Automated Drive Recorder

User Manual

SDR1500

Main Features

Unlike other in-car recording systems, the Drive Recorder is used to record both video data in a continuous loop fashion. If the vehicle is involved in an accident such as a collision, impact, and sudden acceleration-related incident, this data is marked and stored. One may thereafter analyze the data to find its root cause by playing back the scenes of interest and where acceleration, vehicle speed, direction, and location are available for review. Added to the recording are vehicle speed and direction and GPS location.

Continuous recording

The video and audio data from the front and interior views is continuously recorded while power on. When the capacity of the **Micro SD** has been reached, the oldest files are overwritten by the latest ones in a "round-robin", first in, first out fashion.

Emergency recording

When impact or unusual acceleration or deceleration is detected by the built-in G-Sensor and has exceeded the preset limit or one activates the manual emergency record button, the recorded video data is locked-in and is erased only by an authorized party and by using a PC or laptop, accessing the **Micro SD**. emergency data records 1 minute before and 1 minute after (**Note**: The User may set the pre-event time to either 1 minute, 2 minutes or 3 minutes of pre-event recording).

The next time the **Micro SD** card is read by the unit, the unit's set up parameters will be uploaded into the recorder. As previously mentioned, stored event recording data in the **Micro SD** card will not be erased by the unit, and where this must be done manually by the user.

Playback of video data

The recorded data can be **played back** using the provided playback software which resides on the **MicroSD** card. By removing the **MicroSD** card and accessing the Player folder and double clicking on the "**Player.exe**" line starts the playback software.

Data analysis

The recorded data can be easily analyzed for speed, vehicle location and direction of travel including impact by using the Player that is found on conveniently on the supplied **Micro SD** card.

Record speed & location

Driving at the time of the accident using GPS location, time, speed, and can save you can check via the supplied Player.

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Before using the product

Warranty and responsibilities

◆ Damage due to production malfunction, loss of data, or other damages occurring while using this product shall not be the responsibility of the manufacturer.

◆ Although the Drive Recorder is a device used for recording/storing videos, the device is not guaranteed to record information on every accident in the case of a malfunction.

◆ In the case of an accident, a minor force will not trigger the G- sensor to activate Event Recording. Therefore the user must use the Manual Record Button located on the device itself.

◆ For stable use of the product, check the product and **Micro SD card** regularly to ensure its proper operation.

Tip. For safe and long-term use of the Micro SD card.

◆ Please make sure to turn off the device power when inserting or ejecting the **Micro SD card**.

◆ Generally, the **Micro SD card** has a set lifespan and may not be able to store new data after a certain period of time. In such a case, please purchase a new **MicroSD card** for use. Please take caution as loss of data due to overuse of the **MicroSD card** as it shall not be the responsibility of the manufacturer.

◆ Always store data within a storage case as data loss may occur during storage or transport due to static electricity or external voltage.

◆ Always back up all important data in a different storage media.
(Hard disk device, CD, portable disk drive, etc)

◆ Please refer to the **Micro SD card** precaution for safe and long term use of product. (Page. 10)

Preparing for the safety

Keep your safety or property damage due to accidents and are intended to prevent discomfort. Please Read the details below before using the product.

Caution for use

User Manual

● To ensure proper operation please read the manual before installation and use. Failure to follow this safety notice may cause a malfunction and may void the warranty.

Power

● Use only the provided cables and specified power input.
A cable not supplied by the manufacturer may cause product damage, a fire or a short circuit.

● Please use rated capacity for the fuse and confirm the message if the product correctly connected after the installation.

Micro SD card

● Insert the **Micro SD card** to the product.

● Ensure that the capacity of the **Micro SD card** is not exceeded.
※ A full **Micro SD card** will not allow one to record manual alarms or G-sensor based triggers.

※ Do not use **Micro SD card** for any other purpose or copying unrelated files.

● Please make sure to turn off the device power when inserting or ejecting the **Micro SD** card.
※ Inside **Micro SD** data loss may occur due to **Micro** SD error.

Caution!

● **Do not remove MicroSD card when the power is connected.**
It might cause fatal damage to the Micro SD card.

● Ejecting the **MicroSD Card**

1) In case of ejecting the Micro SD card while power is on, press the emergency button over 5 seconds.
(**After LCD turn OFF** : eject the **MicroSD card** within 10~15 seconds)

2) Remove the **Micro SDcard**.

