roadscan

User's Guide

DRIVE RECORDER
DE Series v1.50

R & C

Business International B.V.

Importeur / Distributeur

BENELUX

Thank you for choosing Drive Recorder!

The Drive Recorder is designed to record accident situations that occur while driving your automobile or truck.

Please read the information contained in this user's guide carefully.

Please read the installation instructions and operating guidelines contained in this user's guide carefully.

Damage or malfunction due to improper installation or operation of the product will void the warranty.

The software that accompanies the system is designed to be compatible with the Windows 2000, XP or Vista operating systems. The user assumes all risks associated with attempting to use this software with other operating systems, which in some cases may cause the operating system to fail.

■ Contents

■Product Introduction | General Cautions and Warnings

Please read carefully to assure proper and safe use of your Drive Recorder System.

ⓘ Never disassemble or attempt to repair the system yourself. Unauthorized repairs or attempted repairs will void the warranty.

ⓘ Do not use water, cleaning chemicals, detergents, or any liquid to clean the system. Dust with a dry, soft cloth only. Lenses should be cleaned only with dry cloths or tissues specially made for cleaning optical glass.

ⓘ Do not allow any liquids to come in contact with the system. Liquids can damage electronic circuits and cause fire or shock.

ⓘ Protect from mechanical shock, which can damage mechanical and electronic components.

ⓘ In order to function properly, the system requires a clear visual field. Do not allow obstacles to block the front of the system. Avoid leaving objects near the windshield that might cast shadows or reflections on the inside of the windshield glass, as this may distort or obscure captured images.

ⓘ The system must be correctly oriented and firmly attached.

ⓘ Windshield glass in the system's visual field must be kept as clean as possible,on both the inside and outside of the glass. Dirty glass may result in unusable images.

ⓘ Depending on the settings you select and the limitations of the system, some very minor accidents may not generate enough force to trigger the system.

ⓘ Some severe accidents may dislodge or damage the system, or cause it to lose power, in which case no images may be recorded.

ⓘ The admissibility of Drive Recorder System data as evidence in legal proceedings is governed by the laws and rulings of local judicial authorities.

ⓘ The internal RTC (Real Time Clock) goes faster or slower 30 minutes per year at most. For accurate time, it is only necessary to connect the system to a PC and execute the software. As soon as the software recognize the system, the internal time gets synchronized to the PC time. (The PC time should be set to the real time before doing this.)

ⓘ The system is designed to be powered by the cigar jack. If you want other ways, such as direct wiring, please consult to a professional car mechanic. Do not recommend any powering method other than cigar jack, and do not take any responsibilities for the result.

ⓘ The system can record 1 million times of event. Be aware that reckless driving may result in short life of the device due to frequent event recording.

ⓘ Most USB flash disks, compatible for Windows 2000, XP or Vista, can be used for data download from the system. But, some low-quality USB flash disks may have problem. Please, make sure the USB flash disk operates well with the system.

ⓘ The system is designed to fulfill the EMI specification by Europe and US. Still, The system should be located at least 10 cm from the antennas for GPS, DMB, DAB, etc. to minimize the interference.

ⓘ The design of this product is protected by patent. Copyrights to this User's guide,to the software included with the product, and to certain data are reserved to the manufacturer. These rights are protected by law and international treaties governing intellectual property. Any unauthorized use, reproduction, or distribution will be prosecuted to the fullest extent of the law, and will result in civil suit.

■ Product Introduction | Package Contents

The Packaging of your Drive Recorder System should include :
- Main Body
- Power Cable (5m)
- USB Cable / USB Adaptor
- Mount for Wiring
- Extra Adhesive Tape
- User's Guide
- Software CD

Main Body

Power Cable

USB Cable   USB Adaptor

Mount

Adhesive Tape

User's Guide

Software CD

■ Product Introduction | Visual Guide to Components

[Main Body]
>> The names of details of main body are shown in the figure below.

Adhesive area

Knob

Camera lens

USB connection

[Front]

Power connection

LED indicator

MUTE/Download button

REC button

[Back]

■Product Introduction | Overview of Operations

How does the Drive Recorder System work?

