.7 as shown in the image )
	A Red vehicle icon will appear when generating FCW signal
	<b>A Red pedestrian icon will appear when generating PD warning</b>
Left Number	Shows the vehicle speed ('80' as shown in the image)
	The horizon guide line
	shows the lane lines are being detected. When it generates LDW signal, the lane lines will turn red.
	Home Button: Switches to the main menu
	Camera Button: will change between Front and Rear camera views
	FCW Button : turns ON/OFF FCW function.
	LDW Button : turns ON/OFF LDW function.
	FCDA Function : turns ON/OFF FCDA function.

\* In the front monitoring mode, touch the LCD screen to switch to ADAS display mode

## ➤ ADAS Display Mode



- In the front monitoring Live View Mode, touch the LCD screen to switch to ADAS Display Mode
- Indications
  - LDW : When lane lines are detected , the lines in the display turn Green , the violated line will turn Red .
  - FCW : When a front vehicle is detected , the vehicle icon will appear. The vehicle will turn Red when generating a warning signal .
  - Collision Warning : The red vehicle icon will blink twice .
  - FCDA : The Green Vehicle icon will blink twice
  - HMW Time to collision : indicating at the center of screen
  - PD : A pedestrian icon will blink in Red
  - Vehicle Speed: indicated on the left side of screen as a number
- Press ADAS display screen a second time to enter into power-saving mode and press again to switch to the Live Monitoring mode.
- The video recording function works properly even in ADAS Display Mode and Power-saving Mode.

# Menu Guide

## [Basic Menu]

➤ User can enter each functional setting in the basic menu screen.



- The Basic Menu screen will appear when pressing the side M button or bottom  home button of LCD.
- Press each icon to enter into each corresponding setting menu .
- \* If password system is activated , password input screen will appear .
- \* The Recording function does not work in the menu mode .

- 1) ADAS CAM : Turn ADAS functions ON/OFF and configure operations.
- 2) DVR : Change settings relevant to recording , monitoring and resolution
- 3) Playback : Play recorded videos
- 4) Configurations : Change settings of system volume , voice alarm ,operation environment and SD card data format
- 5) Vehicle Type Setting : Choose the vehicle type and change the installation position
- 6) Exit : Return to the front monitoring mode and start recording function

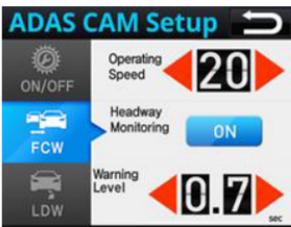
## [ADAS CAM]

In ADAS Setup menu, User can change settings of FCW, LDW, FCDA and PD.



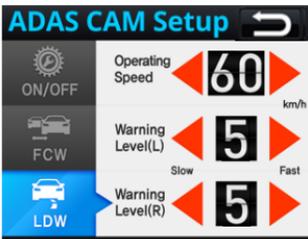
### 1) Operating Settings

- Each function can be turned ON/OFF
- Touch the button to switch between ON and OFF



### 2) FCW

- Operating Speed : press the Left / Right arrow to change  
-Default value 20km/h, adjustable from 20 ~ 80(km/h)
- HMW : The warning function is to keep a safe distance between vehicles .
- Warning Sensitivity: sensitivity can be set from Sensitive, Normal and Insensitive.



### 3) LDW

- Operating Speed : press the Left / Right arrow to change  
- Default value 60km/h, adjustable from 40 ~ 80(km/h)
- Warning Sensitivity: can be adjustable from 1~9,

The higher warning level can lead to a more responsive alert .

\*  : return to the previous menu

## [DVR]

➤ In DVR setup menu , User can change recording operation and resolution.



### 1) Basic Setup

- Continuous Recording function can be turned ON/OFF ( If OFF , only Event files can be recorded )
- Voice recording can be turned ON/OFF ( If OFF , video sound will not be recorded.)
- Recording Sensitivity : Event detection sensitivity can be adjusted.  
- Minor impacts can be recorded if set at Sensitive level.

### 2) Resolution Setting

- The recording resolution can be changed .
- Stored data has limited allocated capacity inside Micro SD card.

