

## Instructions for Safety



Warning

The warning information must be observed to prevent personal injuries or critical functional error.



Caution

The caution information must be observed to prevent service error or system failure.



Reference

Please use Reference for additional information.



Prohibition

The prohibition information must be observed during handling of the Product.



Instruction

Instructions are provided to give specific instruction to users.

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## Instructions for Safety



Warning



User should not install, dismantle or change the unit without guidance. It may cause unit malfunction, electric shock or fire. If it needs fixing please contact the service center for A/S.



Do not change the unit's installation place without guidance. When installation location is changed will the video recording may include a blind spot and thus provides responsibility regarding this problem.



Do not handle the unit while driving. May cause traffic accidents. Handle the unit after safely parking in the parking spot.



A standard Fuse should be used. When changing the Fuse use the standard Fuse. If it is not a standard fuse it may cause fire.

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## Instructions for Safety



Warning



If unit is malfunctioning do not handle the unit. Stop the use when remnants, or water is inserted or if the unit is smoking. Contact the service center for A/S.



When connecting with power connection cable, please install through professional installation engineer. Installation may differ for each vehicle and wrong installation may cause vehicle malfunction or product malfunction.



When attaching other electric products inside the vehicle please watch out so that the unit's power cable is not cut or damaged. May cause malfunction, electric shock and fire. When the product needs repairing please contact the service center and receive A/S.

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## Instructions for Safety



Caution



Do not pull out micro SD card when power is on. Pulling out the card may cause card malfunction.



When cleaning the product, do not use water, benzene or alcohol but a soft, dry cloth. May cause the unit's malfunction.



Do not touch the micro SD card with oily or wet hands. It may cause malfunction of the product.



Do not let the unit receive serious damage. The damage may break the unit or cause malfunction.

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## Instructions for Safety

### Caution



Do not insert anything in the card insert slot of the unit. Card may not be able to be inserted or unit may receive damages.



Only use the authentic cards / recommended cards. Usage of not authentic cards may cause data leakage.



Make sure that there are no connection errors when using the cigar port. Connection errors may cause data leakage or card malfunction.



GPS module needs preparing warm up time when operating at first (Application Model). Depending on the receiving environment seconds or minutes can be used after turning the power on.



Vehicles with metal coating on the front window may experience communication errors. Metal coated vehicles may experience GPS receiving errors.

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## Instructions for Safety

### Instruction

1. User should not install, dismantle or change the unit without guidance.
2. When using components other than the original product composition please use authentic products that are designated by this company.
3. Do not use the product in other voltage than the rated voltage.
4. Remove remnants that will hinder video recording and refrain from too much solar reflection film coverage.
5. When installation location of the product is changed it is possible that camera angle will change also; so adjust the camera angle after installation and confirm the recorded video.
6. Please note that when the product is broken or cut off from power due to a big accident video recording is not possible.
7. When accident has occurred, remove the power port nad attain the memory card. The particular video may be saved not as an event recording but as constant recording and thus be deleted so please check.

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## Instructions for Safety

### Caution

8. Do not take out the micro SD memory card or turn off the power while reading the saved data in the micro Sd memory card, such as when recording or deleting(format) data in the micro SD memory card.
9. Regularly check the data saved in the micro SD memory card to check if the product is working normally and format the micro SD memory card regularly.
10. Use the recommended micro SD memory card for this product. (using the not recommended micro SD memory card may cause product and data damage as well as malfunction.)
11. Do not dismantle or remodel the micro SD memory card at one's disposition.
12. The battery monitoring function may be turned off unexpectedly when it is influenced by the vehicle, the status of the battery, or the accessory components that are attached to the vehicle.

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## Features

The product is a digital video recorder (black box) installed inside the vehicle which will record the video and audio of the front and indoor areas and help collect the evidence in driving accidents and parking damage while preventing theft and promoting safe driving.



