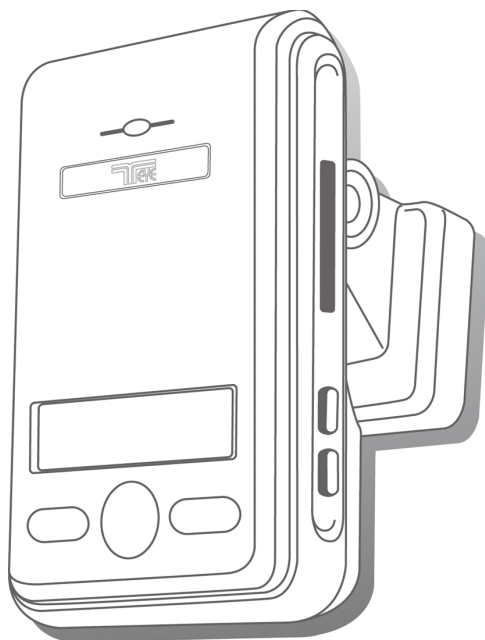Automated Drive Recorder

User Manual

ADR3320

TTeye

Main Features

Unlike other in-car recording systems, the Drive Recorder is used to record both video and audio 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 SD card 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 SD card. Emergency data records 1 minute before and 1 minute after

Even if Emergency recording creates NOT overwritten data, if the number of emergency data exceeds the capacity of SD card, the first emergency data file will be overwritten and then saves the data.

(**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 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 SD card will not be erased by the unit, and where this must be done manually by the user.

Night view recording with Infra-Red Light

The included IR (Infra-Red) Light module with adjustment used this invisible light source to assist in recording nighttime views from the interior facing camera.

Playback of video/audio data

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

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 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 program (viewer program).

Contents

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 SD card regularly to ensure its proper operation.

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

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

◆ Generally, the 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 SD card for use.
Please take caution as loss of data due to overuse of the SD 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 SD card precaution for safe and long term use of product. (Refer to 11p)

Preparing for the safety

Caution!

Keep your safety or property damage due to accidents and are intended to prevent discomfort.   Please Read the details below please use the following.

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.

SD card

● Insert the SD card to the product.
● Ensure that the capacity of the SD card is not exceeded.
※ A full SD card will not allow one to record manual alarms or G-sensor based triggers.
● Please make sure to turn off the device power when inserting or ejecting the SD card.
※ Inside SD data loss may occur due to SD error.

Caution!

● Do not remove the SD card during product operation while power is on.
  Product or SD card could be damaged.
● Ejecting the SD card
  - **When parking surveillance mode is unoccupied**
    Turn the ignition off. then, Remove SD card after making sure LCD & System off
  - **When parking surveillance mode is occupied.**
    After the ignition is off and then see the parking surveillance mode in 5 seconds
    first. Within parking surveillance mode, press the Emergency recording release button
    for 3 seconds to check LCD and system off sign and then withdraw the SD card from
    the product.

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.

● When replacing the fuse, please use a fuse with the rated capacity under the recommended power guidelines. Using this product in alternative power situation will void the product warranty and could result in fire.

● 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.

   ※ From the drop of a product by any foreign substances or dust, it may cause a fatal damage to the product or a car accident while driving.
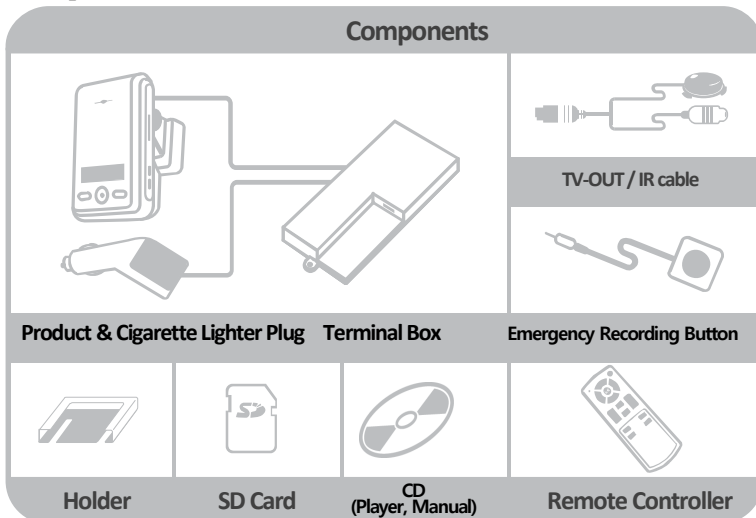
Caution for Archive

Archive

- 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.
- Avoid placing the device under high moisture or dust level.
  Only clean the device with dry cloth if it is necessary.

Components

Components

TV-OUT / IR cable

Product & Cigarette Lighter Plug   **Terminal Box**   **Emergency Recording Button**

Holder   **SD Card**   **CD (Player, Manual)**   **Remote Controller**

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

Technical Specifications

Video	Camera	Built-in 2 (1.3 Mega pixel CMOS sensor)
	Compression	H.264/AVC
	Resolution	VGA (640X480)
	TV-OUT	○ (PIP Mode)
	Audio	1 CH, Mono (in & out)
	GPS	Built-in GPS
	G-Sensor	3D acceleration sensor built-in
	Main car battery supported	Supported (Parking Surveillance Available)
	Monitoring of parking	0~24 hour
	Supported memory	SD Card up to 32GB
	Power	DC 12V ~ 24V

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

Name of the Parts

Built-in Speaker

Provides audio output for chime and any information

Display window

Displays time and speed information.