Caution for installation

- Stop the car at a safe parking lot before operating the device.
  Do not operate the product while driving. It might be a cause of car accident.
- Do not obstruct the view of the product through the front windshield.
  ※ The GPS receiver may not work properly.
- Do not disassemble, repair or modify the device
  ※ This voids the warranty and where we take no responsibility for product damage or problems caused by the user.
- Any excessive window tinting may cause an unclear or distorted image on playback.

First record and then play back the video to see if the recorded video is acceptable.

- Use only the provided cables and specified power input.
  ※ A cable not supplied by the manufacturer may cause product damage, a fire or a short circuit.
- When using double-faced tape, wipe the window clean and clean the surface of the device with dry cloth before putting the tape.

Caution for Storage

Storage

- Do not insert foreign substances into the product.
- Do not cover the camera lens with any materials or objects.
  This may affect recording quality.
- Do not drop or apply excessive shock. This may cause product damage.
- Avoid high temperature from heating device.
- Avoid placing the product under high moisture or dust level.

Cleaning

- Turn the device off before cleaning the device.
- Only clean the device with dry cloth if it is necessary.

Components

Components		
Product	Bracket	Cigarette Lighter Plug
Micro-SD Card		

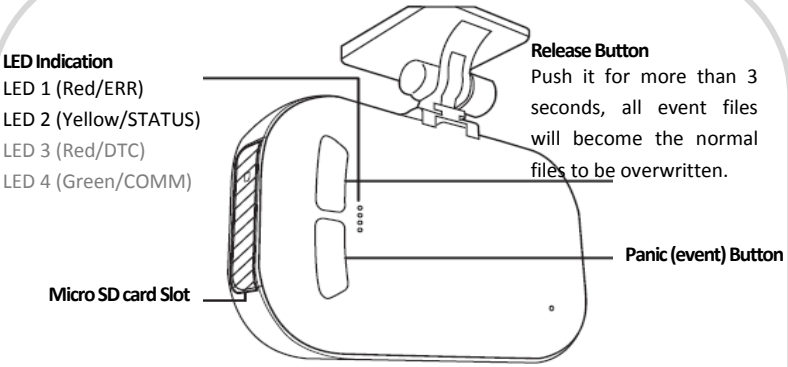
*Product package may change for product enhancement without any notification.

Technical Specifications

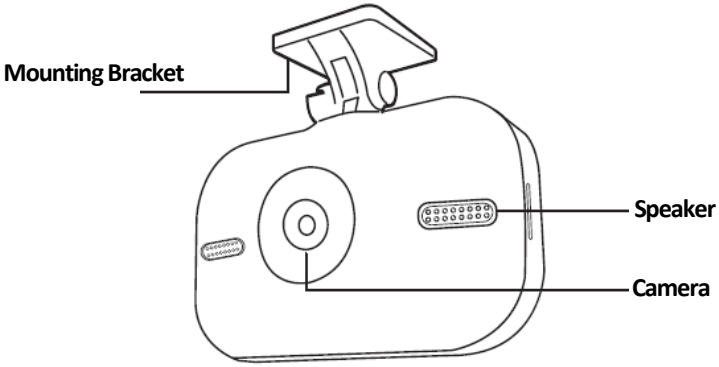
Item	Specification	
Camera	1Camera, VGA CMOS	
Video	VGA(640 x 480), 15fps / 30fps	
CPU	667MHz, OS: Linnux	
GPS	Built-in SMART GPS	
G-Sensor	3D acceleration sensor built-in	
Memory	Micro-SD/ Micro-SDHC [4GB~16GB]	
Power input	Cigarette Lighter Power	DC 9V~16V

*This manual may be changed without prior notice to users for product improvements.

Name of the Parts



REAR VIEW



FRONT VIEW

Functions of each part

Camera
The camera must be horizontal and vertical. When the lens of the camera is obstructed or is dirty, clear images may not be captured. Periodic cleaning is required. To clean the lens, use a soft camera lens cloth to prevent damage.

Panic (event) button & Emergency Recording Release button
In order to record driver detected scenes of interest, press the emergency record button to record. This data records 3 minute before and 1 minute after. (User may set pre-event time 1 minute, 2 minutes or 3 minutes).
Stored event recording data in Micro SD card will not be erased unless user cancels (A remote button is also provided for this function for covert recording)
The recording time is determined in prerecording time.

LED Lamp
Color and lighting products for the state will be displayed.