2-channel video recording



Play VGA (640X480/H.264)



Optimal picture quality 1.3M pixels camera



GPS Module (Speed & Location Info)



Infrared recording (Indoor Only)



Free voltage (DC 12V / 24V)



Micro SD card 2G provided



Storage Protection



Damage sensing G sensor



External buttons



Continue recording Event recording



Voice instruction



Exclusive viewer playback



Online Map (google)



Voice recording



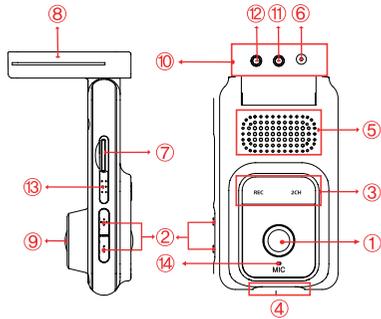
Print-out



Battery monitoring

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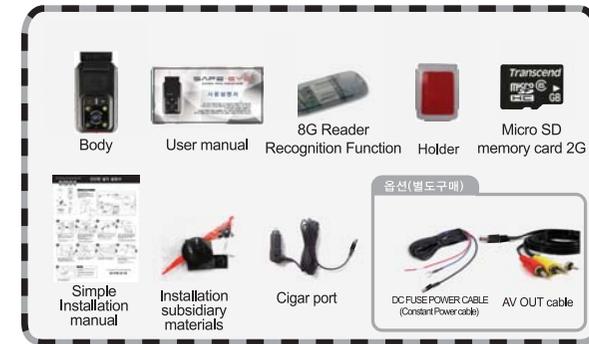
## || Name of Each Part



Name	description
1	Indoor camera To video-record inside the car (selectable)
2	Volume button To control the volume of voice messages
3	Mode selection button To select either Button recording or indoor recording (2ch)
4	Power LED It indicates the status of power supply
5	Speaker For voice messages
6	Power jack To connect the external power port
7	micro SD card slot To save recorded data into a micro SD card
8	GPS module To receive satellite radio (global positioning information)
9	Front camera To video-record the front of the car
10	Holder slot To attach the holder on the windshield
11	AV OUT (optional) To connect the AV OUT cable
12	Video in Takes images of rear areas of the vehicle
13	micro SD card holder Micro SD card lock / unlock
14	Mike Indoor voice recording

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## The Package ||



Reference

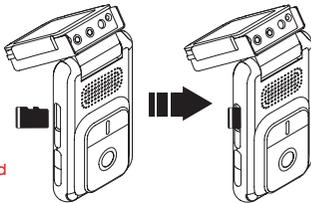
- micro SD memory card without the body has the warranty duration of 6 months after first use and other components' warranty duration is for 1 month.
- The pictures of the components may differ from the actual parts and some components are prone to changes depending on situations.

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## || To insert the Card

micro SD card should be inserted before power is permitted. At this moment of insert the part with the cut card's edge should be the lower part. (When it reaches the end, you will feel the card locking.)

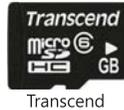
Check the micro SD card direction.



### Caution

Always insert the card to the end, as not doing so may result in malfunction. The connection terminal (gold) of the card should not be touched by hand and should not be vulnerable to alien substances. May cause card damage. The card in use should not be used for other purposes.

Depending on the LOT authenticity of the product when purchasing a micro SD card, even the recommended product may not be interchangeable.

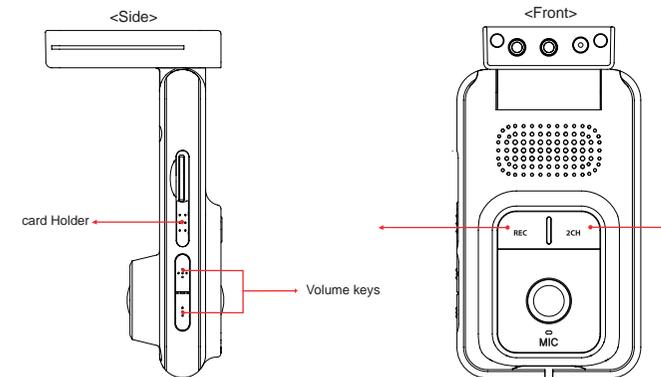


Please use the recommended micro SD memory card when purchasing one!  
When bigger capacity micro SD memory card is purchased than the original component part the recommended products is Transcend.