The Drive Recorder System automatically records and stores images in its field of view in case of any abrupt change in acceleration, such as those caused by accidents and sudden stops. When the system recognizes an acceleration event, it notifies the driver via beep sound and LED indicator and saves the images, along with acceleration and time data. When the recording of the incident is complete, the LED indicator on the system will change to blue color. A maximum of 10 of these image-and-data sets can be stored by the system.
The driver can also manually trigger the System by pressing the REC (Record) button on the back of the system.

Once 10 incidents have been stored by the System, any new incidents will overwrite (replace) the oldest incident(s) in memory. If the system has critical incidents stored on it, like an actual accident, the system should be powered off in order to prevent accidental overwriting. Or, if time and events permit, the critical image-and-data set(s) can be transferred to a PC via USB cable or USB flash disk.
The software that accompanies the System-Drive Recorder Manager-can also be used to delete all records stored on the system.

[Drive Recorder Manager]

When the system is triggered by an acceleration incident, it looks back in its short-term memory 14 seconds before the triggering event, as well as recording the 6 seconds after the triggering event. It also records 3-axis acceleration data and the exact time. Each image-and-data set, then, includes time, acceleration data and visual images for a 20-second period.
The user can view and analyze this image-and-data information using the software and a PC running Windows 2000, XP or Vista.

The Drive Recorder System is triggered when accelerometers inside the system detect impact of more than 0.5 G , along any of the axes shown in the diagram below.

What does this mean?

The System constantly monitors every move the vehicle makes. If there are any sudden changes in direction or speed, the system measures just how severe the change is. If it's more sudden or severe than the onboard computer thinks is normal, then the system is triggered, and an image-and-data set is recorded into memory.

The user can set the System's sensitivity using the software.
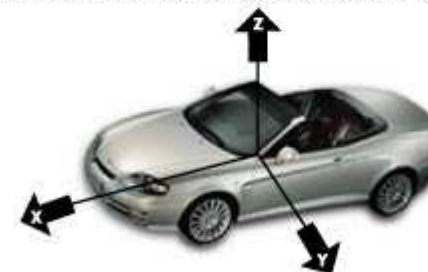
An acceleration of 1G is defined as a change in velocity equal to 9.8m/sec .

■Product Introduction | Manual REC Button& MUTE/DN Button

[REC Button]
On the back of the system is a button labeled REC (Record). The driver can push this button to manually trigger the system, which will then record the same 20-second image-and-data set that it would if it had been triggered by an acceleration event.

[MUTE/DN Button -MUTE function]
To hold down buzzer alarm, press shortly the MUTE/DN button. Press shortly again the MUTE/DN button to restore buzzer alarm.

[MUTE/DN Button - DN function]
MUTE/DN button is also used to download the data to USB flash disk.
The download procedure is as follows :
1. Connect a USB flash disk to the system using the USB Adaptor enclosed in the box.
2. Check if the color of LED indicator is blue. While the system is recording, the LED changes to green and it is impossible to download the data. Wait until recording finishes and the LED changes back to blue.
3. Press the MUTE/DN button longer than 2 seconds.
4. After beep, the data is downloaded to USB flash disk and LED changes to yellow.
5. As soon as the download finishes, the LED changes back to blue.
6. Detach the USB flash disk from the system.

[Trouble shooting about USB download]
1. Cannot connect USB flash disk => Check USB adaptor.
2. Cannot recognize USB flash disk => Try other USB flash disk.
   The system only supports FAT16 or FAT32 format of USB flash disk.
3. Insufficient space => Try again after deleting unnecessary files in USB flash disk.

►CAUTION!
Do not detach if the LED is yellow because the system is writing into the USB flash disk.
Wait until LED gets blue.

