

ADAS+

ADVANCED DRIVER ASSISTANCE SYSTEM



Part Number: ADAS-1100

BRANDMOTION
safer cars today

ADAS

[ADAS] or Advanced Driver Assistance System is an advanced safety assist system that can help a driver to avoid or mitigate accidental collisions.

- 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.



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Safety Caution



[Warning!]

Severe injuries or damages can be caused if the user does not follow instructions.

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.

Separate the power cable when not using for an extended period. Otherwise, it may cause battery discharge or fire.

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

Do not change settings while driving as it may cause traffic accidents.

Do not separate 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 which may cause severe injury.

Avoid installing in places with high humidity or inflammable gas as it may cause explosion or fire.

Please do not place the product in an enclosed vehicle or expose to heat stress for an extended period as it may cause fire or malfunctions.

**[Caution!]**

If the user does not comply with manual instructions, it may cause injuries or property damages.

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 before installation. Do not use force to adjust the lens as it may cause product damage.

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

Use only tested and approved Micro SD Card from the manufacturer to avoid product damages.

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.

Remove and keep Micro SD card with care to protect recorded accident data. New video data may overwrite important data.

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 damaged. Check SD card status before its operation.

Safety Caution



[Caution!]

If the user does not comply with manual instructions, it may cause injuries or property damages.

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. In the following conditions, ADAS functions may not perform properly.

- Extreme weather
- Extremely curved roads
- Roads without painted lane markings
- 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 calibration is incorrect

ADAS functions only work when the speed rate received from GPS is over the set operating speed threshold. If the speed data cannot be adequately read, it may cause ADAS malfunctions

Tinted windscreens will affect the brightness and definition of recorded videos.

Windscreen metallic films may cause GPS signal loss.

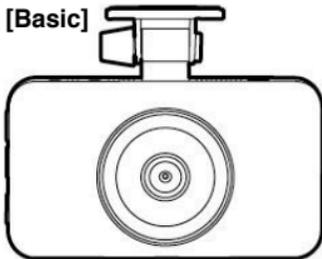
Keep the camera lens and windscreen clean to ensure clear video recording and proper ADAS functions.

Camera lens calibration can be affected by strong impacts such as driving over a speed bump or collisions. The affected camera angle can cause ADAS performance degradation.

Do not disassemble or modify the main body randomly as it will result in data loss, damage and will void the warranty cover.

Basic and Optional Accessories

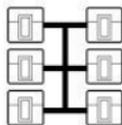
[Basic]



Main Body



Micro SD Card (32GB)



6P Mount



Type A : Mini USB-Cigar Jack



External GPS

[Optional]



OLED Display



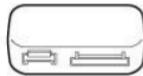
Vibrator



Secondary Camera



SD Card (32-128GB)



HUB



Wi-Fi Dongle



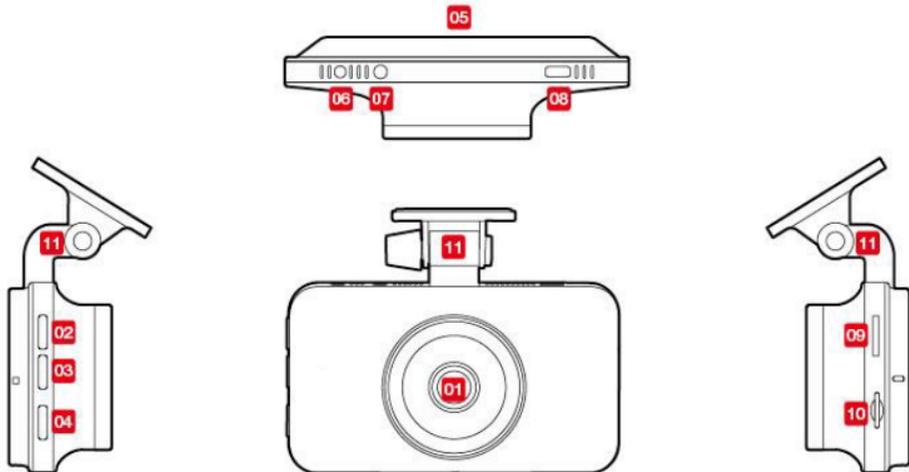
Type B : 10pin Vehicle Wire

Type C : 10pin 1.5m + HUB + Vehicle Wire

The specifications of the above accessories are subject to change without prior notice.
The above images are for user's understanding; original accessories may look a little different.

