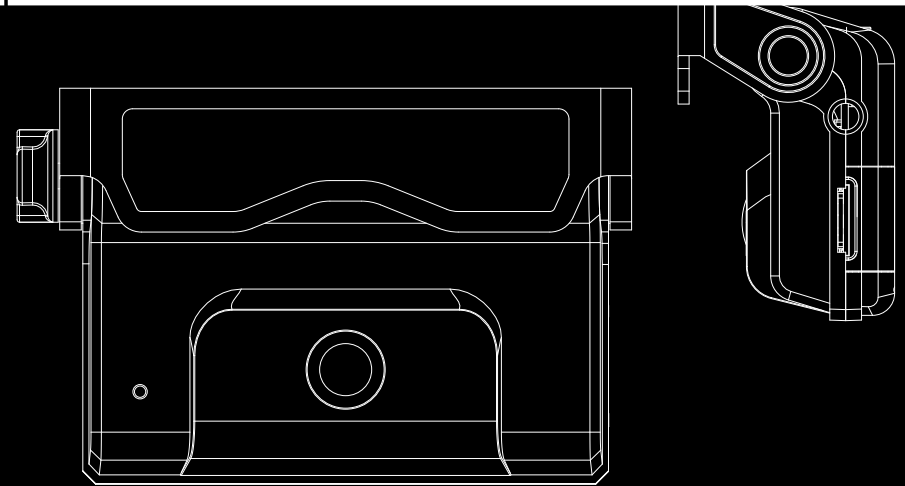


RoadScan Master

User's Guide

Video Event Data Recorder
DM Series v 2.06



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RCBI[®]
B E N E L U X

My Driving Recorder!

- ▶ **VEDR** (Video Event Data Recorder)
- ▶ **DIT** (Digital Image Tachometer)

[This product is the VEDR system for vehicles.]

- We do not take responsibility for the malfunction and accident caused by inappropriate use, mounting and alteration.
- Please check [purchase date, store] on the warranty certificate, and obtain the certificate from the save.
- Read this user manual and warranty certificate thoroughly to use it correctly, and keep it well to read if and when needed.
- ▶ Software provided by this product is designed to operate on the PC with Windows XP/Vista installed.
- ▶ There may be some difference in the product information provided in this manual and the actual product depending on the subsequent update.

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■ Product guide | Caution during use

This guide ensures user's safety and helps to use the product properly. Read carefully and use carefully.

- 1) Do not separate, fix or alter. Accident may result due to abnormal operation, and user may not be entitled to free service if and when product malfunction is caused by user's fault.
- 2) Do not spray water directly to clean up the vehicle's interior. This may cause the product to malfunction and cause fire and electric shock. Avoid contact with chemicals or cleansers since they may alter the surface, damaging the interior of the device.
- 3) Excessive shock or insertion of alien substance is prevented. Excessive force, shock or insertion of alien substance such as beverage may cause malfunction. Thus, be careful about this point.
- 4) If and when alien substance or sticker present in front of the product's lens blocks the view, image may not be filmed properly. Therefore, be cautious of cleanness at the front part of the main body clean. Moreover, other products placed near the product may be visible by reflecting against the mirror. Therefore, do not place other product near the installed product.
- 5) When installed for the first time, device may not operate properly when the location is moved even when it operated normally. Therefore, mount sturdy during installation. Do not move or shock the device by using excessive force after installation is completed.
- 6) Image may be saved with different angle when the device's angle is changed due to long time use, or when exposed to severe vibration when driving on dirt road. Adjust to the original angle while stopped on flat road.
- 7) Be especially careful since watching the product or maneuvering it while driving may cause accident.
- 8) Be careful to avoid excessive shock and contact with humidity and salinity, and be careful since malfunction may result when product is subjected to pressure or shock after product mounting due to the twisting of the location.

- 9) VEDR data may not be recorded during accident with lower than specific acceleration shock level. Be careful of this point. (Refer to VEDR function)
- 10) This product's VEDR data may not be effective in court. Please be aware of this point.
- 11) Product may be upgraded after launch to add on more functions and to increase customer convenience.
- 12) This product has built-in RTC (built-in clock). Built-in RTC is re-set automatically depending on the GPS time information. When battery for RTC is replaced, however, RTC's time information is destroyed. In this case, RTC information is not accurate until entering into a region where GPS reception is enabled.
- 13) Battery at the inside is designed to last average of 10 years without requiring replacement after production although there are some differences according to the driving environment. Contact the store where you purchased the product if battery runs out sooner. Additional cost may be charged depending on the warranty period.
- 14) This device is a product made for use by connecting to vehicle's power cable.
- 15) This product records image on HighSpeed MiniSD Card. Wild driving may decrease MiniSD Card's lifetime due to frequent image recording. In case of MiniSD Card malfunction, purchase MiniSD Card from your Roadscan supplier.
- 16) This device is designed to pass the EU and US EMI standard. However, distance between device and broadcasting reception antenna should be at least 10Cm since there may be intervention with other device.
- 17) This software indicates accident and navigation record by linking with Google Map. This function is not free. Instead, it charges fee for every specific period or count.
- 18) All rights to this product's hardware, software and data belong to the manufacturer. Unauthorized copying, processing and distribution may be subjected to compensation for damage according to the civil law or to criminal punishment according to the Intellectual Property Right Protection and Management Law.

■ Product guide | Verification of components

[Check to see whether all the components included in the following diagram are included.]

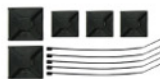
- 1) main body (part for adhering to vehicle and power line included)
- 2) MiniSD Card - capacity may differ depending on region and time of launch.
- 3) software (CD)
- 4) stick for attaching onto glass
- 5) mount for arrangement lines
- 6) user guide
- 7) key for the part for MiniSD insertion
- 8) GPS receiver - option
- 9) button for external recording - option



Main Body



Mini-SD Card



Mount



Adhesive Tape



Software CD



Key



User's Guide

■ Product guide | Names of each part

Main body is comprised of the module that processes and assesses status on the camera, current image and situation with the internal CPU.
>>Name of main body's each part is shown on the following diagram.



[Front]



[Back]

■ Product guide | VEDR function

[Image and data saving function during impact]

When impact is felt by the vehicle, this device detects the shock automatically, and records the image on a real time basis before/after an accident. At the same time, the device records information related to time and vehicle's 3-axis acceleration data, GPS location information and speed information etc.

Impact results in case of vehicle accident, sudden braking, sudden curve, irregular road surface, and impact to the main body and it is possible to adjust impact level. When the impact level is low, recording takes place frequently as the device detects even the minor braking. Storing does not take place often when the impact level is high, but this in turn may not record minor collision.

[Manual recording function]

This is the function that records image regardless of impact level. Press on the REC button located at the back of the main body to record image of setup pre/post time, acceleration, and GPS location speed information. Using this function when image is not recorded due to minor collision enables you to record the data.

[Stable image storing function using back-up power]

In the case of large accident, there is a potential that power will be severed. However, accident image is saved safely even when power is severed thanks to the built-in back-up power located in the main body. At this time, however, image is recorded up to the point when power is severed for safe image of accident storing, and does not record data afterwards. Moreover, frames per second of the image may be lower than the normal frames per second.

[Emergency recording function that uses built-in Flash memory]

One case is recorded in the memory when there is no MiniSD Card at the inside, when there is malfunction, when communication is not available or when impact that is at least 0.6G is detected. This function does not over-write the recorded data, and the data remains until it is moved to the MiniSD Card. Time is set to 14 seconds prior to the event, and for six seconds afterwards. This record is moved when normal MiniSD Card is inserted afterwards.