MicroSD card Slot
Before inserting / removing the Micro SD card, Power must be OFF.
The LED Lamp must be off. (BLANK!)

Power connection port
Connect one end of the cigarette lighter plug cable into the matching connector of the power port of the unit. Plug the other end of this cable to the cigarette lighter plug of the vehicle.

Caution! Do not lose the supplied power cord or use other cables. If damaged or lost, contact your Reseller for a replacement.

Micro SD card

Micro SD Card specifications

※ Denotes an average time.

(Motion affects recording duration. Times reflected see recordings made during the daytime in typical city downtown areas.)

Micro-SD Capacity	Maximum Recording Time (hours @30fps)	Average Recording Time (hours) @ 30fps		
		Low	Normal	High
4GB	4.5 hours	4.5	3.5	1.8
8GB	9.1 hours	9.1	7.1	3.6
16GB	18.2 hours	18.2	14.3	7.2
32GB	37.8 hours	37.8	29.6	14.9

'* Time varies depending on the amount of motion seen by the camera & lighting conditions.

Caution!

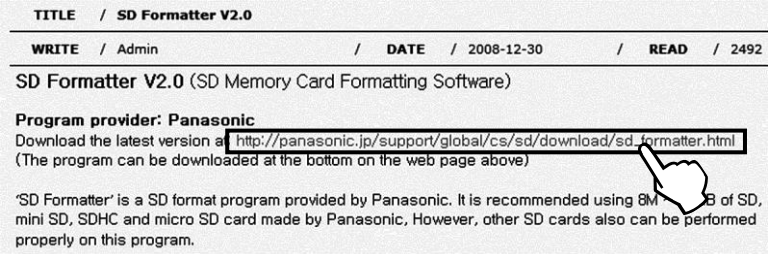
1. Do not remove **MicroSD** card when the power is connected.
   (It might cause fatal damage to the **MicroSD** card.)
2. Do not use the card for any other purpose or copying unrelated files.
3. Check for data abnormalities once a week for stable operations and format the **MicroSD** card at least twice a month for stable use of product.
   (Refer to website and download the recommended formatter program for **MicroSD** formatting.)
4. In case where the PC does not support the **Micro D** card and the **MicroSD** SDHC2.0 card standard, use a separate SDHC2.0 USB reader.(**MicroSD** card to USB adapter)
5. **MicroSD** card need to be replaced with a new card once it reached end of product life and may not be able to store new data after a certain period of time.
   (**MicroSD** card warranty is three months after purchasing.)
6. Only use the provided **MicroSD** card from the manufacturer.
   Product may not function correctly if un-tested **MicroSD** card is used.
   (We recommend the use over "SDHC Class4 Card".)

Caution!

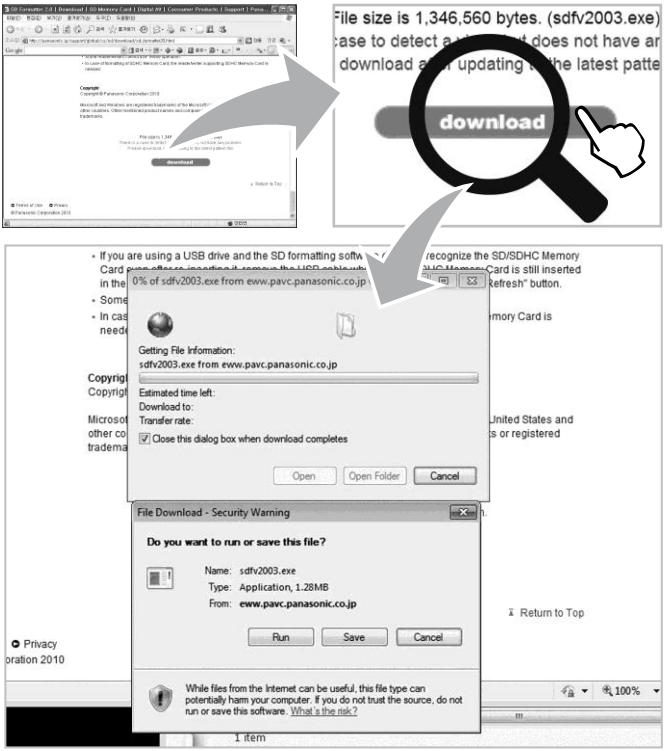
- Format the Micro SD card at least twice a month regularly for optimal performance.
- Format function will delete all files in the player.
  Backup all the important data before formatting the removable disk.
  (Any loss of data shall not be the responsibility of the manufacturer.)
- After formatting the Micro SD card, set the time zone in the view program configuration
  If you do not configure the settings, system initialization may take up to 10 minutes and where the time and the **Time zone** may not match.