Infra-Red(IR) Light

Infra-Red(IR) Light for night vision.

Rear Camera

Records interior images of the vehicle.

SD card Slot
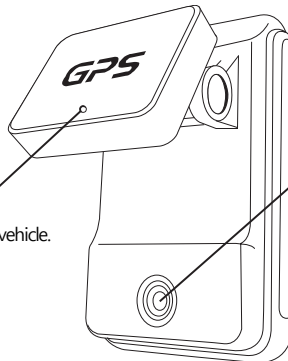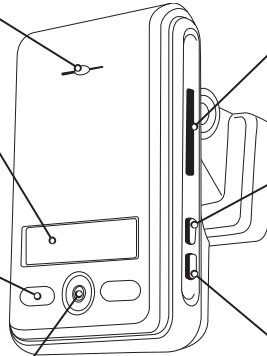
To insert the SD card into unit.

**Event release button/
System power off button**

Release recorded data by event locks.
System power off on the Parking surveillance mode:
Press over 3 seconds after the car engine off

**Emergency(Event)
Recording button**

To perform an emergency recording.

GPS Built-in & Holder slot

1) GPS Built-in

2) For attaching the holder to the vehicle.

Front Camera

Records forward images of the vehicle.

Remote controller

MOVE & MENU Button
(Press the Menu button to
activate the TV-OUT (on-screen
setup) function and then choose
the function with OK button.)

Menu button
The button is activate the
TV-out .

Playback control button
Playback the selected file and
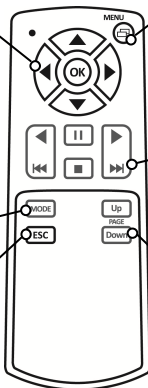adjust the frames.

MODE button
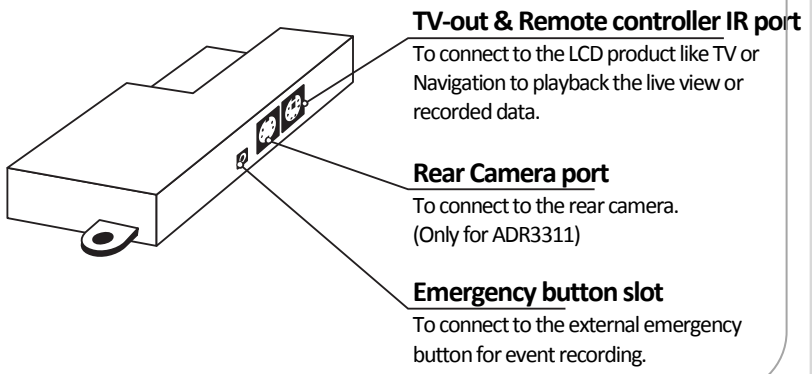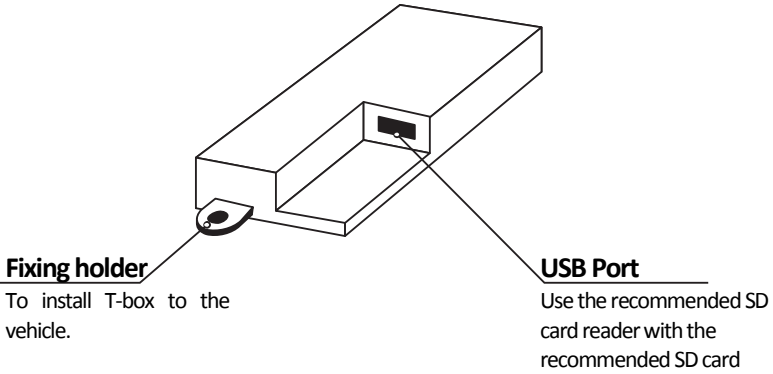Activate PIP function

MENU cancel button
Cancel the previous function

Page Up/Down
Adjust the playback file list
page.

T-BOX

Fixing holder
To install T-box to the
vehicle.

USB Port
Use the recommended SD
card reader with the
recommended SD card

TV-out & Remote controller IR port
To connect to the LCD product like TV or
Navigation to playback the live view or
recorded data.

Rear Camera port
To connect to the rear camera.
(Only for ADR3311)

Emergency button slot
To connect to the external emergency
button for event recording.

Caution!

If the user uses SD card with SD card reader (USB port), the data will be saved in SD card with SD card reader.
- If the user uses SD card with SD card reader (USB port) and SD card in the product at the same time, SD card with SD card reader (USB port) at the T-box has a priority to save the data.
- Please use the recommended SD card reader
  (The user must use the recommended product only.)