Basic and Optional Accessories

[Main Body]



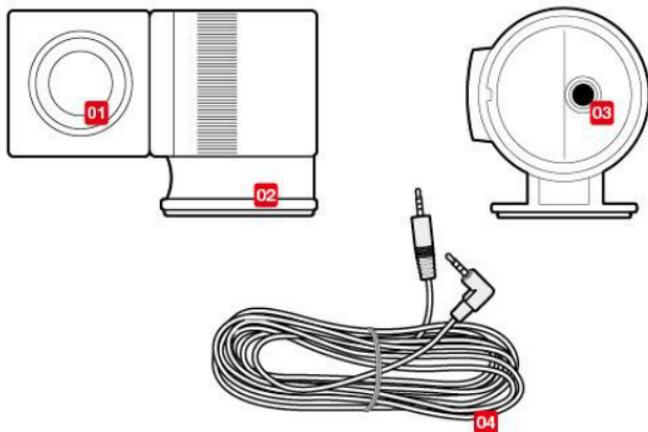
- 01 Front Camera (FHD)
- 02 Volume Adjustment [+]
- 03 Volume Adjustment [-]
- 04 Recording Button

- 05 Touch LCD Screen
- 06 Secondary Camera Ø2.5
- 07 External GPS Ø3.5
- 08 Power Port (Mini-USB Type)

- 09 USB Port
(External Wi-Fi Connection)
- 10 Micro-SD Card Socket
- 11 Bracket

Basic and Optional Accessories

[Secondary Camera]



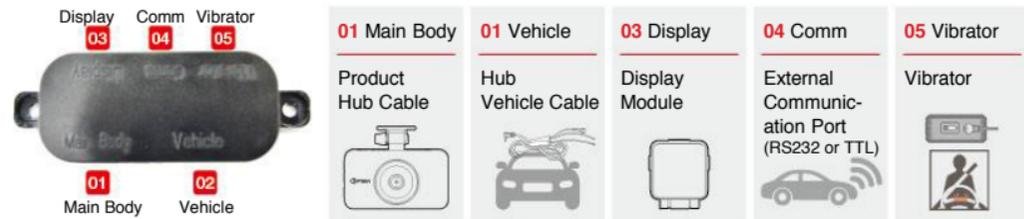
- The user can set the specific installation location of Secondary Camera.
- A 5m power cable is provided.

- 01 Rear Camera
- 02 Integral Bracket
- 03 DC Power Port
- 04 DC Power Cable

Basic and Optional Accessories

[HUB and Connection Pin map]

- Display and vibrator can be connected to Hub.

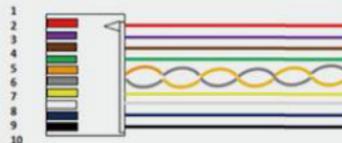


- B Type: Main body to vehicle connection Pin out



No.	Signal	Cable Color
1	B+	Red
2	ACC(IG)	White
11	GND	Black

- C Type: Dual HUB to vehicle connection Pin out



No.	Signal	Cable Color	No.	Signal	Cable Color
1	ACC(IG)	Red	7	TURN_R	Yellow
2	B+	Violet	8	TURN_L	White
3	BRAKE	Brown	9	SPEED	Blue
4	WIPER	Green	10	GND	Black

Product Installation

[Precautions]

- Install the product when parked on flat ground with the power turned off
- When installing in passenger vehicles, avoid installing in a place where it interferes with movement of the rear mirror
- When not installing at the center of the windshield, install within a 20cm range from the center of Windshield to ensure stable ADAS performance.
- Install near to the rear mirror in Sedan or RV
- If possible, install near to the bottom area of the windscreen in heavy vehicles



- 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, change 'GPS' to 'Pulse' in PC manager program. Afterward, 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

Product Installation

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



Correct Angle Adjustment :

The horizon guideline matches with the actual horizon.



Incorrect Angle Adjustment :

The horizon guideline is above the actual horizon



Incorrect Angle Adjustment :

The horizon guideline is below the actual horizon.

- ! After the calibration, if the view angle is different to [Correct Angle Adjustment] image as above, please rotate the camera adjuster to recalibrate correctly.

[Installation option I Type A - Cigar Jack Connection Method]

* Should be installed in a professional installation shop

* The following instruction shows how to install the main body and essential accessories.
Please read carefully before attempting to install.