32G SD, SDHC, CLASS 2, 4, 6

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## To operate buttons ||



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## || To operate buttons

Items	Operating method	Function	Voice instruction
Volume control	+ -	High Low	1,2,3,4,5 1,2,3,4,5
Sensitivity control mode (Default "3")	- Button press and hold 3 seconds	Low High Mode release	Entering to the sensitivity control mode. The current sensitivity is X. 1,2,3,4,5 Exiting from the sensitivity control mode.
Recording mode	2CH	Indoor recording (Default) Deselect indoor recording. Select indoor recording (toggle)	Indoor recording is selected. Indoor recording is deselected. Indoor recording is selected.
Emergency recording mode	REC	Button recording mode (toggle)	Recordings begins.
Installation mode	2CH Button press and hold 3 seconds	TV-out	Entering to the installation mode. TV-out is selected. Exiting from the installation mode.
Formatting	REC Button press and hold 3 seconds	micro SD card format	Deleting previous data.

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## Product Description ||

### Main Functions

This page guides you through the initial installation and operation of Vehicle.

Video recording .....	17
Front recording .....	17
Car battery monitoring .....	18
Indoor recording ON, OFF .....	18
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AV Out (optional) .....	22

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## || Product Description

### Video recording



Insert a micro SD card, connect the power supply, and the front and indoor recording will begin. Red light will illuminate and in 3-7 seconds red light will flicker on LED.  
Voice message : Indoor recording is selected. Recording begins.

※ If the micro SD card is to be removed, wait until the lamp is completely turned off to avoid card failure.

In case on the car accident, turn the power off on the product and remove the micro SD card for safe keeping.(otherwise, old data may be written off by new recordings. Data containing the accident should be kept safely as evidence.)

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### Front recording (outdoor)



1.3m pixel camera tuning for the best picture quality.

## Product Description ||

### Indoor recording ON, OFF



2CH recording ON / OFF (selection switch)

Night recording is enabled with '4 infrared recordings'. Upon connection of the power the indoor recording begins automatically. Turn the 2CH switch downward to stop the indoor recording. Turn the 2CH switch downward once again to select the indoor recording.

Voice message : 2CH recording is deselected.

### Continuous recording while stationary

(The DC fuse power cable is sold separately)



- If the Product is connected to a constant power supply, 24 hour recording is feasible. The car battery monitoring function will switch off the power before the battery is discharged. **Installation or maintenance of the constant power supply should be assigned to an authorized technician to avoid safety or functional damage to the Product and for customer's safety and protection.**
- In order to enable constant recording while stationary, the power cable must be connected to the fuse box(for constant power supply). The car battery monitoring function will switch off the power before the battery is discharged. If the car remains stationary for a long time, the car battery may be discharged.
- Within the memory size of the SD card, the constant video recording function while stationary can be selected. The recording is saved in the memory until the memory space is fully taken up. Once the memory is full, the recording continues overwriting the data saved earlier. The recording of an accident saved earlier in the memory may be overwritten by the lengthy and constant recording, and search of the particular data may be uneasy if the memory is full of data.
- Power consumption: 1.5w based on 12V

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## Product Description

### Emergency recording button



#### Emergency Save switch

Turn the Emergency recording switch upward to save the video recording as the 'Event'.  
Voice message: "Starting to record."

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### Speaker

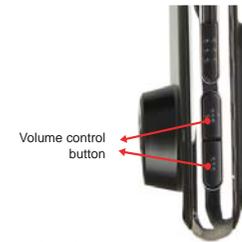


#### Speaker (for voice message)

Easy and friendly voice messages are given at selection of functions of the Product. Please observe the voice messages.  
Voice messages can be adjusted to level 1 - 5.