SD Card

SD Card specifications

Total Frame	Maximum Recording Time (Min.)				
(Frame/Sec.)	Lowest	Lower	Normal	Higher	Highest
30 Frame	2.5	2	1.3	1	48 mins
25 Frame	3.1	2.2	1.6	1.1	1.1
22.5 Frame	3.3	2.5	1.8	1.2	1
20 Frame	4	2.7	2.7	1.3	1.1
15 Frame	5	4	5	2	1.6
10 Frame	8	5	4	2.7	1.6
7.5 Frame	10	6.7	5	3.3	2.7
5 Frame	13.3	10	6.7	5	3.3
3 Frame	20	13.3	10	6.7	5
2 Frame	26.7	20	13.3	10	6.7
1 Frame	33.3	26.7	20	13.3	10

* Time varies depending on the amount of motion seen by the camera & lighting conditions.
 (Based on 2GB)

Caution!

1. Do not remove SD card when the power is connected.
     (It might cause fatal damage to the SD 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 SD card at least twice a month for stable use of product.
    (Refer to website and download the recommended formatter program for SD formatting.)
4. In case where the PC does not support the SD card and the SD SDHC2.0 card standard,
    use a separate SDHC2.0 USB reader. (SD card to USB adapter)
5. SD 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.
     (SD card warranty is three months after purchasing.)
6. Only use the provided SD card from the manufacturer.
    Product may not function correctly if un-tested SD card is used.
       (We recommend the use over "SDHC Class4 Card".)

Caution!

- If the computer does not support SDHC2.0, please use extra (recommended) SD card reader for the performance.
- SD Card should be formatted regularly in order to prevent the error.
- After formatting SD card, please set up the time zone in configuration menu on the viewer program. **(Refer to 28page)**
- If the user does not re-set up the time zone, the data may be saved with incorrect time and it takes long time to boot up the product
- Formatting SD card will delete all the data in the SD card. If in need, please back up the data before formatting SD card
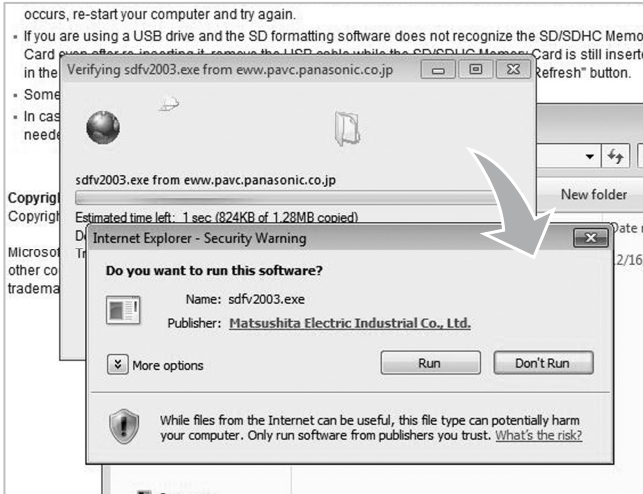
SD Card Formatting

1.   Homepage > Support > Download > SD Formatter V2.0

TITLE	/	SD Formatter V2.0						
WRITE	/	Admin		/	DATE	/ 2008-12-30	/	READ	/ 2492

SD Formatter V2.0 (SD Memory Card Formatting Software)

Program provider: Panasonic
Download the latest version at: http://panasonic.jp/support/global/cs/sd/download/sd_formatter.html
(The program can be downloaded at the bottom on the web page above)

'SD Formatter' is a SD format program provided by Panasonic. It is recommended using 8M ~ 32GB mini SD, SDHC and micro SD card made by Panasonic, However, other SD cards also can be performed properly on this program.
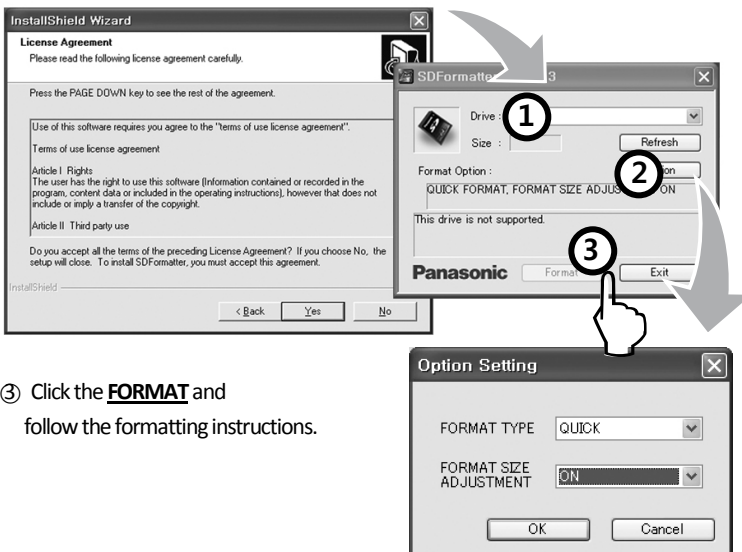
2.   At the bottom of the linked page, click **Download** to save the file to your computer.

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

occurs, re-start your computer and try again.
- If you are using a USB drive and the SD formatting software does not recognize the SD/SDHC Memory Card even after re-inserting it, remove the USB cable while the SD/SDHC Memory Card is still inserted in the [...] "Refresh" button.
- Some [...]
- In case [...]
needed [...]

Copyright
Copyright [...]