[Storage time setup modification function]

Storage time (before and after the event) can be adjusted by using software's Device Setup. At this time, time before an event can be setup to 34 seconds maximum while the total time can be setup to maximum 60 seconds.

[Function to modify number of image storing unit setup]

Up to 60 events can be recorded, but this can be modified by using the setup screen. Space that remains according to MiniSD Card capacity is used as DIT record. Therefore, adjust and use appropriately depending on situation.

*Caution !!

You must download recorded data in the MiniSD Card to a PC prior to using setup function. All the existing data is deleted during the process of re-configuring MiniSD Card's file system.

[How to use MiniSD Card properly]

You must insert MiniSD Card first prior to authorizing the power of the main body. Moreover, take out the MiniSD Card while power LED is turned off after turning off the power. MiniSD Card's file system may be damaged when the MiniSD Card is placed in or taken out while main body is in operation. Normal operation is ensured only when the recommended MiniSD Card is used, not by using other MiniSD Card besides the MiniSD Card provided at the time of product purchase.

[Image and vehicle data analysis function]

It is possible to analyze image and data of the time when accident took place by using provided CD's VEDR software.

[VEDR accident saving conditions]

Image and data are recorded in the following conditions.

Acceleration is defined as $1G = 9.8m/sec^2$, and Impact Value signifies amount of change in acceleration for each axis (maximum value - minimum value) during 0.7 second.

Event is recorded when the Impact Value is at least specific value. Value set up initially is 0.5, and it is possible to setup separately for each X, Y and Z axis.

Refer to the [Software guide] for software details.

■ Product guide | Button's function

[REC button]

It is possible to record image manually by using REC (Record) button. Press on the REC button to record image manually, and image and information is recorded in the MiniSD Card like automatic recording.

*Caution!!

Event may not result in the case of minor collision or in the case of contact accident involving vehicles that are moving at the same speed. In this case, press on the REC button to record before and after image for the time designated for recording.

[MUTE button]

You can stop the buzzer sound by pressing on the MUTE button. Press on the MUTE button once again to hear buzzer sound.

! Caution: There is no sound when mute button is pressed down. If buzzer sound is not heard when it needs to be heard, then press on the mute button once again to check whether buzzer sound is heard once again or not.

[Button for external saving - option]

This is a button which plays the same function as REC button was invented to attach at a location where driver can use easily in the case of the large bus or truck where driver finds it difficult to press on buttons. Select and attach at a location that enables driver to press it easily.

■ Product guide | DIT (vehicle tachograph) function

DIT function refers to the function that records DIT path, time, and speed along with the image while vehicle is in DIT.

[Recording time]

DIT's total recording time is setup according to MiniSD Card capacity and Event record time.

[Image record]

This is the function is a function that is characteristic of this product that records stopped image one by one for each setup time. By default, it records one image every 1 minutes, and this recording cycle can be adjusted on the setup screen. Simple DIT recording function and DIT image are recorded to check increasingly accurate information such as traffic information at the time of DIT.

[Speed, location and time record]

When connected to the GPS, this product records speed, location and time during regular interval.

The product is setup to record once every one minute at the time of launch, and modification is enabled through Software's Device Setup.

[Speed]

Graph is shown on the speed screen to enable precise analysis of the DIT record. Moreover, speed is indicated on the vehicle speed gauge to facilitate analysis.

[Time]

Time is indicated according to the location of the PC where image will be played. Accordingly, if there is time difference between image recording location and location for playing, then the time of the PC where image will be played becomes the standard.

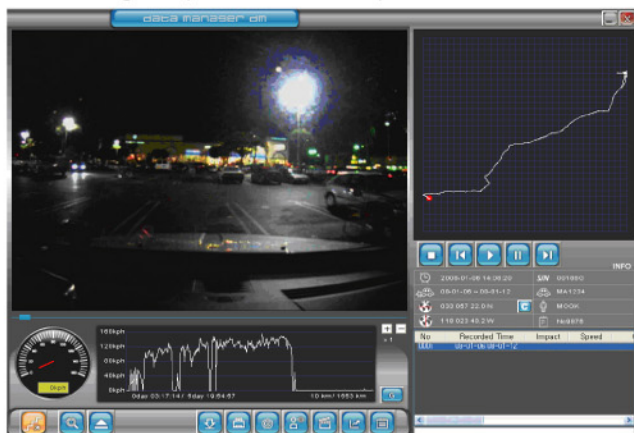
Example) when the data recorded in the EU is played in Korea to play, then the time is indicated for the night, the Korean time, at the time of recording.

■ Product guide | DIT (vehicle tachograph) function

[Location]

Indicating latitude and longitude with numbers is the same. However, indication method differs depending on the question of using Internet's Google Map when it comes to indicating with graph. When using Google Map: connects to the Google Map to indicate current location on the map, and indicates location modified according to time when DIT record is played. At this time, it is possible to play map's expansion and contraction, and photo of satellite. Moreover, press on the Path button when you wish to know entire path, which indicates by marking point on top of the entire path. In this case, speed may slow down. Thus, use with care.

*When Google Map is not used: entire path is indicated with line.



■ Product guide | Guide for the LED indication and buzzer

[LED indication details]

LED	Status	Explanation
POWER	turned off	Power is turned off or malfunction state.
	flickering	Automatic image recoding prohibited mode is set.
	turned on	Operating with power or battery.
MINI SD	turned off	No MiniSD Card or MiniSD Card is not recognized.
	flickering	wrong MiniSD Card. Not MiniSD Card for Roadscan master or serial number does not match. Data cannot be recorded properly on the MiniSD Card.
	turned on	MiniSD Card operates normally.
GPS	turned off	GPS is not connected or does not operate normally.
	flickering	GPS is operating but reception is defective.
	turned on	GPS is operating normally and reception is good.
READY	turned off	Image recording is impossible. Product malfunction and READY LED is turned off even during situations such as MiniSD Card error etc. It turns off while recording image of accident. If normal, READY LED is turned on again when the work is completed.
	flickering	records image of accident in the built-in Flash memory or copies image of accident, which was recorded in the built-in Flash memory, on the MiniSD Card
	turned on	Product operates normally, and standby state in which image can be recorded immediately if accident takes place.

■ Product guide | Guide for the LED indication and buzzer

[Buzzer sound and LED indicator lamp following product operation]

Classification	Timing for guide	Buzzer sound	LED indicator lamp	Others
Power connection	after connecting to power		Turned off after POWER, MINI SD, GPS and READY are turned off one by one	Refer to the LED indication details during the subsequent state.
System inspection	normal state	beep	POWER turned on MINI SD turned on READY turned on	Normal operation state.
	state in which automatic image recording is prohibited	beep	POWER flickering MINI SD turned on READY turned on	System is at the normal state, but it is the stage in which automatic recording is prohibited. Press on the MUTE button for a long time to turn into normal state.
	No MiniSD Card	beep~	POWER turned on, MINI SD turned off READY turned off	State in which there is no MiniSD Card or it is not recognized.
	MiniSD Card error	beep~	POWER turned on MINI SD flickering READY turned off	MiniSD Card is recognized, but file system for master is not installed. Need to install file system in the MiniSD Card through software.
	RTC time error	beep~	POWER turned on	When RTC time is wrong due to the reasons such as RTC battery replacement and others. Correct automatically after connecting to the GPS.