■Product Introduction | Buzzer Sound and LED Indicator

	Trigger	Buzzer Sound	LED	Meaning
Power On	Power turned on	* Beep Beep Beep *	Changes yellow to blue	System ready
Routine operation	Sudden stop or turn	* Beep - Beep *	Green	An image -and-data set is being stored in the system's memory.
	Recording finished	* Beep *	Blue	System ready
Manual recording	REC button pushed	* Beep -Bop*	Green	An image -and-data set is being stored in the system's memory.
	Recording finished	* Beep *	Blue	System ready
MUTE Button	MUTE/DN button pushed shortly	* Beep *	Sky Blue	Hold down buzzer alarm
	MUTE/DN button pushed shortly	* Beep - Beep *	Blue	Restore buzzer alarm
DN Button	MUTE/DN button pushed longer than 2 seconds	* Beep - Beep *	Sky Blue	An image -and-data set is being stored in the USB disk.
	Downloading finished	* Beep *	Blue	Downloading finished
	Downloading Error	* Beep - Beep *	Yellow LED blinking	See [Trouble shooting about USB download]
System	System Error	.	Red	There is a problem with the system.

ⓘ The actual sounds and LED arrangements may vary.

■Software | Installing the software on your PC

When you're ready to install the system software, follow the steps below:

(1) Leave the System unconnected to the PC. You will be instructed when to connect the system to the PC.
Insert the software installation CD into the CD-ROM drive of your PC.
When the installation dialog box ("InstallShield Wizard") opens, click NEXT.

(2) Click the INSTALL button.

(3) When the software installation is complete, the dialog box below will appear. The first part of the installation is now completed, but the driver installation still needs be done.

Click FINISH to exit the installation.

■Software | Installing the system driver on your PC

(1) Connect the system to your PC with a USB cable.

(2) The following dialog box should appear automatically.
Select "Install from a list or specific location (Advanced)"option.
And then click NEXT to proceed.

(3) The following dialog box should appear automatically.
- Check "Include this location in the search".
- Click "Browse" button and Select CD Drivers directory.
 (If CD Drive is "E", then select "E:\Drivers")
- Click NEXT to proceed.

(4) When the installation is complete, the following dialog box will appear.
Click FINISH to finish and exit the installation.

■Software | Checking for Proper Installation of the Driver

Right click on MY COMPUTER, and select PROPERTIES from the popup menu. In the "Device Manager"view, look under "Universal Serial Bus controllers". If the driver installed correctly, you should see a new device called "KETI USB Controller (Oe18,0010)".
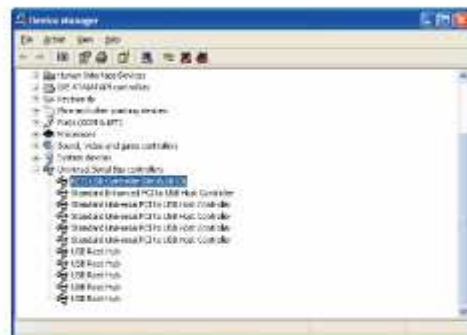
■Software | Main Software Features

1. Show the video display.
2. The bar will be moving with the video proceeding, and the bar can be moved by a mouse point.
3. Show graph of the acceleration data and the impact data in turn. Click below button, the graph display mode will be changed.
4. Show the acceleration data, the impact data and the maximum impact data.
5. Show the recording date and time.
6. Show play list.
7. Show the software menu button.
8. Show the file path.

■Software | Main Button Functions

Button	Function	Description
	Download Data	Download data of system to PC. Refer to " Downloading data to your PC" for detailed information.
	File open	Open an existing image data file.
	Print	Print the active file.
	Play	Play the video display continuously.
	Pause	Pause the video display.
	Stop	Pause the video display and initialize the video display.
	Previous	Show previous image frame.
	Next	Show next image frame.

Button	Function	Description
	Graph	Show acceleration graphs in detail.
	Device Setup	Set the system's sensitivity.
	Time Setup	Set the time of the system. The time of system will be automatically updated with PC time.
	Movie	Create movie file from the image data file.
	Delete Data	Delete all data of the system. (Maximum 10 data will be deleted.)Use the this function, only when the stored data is not necessary any more.
	Copy	Copy software to USB flash disk.
	Info	About the software version
	Exit	Exit the program

■Software | Setting the sensitivity of system

1) Recording for critical impact is added to the traditional recording functions wich are normal and manual recording.

① Basically, recorded event is managed by impact value.