Micro SD Card Formatting

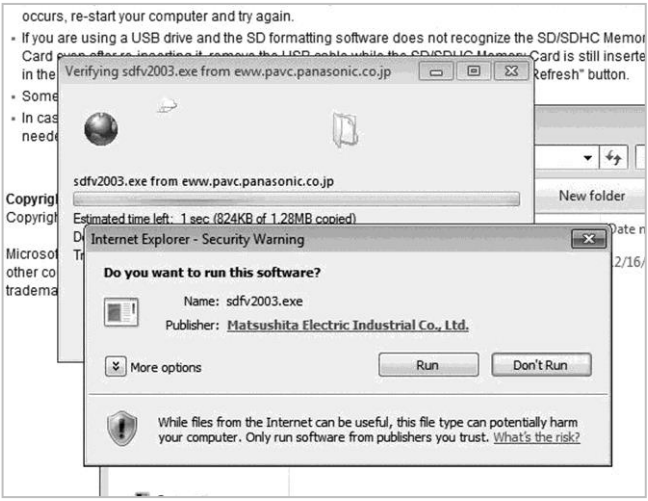
1. Downloads> Micro SD only by clicking on **Formatter V2.0** Go to the site.



2. At the bottom of the linked page, click **<u>Download</u>** to save the file to your computer.

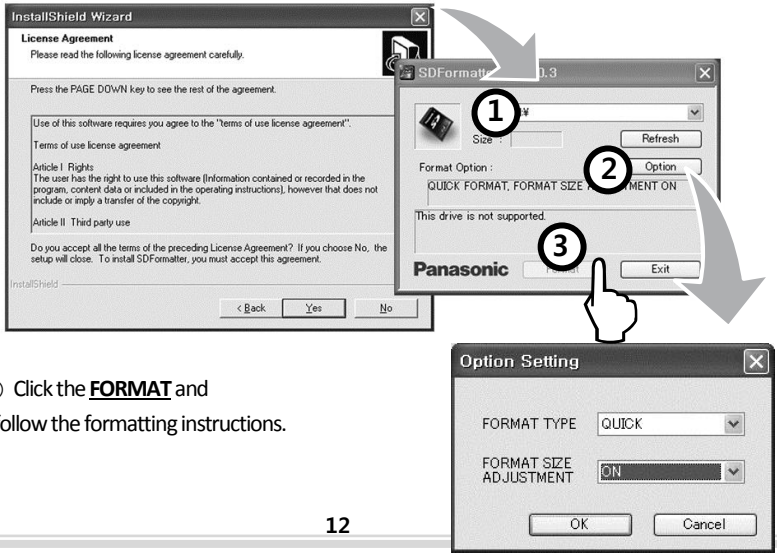


3. **Download** to your computer, double-click a file and run it.



4. **Install** the program on your computer.

5. ① Select a drive on MicroSD card reader.
   (MicroSD card will be automatically recognized if Micro D card is inserted.)
   ② Click the **Option** and choose the FORMAT SIZE ADJUSTMENT Check **ON** and click the **OK** button.



③ Click the **FORMAT** and
follow the formatting instructions.

Installing the product

Caution!

- Make sure to install with the ignition turned off and car keys removed.
  Particularly, make sure to connect the power after installation is complete.
- Reception will improve when the GPS receiver is fully exposed through the front window.
- Please keep clear the space to install the product in order to have enough viewpoint
  Without room mirrors or other attachment.
- After installation, the product should be positioned in straight vertical degree.