Resolution	Continuous	Event	Parking	Remark
Full HD	200 min	60min	120min	1CH/ Based on 32GB
HD	320min	100min	120min	

\* The number of recorded files vary according to the capacity of Micro SD card.

\* Oldest files will be overwritten when the capacity of SD card is fully occupied.



### 3) Parking Mode Setting (when power is connected to B+)

- Recording in Parking Mode :

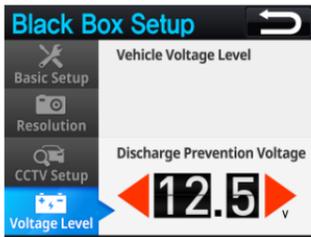
The recording function in parking mode can be turned ON/OFF.



\*  : return to the previous menu

## [DVR]

➤ In DVR setup menu , User can change recording operation and resolution.

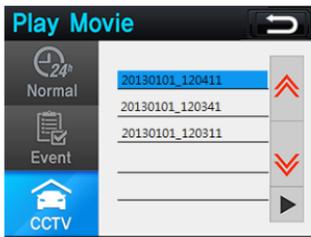


### 4) Voltage Setup

- It is recommended to measure the voltage level at ACC On, and then input the prevention voltage value.
- \* If prevention voltage value is below 12V, the vehicle battery could be discharged.

## [Play Movie]

➤The recorded Video files in modes of Continuous/ Event / Parking can be checked instantly.



### 1) Continuous / Event/ Parking

- Continuous : Select and check recorded files
- Event : Select and check the event files recorded during driving and parking
- Parking: Select and check recorded files in parking mode
- Select the file and press the play button to check
- When pressing stop  button, it will return to the file list page .



: scroll upward & downward to change



: play the selected video file

\*  : return to the previous menu

\* User can check recorded video files with ease via PC Data Manager program; User can check acceleration data , vehicle coordinate and other relevant information via PC Data Manager program. \*

## [Configuration]

➤ In Configuration menu , the operation settings can be configured .



### 1) Volume Control

- Speaker Volume Adjustment : the speaker volume can be adjusted. (0~15)
- MIC Volume Adjustment : the MIC input volume can be adjusted . (0~15)



### 2) Voice Alarm

- Event Recording : the voice message < start event recording >will be generated
- HMW : HMW signal will be generated with the voice message < watch out > .
- LDW : The voice message < be careful of Left/Right lane > will be generated.
- FCDA: The voice message <Check ahead > will be generated.

\* Even when voices are turned off , warning alarms still be generated.

\* FCW only generates the alarming sound without the voice guide .



### 3) SD Card Data Format

- Delete all the data stored in Micro SD to maintain the file system.
- \* Critical event files should be stored separately prior to SD card data format .
- \* SD card data format must be done in Configuration menu or via manager program . Notice that general data format method via PC can cause data format incompatibility.

\*  : return to the previous menu



## [Configuration]

### 4) System Setup

- LCD setting : sets LCD screen display and Screen OFF mode.
- LCD display : turns ON/OFF speed, speed unit, smart UI, and horizontal line on the display.
- Language : language type can be selected.
- System info : to check system information and initialize the system



#### 4-1) LCD setting

- Select View : It sets up the LCD screen display mode.
  - Front: It displays only the image of the front camera of the main body.
  - Rear: It displays only the image of the rear camera of the main body.
  - PIP: It displays front and rear images simultaneously.
    - \* Rear/ PIP screens are supported only when the secondary camera is connected.
- Screen Save
  - sets up LCD display status.
  - Even in Always On state, different modes can be switchable in-between Front monitoring → ADAS display → Screen OFF by touching the LCD.



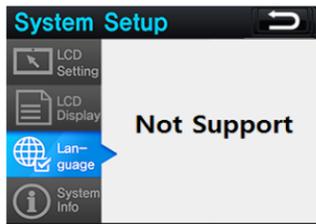
#### 4-2) LCD Display

- Speed: When ON is selected, it displays the speed values on LCD.
- Unit: It selects the speed unit
- Smart Car: When ON is selected, ADAS UI appears in Monitoring mode.
- Horizontal line: When ON is selected, a horizontal guide line appears in Monitoring mode.