■ Product guide | Guide for the LED indication and buzzer

Classification	Timing for guide	Buzzer sound	LED indicator lamp	Others
	system error	repetitive beep sound	POWER turned off READY turned off	request for A/S for malfunction
Automatic recording	Start VEDR Storage	beep beep beep	READY turned off	READY LED flickers in case of built-in Flash memory recording.
	End VEDR Storage	beep	READY turned on	
REC button	After pressing on the button	beep beep beep	READY turned off	READY LED flickers when recording in built-in Flash memory.
	VEDR recording completed	beep	READY turned on	
MUTE button	MUTE setup	beep~		Buzzer sound stops.
	MUTE un-do	beep		Buzzer sound is heard.
Copy image in built-in Flash memory	Start copying image in built-in Flash memory		MINI SD turned on READY flickering	Approximately one minute is required.
	Copying image in built-in Flash memory completed	beep	MINI SD turned on READY turned on	

■ Product guide | Firmware update

There are instances in which Firmware update file is provided for main body's function enhancement. In this case, update with main body with the following method.

- (1) Connect Mini SD Card to a PC.
- (2) Copy Firmware update file to the Mini SD Card's RDVVMST1 folder.
- (3) Modify name of Firmware update file, copied onto Mini SD Card to UPDATE.BIN.
- (4) Turn on the power after UPDATE.BIN file inserts saved Mini SD Card to the main body.

***Caution!!**

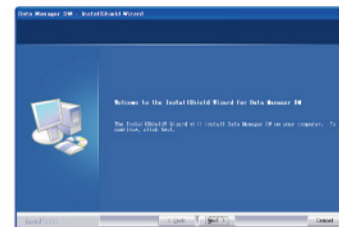
Does not get updated when Mini SD Card is inserted while power is turned on.

Main body's Firmware update is completed when the power connection indication (POWER, MINI SD, GPS, and READY LED are turned on one by one) is indicated once again after five to 10 seconds after main body's power connection indication (POWER, MINI SD, GPS are READY LED turned on, one by one) is indicated.

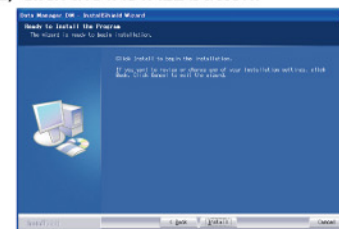
■ Software guide | Software installation

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

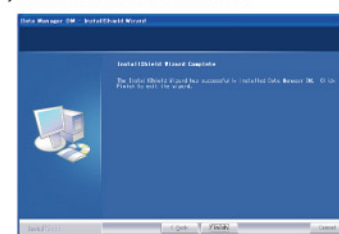
- (1) Leave the System unconnected to the PC. You will be instructed when to connect the system to the PC.
Insert the software installation CD into the CD-ROM drive of your PC. When the installation dialog box ("InstallShield Wizard") opens, click NEXT.



- (2) Click the INSTALL button.



- (3) Click the FINISH button.

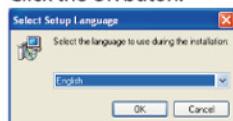


■ Software guide | Software installation

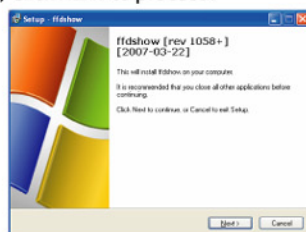
The Codec program is required to play the movie file with Windows Media Player. When you're ready to install the Codec program, follow the steps below:

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.

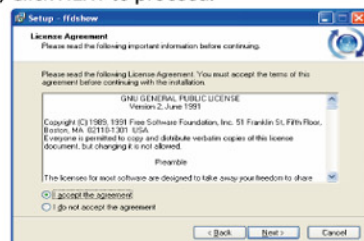
- (1) Start the install program (Click **Start** -> All Programs Data Manager DM -> ffdshow").
- (2) The following dialog box should appear automatically. Click the OK button.



- (3) Click NEXT to proceed.

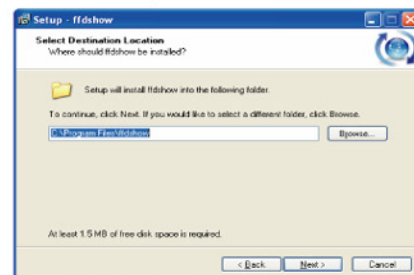


- (4) Click NEXT to proceed.

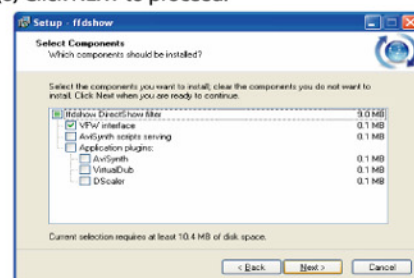


■ Software guide | Software installation

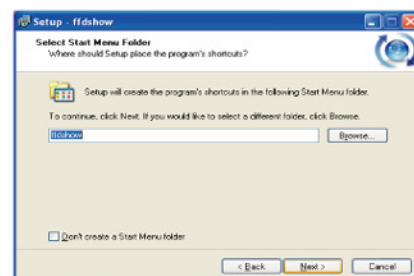
- (5) Click NEXT to proceed.



- (6) Click NEXT to proceed.

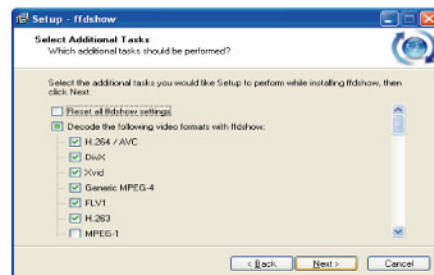


- (7) Click NEXT to proceed.

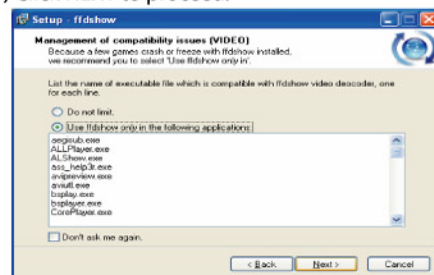


■ Software guide | Software installation

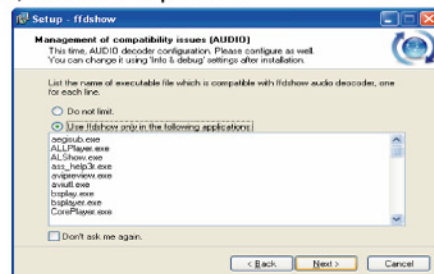
(8) Click NEXT to proceed.



(9) Click NEXT to proceed.

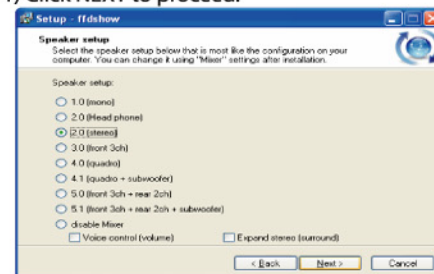


(10) Click NEXT to proceed.

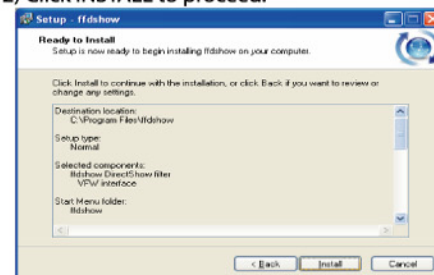


■ Software guide | Software installation

(11) Click NEXT to proceed.



(12) Click INSTALL to proceed.



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

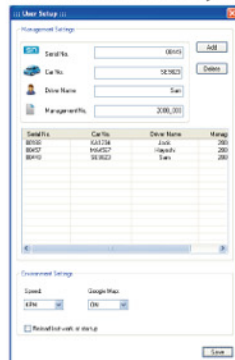


■ Software guide | Prior to starting software

- (1) The following Dialog Box is indicated when the software is executed for the first time. Registration is completed when the OK button is clicked on after inputting serial number attached on the CD. The following Dialog Box does not appear once registration is completed successfully.