01



- Clean installation surface of the windshield

02



- Remove tape off the bracket and attach the main body horizontally

03



- Connect to cigar jack and turn vehicle engine ON

04



- After setup, the live-view screen will appear

Installation Notice

! Make sure to connect product and cigar jack cable when vehicle engine is OFF

! If the product is connected when vehicle power is ON, it may cause product damages.

! During camera installation and setup, keep vehicle power in ACC condition. If the camera is reset in shaky situations, ADAS may not work correctly.

! After installation, drive 60km/h for around 1 min on the road with clear lane markings in order to automatically calibrate the camera. ADAS functions may not work ideally if the automatic calibration is not completed.

Product Installation

[Installation option I Type B - Direct connection method]

* Should be installed in a professional installation shop

* This instruction shows how to install the main body and basic accessories.

Please read carefully before attempting to install.

01



- Clean installation surface of the windscreen

02



- Remove tape off the bracket and attach the main body horizontally

03



- Connect cable wire to B+ of vehicle

04



- After setup, the live-view screen will appear

Installation Notice

! Make sure to connect product and cable when the vehicle engine is OFF

! If the product is connected when vehicle power is ON, it may cause product damages. ! During camera installation and setup, keep vehicle power in ACC condition.

! If the camera is reset in shaky conditions, ADAS may not work correctly.

! To activate parking mode[CCTV], connect relevant wires to ACC and B+

! After installation, drive 60km/h for around 1 min on the road with clear lane markings in order to automatically calibrate the camera. ADAS functions may not work ideally if the automatic calibration is not completed.

[Installation option I Type C - Hub Connection method]

* Should be installed in a professional installation shop

* This instruction shows how to install the main body and essential accessories.

Please read carefully before attempting to install.

No.	Name	Wire Color	Description
1	IG[ACC]	Red	IG2[Key-On] power
3	BRAKE	Brown	Brake signal
7	TURN_R	Yellow	Right turn signal
8	TURN_L	White	Left turn signal
9	VSS	Blue	Speed signal
10	GND	Black	Ground

01



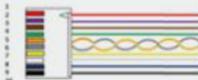
- Remove tape off the bracket and attach the main body horizontally

02



- Attach the Hub and connect cables to the Hub

03



- Connect power cable (refer to pin map)

04



- When connecting optional devices, be sure to connect to the Hub first before applying power

05



- After setup, the live-view screen will appear

Installation Notice

! Make sure to connect product and cable when the vehicle engine is OFF

! If optional devices are connected when the vehicle power is being applied to Hub; it may cause damages to the device.

! During camera installation and setup, keep vehicle power in ACC condition.

! If the camera is reset in shaky conditions, ADAS may not work correctly.

! After installation, drive 60km/h for around 1 min on the road with clear lane markings to automatically calibrate the camera.

ADAS functions may not work ideally if the automatic calibration is not completed.

Product Installation

[Secondary Camera Installation]

01



- Ensure to connect the secondary camera after turning off main body
- *When connecting the cable of the secondary camera, firmly push the connection jack until the jack hides inside.

Caution!

! Ensure to connect the secondary camera after turning off the power of the main body. The secondary camera may not be sensed if it is connected when the main body power is ON.

! After mounting the camera, check through a monitoring screen if the direction of the live-view image is correct.

! In the monitoring mode, the rear-view screen, PIP screen, and the front view screen can be switchable.

02



- When attaching the secondary camera to the rear window, place the holder on the right side.
- *Avoid installing directly over heat wires.

[Calibrate camera angle for proper ADAS performance]

01		Drive 40km/h for 30 seconds on the road with clear lane markings	<p>Notes:</p> <p>! During calibration, the left and right lane markings on the straight road should be visible.</p> <p>! To calibrate at high accuracy, it is recommended to drive on the flat and straight road. If the camera is calibrated on a sloped road, ADAS may not work as well as expected.</p> <p>! The 1st calibration should be done while driving above 40km/h, and the 2nd calibration should be done while driving above 60km/h.</p> <p>! If the 2nd calibration stage is not completed properly, ADAS may not perform as well as expected.</p>
02		After lane detection, drive 40km/h for 30 seconds again. A red crossing icon will appear on display to indicate the 1st stage of calibration is completed.	
03		After the 1st stage of calibration, drive 60km/h for 30 seconds. The display will turn Black for 1 or 4 seconds.	
04		Afterward, the screen will turn normal, and the red crossing will turn Blue, accompanied by a voice message to inform the driver of calibration finish status.	