Microsoft [...]
other co [...]
tradema [...]

Verifying sdfv2003.exe from eww.pavc.panasonic.co.jp

sdfv2003.exe from eww.pavc.panasonic.co.jp
Estimated time left: 1 sec (824KB of 1.28MB copied)

New folder

Date [...]
2/16/

Internet Explorer - Security Warning

Do you want to run this software?

Name: sdfv2003.exe
Publisher: **Matsushita Electric Industrial Co., Ltd.**

More options   Run   Don't Run

While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. What's the risk?

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

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

InstallShield Wizard

License Agreement
Please read the following license agreement carefully.

Press the PAGE DOWN key to see the rest of the agreement.

Use of this software requires you agree to the "terms of use license agreement".

Terms of use license agreement

Article I   Rights
The user has the right to use this software (Information contained or recorded in the program, content data or included in the operating instructions), however that does not include or imply a transfer of the copyright.

Article II   Third party use

Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install SDFormatter, you must accept this agreement.

InstallShield

< Back   Yes   No

SDFormatter 3

Drive :
Size :   Refresh

Format Option :
QUICK FORMAT, FORMAT SIZE ADJUSTMENT ON

This drive is not supported.

Panasonic   Format   Exit

① ② ③

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

Option Setting

FORMAT TYPE   QUICK

FORMAT SIZE
ADJUSTMENT   ON

OK   Cancel

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.
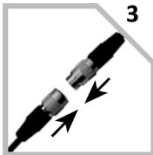- After installation, the product should be positioned in straight vertical degree.

Installing the product

1 Clean the surface with dry cloth before putting the tape.

2 Remove the plastic from the double-faced tape on the holder located on the upper rear of the rearview mirror.

3 Connect the device and T-box.

4 The device must be installed on the mounted straight both horizontally and vertically.

Installing the accessories

1 Locate the best position for the remote alarm button. Secure the button by removing the adhesive film attached to the tape on the external button, press and hold.

2 Locate the best position for Remote control IR reception.
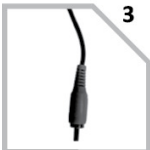
3 Connect the video cable to the connection port of the device.
*Gender might be in need for each monitor. (excluded)

4 Keep the remote control at the safe place to be reached easily. .

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Installing the Parking Surveillance

Notice

- Each vehicle has its own system and features. Please conduct this manual for the installation as a reference.
- Please ignition off while installing the parking surveillance and contact the car technician if needed.
- In order to use parking surveillance, cigar lighter power plug should be cut and use the cable for the wiring.

Each part of T-BOX
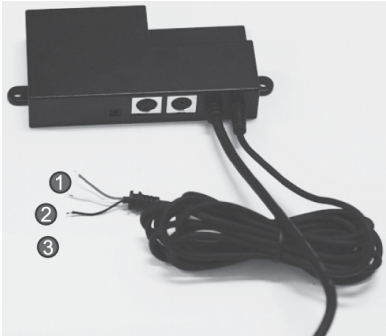
1	RED	POWER SUPPLY VCC (+) POWER SUPPLY (+12V ~ +24V)
2	WHITE	ACC (Ignition) ADR3320 signal for operation
3	BLACK	GND (-) Connect to the ground
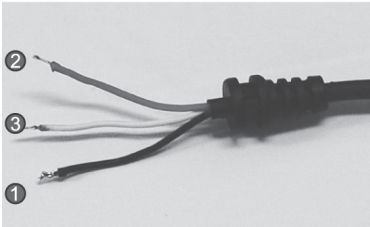
1. Connect the black wire (GND)(-) with car frame or ground wire.
2. Connect the red wire(power supply cable)(+) with all-time power supply cable. For this power supply, it should be powered on after the ignition is off. For instance, Emergency button has the power supply without ignition.
3. Connect the white wire(ING) with the power cable which can have the power with the ignition only. For instance, the cigarette lighter cable has the power while the ignition is ON only

CAUTION!

- For the safety reason, while installing the parking surveillance, please connect the ground wire first.
- Please connect the power cable and ACC(Ignition) cable through the fuses inside.

T-BOX Installation

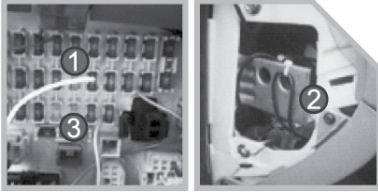**1.** Check the location of the fuse box in the vehicle.

2. Fix the place to install the T-BOX in the vehicle.

3. Adjust the length of the wire from T-BOX to the fuse box.
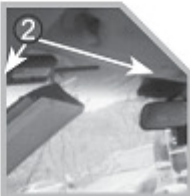
4. Remove the A pillar like picture (1) and insert (install) the cable at The gap between sealing and windshield like picture (2)

5. After adjusting the cable, connect the power cable.

(1)   Red wire is connected to "emergency button" fuse (the fuse with power after the ignition is off)
(2)   black wire should be connected to the ground of vehicle.
(3)   white wire which is ignition wire is connected to cigarette lighter power cable after the ignition is of and check the status of cigarette lighter power.
     (Some vehicles are having the power at cigarette lighter power after the ignition is off.)

