

Please read this manual thoroughly before use, and keep it in a safe location for future reference.

USER GUIDE

High Performance Vehicle Recorder

Safety Warnings and Cautions

The following are warnings and cautions for the safety of the users and for the prevention of any property damage. Please read below thoroughly.

※ The following warnings and cautions are classified depending on degree of the danger or property loss in the case of the improper use of the product.



Warning

Failure to follow these safety warnings could lead to a seriously injury or death.



Caution

Failure to follow these cautions could lead to an injury or cause loss of property.













Warning

	Do not operate the product while driving. It can lead to a car accident. Operate the product at a safe place while the car is stationary.		Do not disassemble, repair, or modify the product. This may cause fire, electric shock, or injury due to abnormal operation.
	Do not place and cover anything on the product. It can damage the product and lead to break down.		Do not try to operate the product when you find something wrong with the product. In the case of substantial shock, contact with water or sign of smoke. Power off the product and contact your local dealer.
	Do not use the product when it is out of order. Contact your local dealer or a call center after you turn off the power.		Only use a designated capacity fuse for the cigarette jack. Using an improper capacity fuse can lead to a fire. When replacing the fuse check the designated fuse rating with the car manufacturer's guide.
	Use an approved cigarette jack cable and stand when you need to change them. Any damage or accident caused by not using approved components are user's responsibility.		Install the product where it obstruct your field of vision. Incorrect installation can lead to a car accident. Install the product in the top center of the front windshield.
	Avoid installing in an area with moisture, dust, or soot. This can cause a fire or electric shock.		Do not apply a high temperature device to the product such as a heater, microwave and hair dryer etc. It can lead to an explosion, transformation or product malfunction.
	Install the product where it doesn't bother the movement of any car equipment (i.e. Airbag). It can lead to an injury caused by interruption of normal operation.		Keep the surrounding temperature between 0°C to 50°C and keep the product away from high humidity. This may cause a product breakdown.
	Do not put a vase, flowerpot, cup, cosmetics, medicine, or any vessel with water around the device. This may cause a fire.		



Caution

	Do not touch the product with greasy or wet hands. It can lead to product damage or breakdown.		Do not put anything into the external memory card slot except for the card. It can damage the memory card slot or lead to a breakdown.
	Do not drop or make any heavy impact on the product. It can damage the product or lead to a breakdown.		Do not operate the product with a sharp instrument such as a toothpick or nail. It can damage the product or lead to a breakdown.
	Do not place the product near a magnet or areas with high magnetic fields. It can damage the product or lead to a breakdown.		Do not attach any stickers or paint on the product or memory card. It can damage the product or memory card damage or even lead to a breakdown.
	Remove any sun shade film or substantial item that hinders the image recording. It can lead to low quality recording image.		Do not take out SD memory card during operation. It can lead to a loss of the data from SD memory card or breakdown.
	Use only approved SD memory cards. It can lead to a loss of data on the SD memory card or breakdown.		Replace old SD memory cards regularly to a new one. Prolonged usage of the SD memory card can lead to abnormal image recording.

Checking SD Memory DATA

Please, pay attention to following information to minimize the chance of losing recording data. Remember that you should protect SD Memory from any impacts or misuse as this may cause product damage.

The Manufacturer is not responsible for missing data or defects caused by the users' mishandling.

* prior to the SD memory card replacement, check if SD memory card is compatible with the product.

Examples that can cause a loss of data or damage to SD memory card

Any outside Impacts on the case which could happen during disassembling or setting up the device.

A power cut or incorrect shutdown while the device is operating.

Moving or causing any impacts on the device during operation. Please, back up Event data as soon as possible to minimize the chance of losing important data from the SD Memory Card.

Product Features

The Aim of this products is to act as a safe driving assistant, provide attention to driving, prevention of road accidents and use reference to an actual accident.



Various Recording Modes (Normal, Event and Manual Recording)

~ It continuously records 30 frames per second at a 120° angle within the driving direction at high quality.

~ It automatically records when accident, extreme acceleration, breaking or turning occur by a 3 axis acceleration sensor detecting abnormal situations.