\*  : return to the previous menu

## [Configuration]



### 4-3) Language

- The default language is English



### 4-4) System Info

- User can check S/W & H/W Version information
- When [Reset Setup] button is pressed, the values stored in the system will be initialized, and the system will enter into Install Mode.

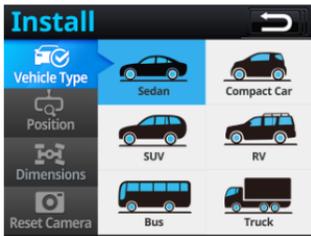
\*  : return to the previous menu



## [Install]

### ➤OPTIAN installation settings.

If values entered through Install mode are arbitrarily modified, it may cause ADAS function errors.

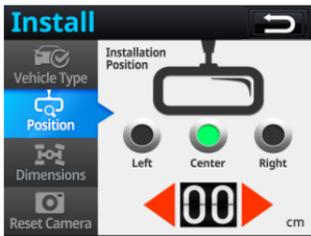


#### 1) Vehicle Type

- Choose vehicle type.

\* If user selects a vehicle type, the values of Width and Height will be automatically set in 「Dimensions」 menu. For more accurate warning, it is recommended to input actual values of Width or Height in 「Dimensions」 menu.

Type	Height (m)	Width (m)	Type	Height (m)	Width (m)
Passenger car	1.3	1.8	RV	1.7	1.9
Compact car	1.3	1.6	BUS	1.6	2.5
SUV	1.5	1.9	Truck	2.5	2.5



#### 2) Position

- Choose installation position of ADAS CAM.

\* Attached position is based on the driver's view inside the vehicle.

\* If the product is attached to the right or left side of the windscreen, please select the applicable position and input the measured distance from the center of the windscreen.



\* Attach the main body within 20 cm distance range from the center

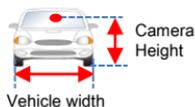
Attached Position(center=0cm)

## [Vehicle Type Setting]



### 3) Dimension

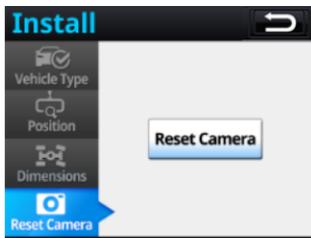
\* To perform ADAS properly, input actual vehicle width and installation height by using the arrow button.



\* Measure the height from the ground to the main body of camera

### \* Blinker Active

If the display arrow light blinks continuously even when turn indicators are off, change High/Low settings of [Blinker Active] in the Dimensions menu.



### 4) Reset Camera

• Reset the camera values

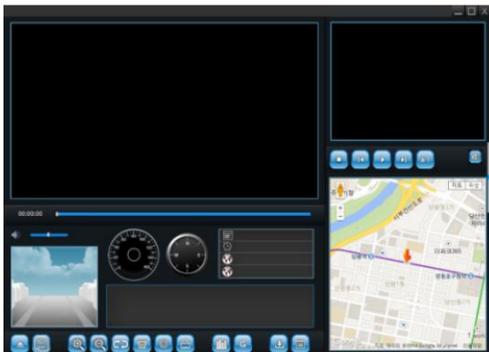
\* Press 'Reset Camera' button to activate install guide



# DATA MANAGER

## Installation of Data Manager Program

- In data manager program , user can view FHD videos in a wider screen. Also, user can check additional information, such as vehicle GPS and acceleration data.



- 1) Release the provided zip file
- 2) If (setup.exe) is launched, user can install by following Visual C++ 2010 Runtime Libraries (x86) guide.
- 3) Install OPTIAN 7 Viewer program
- 4) A desktop icon will be created after installation