## Product Description

### Volume control for voice messages



#### Volume control for voice messages

Volume for voice messages can be adjusted to level 1 - 5.

### GPS Positioning System



#### Vehicle positioning information

The GPS module fitted to the Product provides positioning information.  
\*The module uses the same frequency as the Navigation and radio and as a result there may be interference.

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## Product Description

### To delete recording



#### Data deletion

To delete all data including normal recording(N), Button recording(B), Event recording(E).  
**1. To delete by the volume switch**  
(This function is only available when the voice message of 'Data will be deleted due to insufficient memory' is given.)  
To operate: Press the volume switch downward.  
Voice message: All data will be deleted. Please wait for a few minutes to complete. Data deletion is complete.  
**2. Use of the REC switch (constantly selectable)**  
To operate: REC Button press and hold about 3 seconds.  
Voice message: All data will be deleted. Please wait for a few minutes to complete. Data deletion is complete.

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### Sensitivity Control



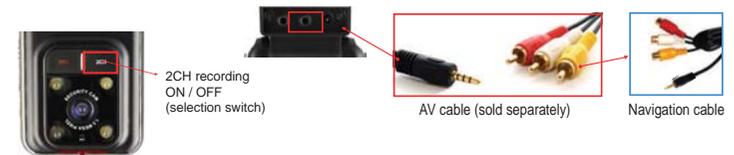
#### Sensitivity control (for G-sensor impact, acceleration, braking sensor)

To operate: volume - button press and hold about 3 seconds.  
Voice message: Entering to the sensitivity control mode. The current sensitivity is '3'. Control with the switch.

'+' will increase the sensitivity to 4 or 5, while '-' decrease to 2 or 1.  
Upon completion, turn the 2ch button downward to release the sensitivity control mode.  
Voice message: Exiting from the sensitivity control mode.

## Product Description

### AV Out (available by connecting the AV cable which is sold separately)



The current image may be viewed on your Navigation. (Navigation Output: PAL and NTSC compatible)

To operate: 2CH Button press and hold about 3 seconds.  
Voice message: Entering to the installation mode. AV Out is selected. Indoor recording is selected. Recording begins.

Connect the AV cable into TV Out hole as shown above the picture.  
Toggle between 'front recording' and 'indoor recording' by 2CH Button press and hold about 3 seconds.  
The AV Out function is released if the power is disconnected.

Voice message: Exiting from the installation mode.

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## Checking the Status of Unit

Status	Red LED			Voice message
	Lights on	Lights out quickly	Lights out slowly	
Power ON	●			Please fasten your seat belts.
Card Not inserted/wrogly inserted	●			Be sure the memory card is placed correctly.
Installation Mode			●	Memory is insufficient and all data will be deleted.
No memory			●	Be sure the memory card is placed correctly.
Firmware Update			●	The firmware update will start.
Sensitivity Control Mode			●	Entering to the sensitivity control mode.

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## Checking the Status of Unit

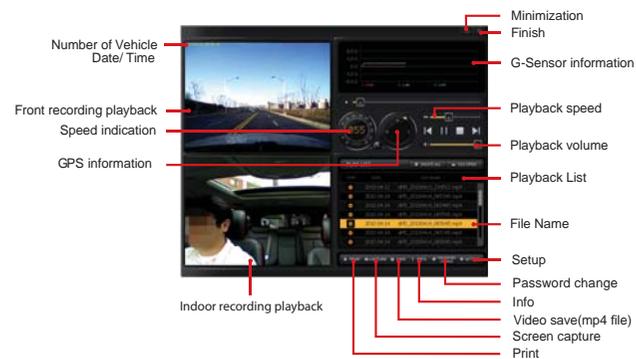
Status	Red LED			Voice message
	Lights on	Lights out quickly	Lights out slowly	
GPS signal detected & Event recording		●		Start recording.
Unable to detect GPS signal & Event recording	●			Start recording.
GPS signal detected & in door recording		●		2 channel input has been selected.
GPS signal detected & out door recording	●			2 channel input has been cancelled.
Unable to detect GPS signal & in door recording		●		2 channel input has been selected.
Unable to detect GPS signal & out door recording	●			2 channel input has been cancelled.
Other error (other than the power failure)			●	

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## To run the program

### ※ Recommendable PC specification

CPU: Pentium 4/1 GHz or higher Memory: 512 MB RAM or higher OS: WINDOWS XP, VISTA(partially compatible) HDD: 500MB or higher



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## To run the program

### How to run the program



DRS\_PCMgr.exe



① Double click the icon, DRS\_PCMgr.exe built inside the micro SD card.