Acceleration Information Retention

~ It saves vibration information from the front-rear, left-right and top-bottom of the car at the moment of accident, extreme acceleration, breaking or turning.



Battery free by using a power input from the car

~ It eliminates inconvenience of buying and replacing batteries by using the cigarette jack of the car.



Audio Input

~ It records driving images and audio data simultaneously by using an internal microphone.



Easy viewing of recorded images by a designated player

~ Recorded images in SD memory card can be viewed by a designated player on a computer.



Overwriting

~ When SD memory card gets full during recording it overwrites new data on the oldest data in order.

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Product and Accessories

Please make sure the following components are included when you unpack the product. If any items are missing, contact your local dealer.



Vehicle Recorder



Bracket



Power Cable



Micro SD (4GB)



Micro SD Reader
(USB Gender)



3M Double-sided tape
(For attaching Bracket)



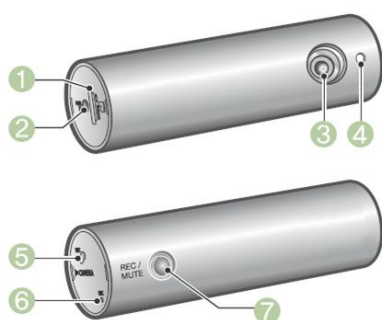
Cable Clips



User Guide

※ The figures in the manual may slightly differ from the actual product depending on model.
※ This manual is subject to change without notice

Part Name and Description



①	Memory Card Slot	Location to insert the Micro SD Memory card.
②	Power	Power input
③	Camera Lens	Receives optical data
④	Illumination Sensor	The sensor is used to detect between daytime or nighttime in order to record the best image.
⑤	LED	This LED displays the recording status.
⑥	MIC	Audio input
⑦	Recording/Mute	Manual Recording(Emergency Recording/Audio mute)

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Installation and Setup

Caution before installation

Parts

- ~ Make sure all components are included before starting installation. ► Page 6
- ~ If you find any components are missing, contact your local dealer or call center.

Installation Preparation

Make sure you follow these instructions closely as the installation angle and position can affect the recording.

- ~ Position the bracket in the central area of the wind shield.
- ~ Place the recorder on to the bracket facing the right direction (direction of recording area).
- ~ Check that nothing is placed in the way or can cover the view between the recorder and wind shield.
- ~ Fix the bracket to the windshield with the double-sided tape. Make sure surfaces area for installation is clean and free from dust or oil.

Installation of the Recorder

Check a location and installation conditions of the recorder. If you have not already done so then please refer to Cautions before installation ► Page 3

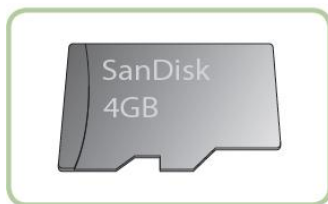
Remember that a 120° angle can be recorded with the recorder installed at the top, bottom or center of the wind shield.



1. Clean the windscreen with dry fabric where the holder will be positioned.

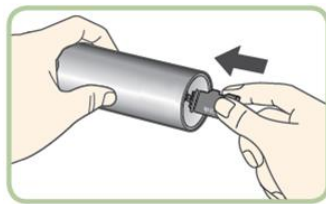
2. Remove the protective film from the double-sided tape and stick one side to the bracket then take off the second side of the protective film.

3. Attach the bracket to the wind shield.
- Make sure that the location of the bracket is not in the driver's line of sight. Attach the bracket firmly to the windshield.



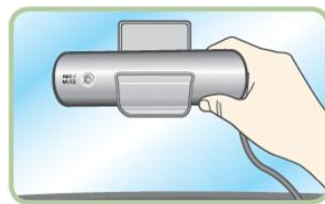
4. SD Memory card preparation

- Make sure the side with letters is facing upwards.

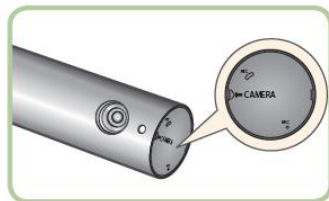


5. Insert the SD Memory card into the card slot of the recorder.

- Push the card all the way to the end.