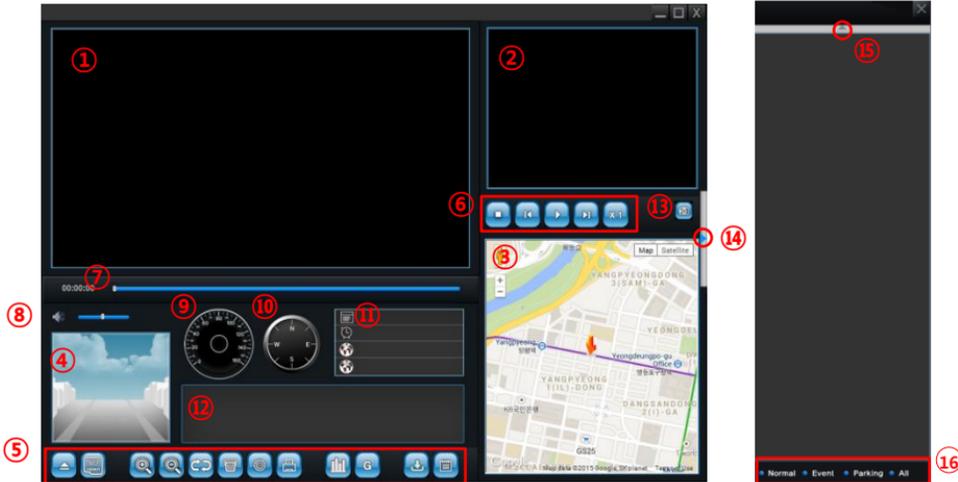


\* A map , if not supported by Google , will not appear in the manager program.

\* Recommended PC Specification

- OS : Window7/8/10(32/64bit)
- H/W : Dual Core 3.4GHz or above / 2G RAM or above
- Internet Brower : Microsoft Internet Explorer 11 or above
- Direct X version : Direct X 9.0 or above

## [Screen Composition]



1) Main Screen

2) Sub Screen

3) GPS Location on the map

4) ADAS Display Screen

5) Manager Menu bar

6) Video Play Bar

7) Video Play Time

8) Video Volume

9) Speed Indication

10) Compass

11) Recording Date & GPS co-ordinates

12) Acceleration sensor data: impact level & speed graph

13) Play/DIT Mode Change

14) File list window Open/Close button

15) File list sort out button

16) Classification of Normal, Event, Parking modes

## [Screen Composition (DIT Mode)]



1) DIT data list

2) Main camera screen

3) Location tracking window

4) ADAS display screen

5) Manager Menu bar

6) Video Play Bar

7) Video Play Time

8) Video Volume

9) Speed Indication

10) Compass

11) Recording Date & GPS co-ordinates

12) Acceleration sensor data: impact level & speed graph

13) DIT mode exclusive buttons

## [Button Description]

	Open file		Stop
	Open SD card		Play Previous File
	Zoom in on the video playing main screen		Play
	Zoom out on the video playing main screen		Pause
	Switch between the main screen video and sub screen		Play Next File
	Format SD card		Normal playing speed
	Configuration		Quick Play x 2
	Print the main screen image		Switch to DIT mode
	View Acceleration/ Impact/ Speed graph in detail		Switch to Player mode
	Switching between acceleration and G-sensor button		Indicate vehicle tracking mark
	Press the G-sensor button to view the speed		Over speed time setup
	Press the speed button to view the acceleration		Continuous file list
	Download the playing video to a selected folder		Automatic/ Manual/ Parking event file list
	The manager version information		Parking Event File list

## [Set Up Main Function]

Press the configuration button to set up ADAS, DVR and B2B special functions.

The screenshot shows a 'Setup' window with a close button (X) in the top right corner. The window has a tabbed interface with the following tabs: ADAS CAM, Car DVR, Setup, Install, Special, and Update. The 'Setup' tab is currently selected. The window is divided into several sections:

- ON/OFF:** A row of four checkboxes, all of which are checked: FCW, LDW, FCDA, and PD.
- FCW:** A section containing two rows of controls. The first row has 'Operating Speed' set to '20' km/h. The second row has 'FCW Warning Level' set to 'Normal' (indicated by a dropdown arrow).
- LDW:** A section containing two rows of controls. The first row has 'Operating Speed' set to '60' km/h. The second row has 'Warning Level(L)' set to '5'.
- FCDA:** A section containing one row of controls with 'Alarm Timing' set to '0' Sec.