Installing the product

1. Attach the mounting bracket to the main unit

2. Place the unit on the installation point (windshield) and remove the red film from the tape on the mount

3. Install the unit on the upper & center on the windshield as shown above

Connecting the power cord

1. Connect the power cable with the main unit.

2. Arrange the power cord neatly after inserting it in the chink of the door near the driver or passenger seat.

3. Plug in the power jack into cigarette lighter jack

LED Display

Item	Description	ERR(Red)	STATUS(Yellow)	Remarks
Booting	**Power on**	ON	ON	Before video recorded
Video Recording	**Start video recording**	OFF	ON	Before GPS acquired
GPS Acquisition	**GPS ON**	OFF	BLINKING	BLINKING 2 sec (1 sec ON/ 1 sec OFF)
Error 1	**GPS Error**	ON	ON or BLINKING	Under video recording
Error 2	**Camera, SD error**	BLINKING	OFF	BLINKING 200ms (100ms ON/100ms OFF)
Event Recording	**Manual/auto**	ON or OFF	BLINKING	BLINKING 1 sec (500ms ON/500ms OFF)
Shut down	**Power off**	OFF	OFF	BLINKING 1 sec (500ms ON/500ms OFF)

Important Notice

Please ignore LED DTC and LED COMM. Both LEDs are not indicating any functions or Problems on SDR1500.

Operation sequence

Preparation for video recording

1. Check to see whether the Micro SD has been inserted in to the device and connect the power cable.
2. While the device prepares for acquiring GPS signal, STATUS LED Lamp is blinking at 1sec intervals.
3. After GPS reception complete and STAUTS LED lamps is ON.
   (Video recording continue even if GPS reception is not complete.)

Continuous recording while driving

1. In the event occurrence of shock or button operation, ERR LED lamp is ON and STATUS LED lamp is also ON.
2. Continuous recording while driving, if capacity is exceeded of Micro SD data the oldest file is overwrite. When The vehicle's ignition off or disconnect the power cigarette, operation of the product will be discontinued and all lamps will be OFF.

Running the viewer program after driving

1. The player is built in the Micro SD card so the user is able to view the recorded data on any PC. (Windows)
2. Check the recorded Micro SD card data regularly for stable operation of the device and the Micro SD card.
3. Always back up all important data in a different storage media.
   (Hard disk drive, CD, portable disk drive, etc)
4. The newly released firmware will be available to download at the website.

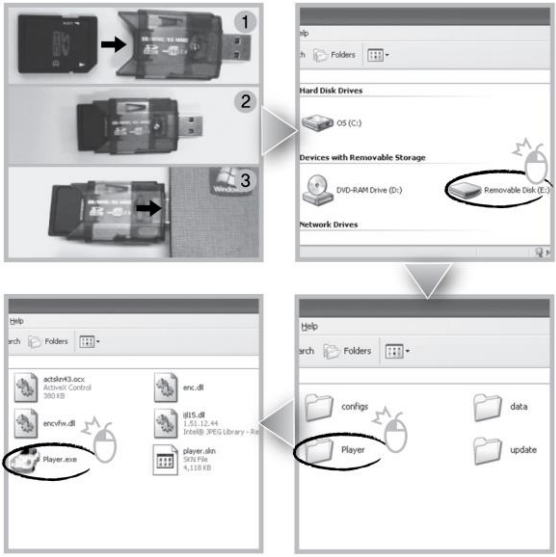
Running Player program (Viewer program)

PC system requirements

Component	Requirements
CPU	Pentium4 / 1GHz processor or higher
Menory	512MB of RAM or higher
Orperating System	Microsoft Windows XP Home Edition or higher
Graphics	DirectX 8.1b or higher
HDD space	200MB or higher

※ When using MS Windows Vista and **Player** soft ware for the first time, you may have to run the Player in Administrator Mode.

Player installation



1. Insert the **MicroSD card** into a PC or **MicroSD card** reader and connect it to PC.
2. Select **MicroSD card** drive.
3. Double-click the "**Player**".
4. Double-click "**Player**.exe" to execute the program.

Player screen review

To playback video, select the “Open a File” button, explore the **Micro SD card** or other location where the recorded (or saved) data is located, (file called DATA is on the **Micro SD card**), then double click the selected file from the list in order to play.

No.	Name	Description
1	Forward Camera view	Displays the video images recorded by the forward facing camera.
2	Map window	Display the vehicle location and travel onto a city map.
3	Vehicle Speed	Displays the speed of your vehicle.
4	Vehicle Location	Displays the coordinates (latitude and longitude) of the vehicle.
5	Shock graphs	Displays vehicle motion and any impact detected by the G-Sensor with a graphically in 3-axis.