- (2) Basically, software can be executed 100 times. Google Map can be used within 100 times, and Count decreases by one time every time it is executed. Map is not indicated after Count of use exceeds 100 times. Map is not indicated on the PC that is not connected to the Internet. At this time, Count with which software can be executed does not decrease. Request the seller when you wish to use the Map after 100 times. (Service for a fee)
- (3) Software screen's resolution is 1024x768 by default. When the resolution of the PC used is 1280x1024, software's resolution converts automatically to 1280x1024.



■ Software guide | Prior to starting software

[Software's key function (main feature)]

- Moves into next path to execute software.

The following screen appears when the Start -> All Programs -> Data Manager DM -> Data Manager DM software is executed.



- Main screen is configured as follows.

- (1) Menu Buttons
→ Includes functions such as Download, Setup, and Video play etc.
- (2) Video Display Window
→ Screen that displays VEDR data or DIT data's image.
- (3) Map Display Window
→ Shows data's location information via Google Map.
- (4) File List Window
→ Manages searched file or file opened directly.
- (5) Graph Display Window
→ Displays the graph of the acceleration, impact and speed data.
- (6) Drive Information Display Part
→ Displays the drive information data by text. (recorded time, latitude,....)
- (7) Progress Bar
→ Display process progress status.

■ Software guide | Prior to starting software

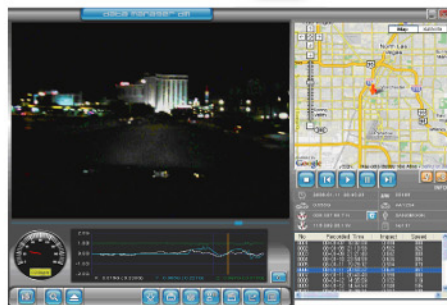
[Button's function and explanation]

(1) Switch Functions



: Function that displays VEDR data and DIT data alternatively. When button is pressed on, Display Mode modifies VEDR Display Mode and DIT Display Mode alternatively. At this time, button's shape is modified as well.

When VEDR Display Mode,



Otherwise (DIT Display Mode),

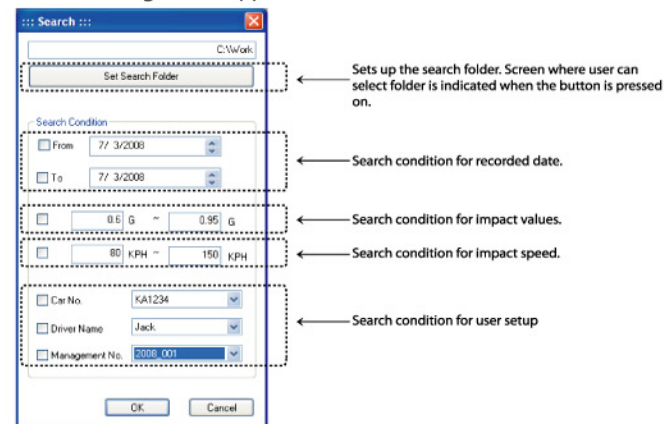


■ Software guide | Prior to starting software

(2) Search Open



: Function that opens file by leveraging search function. The following screen appears when the Search Button is clicked on.



Notice When OK button is pressed while only folder is designated as shown on the above screen, all the data files in the folder are searched to indicate on the database screen on the right. (Possible to search up to 10,000)

- ① To search by date, designate the start and ending date on the date dialog box, and check on the box on the left side and then (In the DIT Mode, search is conducted with the day when driving started as a standard.)
- ② To search by impact value, input minimum and maximum values, and then check the box on the left, pressing the OK button afterwards. Input one value to search with only one impact value. (Use only on the VEDR Mode, while it is meaningless in the DIT Mode)

■ Software guide | Prior to starting software

- ③ To search by impact speed value, input minimum and maximum values. Then, check the box on the left, and press on the OK button. Input one value if you wish to search with only one impact speed value. (Use only on the VEDR Mode, while it is meaningless in the DIT Mode)
- ④ Car number, driver name and management number can select saved value with User setup. Press on the OK button after checking the box on the left.
- ⑤ All conditions can be searched with AND conditions.

(3) File Open



: Function to open file that can open various files all at once.
(maximum of 10,000)

(4) Download



: This is the function that downloads main body's MiniSD Card's data to a PC.

Use Card reader to download main body's data to a PC.

To download, press on the download button while MiniSD Card is connected to a PC, and the following Dialog box appears.

Management Info:

Serial No. 00457

Car No. KC3407

Driver Name Jack

Management No. 000000

VEDR Data:

No.	Created Date	Created Time
01	08-04-27	17:29:47
02	08-04-27	23:01:08
03	08-04-28	01:10:29
04	08-04-28	01:29:54
05	08-04-28	10:00:56
06	08-04-28	12:37:32
07	08-04-28	12:46:09
08	08-04-28	16:44:29
09	08-04-28	21:35:35
10	08-04-28	01:43:52
11	08-04-29	10:04:34

Select All Deselect All

DIT Data

☒ Download DIT data

Notice: The DIT data of SD Card will be deleted after download.

OK Cancel

■ Software guide | Prior to starting software

Check on the check box on the left side of the data that you want to download among the saved data.

Press on the OK button on the dialog box after checking.

[Downloaded Folder]

In case of the car number is not registered at User Setup:

The serial number folder is created automatically, and MiniSD Card's data will be downloaded to that folder.

In case of the car number is registered at User Setup:

The car number folder is created automatically, and device data will be downloaded to that folder.

Notice VEDR data remains inside the MiniSD Card even when it is downloaded, but DIT data is deleted after it is downloaded to leave space in the main body that can record DIT data. If you do not wish to delete, then un-check the DIT Data's check box. In this case, DIT Data is not downloaded, and may be downloaded later on.

※ MiniSD Card includes main body's serial number. If management setup value is input for each serial number in the software's User Setup, then Serial Number, Car Number, Driver Name, and Management Number are indicated at the upper part of the download Dialog Box.

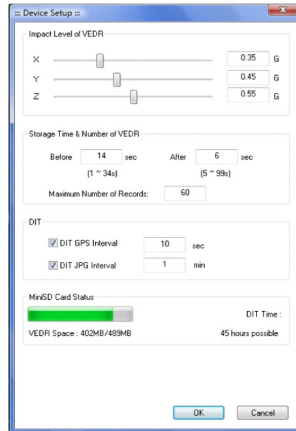
(5) Print



: prints the current screen as is.

■ Software guide | Prior to starting software

(6) Device Setup



This is the function that saves main body's setup value in the MiniSD Card.

It is possible to setup Impact level of VEDR, Set Storage Time & Number of VEDR and DIT Data Settings.

(Notice) The following Message is indicated when the Device Setup is executed after connecting new MiniSD Card devoid of main body information. Press on the OK button to initialize since MiniSD Card needs to be initialized to suit main body. This process takes up to approximately one minute.



■ Software guide | Prior to starting software

[Impact level of VEDR]

Set the impact level of VEDR.

Basically, the system is triggered when impact value of X, Y or Z-axis is more than 0.5 G.

But if you want to record the image data more frequently, select lower value of G, i. e. 0.4G or 0.3G.

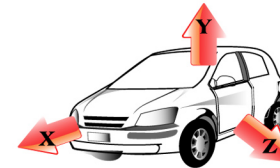
If you want to record the image data less frequently, select higher value of G.