### • ADAS CAM

#### 1) ON/OFF

- Set up FCW, LDW, FCDA, PD function ON/OFF

#### 2) FCW

- to change operating start speed and warning sensitivity

- A Higher value can enable a more responsive warning

#### 3) LDW

- to set up the starting speed of LDW operation and the warning sensitivity of left and right lane changes

- A Higher value can enable a more responsive warning

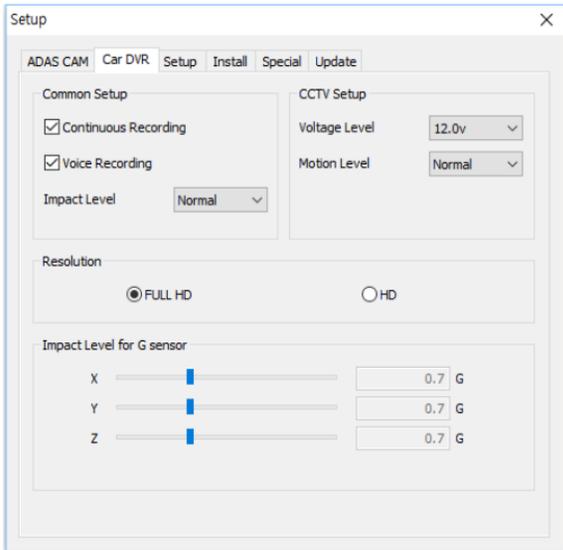
- min.1 / max. 9

#### 4) FCDA

- to change the standby time after the first alarm is triggered.

#### 5) PD

-PD function ON/OFF



X : Front  
Y : Side  
Z : Up/ Down

## • DVR

### 1) Common Setup

- to turn ON/OFF the functions of Continuous Recording and Voice Recording.

### 2) Impact Level

- to adjust the event recording sensitivity.

### 3) Voltage Level

- to set up the voltage level for battery discharge prevention

### 4) Motion Level

- to adjust the motion detection sensitivity during parking hrs.

### 5) Resolution

- to set up the resolution of recorded images. The higher the resolution of the image is, the shorter the time of recording cycle becomes.

### 6) Impact Level for G sensor

- to adjust the sensitivity of event recording in detail.

- A smaller value can enable a more sensitive impact detection setting.



## • SETUP

### 1) Volume Control

- to adjust the volume levels of a speaker and a microphone.

### 2) Voice Alarm

- to turn ON/OFF the voice alarming for each function.

### 3) LCD Setting

- to set up main body, external device and PIP screen output on LCD.

- to set up the Screen Save mode.

### 4) LCD Display

- to turn ON/OFF icons of speed, ADAS graphic, and display of horizontal line on LCD screen.

- to set up the speed unit type.

### 5) Language

- to change the language of the Manager program.

## • INSTALL

### 1) Vehicle Type

- choose your vehicle type

\* After selecting the vehicle type, for more accurate ADAS functions, please input exact installation parameters.

### 2) Install Position

- Choose the installation position from the driver's point of view.

- input installation height and width

- input the offset distance from the center of the windshield



※ **ADAS function may operate abnormally when setup is not properly done.**

### 3) Other Settings

- Brake Activation Signal : When brake wire is connected, choose HIGH/LOW type which is indicating on LCD display by pressing the brake

- Turn Active Signal : when blinker wires are connected , choose HIGH/LOW type which is indicating on LCD display when turning on the blinker

- Vehicle Pulse : When a speed signal cable is connected, input the pulse value of the vehicle

- Velocity priority : Select the priority of speed signal. When speed signal wire is connected, select Pulse