Item	Recording by normal impact	Recording by critical impact	Recording by manual (Forced recording)
Recording pattern	Minnor colliion or extreme driving	Critical impact	Putting REC button
Available setting value	0.1 G-0.99 G	1.0 G-1.9 G	–
Initial setting value	0.5 G	1.1 G	–
Remarks	Recommended value: 0.4 G-0.7G	Overwrite is unavailable (Refer to the following)	–

② Recorded time and number of event

>> Recording time (20 seconds):Before 14 seconds and after 6 seconds from event. Total 10 events are recorded.
>> In recorded 10 events, the critical event that is recorded by critical impact will be recorded max. 3 times automatically, at this time, remaining recorded event (if critical events are 3 events, remaining event data will be 7 events) will be normal event.
>> 'Normal event' and ' forced recording event' are managed to same type event. When space of memory is full, the oldest event will be overwritten. For example, if critical event is not existed, the oldest normal event will be deleted and then the new normal event will become 10th event. If recorded critical event is 3 events, the oldest normal event will be deleted and then the new normal event will become 7th event.

>> Critical event' is recorded and managed max. 3 events and 4th critical event will be 3 rd critical event (the oldest normal event will be deleted). In this case, the oldest critical event is change to 7th normal event.

2) User can set up the 3G Axis (condition of automatic recording).

The process that set up for controlling sensitivity(impact sensor) is as below.

Put **Setup** button and then you can find as the following screen.
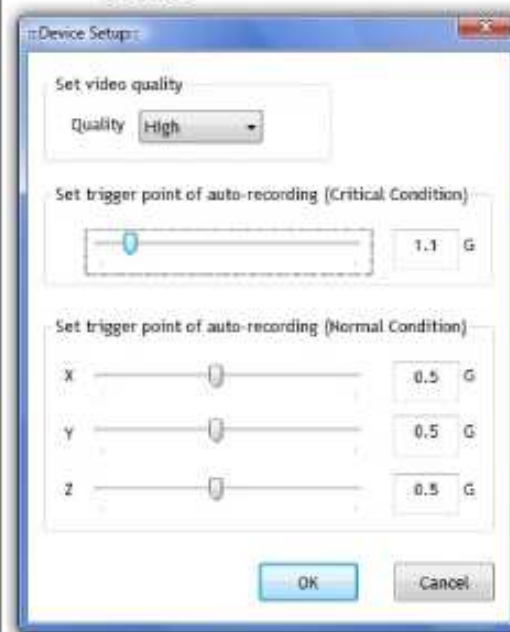
[Process of set up]
(1)Roadscan connects with PC by USB cable.
(2)User set trigger point and then click 'Ok' button in the screen. The value will be saved.

*Initial set value is 0.5G. If you would like to record frequently, please set up to under 0.5G. If you don't like to record frequently, please set up to over 0.5G.

3). User can set "Video Quality" to High Quality or Medium Quality.

High Quality: VGA, 8 Frame/sec
Medium Quality: QVGA, 20 Frame/sec

■Software | Downloading data to your PC

(1) Start the program: Click ⊞ start → All Programs → Drive Recorder(DE)
   → Drive Recorder Manager

(2) Click DOWNLOAD DATA.

When the dialog box below appears, click on the checkboxes next to
the image-and-data sets(s) want to download, and click OK.
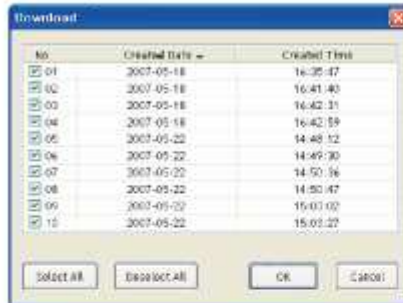
(3) When the following dialog box appears, type a file name into the "File name"
field at the bottom of the box, and click SAVE. For ease of finding the files
you want later, it is recommended that you use file names that include the
date and time of the event that the file records.
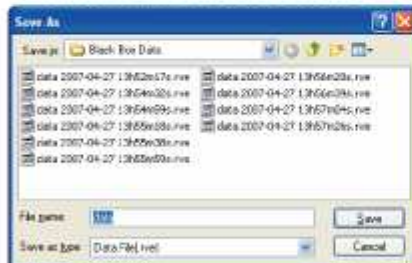
(4) Data will be transferred from the system to your PC.
The progress bar lets you see how much of the data has been
transferred and how much is still to be transferred. When the total
process status bar reaches 100%, the transfer is complete.