Control Menu

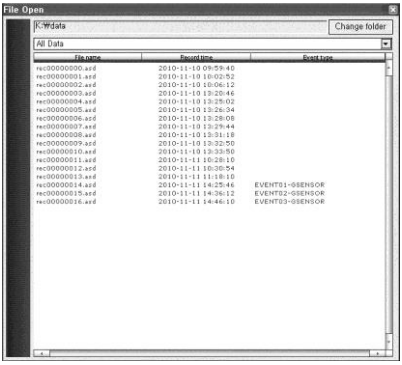
No.	Name	Description
1	**Volume Control**	Adjusts the volume level while playing back the recorded data.
2	**Playback speed control**	Adjusts the video playback speed.

Playback Interface Controls

Button	Function	Button	Function
	Move to the previous file		Open a file
	Playback the previous frame		Convert the fi le into an AVI format
	Pause the Playback		Playback Link the recorded data with map Playback Access System
	Stop		Set Up Menu
	Playback		Close Player
	Move to the next file		Hide/Close the window

Playback

1. After clicking the folder icon ( ) on the lower right corner of the viewer, click "**Change Folder**" to select the location for the recorded data. Typically the first time you do this all the files are located on the data folder of **MicroSD card**.
   If saved elsewhere, use this utility to explore your computer to locate the file for playback.
2. When the file list appears, double-click the desired file to play back.



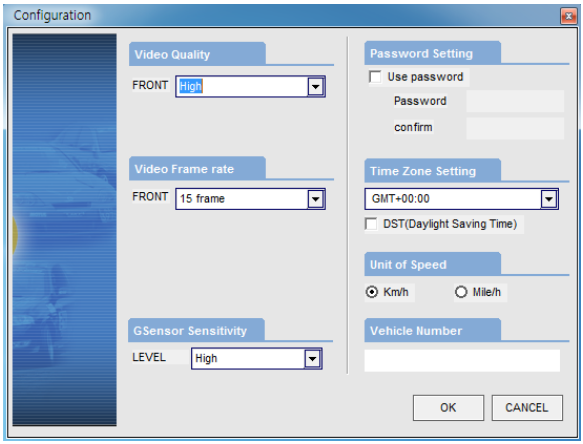
※Click the list name to sort by File Name, Record Time or Event Type.

- FILE NAME: File name of the recorded video images.
- RECORD TIME: Date and time when the images have been recorded.
- EVENT TYPE: Displays the recording type
  (Continuous recording / Emergency recording /remote event butt on recording).
- Click the list name to sort by File Name, Record Time or Event Type.

Event Type	Description
Continuous recording	No nomenclature applied. Clicking on this shows the recorded file when driving.
Emergency Recording (EVENT000-BUTTON)	Annotated with the word **BUTTON**. This allows you to locate files that were marked by the driver using the push button on the recorder or the remote event push button.
G-Sensor automatic recording (EVENT000-GSENSOR)	Annotated with **GSENSOR**. This data is recorded when any impact, sudden acceleration, or accident is detected.

System configuration

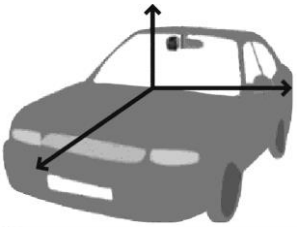
Click on the System Setup **configuration** icon ( ) located at the lower right corner of the **player**.
The following window will then appear.



No.	Name	Description
1	**G-Sensor Sensitivity**	Sets the sensitivity of G-Sensor. (OFF/LOW/NORMAL/HIGH)
2	**Video Quality**	Sets the quality of Video (LOW/NORMAL/HIGH)
3	**Unit for Speed**	Set the unit of the car speed. (kilometer / mile)
4	**Password Setting**	Sets any Password to access the recorded data.
5	**Time Zone Setting**	Sets the time zone for the user. (Ex. Korea — GMT+09:00)
6	**Vehicle ID Number**	Sets the license plate number or fleet vehicle ID number associated with the vehicle where the MicroSD card is to be installed in.
7	**Video Frame Rate**	Sets the frame rate at 15 / 30 fps