Setup

ADAS CAM Car DVR Setup **Install** Special Update

Device Position Setting

Vehicle Type :  Sedan  Compact Car  SUV  
 RV  Bus  Truck

Attached Position :  Left  Center  Right

Camera Height :  m

Vehicle Width :  m

Attached Position :  cm

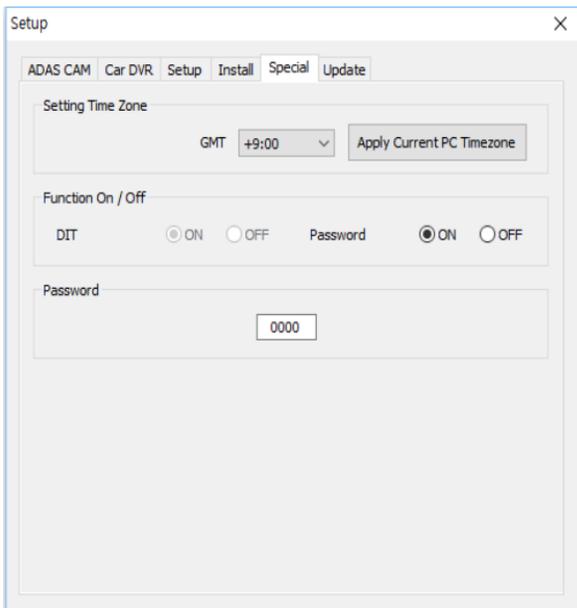
Other settings

Turn Activation Signal :  LOW  HIGH

Brake Activation Signal :  LOW  HIGH

Vehicle Pulse :

Velocity priority :  GPS  Pulse  GPS to pulse logic



## • Special

### 1) Time Zone

- GMT can be set
- Press [Apply Current PC Time zone] to sync with the GMT setting of your PC

### 2) Function On / Off

- to turn ON/OFF B2B special function.

## Maintenance



### [ Micro SD Card Maintenance ]

SD card is a consumable product. If not maintained well, errors may occur and videos may not be recorded properly.

Ensure to use the micro SD card approved by the manufacturer.

#### ➤ **SD Card Insert/Remove**

Before inserting or removing the SD card , ensure to turn off power

#### ➤ **Regular Check**

When video is recorded properly, a blinking REC sign will appear on the video monitor or ADAS display mode. If REC sign does not appear , there is an error in Micro SD card and user will need to replace or format the Micro SD card.

#### ➤ **Data Backup**

The recorded data may be deleted as time passes . It's necessary to save important data separately or keep the SD card separately.

#### ➤ **SD Card Format Method**

Please format video data via the configuration setting or via the data manager program

## [Troubleshooting]

### **Q. Power does not turn on.**

- Check if the power cable is correctly connected to the product.
- Check if the power cable is correctly connected to the car.
- Check the power condition of the battery of the car.

### **Q. The product stopped operation.**

- Check if there is any error in the micro SD card.  
(If there's an error in the micro SD card, the product may stop operating)

### **Q. No sound after booting up**

- Check if the volume is set to '0'.

### **Q. Images are not saved.**

- Check if the Micro SD card is normal.
- The product can be turned off automatically at high temperature in Parking mode for safe recording.

### **Q. ADAS warning function does not operate.**

- Check if the function is set to OFF.
- Check if the volume is set to '0'.
- Check if GPS is being received and if ADAS function setting speed is normal.
- Check if the model of the car and the adjustment of horizontal line are correctly set up.

### **Q. lane departure warning is too slow or too fast.**

- Check if the adjustment of horizontal line, the model of the car, and the mounting location are correctly set up.
- Check the LDW sensitivity setting

### **Q. Front collision warning is too slow or too fast.**

- Check if the adjustment of horizontal line, the model of the car, and the mounting location are correctly set up.
- Check the sensitivity setting of FCW.

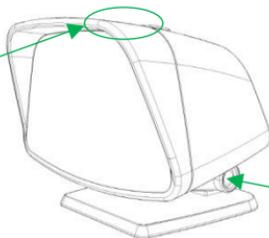
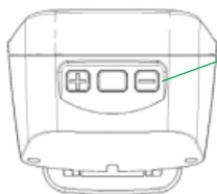
### **Q. Micro SD card cannot be detected by PC.**

- Check if the micro SD card adapter or the SD card reading device operates normally.

## [DISPLAY]

User can easily check ADAS detection and warning statuses.

Volume Adjustment



Angle  
Adjustment  
Screw

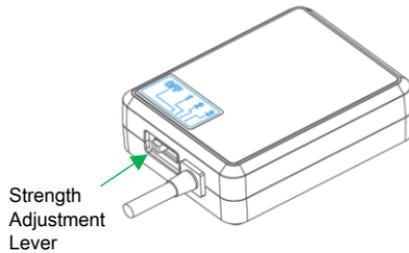


UI

UI	Meaning
Number	HMW Time to Collision
	Recording Activated
	Vehicle Detection & Warning
	Lane Detection & Warning
	Pedestrian Detection & Warning
	Turn Signal Activation
	Brake Signal Activation (when brake wire is connected )
	Error or Functions OFF

## [Vibrator]

Warnings can be effectively sensed by the driver through the instant vibratory warning method.  
The vibration strength can be adjusted from level 1 to level 3 or can be turned off.