■Software | Displaying downloaded images and data

(1) Start the program: Click ⊞ Start → All Programs →Drive Recorder (DE)
   → Driver Recorder Manager

(2) Click FILE OPEN button on the main screen.

(3) When the following dialog box appears, select the name of the file you
wish to open and click OPEN.(The preview of the file will be displayed
on the right-bottom of the main screen.)
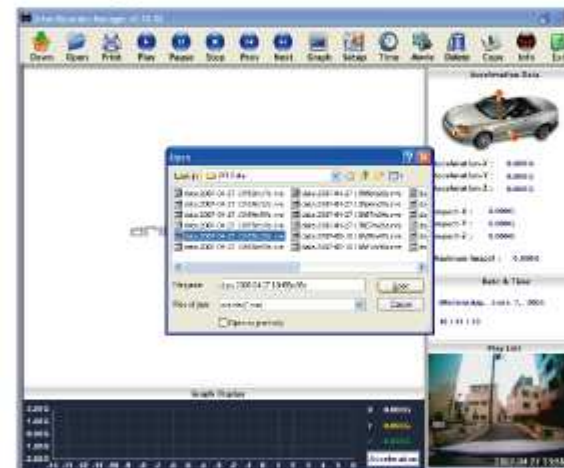
(4) Click PLAY button.
The image-and-data set you selected will be displayed.

■Software | Graph display of the acceleration data

Display graph of the acceleration data and the imapct data in detail.

Open file and click GRAPH button, the below screen will be displayed.

[Acceleration]

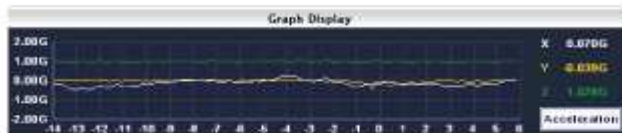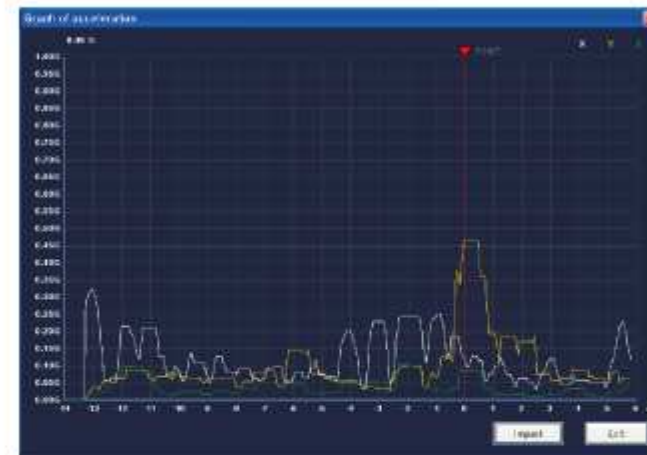Click ACCELERATION button , The button will be changed to IMPACT and the graph displays the impact data.

[Impact]

■Software | Creating Movie File and Playing Movie File

The image data file can be converted to movie file (avi file) and this
movie file can be played with Windows Media Player.
The procedure is as follows :
1. OPEN data file.
2. Click MOVIE button.

Codec program is required to play the movie file with Windows Media
Player. When you're ready to install the Codec program, follow the steps
below:
(!Notice)FFDShow MPEG-4 Video Decoder is free software; you can
redistribute it and/or modify it under the terms of the GNU General
Public License as published by the Free Software Foundation.

(1) Start the install program: Click 🏁Start→ All Programs → Drive Recorder
   (DE) → ffdshow
(2) The following dialog box should appear automatically.
    Click the OK buton.

(3) Click NEXT to proceed.

(4) Click NEXT to proceed.

(5) Click NEXT to proceed.

(6) Click NEXT to proceed.

(7) Click NEXT to proceed.

(8) Click NEXT to proceed.

(9) Click NEXT to proceed.

(10) Click NEXT to proceed.

(11) Click NEXT to proceed.

(12) Click INSATLL to proceed.

(13) When the installation is complete, the following dialog box will appear. Click FINISH to finish and exit the installation.