6. Check the all wires and power on and Check the following points after parking surveillance setting.

The product is turned off again after powering on the product. After the power is off, parking surveillance will be in operation and it will be normal if LCD on the product is blinking.
If the LCD is keep ON (not blinking), the installation might be failed.

7. Put the wires with the cable tie in order and then install all the removed cases back.

T-BOX system operation

Item(s)	Description
Input power voltage	Min. 12V ~ Max. 24V
Low voltage detection	Min. 11.6V(12V battery) or Min. 23.2V(24V battery)

System LCD Display

EVENT REC `88:88` MPH
V1 V2 V-OUT km/h
USB GPS knot
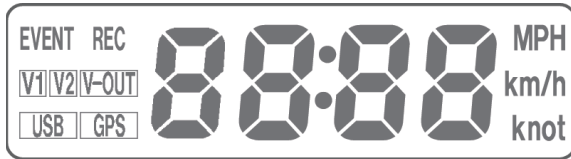
Display	Status or Measure
88:88	Displays Time & Speed
REC	The sign is ON, while Emergency recording (E button, G-Sensor detected)
EVENT	The sign is ON, while it is recording.
V1	The sign is ON, while front camera is recording.
V2	The sign is ON, while extra (rear) camera is recording.
V-OUT	The sign is ON, while TV-out in process.
USB	The sign is ON, while USB connected.
GPS	The sign is ON, while GPS signal captured.
MPH km/h knot	Designated speed measurement unit.
F_UP	Firmware update
OFF	Power OFF

Trouble shooting

Indication	Trouble description	How to check
Sd_E	SD card ERROR or NO GOOD	Check the SD card in the product or format the SD card
Err1	CMOS Sensor error	Problem with Camera sensor. Please contact your dealer.
Err2	G-sensor error	Please contact your dealer.
Err3	GPS error	Please contact your dealer.
Err4	RTC error	Please contact your dealer.

※ If the above instruction is not working out, please contact your dealer.

Operation sequence

Preparation for video recording

1. **After inserting SD card into the product and then turn on, [----] will be shown on LCD display.**
2. If the product is within normal condition, it chimes once.
3. <u>**Video will be recorded with [HELLO], REC, V1, V2**</u> on LCD display. **After inserting SD card into the product and then turn on, [----] will be shown on LCD display.**
4. If the product is within normal condition, it chimes once.
   <u>**Video will be recorded with [HELLO], REC, V1, V2**</u> on LCD display.

Continuous recording while driving

1. This Product informs you of your vehicle's speed, when stopped, the unit it displays the time.
2. When the capacity of the SD card has been reached, the oldest files are over written for continuous recording. The data recorded by either the unit's internal G-Sensor or external manual record button are not over written. (This alarm data must be erased by the User with the SD card inserted in the computer, erasing event data in the DATA folder.)
3. When you stop the engine or remove the power cable from the cigarette lighter plug, the device stops recording.

Running the viewer program after driving

1. The player is built in the SD card so the user is able to view the recorded data on any PC.
2. Check the recorded SD card data regularly for stable operation of the device and the SD card.
3. Always back up all important data in a different storage media.

   (Hard disk drive, CD, portable disk drive, etc)

Running Player(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.
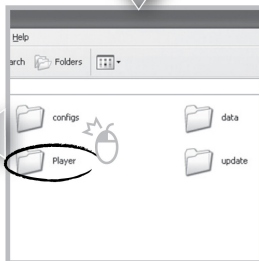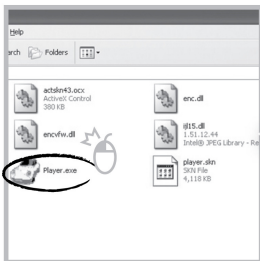
Player installation
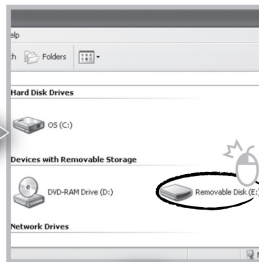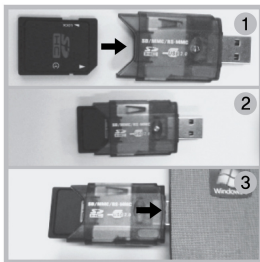
1. Insert the SD card into a PC or SD card reader and connect it to PC.