It is possible to setup impact level by each X, Y, Z axes. impact level is saved when the OK button is clicked on after moving the bar to the desired number.

X-axis => vehicle's front and rear direction

Y-axis => vehicle's left and right direction

Z-axis => vehicle's upper and lower direction



[Set Storage Time & Number of VEDR]

With the standard for timing of the image recording, previous recording time and recording time afterwards can be setup, and number of recording can be setup as well.

Scope of previous recording time: 1sec ~ 34sec

Scope of post recording time: 5sec ~ 59sec

Up to 60 seconds is available when total recording time is calculated by adding up the time before and after.

As storing capacity changes depending on the recording time and number of VEDR, use the MiniSD Card Status located at the lower part of the Dialog Box to setup within MiniSD Card capacity.

(Notice) When record time or number of VEDR is modified, MiniSD Card needs to be initialized, and this process takes up to approximately one minute. (In case OK button is clicked)

■ Software guide | Prior to starting software

[DIT Data Settings]

DIT GPS Interval: Sets up DIT's location information/time information/speed information recording intervals. (Unit: second)
DIT JPG Interval: Sets up DIT's JPG image recording interval. (Unit: minute)

DIT enabled time changes according to MiniSD Card's remaining capacity and DIT Data Settings. Adjust DIT Data Settings by using MiniSD Card Status' DIT Time at the lower part of the Dialog Box.

[MiniSD Card Status]

Indicates MiniSD Card's total current capacity and capacity available for recording.

VEDR capacity: significance of 402 MB / 489 MB :

Capacity allocated to VEDR among the total MiniSD Card capacity of 489 MB is 402 MB, and the remaining 87 MB is the capacity that is be allocated to the DIT.

(7) User Setup



Environment Settings that enable Management Settings and environment setup that makes it possible to manage with vehicle number, driver's name and management number when it comes to each serial number.

After vehicle number is registered, it is downloaded to the vehicle number folder when it comes to the setup serial number, and it is downloaded to the serial number folder when it comes to the serial number that is not setup.

The following Dialog Box appears when menu's User Setup button is pressed on.

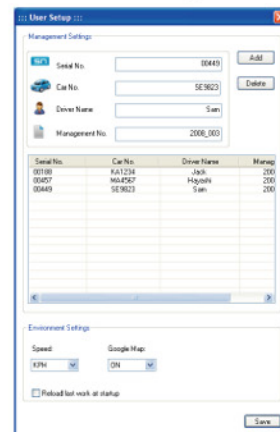
[Management Settings]

- How to input Management Settings

- (1) Click on the Add button after inputting Serial No., Car No., Driver Name and Management No.

At this time, at least one value among serial number, vehicle number, driver's name and management number must be input.

■ Software guide | Prior to starting software



- (2) Press on the saving button after confirming that the value is added onto the list.

- How to delete setup Management Settings

- (1) Click on the serial number to delete setup value on the list.
- (2) Click on the Delete button.
- (3) Click on the Save button after verifying deletion from the list.

[Environment Settings]

-Speed setup

KPH is selected when the unit of vehicle's speed is km/h, and MPH in the case of mile/h.

-Google Map ON/OFF

Select OFF when Google Map is not used.

Map usage Count does not increase from the subsequent execution when FF is selected.

-Reload last work at startup

Check "Reload last work at startup" and press on the saving button. Then, if software is executed again after software is ended, data file prior to ending is indicated on the File List.

■ Software guide | Prior to starting software

(8) Make Movie



The image data file can be converted to movie (mpg) and this movie file can be played with Windows Media Player. The procedure is as follows:

1. OPEN data file.
2. Click MOVIE button.
3. Then movie file is created.

Click on the button to convert currently selected VEDR data file so that the mpg file is saved within the same folder.

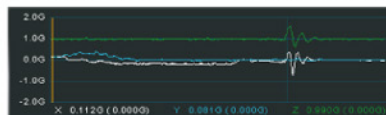
However, DIT Data file cannot be converted. Only VEDR data file is available for conversion.

※ CODEC file is required to play on the Window Media Player. Install CODEC by executing Install ffdshow.

(9) Graph Display



Displays the acceleration data and the impact data, speed data in detail.



Open file and click "Graph Display" button, the below screen will be displayed.



■ Software guide | Prior to starting software

Graph indication can be converted to Acceleration, Impact and Velocity sequentially.

Click button => The button will be changed to and

displays the impact data.

Click button => The button will be changed to and

displays the speed data.

Click button => The button will be changed to and

displays the acceleration data.

(10) About Software



Shows the version of software and your registered serial number.

(11) Play Buttons

The menu buttons for play the video.



Play the video display continuously.



Pause the video display and initialize the video display.



Pause the video display.



Show previous frame.




Show next frame.


■ Software guide | Prior to starting software

(12) Auxiliary Buttons

 Graph indication conversion button

This is the function that can convert Graph indication, and it is possible to convert Acceleration, Impact and Speed in sequence.

 : Acceleration data indication

 : Impact data indication

 : Speed indication

 GPS Latitude & Longitude data copy button

This is the function that copies the GPS Latitude & Longitude data onto the PC's Clipboard, and this is a function that is resourceful when indicating location on the Internet map.

Example on the usage) click on C button ==> connect to maps.google.com ==> place mouse on the Search Maps screen, and then press on the Ctrl+V Key (or paste after clicking mouse's right side) ==> map of applicable location is indicated

 Draw path

This is the function that indicates path on the map.

VEDR Mode : marks VEDR data's location information in one sec interval

DIT Mode : marks DIT data's location information as the value of the setup DIT recording interval (indicates maximum of 1000 points)

(Play speed may decrease after marking path on the DIT Mode.

Delete part with Delete path button if you wish to display fast.)


 Delete path


This is the function that deletes path when path is indicated on the map.

■ Software guide | Prior to starting software

 DIT playing speed setup

This is the function that sets up the speed to increase/decrease speed of play on the DIT mode.

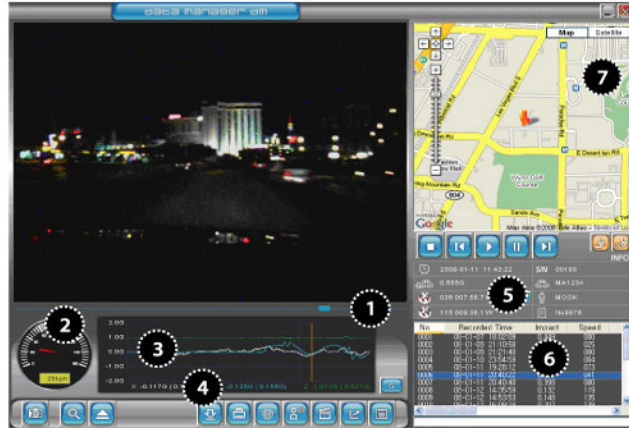
Increases speed up to 4 compact disk access time to $x 1 \Rightarrow x 2 \Rightarrow x 3 \Rightarrow x 4$ when  is pressed on

Decreases speed up to 4 compact disk access time to $x 1 \Rightarrow x 1/2 \Rightarrow x 1/3 \Rightarrow x 1/4$ when  is pressed on.

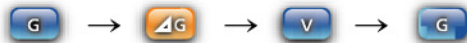
This function operates only when play button is pressed on.