■Software | Interpreting the acceleration data

Here are some examples of acceleration data you might see on the "Acceleration Display" across the bottom of the screen when viewing image-and-data sets, along with possible interpretations.

[Stop State]

[Acceleration]

[Brake State]

[Right Turn State]

[Left Turn State]
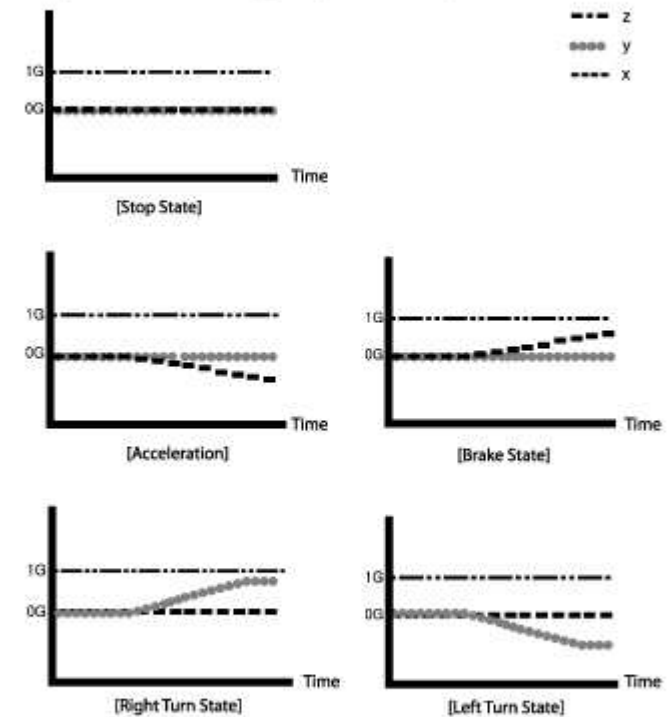
How to recognizes an acceleration event?

If the IMPACT value of one record is greater than the trigger G value, then the system is triggered, and an image-and-data set is recorded into memory.

IMPACT

0.5G — — — — — — — — — — — — — — — — Trigger G Value
[sensitivity of trigger condition]

Time

0

[IMPACT data graph]

■Installation Instructions | General instructions and cautions

Before you start . . .

ⓘ Since part of the installation process is setting the angle of the system, it is important to choose a workspace where the vehicle is level and stable, and can remain so throughout the installation.
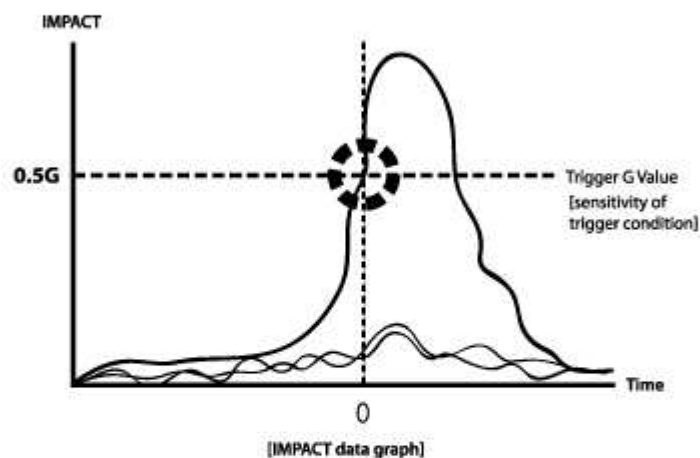
ⓘ Before installation, check the contents of the box against the list on page 5. Make sure all parts are accounted for and in good condition.

ⓘ Read this installation guide completely before beginning the installation.

ⓘ Take care that the installation location chosen will not cause the system to interfere with the driver's line of sight when operating the vehicle.

ⓘ Take care that the installation location chosen will not cause the system to interfere with the movement of the rearview mirror.

ⓘ Use the included installation hardware to make sure that the wiring for the system is secure, and will not interfere with the safe operation of the vehicle.

ⓘ Before attaching the system to any surface, make sure to clean the surface thoroughly.
Rubbing alcohol is recommended for the removal of any residual oils.

ⓘ You may wish to set the system's clock and operating parameters before installation.