② Check on the 2 channel on right side of the screen and enter password. (Base password is 1234.)

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## || To run the program



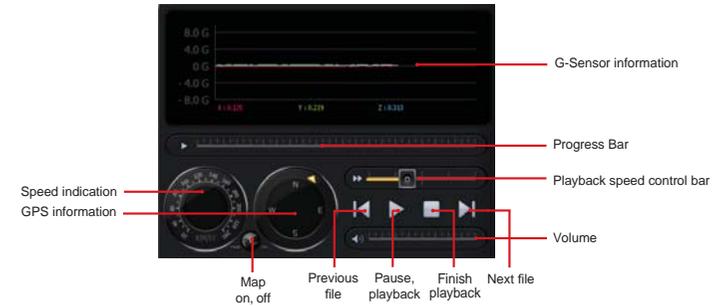
③ Press the confirm button of the guideline window displayed on the screen.

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④ Now the viewer program starts.

## To run the program ||



Reference Playback speed control: 2x slow, 1.5x slow, normal, 1.5x fast, 2x fast

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## || To run the program



To delete all playback lists

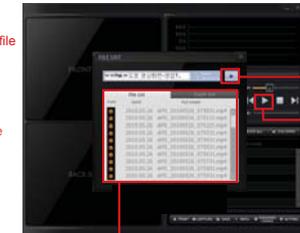


- 1 - View file location. / Select Directory
- 2 - The selected files can be added to a Playlist.
- 3 - View all files / View Event files
- If a file list exists, it is shown in the box 3.

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## To run the program ||

### ■ To select a file to playback



Select file location ▶ Select a mobile disk (micro SD card)

To open a file ▶ Select file location ▶ Select a mobile disk.  
▶ Select a movie file to playback and click on the [ ▶ ] button.

The selected movie file is added to a Playback List. Select a movie file to playback and click on the [ ▶ ] button.

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## || To run the program

### ■ To identify type of recording files

Files are saved at 1-minute intervals by hour and day for easy retrieval. Files are also designated with letter (N) for normal recording, (E) for event (such as accident and impact) and (B) for emergency outdoor recording by button, for easy search.



- drf0: an indoor or rear recording file.
- drf1: a front recording file.



The file names are saved in the form of 'year month day\_hour minute second'



Normal recording (N) : A normal video recording is saved by the unit of 1-minute. Files are sorted by date and hour for easy search. If the memory space is fully used, the oldest file is erased to provide space for new recordings.

Event recording (E) : A normal video recording of impact of accident is saved in the Event list.

Emergency recording (B) - Button recording : An external switch button is used to record an emergency event, and the file is saved as an Event file.

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## To run the program ||



G-sensor X,Y,Z information

- The built-in G-sensor enables detection of impact, acceleration or braking to be automatically recorded and saved.

- Triple axis (X,Y,Z), acceleration values and GPS data are saved.



- The G-force detected by the G-sensors located vertically, horizontally and on right and left, is converted to numbers to indicate driving direction, turning direction and size and direction of impact in an accident.

### Use of Google Map is recommended.

The 'Map View' function is only available when the Internet is connected.

Compatible with Google Map  
With maps (Google Map), satellite and superposition information, driving route information is provided.

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## || To run the program



Select the icon to execute the program



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### ■ Print



- To print the screen the instant printing function

## To run the program ||

### ■ Screen Capture



Select : front / Indoor(rear) camera

- To capture the current screen. The saved file is added to the hard disk.