2. Select SD card reader 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 SD card or other location where the recorded (or saved) data is located, (file called DATA is on the SD card), then double click the selected file from the list in order to play.
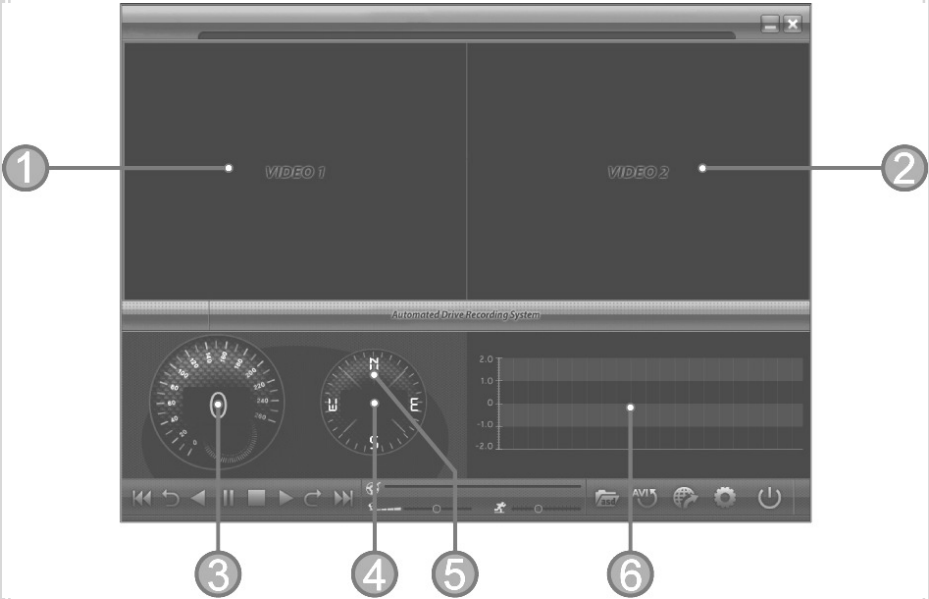
No.	Name	Description
1	**Forward Camera view**	Displays the video images recorded by the forward facing camera.
2	**Interior Camera view**	Displays the video images recorded by the interior facing camera.
3	**Vehicle Speed**	Displays the speed of your vehicle.
4	**Vehicle Location**	Displays the coordinates (latitude and longitude) of the vehicle.
5	**Direction of Travel**	Displays the vehicle's direct on of travel.
6	**Shock graphs**	Displays vehicle motion and any impact detected by the G-Sensor with a graphically in 3-axis.

Control Menu

Volume control   Playback speed control

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

Playback

1. After clicking the folder icon ([asd]) on the lower right corner of the viewer, click "Change Directory" 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 SD 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.

File Open		[x]
N:₩data		Change Directory

FILE NAME	RECORD TIME	EVENT TYPE
rec00000107.asd	2010-09-10 20:00:04	
rec00000060.asd	2010-09-11 13:56:12	
rec00000061.asd	2010-09-11 13:57:28	
rec00000062.asd	2010-09-11 13:58:44	
rec00000063.asd	2010-09-11 13:59:00	
rec00000031.asd	2010-09-11 18:34:38	
rec00000032.asd	2010-09-11 18:35:04	
rec00000000.asd	2010-09-28 09:31:26	
rec00000001.asd	2010-09-28 09:32:16	
rec00000006.asd	2010-09-28 17:16:52	
rec00000007.asd	2010-09-28 17:18:20	
rec00000008.asd	2010-09-28 17:19:38	EVENT001-GSENSOR
rec00000009.asd	2010-09-28 17:20:28	
rec00000010.asd	2010-09-28 17:21:46	
rec00000011.asd	2010-09-28 17:22:02	EVENT002-BUTTON
rec00000033.asd	2010-09-28 17:39:38	
rec00000092.asd	2010-09-29 02:26:46	
rec00000093.asd	2010-09-29 02:28:22	
rec00000096.asd	2010-09-29 02:29:46	
rec00000097.asd	2010-09-29 02:30:36	
rec00000083.asd	2010-09-30 09:49:08	
rec00000084.asd	2010-09-30 09:50:28	
rec00000085.asd	2010-09-30 09:51:50	
rec00000086.asd	2010-09-30 09:53:06	
rec00000091.asd	2010-09-30 09:59:50	
rec00000094.asd	2010-09-30 10:01:08	
rec00000095.asd	2010-09-30 10:02:26	
rec00000098.asd	2010-09-30 10:03:44	
rec00000100.asd	2010-09-30 10:03:46	
rec00000054.asd	2010-10-01 09:33:14	
rec00000055.asd	2010-10-01 09:34:30	
rec00000056.asd	2010-10-01 09:35:48	
rec00000057.asd	2010-10-01 09:36:44	
rec00000064.asd	2010-10-01 09:40:54	

※ 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 button 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 video by pressing the emergency record button.
G-Sensor automatic recording (EVENT000-GSENSOR)	Annotated with **GSENSOR**. This data is recorded when any impact, sudden acceleration, or accident is detected.

Pop-up Display window

With double-click the display window, the recorded images are played back at the original size. Double clicking the screen returns the view to normal, original size. Use the PC's mouse to move the screens and adjust them within desktop window.

Interfacing with a GIS/City map

Drive Recorder simultaneously records the GPS data while driving so you can check the driver's route on the map. Click the GIS/MAP icon (   ) on the lower right corner. The map window appears for the user to see the vehicle location and travel onto a city map.

※ To use this function, the system must access the Internet.

Converting into AVI file format

Convert a portion of the recorded data into an AVI file format to playback on "Window media player" or to share the recorded data with someone else or email a file.