■Installation Instructions | Installation Guide

The system is typically attached to the inside of the windshield, at about the height of the rearview mirror.
In order to avoid having to reinstall the system, take the time to be sure that the system location will not interfere with the rearview mirror or block the driver's line of sight.

When you have determined the best spot, you may want to mark it with a grease pencil or permanent marker.

[Installation for passenger car]

[Distance from room mirror]

Check to make sure the lens cover has been removed.

Follow the steps below :

Step 1: Remove the backing from the adhesive mounting tape.
Step 2: Locate the system in the middle of windshield .
Step 3: Check the position of the system is set in the center of a vehicle and then Attach the system to windshield.
Step 4: Adjust the installation angle to align the device vertically.
Step 5: When the angle is properly adjusted, tighten the set knob in a clockwise direction to hold the system in place.
Step 6: Connect the power cable and check the power LED indicator is on.

step 1

step 2

step 3

step 4

step 5

step 6

[Alignment]

Alignment, a very important procedure for automatic recording trigger of System, should be done according to the following steps once after installation.

The alignment procedure is as follows :

Step 1 : Power the system while MUTE/DN button is pressed. Approximately 5 seconds later, the system enter into alignment mode with beep and white LED. After beep, the MUTE/DN button may be released.

Setp 2 : Make sure the system is vertically aligned, and press shortly MUTE/DN button. The alignment mode finishes with beep and the LED changes to blue.

[Data Download]

※ To download data directly to a PC, it is necessary to detach the system from vehicle. Turn the fastening knob counter-clockwise and pull out the body from head.

※ To download data via USB flash disk, it is unnecessary to detach the system from vehicle. Connect a USB flash disk via a USB adaptor and download the data from the system.

The mounting installation is very similar to mounting a rearview mirror.

■ Installation Instructions | Wiring Guide

For neat wiring, follow the instructions below :
→ Route the wiring around the windshield, working it into available grooves.
→ If the side-pillar trim is easily removed, the wiring may also be run behind the trim
→ Connect to the 12V outlet (cigarette lighter socket), and secure the extra length with the included cable ties and mounts, so that the wiring will not interfere with safe operation of the vehicle.

[Using Mount]

 1. Remove the adhesive cover and attach on the right place.

 2. Insert wire into the mount.

Checking Your Work

√ Turn the system on. Do you hear the beep sound and see the LED indicator lights up?
√ Does the system interfere with the rearview mirror?
√ Does the system interfere with the driver's vision?

■ Troubleshooting

Problem: The system is not recording video images.

Possible solutions:

√ The system only records image-and-data sets if acceleration
   conditions are met (unless you have pushed the REC button).
   It may be that the impact conditions have not been met.
   Also, check your sensitivity settings. If the settings are too high,the
   system will record fewer events.

Problem: No sound comes out of the system.

Possible solutions:

√ Check to make sure the power is properly connected.
√ Also, check the MUTE mode. If you set the MUTE on, the system
   will not generate audible sounds.

Problem: The system sometimes seems hot.

Possible solutions:

√ The electronics inside the system will generate some heat under
   normal operating conditions. Direct sunlight or your vehicle's
   climate control may add to this heat. To extend the life of the
   system, consider protecting it from external heat sources when
   you don't need to be using it.

Problem: The image data can't be downloaded via USB cable.

Possible solutions:

√ Check to make sure the system is connected to your PC via USB
   cable.
√ Check to make sure the driver is installed on the PC you're using.

■ Specifications

- Norm. Operational Voltage : 12V/24V
- Min. Operational Voltage : 8V
- Max. Operational Voltage : 32V
- Max. Power Consumption : 3W
- Operating Temperature: -20 ~ 70 degrees(C)
- Storage Temperature.: -40 ~ 85 degrees(C)
- Camera Type : Color CMOS
- Max. Camera Pixel : 350k
- Actual Camera Pixel : 320k
- Avg. Recording Frame Rate : 8 frame / sec
- Min. Operation Luminance : 1 Lux
- Camera Angle: 90   degrees
- Recording Resolution : 640 x 480 pixel
- USB : USB 2.0
- Size : 80 x 61 x 33 mm
- Weight: 85g
- Simulation Program OS : Windows 2000 / XP / Vista