### ■ File Save



Select : front / Indoor(rear) camera

- During playback, the file can be saved on a PC as well.
- The file is converted to an mp4 file and saved.

### ■ Version Info



- To view the software version.

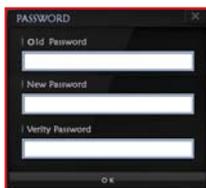
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## To run the program

### Password Change



1. [Password Change] click



2. Enter old password and set the new password about 2 times.

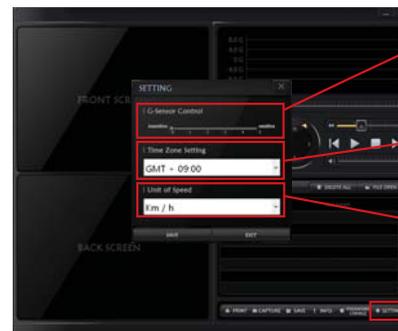


3. When playing the program, you must enter new password on the screen.

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## To run the program

### Program Setup



- **Sensitivity control**  
To control sensitivity. The higher the number the higher the sensitivity. Set the sensitivity suitable to your car and the user.
- **Standard time setting**  
Set the standard time. Set the time for the user.
- **Speed unit**  
Select 1 unit from among the km/h, mile/h, knot/h

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## Updating Firmware

### Updating Firmware



**Must format the micro SD card before upgrading firmware!**

- 1 Remove the micro SD card from the Main Body and place it on a card reader.
- 2 Connect the card reader to the USB port on a PC.
- 3 Download the upgrade file from the website. (The downloadable file is in the compressed format. You will need to decompress the file first. Copy the file and paste it onto the micro SD memory card.)
- 4 Insert the micro SD card to the Product and connect the power supply for auto upgrade. (Voice guidance : The firmware update has been completed.)

**Caution** Do not disconnect the cigar jack or turn off the ignition during upgrade. Do not remove the micro SD card during upgrade.

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## Unit Standard

### Product Specification

Particular	Power consumption	Weight	Size (LxWxH)	Operation temperature
Product	1.5 W	90 g	48 X 85 X 27	-20°C ~ +70 °C
Camera		GPS	G-sensor	Storage
2Camera / 1.3M pixel CMOS digital sensor		Internal GPS Module	Internal 3D "G" sensor	micro SD card
Voice REC.	Event	Resolution	Power Supply	
Internal MIC	Emergency button, shock	640 x 480 / 24fps	DC 12V/ 24V (Cigar jack)	

## || Trouble Shooting

Trouble	Trouble Shooting	Remarks
<b>Power failure</b> The Product is not turned on.	<ol style="list-style-type: none"> <li>1. Check if the power cable at the top of the Product is properly connected.</li> <li>2. Check if the power fuse inside the fuse box in the car that connects between the car and the Product, is normal. (in case of constant power supply cable being in use)</li> <li>3. Format the SD card before firmware upgrade.</li> </ol>	If the trouble persists, please contact the Service Center.
<b>Card failure</b> Display: Red LED	<ol style="list-style-type: none"> <li>1. Check if the card is correctly inserted.</li> <li>2. Check if the original or recommended card is in use.</li> <li>3. Format the SD card before firmware upgrade.</li> </ol>	If the trouble persists, please contact the Service Center.
<b>GPS failure</b> The Product does not work properly. 1. Date and time of save differs to the actual. 2. Playback speed is abnormal.	<ol style="list-style-type: none"> <li>1. Check if there is any obstacle above the Product.</li> <li>2. Check the status of Product installation together with its position and angles.</li> <li>3. Format the SD card before firmware upgrade.</li> </ol> <ul style="list-style-type: none"> <li>- GPS reception may be poor in enclosed area such as indoor or inside tunnel.</li> <li>- It may take a while to reach the normal operation status if the car had been stationary for a long time (for more than 3 days) or the Product had been running for a long time in poor reception areas such as basement or clustered building areas.</li> </ul>	Check if you are in poor reception area. Disconnect the power and reconnect. If the trouble persists, please contact the Service Center.