Main Functions



FCW | Forward Collision Warning

The FCW function monitors the driving lane and generates a warning signal when there is a risk of a collision with the vehicle (including a two-wheeled motor vehicle) in front.

- When installing in passenger vehicles, avoid installing in a place where it interferes with movement of the rear mirror.
- Generates a loud warning signal if a risk of an impending crash is detected
- The collisional risk is estimated by calculating the relative speed and the distance to a preceding vehicle
- Accompanied by a series of Strong FCW alarms
- In Monitoring Mode: FCW icon appears when FCW is triggered.
- In Display Mode: A Red vehicle icon appears when FCW is triggered.

The FCW function works when driving over 1km/h.

- FCW operating start speed cannot be configured; the FCW function always stays activated while driving.



SDA | Safe Distance Alert

The SDA function notifies you to keep a safe distance with the vehicle (including a two-wheeled motor vehicle) in front.

- Notifies the driver if a safe distance to the vehicle in front is not maintained
- The alert timing is estimated by calculating driving speed and the distance to a preceding vehicle.
- Alert Timing = Distance to a front vehicle/host vehicle speed
- Accompanied by a notifying sound/timing indication (ex: 0.7sec, 0.9sec, etc.)
- In Monitoring Mode: Alert timing indication / SDA icon will appear on the screen when SDA is triggered.
- In Display Mode: A white vehicle icon appears along with timing indication / The vehicle icon will turn Red when SDA is triggered.

The SDA function works when driving over operating start speed.

- Default Operating Start Speed: 40km/h
 - Default Timing: 0.7s
 - The operating start speed can be adjusted from 30 to 80km/h
 - The alert timing can be set from 0.4 to 1.0s in SDA tab of 「ADAS Setup」 menu.
-

Main Functions



LDW | Lane Departure Warning

The LDW function generates a warning signal if you unintentionally depart from the driving lane.

- The LDW warning can be generated when unintentionally changing lanes. If the vehicle turn indicator is connected, it will only give warnings when changing lanes without turning indicator light ON.
- Continuous lane changing within 3 seconds will not activate the alarm.
- Accompanied by a Strong LDW Alarm
- In Monitoring Mode: Green lane icon appears when driving lane is detected / The violated lane direction will turn Red
- In Display Mode: Green lane icon appears when driving lane is detected / The violated lane direction will turn Red.
- In Display Mode : A Red vehicle icon appears when FCW is triggered.

Notice: If A type or B type connection method is applied, the LDW function will stay activated even when turning on the blinker.

LDW only works when driving over operating start speed.

- Default Start Speed : 60km/h
- The operating start speed can be adjusted from 30 to 80(km/h) in 「ADAS Setup」 menu.
- The warning sensitivity can be adjusted in 「ADAS Setup」 menu.



FCDA | Front Car Departure Alert

The FCDA function informs you of the movement of the vehicle in front when your vehicle is stationary.

- If the vehicle in front starts moving, it instantly notifies the driver.
- The change of distance to a front vehicle is monitored when the host vehicle is stationary.
- Accompanied by a notifying sound
- In Monitoring Mode: FCDA icon appears on screen when a front vehicle movement is sensed.
- In Display Mode: A white vehicle icon appears when FCDA is triggered.

The FCDA function works when the host vehicle speed is 0km/h. • Not being able to configure operating start speed

- Pay attention to forwarding direction after hearing the FCDA sound
-

Main Functions



PCW | Pedestrian Collision Warning

The PCW function gives a warning signal if a possible collision with a pedestrian ahead is detected.

- Pedestrians on the urban road or in crossroad can be detected.
- The full-body shape of an adult pedestrian should be visible.
- The maximum detection range is up to 20 meters, which may vary by installation positions.
- Accompanied by a PCW alarm
- In Monitoring Mode: A pedestrian icon appears on screen when PCW is triggered.
- In Display Mode: A Red pedestrian icon appears when PCW is triggered.

The PCW function works when the driving speed is less than 30km/h.

- The operating start speed cannot be configured.
- Only a pedestrian within the driving path can be detected.
- In the following conditions, PCW may not work correctly.
 - 1) Low ambient light
 - 2) Pedestrians are hard to be sensed due to inclement weather
 - 3) Pedestrians are surrounded by other objects
 - 4) Pedestrians are hard to be detected due to backlight or shadow
 - 5) Pedestrians are moving too fast
 - 6) Pedestrians cut in driving path suddenly



VB | Virtual Bumper

The VB function generates a virtual bumper length in front of your vehicle; if the vehicle in front is sensed within the virtual bumper range, a beep sound will be generated.