■ Software guide | Software screen explanation

When VEDR Display Mode



- (1) **Moving Bar** : The bar will be moving with the video display and this bar can be moved by mouse point.
- (2) **Speed Meter** : indicates vehicle speed with speed meter.
- (3) **Graph Display** : displays current file's acceleration profile.
(white color: X-axis acceleration value, sky blue color: Y-axis acceleration value, green color: Z-axis acceleration value)
graph indication can be converted to Acceleration, Impact and Speed in sequence in the order listed.



- (4) **Display acceleration / impact by text**
x-0.117G (0.109G) means acceleration value in X is -0.117G and impact value in X is 0.109G

■ Software guide | Software screen explanation

(5) Display drive information and user setup data

- indicates current image frame's recording time
- indicates current file's maximum shock amount
- indicates Longitude among current image frame's location information
- indicates Latitude among current image frame's location information
- S/N** indicates current file's Serial Number
- indicates current file's Car Number (indicates only when registered to User Setup)
- indicates current file's Driver Name (indicates only when registered to User Setup)
- indicates current file's Management Number (indicates only when registered to User Setup)
- indicates current file's Impact speed value (indicated only on the 1280x1024 resolution)

(6) Display opened files list

Indicates each File's information, and displays each file's image and information when File is clicked on.

Data can be aligned in sequence by clicking on the File list's top menu (Recorded Time, Impact, Speed, Car Number, Driver Name and Management Number).

■ Software guide | Software screen explanation

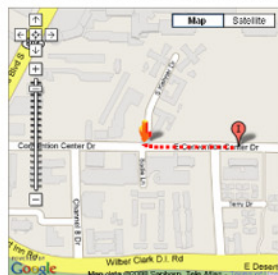
(7) Display map information

Location of current file's each image frame is indicated on the Google Map, and current location is indicated at the center of the map down with arrow icon.

Map screen's Zoom In/Out function can be used to expand/contract screen, and it is possible to move screen by dragging with mouse. Moreover, map screen is converted to satellite screen by clicking on the satellite button located at the upper part of the map screen's right side. Click on the map button located at the upper part of the right side return to original screen.



When path is drawn with "Draw Path", then the mark that is comprised of red point and "I" are indicated. "I" indicates the starting point while the Mark of each image frame indicates GPS location information.



■ Software guide | Software screen explanation

When DIT display Mode



- (1) **Moving Bar** : The bar will be moving with the video display and this bar can be moved by mouse point.
- (2) **Speed Meter** : indicates vehicle speed with speed meter.
- (3) **Graph Display** : displays current file's speed profile continuously.
- (4) **Display driving distance and time by text**
 Display driving time:
 0day 02:12:58 / 5day 19:54:57 means whole driving time is 5day 19hours 54minutes 57 seconds and current frame's driving time is 0day 02hours 12minutes 58seconds.
 Display driving distance:
 5km / 1553km means whole driving distance is 1,553 km and current frame's driving distance is 5 km.

■ Software guide | Software screen explanation

(5) Display drive information and user setup data



indicates current image frame's recording time



indicates current file's driving start day and driving ending day



indicates Longitude among current frame's location information



indicates Latitude among current frame's location information



indicates current file's Serial Number



indicates current file's Car Number (indicates only when registered to User Setup)



indicates current file's Driver Name (indicates only when registered to User Setup)



indicates current file's Management Number (indicates only when registered to User Setup)



indicates current frame's speed (indicated only on the 1280x 1024 resolution)

(6) Display opened files list

Indicates each File's information, and each file's image and information is indicated when File is clicked on.

It is possible to align data in sequence when the File list's top menu (Recorded Time, Car Number, Driver Name, and Management Number) is clicked on.

Because DIT data does not have Impact acceleration value and Impact speed value, this information are not indicated.

■ Software guide | Software screen explanation

(7) Display map information

Indicates location of current file's each frame on the map.

Current location is indicated on at the center of the map domain with arrow icon.

When path is drawn with "Draw Path", then the mark that is comprised of red point and "I" are indicated. "I" indicates location where power is turned on when it comes to the main body (vehicle is ignited), and each image frame's Mark indicates GPS location information. Mark is indicated up to 1,000 points.

■ Software guide | Image data downloading method

1) Insert MiniSD Card where main body's data is recoded to PC.

2) Click on the download button after executing the software.



3) Click on the download button's OK button.

4) Click on the File Open button when download is completed.

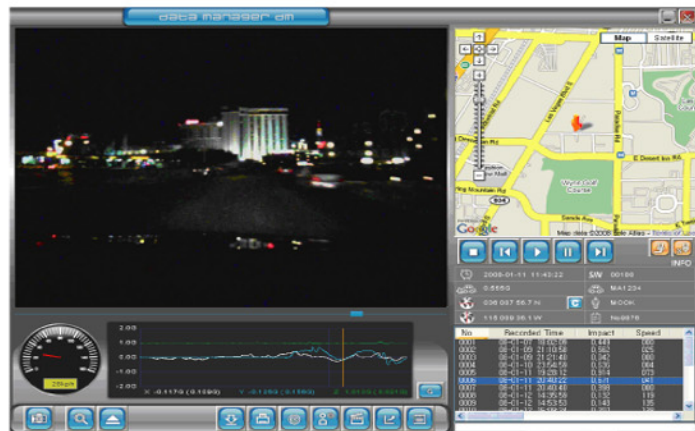


5) Open the downloaded VEDR data file.

6) Click on the Play button.



7) Downloaded data can be displayed as shown on the following screen.



8) Click on the "Switch" button to display DIT data.



9) DIT screen is converted as button changes to



■ Software guide | Image data downloading method

10) Click on the File Open button.



11) Open the downloaded DIT data file.

12) Click on the Play button.



13) Downloaded DIT data can be displayed as shown on the following screen.

Click on the Draw Path" button to indicate Drive path on the map.



*When Internet connection is not supported

Map screen is not indicated when Internet is not supported or when frequency of use exceeds 100 times, and it is not indicated as the following screen.

(1) VEDR display

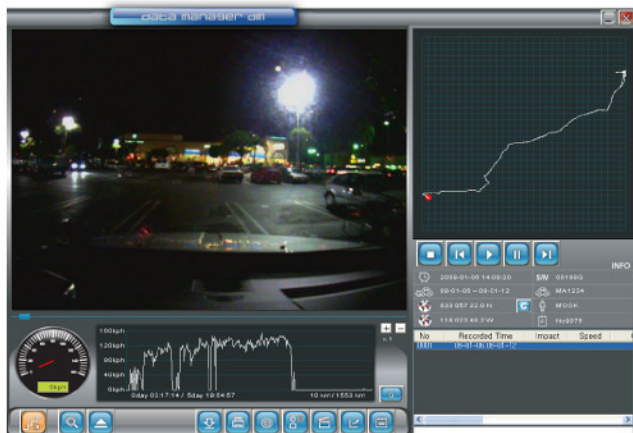
Indicates the file's Preview screen selected on the MAP screen location. Preview screen indicates screen at the time of recording.