### \* How to apply vibratory device

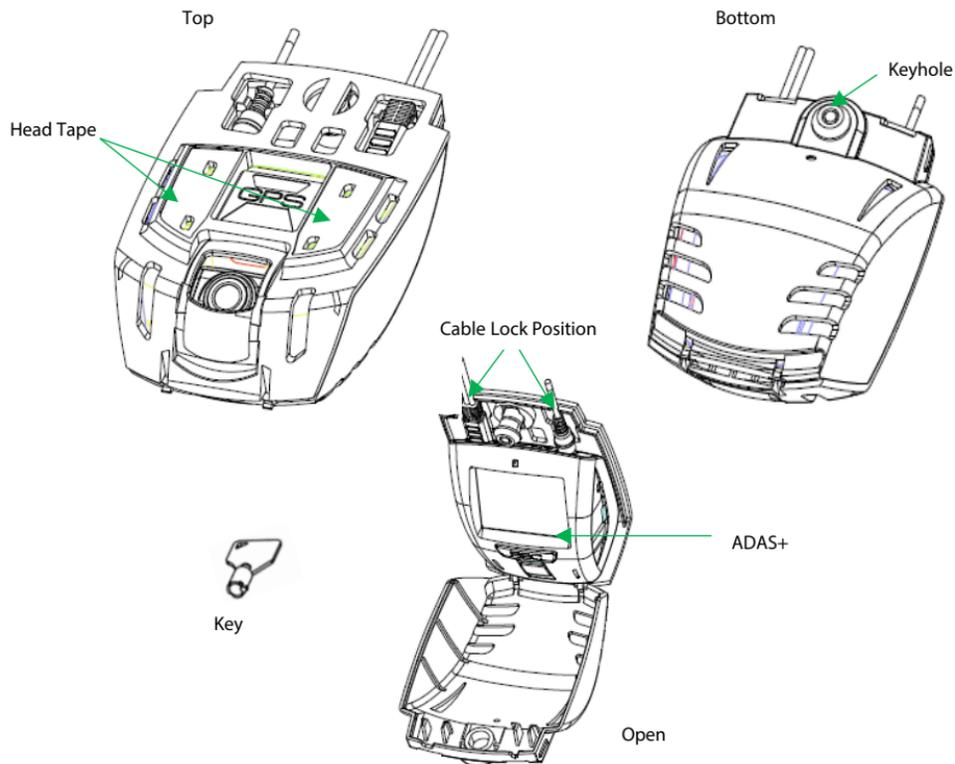
Place the vibrator inside the pocket of cover and wrap around the seat belt



## OPTIONAL DEVICES

### [Cover Lock]

The Cover Lock is designed to prevent theft and unauthorized setting changes.



## [Specification]

The specification of ADAS CAM is subject to change without a prior notice for product improvement.

Name	<b>ADAS CAM</b>		
Front Camera	Full HD(1920 x 1080) 100 x 82 x 42 (mm)	Operating Voltage	12V, 24V
Rear Camera (Option)	HD (1280x720) 65 x 28.3 x 32.5 (mm)	Minimum Operating Voltage	9V
LCD	2.4" QVGA TFT Panel	Maximum Operating Voltage	32V
Recording Mode	CCTV, Event, Manual, Parking	Maximum Electric Consumption	5.6W
SD card type	Micro SDHC card Class10 (Default = 32GB)	Storage Temperature	-40°C~85°C
Recording Frame	Front 27fps/Rear 30fps	Operating Temperature	-20°C~70°C
Video	H.264 / extension – AVI	Minimum Operating Illumination	1lux
Voice Recording	Sensitive internal condenser MIC	Weight	155g

Updated user guide will be available on our website at:

**[www.brandmotion.com](http://www.brandmotion.com)**