- If the distance to the vehicle in front is less than 4 meters, it gives a VB warning.
- The collisional risk is estimated by calculating the distance to the vehicle in front.
- Accompanied by a VB alarm
- In Monitoring Mode: A VB icon appears on screen when VB is triggered.
- In Display Mode: A Red vehicle icon appears when VB is triggered.

The VB function works when the driving speed is from 1 to 30km/h.

- The VB operating start speed cannot be configured.
-

Main Functions



DVR | Driving Video Recorder

1. The DVR function records videos in Full HD.
2. Types of Recordings
 - 1) Continuous Recording: generates a video file every 60 seconds and saves in the Normal folder of SD card.
 - 2) Automatic Event Recording: records video data automatically into the Event folder when an impact is detected
30 seconds of Event: previous 10 seconds / afterward 20 seconds

*Driving over a speed bump, utility hole or uneven road at high speed may also be recorded as Event files.

3. Parking Mode[CCTV]

• The parking mode[CCTV] can be activated when ACC(IG) and B+ are connected; If the vehicle engine is turned off, it will enter into the parking mode[CCTV]. If the vehicle engine is turned ON, it will exit the parking mode [CCTV].

- Vehicle Protection
 - Discharge Prevention: the system will automatically turn OFF if the vehicle battery voltage drops below the set voltage level.
 - 「DVR」 Menu: adjustable from 11.5 to 13.5 voltage.

*A low voltage setting can cause battery discharge. Appropriate voltage level setting is required.

The duration of parking mode[CCTV] is limited to 2 hours

It is necessary to exit menu setting mode to record videos.

System Start

[Booting up]

When power is applied, the intro loading screen will appear.



Logo Screen



Loading Screen

*If the system is connected to B+ of the vehicle, the system will restart when turning on vehicle IG.

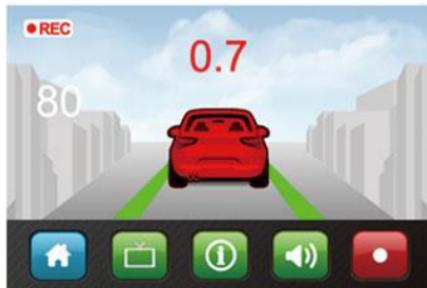
System Start

[Screen Menus | Live View Mode]



	Video is being recorded
	Safe distance alert time is indicated if a front vehicle is detected
	Vehicle speed
	Horizontal Guide Line
	Calibration completed
	Lanes are detected when driving over operation start speed. The violated lane direction will turn Red.
	If FCW is triggered, the FCW icon will appear.
	If SDA is triggered, the SDA icon will appear.
	If LDW is triggered, the LDW icon will appear.
	If FCDA is triggered, the FCDA icon will appear.
	If PCW is triggered, the PCW icon will appear.
	If VB is triggered, the VB icon will appear.
	Press home button to return to menu screen
	Press monitoring button to switch view from front to rear or PIP (In case a secondary camera is connected)
	Turn ON/OFF screen info indication
	Turn ON/OFF sound
	Record event manually

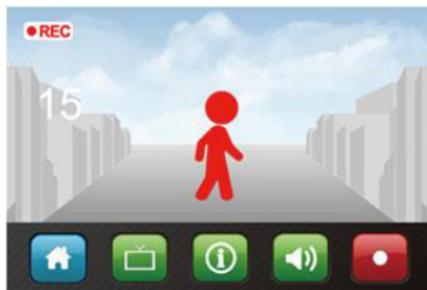
[Screen Menus | ADAS Display Mode]



• In the live -view mode, touch LCD screen to switch to ADAS display mode.

• Indications

- LDW: If the driving lane is detected, the lane icon will turn Green, and the violated direction of icon will turn Red.
- SDA: If a front vehicle is detected, a vehicle icon will appear, and it will turn Red if the safe distance is not maintained.
- SDA Timing: it indicates timing value at the center of image.
- FCW: A vehicle icon appears in Red.
- FCDA: A vehicle icon appears in Green.
- Pedestrian Detection: A pedestrian icon appears in Green.
- PCW: A pedestrian icon appears in Red.
- Vehicle Speed: Indicating speed value on the left of the screen.