■ Software guide | Image data downloading method



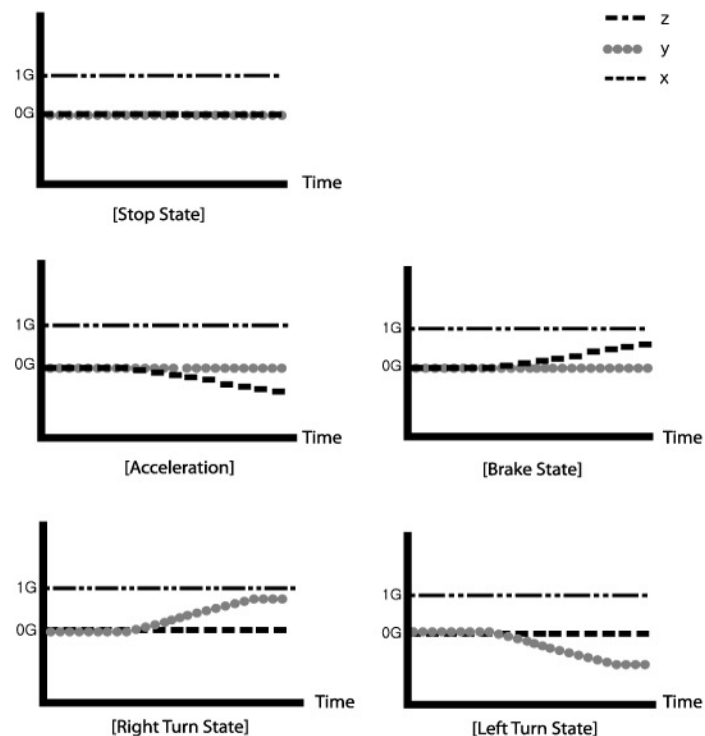
(2) DIT display

DIT data's path is indicated with line on the MAP screen location, and current location is indicated with Red Circle.

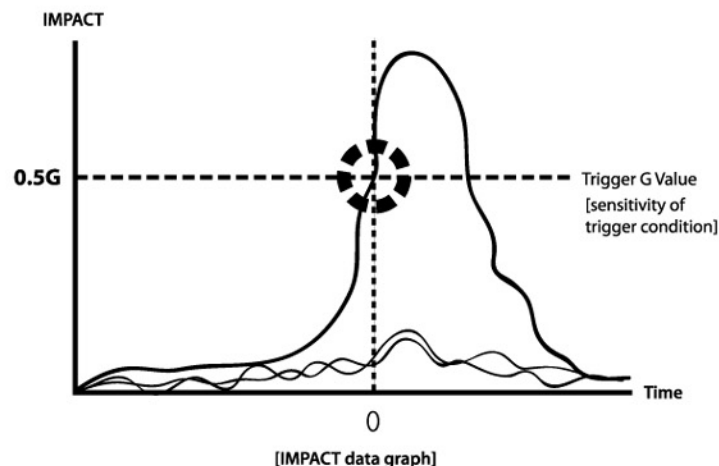


■ Software guide | Acceleration data interpretation method

The following includes various data interpretation examples. User can confirm the data using the following method, and can analyze the type of accident.



■ Software guide | Impact data graph



■ Installation guide | Caution during installation

※ Prior to installation, check whether contents of the product are included, and mount according to the set procedure after understanding the contents of the installation guide.

1. During product installation, even when the lever of transmission is set for the N level, it is necessary to mount on the ground surface on a perpendicular manner at a flat place where the vehicle does not move to either front or rear.
2. Select location for mounting that does not block driver's view at the mirror located in front of the vehicle.
3. When main body is mounted, check whether location is one that does not limit the room mirror's movement, and select a location that is not intervened even when room mirror is maneuvered.
4. Clean the mirror at the location where adhesion will take place by using dry cloth prior to attaching onto vehicle.
5. When installing vehicle, install so that other safety devices in the vehicle are not affected.
6. When vehicle's power is input, check whether LED and buzzer sound come off. (Check LED indication and buzzer sound guide)
7. The above mentioned product records the image data input from the camera.

■ Installation guide | Mounting

When vehicle is moving or stopped or when minor collision or collision results, this product records the before and after of the accident into image. At the same time, this product records vehicle's acceleration information and GPS information.

※ Install at a location where front view is clear when mounting on a vehicle.

In the case of vehicle and RV vehicle, mount at the upper part of the center of the vehicle's front mirror as shown on the following diagram.

In case of tall bus and truck, mount towards the lower part of the center of the vehicle's front mirror.



Passenger car/RV



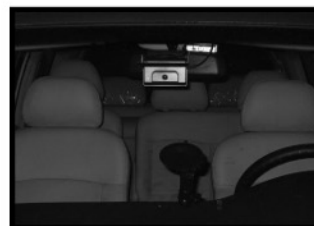
Bus/Truck

※ Install at a location devoid of intervention when maneuvering room mirror.

Mount at a distance so that it does not fall into the range of room mirror operation since intervention may result when room mirror is maneuvered by driver or passenger.

■ Installation guide | Mounting sequence

※ Product's basic mounting location is located at the upper part of the center of the vehicle's front mirror. This location is the front part of the room mirror in the case of the passenger car. Attach the part with the tape attached onto the mirror, and adjust the angle so that it becomes perpendicular to the ground surface to complete the mounting.



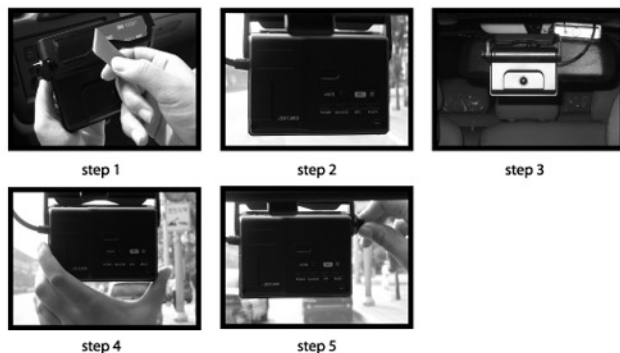
[Installation for passenger car]



[Distance from room mirror]

- Step 1) Take out the cover of the two-sided tape attached on the main body.
- Step 2) Place the main body at the vehicle's center.
- Step 3) Attach the main body with the two-sided tape's cover taken off onto the front glass.
- Step 4) Adjust angle of the front and the rear so that the main body mounted on the front glass becomes right angle.
- Step 5) When adjustment is completed, turn the connecting screw at the connecting part to the clockwise direction, and fixate main body sturdy.
- Step 6) Connect power with power cable.
- step 7) Beep sound is heard after power is connected, and it is turned off after POWER, MINISD, GPS, and READY are turned off one by one. When power is connected properly, and all the necessary preparations for the image saving by main body are completed, then the LED lamp lightens up.

■ Installation guide | Mounting sequence

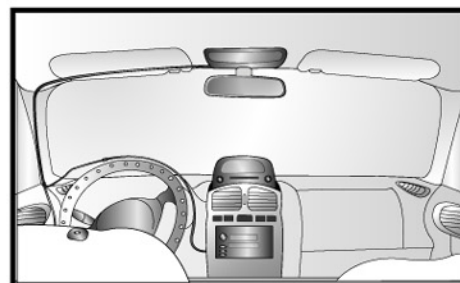


※ There is no need to separate the main body from the vehicle to download image data to a PC. There is MiniSD Card's cover at the main body's side. The cover opens up when the key is inserted to the three holes in this cover. When the MiniSD Card that is placed at the inner side of the cover is pressed on slightly, MiniSD is projected to the outside, and it is possible to download recorded data by connecting this card to a PC.

■ Installation guide | Wiring Guide

This product supplies power by connecting to the vehicle with power cable.

To arrange power cable, it is possible to use the mount that is provided to arrange the power cable.