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## Trouble Shooting ||

Trouble	Trouble Shooting	Remarks
<b>Playback failure</b> 1. When the program is executed, the current screen disappears. 2. program is open but Playback is disabled.	<ol style="list-style-type: none"> <li>1. Check if the power cable at the top of the Product is properly connected.</li> <li>2. Check if the power fuse inside the fuse box in the car that connects between the car and the Product, is normal. (in case of constant power supply cable being in use)</li> <li>3. Format the SD card before firmware upgrade.</li> </ol> Check your PC specification. CPU: Pentium 4/1 GHz or higher HDD: 500MB or higher, Memory: 512 MB RAM or higher OS: Win98, ME, XP, Vista	If the trouble persists, please contact the Service Center.
<b>Speaker failure</b> 1. Voice does not come out when it plays. 2. Voice information does not come out in machine. 3. Noise of the voice information.	<ol style="list-style-type: none"> <li>1. Check the indoor image selection. Revocation of the indoor image, it's not support with voice recording.</li> <li>2. Check the speaker sounds, it's error or not.</li> </ol> Check the connection of the power supply and then connect the power up once again.	If the trouble persists, please contact the Service Center.

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## || Warranty Card

### Warranty Card

#### About the service

• Our company conducts warranty for product according to the Consumer Dispute Resolution Standard according to different items (Fair Trade Commission Notice 2008-3).

• When service is requested our company or the designated partner company will provide the service.

• Matter of compensation and the notification of details will be resolved within 7 days of request and the actual compensation will be completed within 14 days from the notification date.

Product Name	Purchase Date	Serial No.
Model Name	Selling Agency	Purchasing Price

Product warranty is for 1 year, and component storing duration is 1 years,

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## Product Service ||

### Free Service

Free service is only possible when the product is malfunctioning within 1 year of installation (warranty date).  
If the product is used for business purposes, the warranty duration is shortened to half.

Types of Customer Damage	Compensation During the Warranty Duration	Compensation After warranty date is over
When major problem occurs within 10 days of purchase	exchange or refund	
When functional problem occurs while normal use within 1 month of purchase	Product Exchange	
repair possible When malfunction occurs up to 3 times for the same problem	Free repair	Charged repair
When malfunction occurs more than 4 times for the same problem	Product exchange or refund	Charged repair
When there are components for repaired repair is impossible (during the component storing duration)	Product exchange or refund	Exchange after redeeming fixed price depreciation
When repair is impossible because there are no components for repair (during the component storing duration)	Product exchange or refund	Refund after adding 10% to the price after redeeming fixed price's depreciation

### Charged Service

1) When it is not about malfunctions

Asking for service when it is not malfunctioning will cost charges so please read the manual.  
(When repair is impossible, it is subject to separate standards)

<ul style="list-style-type: none"> <li>• Explaining product function uses and when operating simple orders without dismantling the product.</li> <li>• When requesting services related to outside antennas and cable signals.</li> <li>• When re-installing the product because the selling agency has feebly installed it.</li> <li>• When clearing dust from product's inner parts or removing remnants.</li> </ul>	1st time free, charged from the 2nd time
<ul style="list-style-type: none"> <li>• When product is damaged due to outside remnants getting inside the product (such as coffee, milk or drinks)</li> </ul>	charged from the 1st time

#### 2) When it is malfunctioning due to the customer's fault.

- When malfunction occurs due to careless conduct of consumer or when consumer fixes or changes the unit without professional guidance
- When the product is damaged after getting repairs from personnel other than those from our company selling agency or service center
- When malfunction is occurred from the wrong usage of voltage
- When malfunction or damage occurs after dropping the product after installation
- When malfunction occurs due to usage of components of option parts undesignated by our company

#### 3) Other cases

- When malfunction occurs due to natural calamity (thunder, fire, sea wind, flood and so on)
- When it is operated on unstable power that cannot be protected by damage voltage
- When expendable components are worn out (e.g. battery)

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