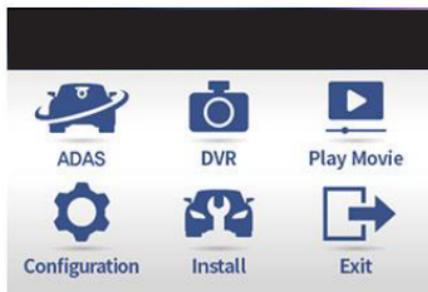
• Touch ADAS display screen a second time to enter into power-saving mode and press again to switch to live-view mode.

• The video recording function works while in ADAS display or power-saving mode.

Menu Guide

[Basic Menu]

The User can choose to enter into each setup menu.



- The Basic Menu will appear when pressing the home button of LCD. 

- Press each icon to enter into each corresponding menu.

- 1)ADAS: Turn ADAS functions ON/OFF and configure operations
 - 2) DVR: Change settings of recording mode and format SD card
 - 3) Play Video: Check and play recorded files
 - 4) Configurations: Configure system volume, voice alarm, and other system settings
 - 5) Vehicle Type: Select the vehicle type and installation position
 - 6) Exit: Return to the live-view mode to start recording
-

[ADAS Setup]

In the ADAS setup menu, the user can change settings of ADAS functions in detail.



1) Operation Settings

Turn each ADAS function ON/OFF.



2) SDA

- Operating Start Speed: press the Left / Right arrow to change - adjustable from 20 to 80(km/h)
- Sensitivity: the default setting is 0.7 sec, adjustable from 0.4 sec to 1.0 sec. A higher value can enable a more active warning.



3) LDW

- Operating Start Speed: press the Left / Right arrow to change - adjustable from 40 to 80(km/h)
- Sensitivity: adjustable from 1 to 9, A higher value can enable a more active warning.



• Return to the previous menu.

Menu Guide

[DVR]

In the DVR setup menu, the user can configure recording operations.



• Return to the previous menu.

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) Recorded data will be stored in the allocated capacity of Micro SD card

- The number of stored files may vary by remaining size.

Resolution	Continuous	Event	Parking	Remark
Full HD	100min	30min	120min	1CH/16GB
Full HD	200min	60min	120min	1CH/32GB
Full HD	600min	20min	120min	2CH/16GB
Full HD	120min	40min	120min	2CH/32GB

*The actual recording time may vary by video size and Micro SD card condition.

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

3) Parking Mode[CCTV] Setting (when power is connected to B+)

- Recording in parking mode[CCTV]: The recording function in parking mode[CCTV] can be turned ON/OFF.



4) SD Card Data Format

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

[Play Video]

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



1) Continuous / Event/ Parking

- Continuous: Select and check recorded files
 - Event: Select and check event files recorded
 - Parking: Select and check recorded files in parking mode[CCTV]
 - Select the file and press the play button
 - When pressing stop button, it will return to the file selection 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.

Menu Guide

[Configuration]

In the Configuration menu, the system operation settings can be changed.



1) Volume Control

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



2) Auditory Warning Setup

- Sound/Voice Alarm: Sound and voice message can be triggered when an event occurs.
 - Sound Alarm: Only sound alarm can be triggered when an event occurs.
 - Voice Alarm: Only voice message can be triggered when an event occurs.
- *FCW and VB only generate sound alarms without voice messages.



3) Display Setting

- View Mode: Select LCD Display Mode
 - Front: Shows front view only
 - Rear: Shows rear view only
 - PIP: Shows front and rear views simultaneously
 - * Rear/ PIP modes can be supported when a secondary camera is connected.
- LCD View
 - Set up LCD view condition
 - Even in the continuous display mode, the user can touch display to change to power-saving or ADAS-display mode.



- Return to the previous menu.



4) System Setup

- LCD Calibration: Calibrate touchscreen for its accuracy
- LCD Indication: Speed UI, smart UI and horizon guideline can be turned ON/OFF.
- Language Setting: The UI language can be selected.
- System Info : Check system info or reset system



4-1) LCD Calibration

- Start : press to calibrate touchscreen
- Press (+) in sequence to complete LCD calibration process



4-2) LCD Indication

- Speed: If ON, it shows speed value on LCD
- Unit: Select the type of speed unit
- Smart Function: If ON, ADAS UI appears on LCD.
- Horizontal Line: If ON, a horizontal guideline appears in the live-view mode.



- Return to the previous menu.

Menu Guide

[Configuration]

In the Configuration menu, the system operation settings can be changed.