*How to use the mount

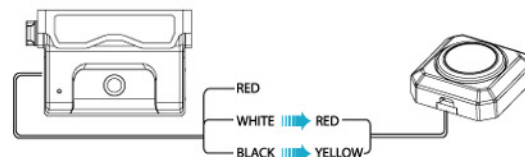


1. Remove the adhesive cover and attach on the right place.



2. Insert wire into the mount.

※ **User can connect " Secret Emergency Button " with Roadscan Master by cabling as below.**



FUNTION	CABLE
(+)VCC	RED
SWITCH (Trigger)	WHITE
(-)GND	BLACK

FUNTION	CABLE
SWITCH (Trigger)	RED
(-)GND	YELLOW

■ Installation guide | Check after installation

- ▶ When ignited, beep sound is heard from the main body, and the ignition is turned off after POWER, MINI SD, GPS and READY lamp are turned off one by one. LED lamp is turned on when the power is connected normally and when all the preparations for the image recording when it comes to the main body are completed.
- ▶ Check whether main body inhibit room mirror's movement.
- ▶ Check whether mounted in line with the installation location.
- ▶ Check whether main body's angle is perpendicular with the ground surface.
- ▶ When MUTE button is pressed on, buzzer sound is not heard along with the "beep" sound. To ensure that the buzzer sound is heard again, press on the MUTE button once again, to check whether "beep" sound is heard or not.
- ▶ Use REC (Record) button to save image manually.
LED indicator lamp and READY lamp are turned off along with the "beep beep" sound when the REC button is pressed on.
Check whether LED indicator lamp READY is turned on along with the "beep" sound when recording is completed.

■ Before suspecting malfunction

- 1) When image cannot be recorded,
 - 1-1) Check whether there is HS MiniSD Card in the main body.
 - 1-2) Check whether it is HS MiniSD Card provided by our company.
Ordinary MiniSD Card may not record.
 - 1-3) Recording may have failed due to the failed impact detection depending on the acceleration impact level.

***Caution!!**

In this case, image is recorded using the moment when the manual recording button was pressed on as the standard.

- 2) Recorded image may not display everything depending on the distance with the number plate of the vehicle in front, lighting, and vehicle's speed.
- 3) Placing bright object or object that emit light in front of the vehicle's front glass, makes it difficult to see as the object may reflect against the glass, especially at night.
- 4) GPS signal may not be received due to the blocking of the signal at underground parking lot, tunnel and skyscrapers, and valleys and large trees.
- 5) MUTE may be pressed down when sound is not heard while LED operates. Sound is heard once again when the MUTE button is pressed once again.
- 6) When the quality of image is not good
Check whether main body's lens is contaminated, and clean with cloth for eyeglasses.
- 7) When the image is faced excessively towards the sky or the ground.
Check whether main body is facing vehicle's front part, and adjust perpendicular to the ground surface.
- 8) When main body's POWER LED is turned off
Check whether main body's power cable is connected properly.

■ Product specs and operation environment



- Norm. Operational Voltage : 12V/24V
- Min. Operational Voltage : 8V
- Max. Operational Voltage : 36V
- 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
- Max. Recording Frame Rate : 11 Frame / second
- Min. Operation Luminance : 1 Lux
- Camera Angle: 120 degrees (96-> horizontally, 72-> vertically)
- Recording Resolution : 640 x 480 pixel
- Memory : HighSpeed SD-card (512MB, ability to expand)
- Backup battery: 5.0Volt
- GPS: Attached on the outside
- Size : 115 x 80 x 40 mm
- Weight (packaging/wiring+main body): 700 g / 270 g
- Simulation Program OS : XP / Vista

 *Minimum operation PC environment for Roadscan Master Manager:
 Windows XP, Vista
 256 MB RAM / HardDisk capacity of 32MB
 At least CPU Pentium4 1.5GHz recommended

■ Warranty policy

● Warranty regulation

1. We fix your product for free when malfunction results even when the product was used normally within the warranty period (for one year from the day of purchase).
 2. Attach warranty certificate when you requested repair during warranty period and attach warranty certificate onto product. Then, request repair at the store where you purchased the product.
 3. The following cases require you to pay for repair even during warranty period.
 - (a) When malfunction is caused by user's mistake.
 - (b) Malfunction and damage caused during transport, movement and fall after product is purchased
 - (c) Malfunction and damage caused by fire, earthquake, flood, pollution, abnormal voltage, and use of power besides the designated (voltage *frequency) and other natural calamities
 - (d) When there is no clause in the warranty certificate
 - (e) When the clause in the warranty certificate is not included or modified
 4. Warranty certificate is effective only for use at the nation where user purchased the product.
 - Regarding warranty and A/S
- ◎ Warranty period is for one year from the day of purchase.
 Make sure to pick up warranty certificate (it is printed on this manual from the store and check whether 「day of purchase and store」 are included. Read it carefully and keep it well.
- ◎ When requesting repair, check wiring state and whether there is malfunction caused by maneuvering method. Continue to repair when there is a problem.
- During warranty period: Attach warranty certificate and take it to the store where you purchased the product. We will repair based on the contents of the warranty certificate.
 - When warranty period has expired: Consult with the store where you purchased the product. When product function is maintained due to repair, we can repair for a charge according to the customer's desire.

Roadscan Master DM

20 events recording setting

Device Setup

Impact Level of VEDR

X G

Y G

Z G

Storage Time & Number of VEDR

Before sec (1 ~ 34s) After sec (5 ~ 99s)

Maximum Number of Records:

DIT

☒ DIT GPS Interval sec

☒ DIT JPG Interval min

MiniSD Card Status

VEDR Space : 137MB/489MB

DIT Time : 182 hours possible

OK Cancel

(Standard 512 MB HS Mini SD Card)

Event recording User set-up

60 events recording setting

Device Setup

Impact Level of VEDR

X G

Y G

Z G

Storage Time & Number of VEDR

Before sec (1 ~ 34s) After sec (5 ~ 99s)

Maximum Number of Records:

DIT

☒ DIT GPS Interval sec

☒ DIT JPG Interval min

MiniSD Card Status

VEDR Space : 402MB/489MB

DIT Time : 45 hours possible

OK Cancel

(Standard 512 MB HS Mini SD Card)

DIT period set-up (GPS plot each 10 sec, Route JPG picture taking each minute)

Standard 512 MB HS Mini SD Card

Device Setup

Impact Level of VEDR

X 0.5 G

Y 0.5 G

Z 0.5 G

Storage Time & Number of VEDR

Before 14 sec (1 ~ 34s) After 6 sec (5 ~ 99s)

Maximum Number of Records: 20

DIT

☒ DIT GPS Interval 10 sec

☒ DIT JPG Interval 1 min

MiniSD Card Status

VEDR Space : 137MB/489MB

DIT Time : 182 hours possible

OK Cancel

= 182 hrs driving time
= approx 4 weeks
= 10.920 JPG photo shoots

Optional 1 GB HS Mini SD-Card

Device Setup

Impact Level of VEDR

X 0.5 G

Y 0.5 G

Z 0.5 G

Storage Time & Number of VEDR

Before 14 sec (1 ~ 34s) After 6 sec (5 ~ 99s)

Maximum Number of Records: 20

DIT

☒ DIT GPS Interval 10 sec

☒ DIT JPG Interval 1 min

MiniSD Card Status

VEDR Space : 137MB/968MB

DIT Time : 431 hours possible

OK Cancel

= 431 hrs driving time
= approx 9 weeks
= 25.860 JPG photo shoots

Optional 2 GB HS Mini SD-Card

Device Setup

Impact Level of VEDR

X 0.5 G

Y 0.5 G

Z 0.5 G

Storage Time & Number of VEDR

Before 14 sec (1 ~ 34s) After 6 sec (5 ~ 99s)

Maximum Number of Records: 20

DIT

☒ DIT GPS Interval 10 sec

☒ DIT JPG Interval 1 min

MiniSD Card Status

VEDR Space : 138MB/1936MB

DIT Time : 933 hours possible

OK Cancel

= 933 hrs driving time
= approx 20 weeks
= 55.980 JPG photo shoots