Analyzing G-SENSOR data

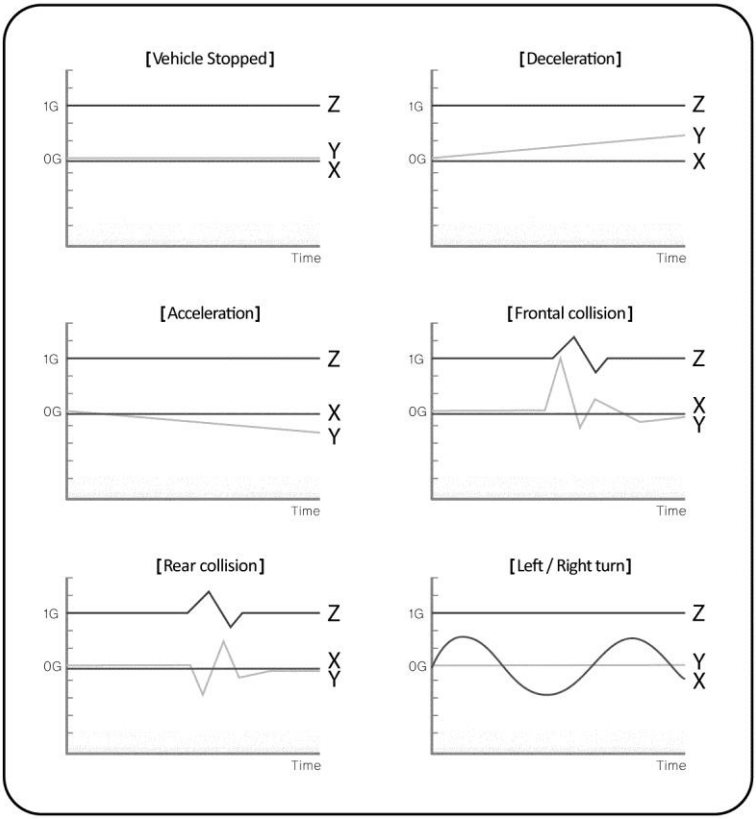
The G-sensor (Gravity Sensor) furnishes data for X, Y and Z axis and stores it along with the other recorded data on the **MicroSD card**. When using the playback software, this information is represented in a graphic format. The resulting graph may be used to analysis the driving condition and driver's habits. Depending on the type of the vehicle, the amplitude of the curve of shown may vary.



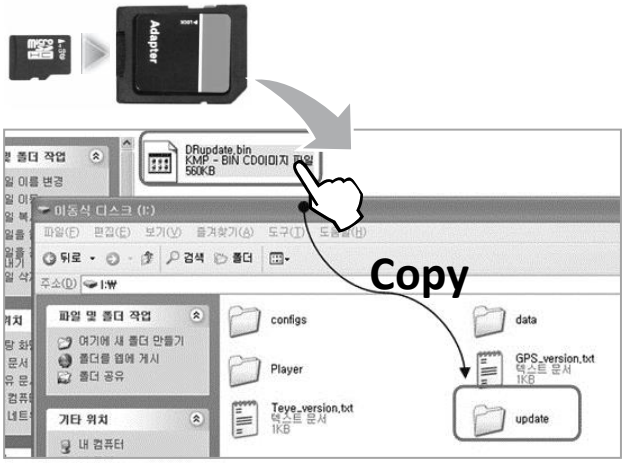
※ X axis: left and right of the vehicle

※ Y axis: front and rear of the vehicle

※ Z axis: top and bottom of the vehicle



Software Update



1. Remove the **MicroSD card** from the device and insert to the **MicroSD card** reader.
2. Connect the **MicroSD card** reader to PC through the USB port.
3. Download the latest software at the website and copy the update files to the update folder of **MicroSD card**.
   (Create " update" folder and copy the update files, if " update" does not exist in the **MicroSD card**.)
4. Insert the **MicroSD card** to the device and turn on the vehicle ignition.
   Software will be updated automatically.

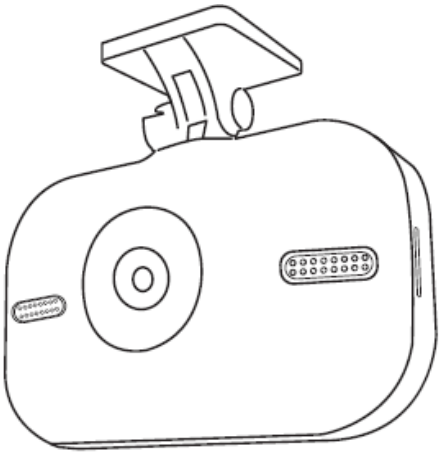
Caution!
Do not turn off the ignition or power off the device during the software updating.

Warranty

Warranty Cover

The warranty period covers for one full year for this device, return to base from the date of purchase.
Should you believe that your device is defectives within the warranty period, please contact to the service center.

The product may be repaired or exchanged for a factory refurbished unit.
Faults reported outside of the warranty period are subject to a chargeable repair.



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