4-3) Language

- The default language is in Japanese, the user can select English or Korean in the menu.

4-4) System Info

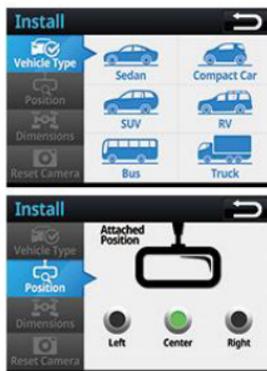
- Check version info of FW, HW, and MCU
- Press the Reset button to remove all saved system parameters
- The Installation setup, including vehicle settings, has to be done from the beginning.



- Return to the previous menu.

[Vehicle Type Setup]

Installation settings



1) Vehicle Type

- Select your vehicle type.

*If the user selects the vehicle type, the values of Width and Height will be automatically set as follows in 「Dimensions」 menu. For more accurate warnings, 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	1.3	1.8	RV	1.7	1.9
Compact	1.3	1.6	Bus	1.6	2.5
SUV	1.5	1.9	Truck	2.5	2.5

2) Installation Position

- Select the installation position of the main body.
- Select the installation position from the driver's point of view



- Return to the previous menu.

Menu Guide

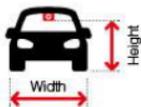
[Vehicle Type Setup]

Installation settings



3) Vehicle Dimension

* To perform ADAS more accurately, input values of installation info.



*Measure the height from the ground to the main body position

* Blinker Active

If the arrow icon blinks continuously even when turn indicators are off, or when the arrow, which is opposite to the applied direction of the turn signal, blinks continuously, please change High/Low settings of [Blinker Active] in the Dimensions menu.



4) Reset Camera

• Reset automatic calibration; press the button in case of re-installation or abnormal ADAS performance.

*After Rest, it will enter into the setup mode as below



• Return to the previous menu.

Data Manager

[PC Manager Install]

In the data manager program, the user can check FHD videos in a full screen. Additional information, such as vehicle GPS and acceleration data can also be monitored.



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

*If your internet explorer does not support Google Map, the map will not appear in the manager program. Please update to the recent version of explorer

*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

Data Manager

[Screen Menus]



- | | |
|-----------------------------------|---|
| 01 Main Screen | 08 Video Volume |
| 02 Sub Screen | 09 Speed Indication |
| 03 GPS Location on the map | 10 Compass |
| 04 ADAS Display Screen | 11 Recorded Date & GPS
Co-ordinates |
| 05 Manager Menu bar | 12 Acceleration sensor data:
impact level & speed graph |
| 06 Video Play Menu Bar | |
| 07 Video Play Time | |



- | |
|--|
| 13 Play/DIT Mode Change |
| 14 File list window Open/Close
button |
| 15 File list sort out button |
| 16 Normal, Event and parking
mode[CCTV]s |

[Screen Menus | DIT Mode]



- | | | |
|------------------------------------|---|---|
| 01 DIT data list | 07 Video Play Time | 12 Acceleration sensor data:
impact level & speed graph |
| 02 Main camera screen | 08 Video Volume | 13 Exclusive DIT mode buttons |
| 03 Location tracking window | 09 Speed Indication | |
| 04 ADAS Display | 10 Compass | |
| 05 ScreenManager Menu | 11 Recorded Date & GPS
Co-ordinates | |
| 06 barVideo Play Bar | | |

Data Manager

[Button Description]

	Open file
	Read SD card
	Zoom in images
	Zoom out images
	Switch between the main screen and sub screen
	Format SD card
	Configuration
	Print main screen image
	Acceleration / Impact / Speed graph in detail
	Acceleration value, press to switch to G-sensor button
	G sensor impact level, press to change to speed button
	Speed value, press to change to acceleration button
	Copy and paste the playing video file into a desired folder
	Check version info

	Stop
	Play Previous File
	Play
	Pause
	Play Next File
	Normal playing speed
	Quick Play x 2
	Change to DIT mode
	Change to Player mode
	Indicate vehicle tracking mark
	Over speed setting
	Normal Continuous recording file list
	Event Automatic / Manual / parking mode[CCTV] file list
	Parking mode[CCTV] File list

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. Make sure to use micro SD card approved by the manufacturer.

SD Card Insert/Remove

Before inserting or removing SD card, turn off the power.

Regular Check During the standard video recording process, a blinking REC appears on the LCD.

If REC does not appear, the SD card may have an error.

Please format or replace the SD card.