1. Click the AVI conversion button (   ) at the start of video clip position to convert the images into the AVI file format. The video playback stops and the AVI conversion window appear as below.
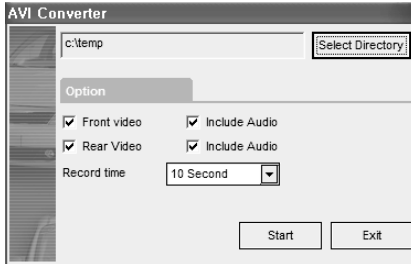

2. Set the following options from the window and click **Start**.
    1) AVI storage directory
    2) Selection of previous/next video and whether or not to include audio data
    3) AVI recording time

3. The conversion progress appears as follows.
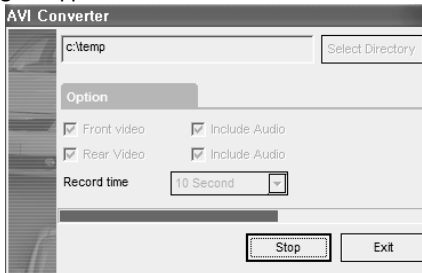
※ The AVI files cannot be created on a portable disk such as SD Card or USB memory stick but only on a hard disk first due to speed required for the conversion.

System configuration

Click on the System Setup configuration icon ( ) located at the lower right corner of the player.
The following window will then appear.
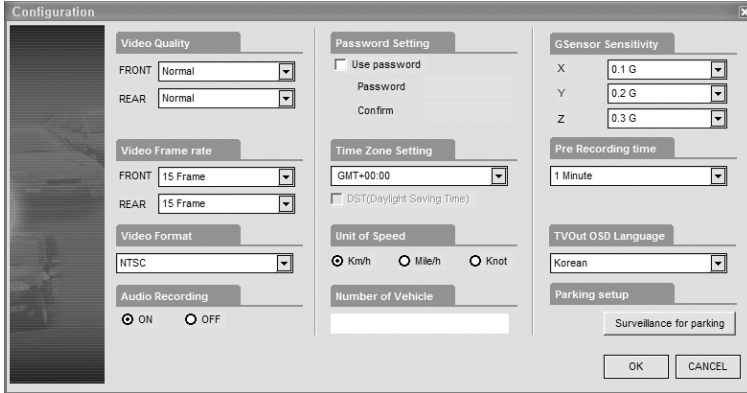
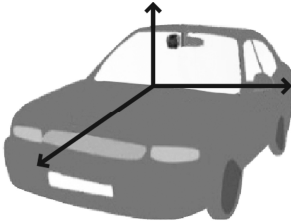| No.	Name	Description
1	Video Quality	Sets the video recording quality. (5 Levels)
2	Video Frame rate	Sets the video frame rate (1, 2, 3, 5, 7.5, 10, 15 frame/sec)
3	Video Format	Sets the video format for TV-OUT & Emergency recording button. (NTSC, PAL)
4	Audio Recording	Enables or Disables the audio record function.
5	Password Setting	Sets any Password to access the recorded data. (Up to 10 digit alphabet or number.)
6	Time Zone Setting	Sets the time zone for the user. (Ex. Korea — GMT+09:00)
7	Unit for Speed	Set the unit of the car speed
8	Number of vehicle	Sets the license plate number or fleet vehicle ID number associated with the vehicle where the SD card is to be installed in.
9	G-Sensor Sensitivity	Sets the sensitivity of G-Sensor. (Available to set each X,Y,Z axis by 0.1G)
10	Pre Recording Time	Sets the time to record the previous scenes before the event.
11	TVOut OSD Language	Sets the language used in TV-Out mode
12	Parking setup	Sets video frame rate of parking surveillance. (Refer to28p)

Parking surveillance Setting

No.	Name	Description
1	**Timer for parking**	Sets the parking surveillance time (none ~ 24h)
2	**Video Quality**	Sets the video recording quality. (5 Levels)
3	**Frame Rate**	Sets the video frame rate during the parking surveillance (1, 2, 3, 5, 7.5, 10, 15 frame(s)/sec)
4	**Audio Recording**	Enables or Disables the audio record function.
5	**G-Sensor Sensitivity**	Sets the sensitivity of G-Sensor. (Available to set each X,Y,Z axis by 0.1G)

※The setting for parking surveillance will be different from the normal operation.
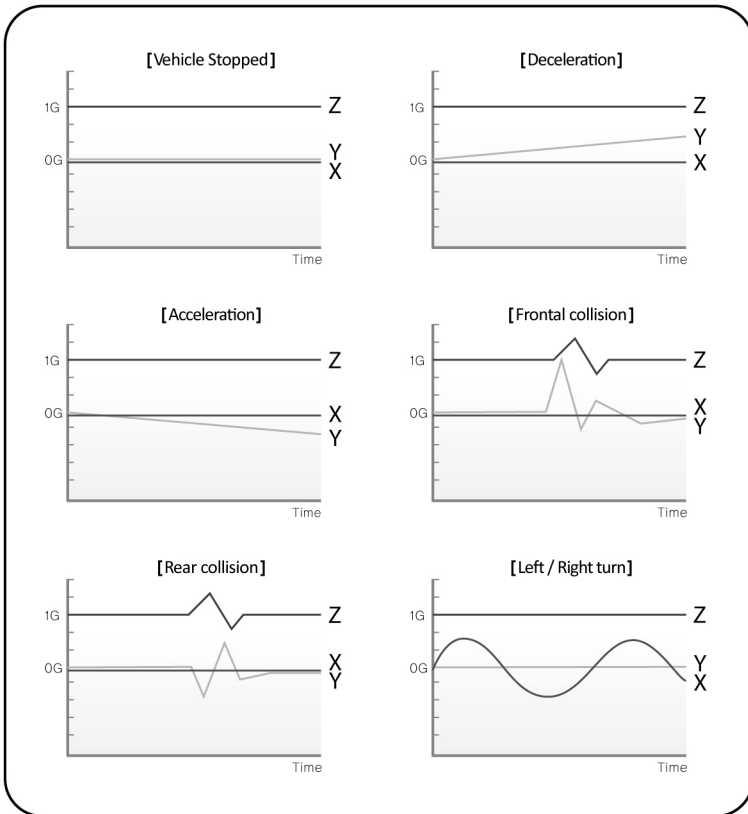
※The parking surveillance will be off if the status(capacity) of battery is lower than the required capacity regardless of Time setting.