Overwrite and Data Backup

SD card has limited capacity, so new data may overwrite the recorded data as time passes. It is necessary to store important data separately.

Format Micro SD Card

Before inserting or removing SD card, turn off the power.

Maintenance

[Troubleshooting]

Q. Not being able to turn ON the power

- Check if the power cable is correctly connected to the product
- Check if the power cable is correctly connected to your vehicle
- Check vehicle battery condition

Q. Operation suddenly halted

- 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 level is 0

Q. Not being able to record videos

- Check if Micro SD card is damaged
- The product can turn OFF automatically at high temperature in parking mode[CCTV] to ensure stable recording.

Q. No ADAS warnings

- Check if ADAS functions are turned OFF
- Check if the volume level is set at 0
- Check GPS status and operating start speed of ADAS functions
- Check if vehicle type and calibration are set properly

Q. LDW is too slow or too fast

- Check if the adjustment of the horizontal line, vehicle type and install position correctly set
- Check LDW sensitivity level

Q. FCW or SDA is too slow or too fast

- Check if the adjustment of the horizontal line, vehicle type and install position correctly set up
- Check SDA sensitivity level

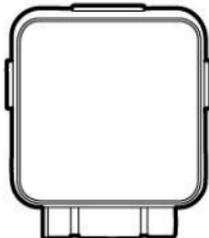
Q. Not being able to read Micro SD card

- Check if the micro SD card adapter operates normally
-

Optional Devices

[Extra Display]

The intuitive display allows the driver to effortlessly monitor detection of lanes, front vehicles, traffic signs, and pedestrians.



UI	Meaning
Number	SDA timing
 Orange REC	Recording Activated
 Green Vehicle	Vehicle Detection & Warning
 Lane Icon	Lane Detection & Warning
 PD Icon	Pedestrian Collision Warning
 Yellow Circle	Turn Signal Activation
 Yellow Circle and Lane	Function OFF or Error

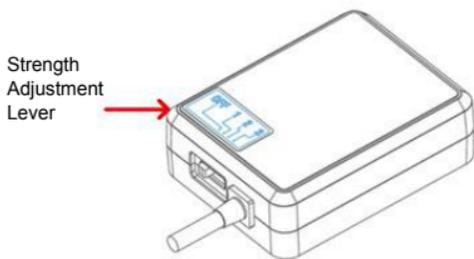
Optional Devices

[Vibrator]

The driver can effectively sense warnings 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 use the vibratory device.

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



Appendix

[Certification]



This device is registered as the Business-purpose (Class A) digital device which achieved electromagnetic wave compliance, Class A digital devices are ones that are marketed exclusively for use in business, industrial and commercial environments.



- Designation No. : KR0022
- Test Report No. : ETL180425.0411
- Rule Part(s) :Part 15 Subpart B



- Test Report No. : ETL180425.0410
- EMCD :EN 55032 : 2015(Class A)



- Approval No. : E9*10R05/01*16199*00



- Test Report No. : ETLRD180427.0063
-

Appendix

No.	ITEM	SPECIFICATION
1	Size	Body : 114.5(W)×64(H)×35.5(D)(unit: mm), Secondary Camera : 62(W)×24.5(H)×35.5(D)(unit: mm)
2	Weight	Body : 140g, Secondary Camera : 25g
3	Camera	Front : FHD (1920x1080), Secondary : HD (1280x720)
4	Recording Method	Continuous Recording, Event Recording, Manual Recording and parking mode[CCTV]
5	Recording Frame	Front : 25fps, Secondary : 25fps
6	Video	H.264 / Extension : AVI
7	Voice Recording	Condenser MIC
8	Display	3.5" TFT Touch LCD
9	External GPS	GPS / GLONASS receiver
10	Memory	Micro SD 16GB (Minimum : 4GB / Maximum : 128GB)
11	External Connection	Secondary Camera : 2.5pi audio jack, NTSC video input, Micro 10p Jack : vehicle power and signal input
12	Speaker Output	Adjustable
13	Power Voltage	12V / 24V
14	Electric Consumption	8W
15	Operating Temperature	-20°C ~ 70°C
16	Storage Temperature	-30°C ~ 85°C
17	View Angle	Front : 110°(H) x 60°(V) x 130°(D), Rear : 100°(H) x 56°(V) x 125°(D)
18	Camera Sensor	Front : IMX323 (SONY), Rear : Soi JX-H62 1/4 AHD)



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