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 SD 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: front and rear of the vehicle

※　Y axis: left and right of the vehicle

※　Z axis: top and bottom of the vehicle

【Vehicle Stopped】

【Deceleration】

【Acceleration】

【Frontal collision】

【Rear collision】

【Left / Right turn】

TV-OUT Viewer

Firmware Version 1.08 - Released Date : 2010/07/30

| No.	Name	Description
1	Live Video	Displays live video streaming
2	Playback Video	Playback video and audio data recorded
3	System Setup	Configuration settings
4	Exit	Closing TV-out

Live Video

1. Displays live video streaming.
2. With the extra camera (the 2nd CH),
   PIP (picture in picture) function will be activated
   by [**MODE**] button.
3. Change the live video channel to press the [**OK**] button

Playback recorded video data
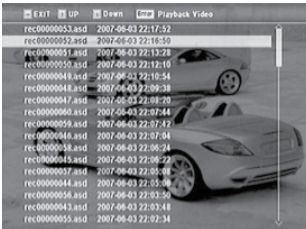
1. Playback video and audio data recorded
   previously.
2. By Page **[UP/DOWN]**, it moves page of the file list.
3. By [⟨▽⟩ / ⟨▽⟩], it moves files.
4. Selects file by press [**OK**] button.
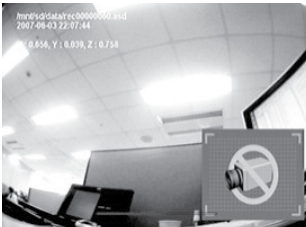

1. By [Playback control button], move to previous/next
   frame or rewind/pause the playing files.

2. Press [**MODE**] and activate PIP function.

 * Drive recorder must stop the recording during the
   playing recorded files.

System Setting
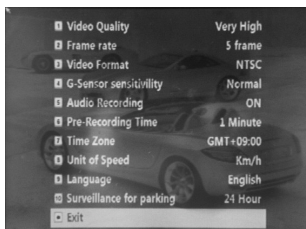
1. Setting page consist with total 11 sections.
2. Setting value will be shared with its viewer program
   ※ For the setting detail, refer to the viewer program
   option. (Refer to 26p.)
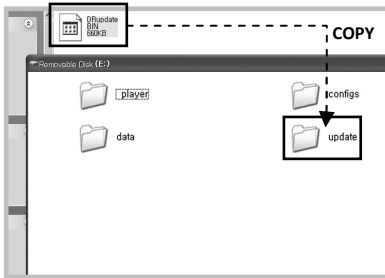
Software Update
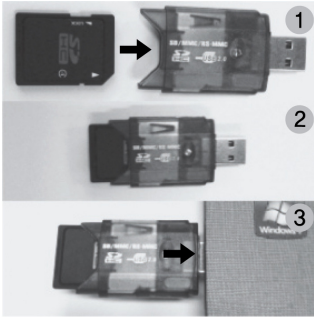
1. Remove the SD card from the device and insert to the SD card reader.
2. Connect the SD card reader to PC through the USB port.

3. Download the latest software at the website and copy the update files to the update folder of SD card.
(Create "update" folder and copy the update files, if "update" does not exist in the SD card.)
4. Insert the SD 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.
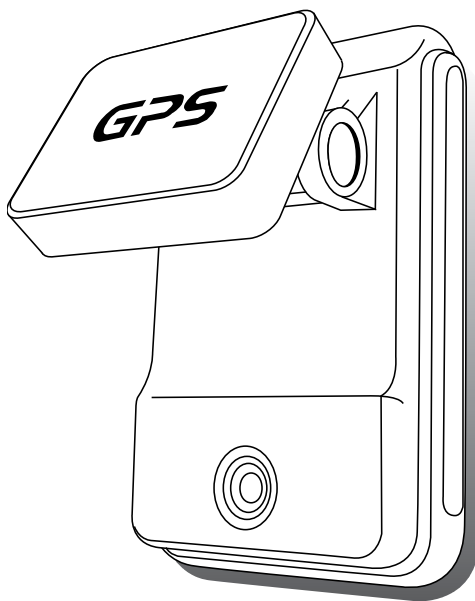
Warranty

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.

AUTOMATED DRIVE RECORDER

TTEYE

GPS

Ver 1. 0