6. After turning on the car power, place the recorder onto the bracket.



7. Adjusting the angle of the camera lens.

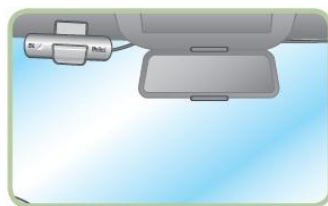
- Use the adjustment angle to make sure that lens directed centrally and forward direction of the car.



8. Connect the cigarette power cable to the power input on the recorder.



9. Connect the other end of the power cable to the car cigarette jack.



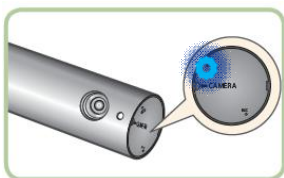
10. Arranging the power cable

- Tidy the power cable using cable clips so that it is not dangling or obstructing the field of vision.

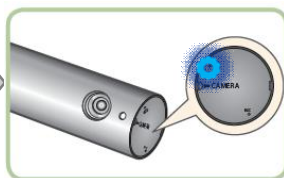
Note

An alarm sound will be activated if the SD Memory card is not connected correctly.

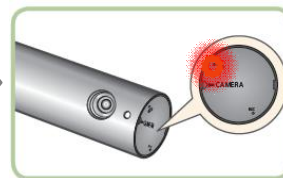
Operational Instructions



1. Connecting Power- A blue light blinks on the LED when the Power is connected



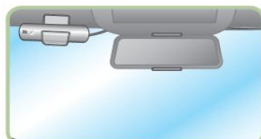
2. Starting Recording
- After connecting the Power and blue light is on without blinking, the device is ready for continuous recording.



3. Event Recording
- Recording starts automatically when extreme impacts are generated, e.g. at the moment of the accident, extreme acceleration, breaking, turning and by a sensor detecting an impact. The camera indicates event recording with a red light in the LED and a buzzer sound.



4. Manual Recording
- The user can manually start recording by pressing Recording button for an emergency or a situation which needs to be recorded.



5. Ending Recording
- The camera creates recording files for between 10 ~ 30 seconds and ends its operation after you turn off your car.

Remark

In Event Recording, it records a total of 20 seconds per event, 10 seconds prior to the event and 10 seconds after the event.

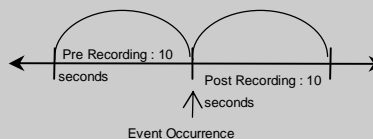


Table of LED and Buzzer sound situations

Status	LED Status	Buzzer Status	Description
Booting	Blue(Blink)	None	After power is connected.
No SD Memory	Red(Blink)	2 times	SD memory is not detected or inserted.
Normal Recording	Blue	None	Continuous Recording activated
Event Recording	Red(Blink)	1 time	In case of impacts generated, extreme acceleration, breaking and turning etc.
Manual Recording	Red	1 time	Manual recording is activated by pressing the recording button
Mute ON	-	2 times	This disables the buzzer sound. Activate by holding the Recording button once for a long period.
Mute OFF	-	1 time	In Mute on mode, it re-enables the buzzer sound by holding the Recording button once again.

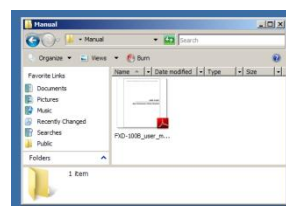
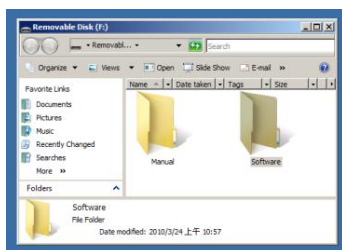
Disconnecting the SD Memory Card

Please always remove the **SD** Memory Card in the following order.

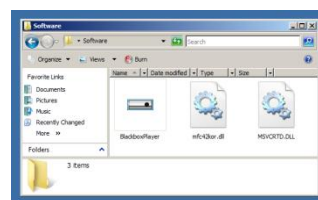
- ~ Turn off your car power and remove the cigarette jack power cable from the recorder.
- ~ Make sure LED on the body turns off (The LED turns off slowly).
- ~ Push SD memory card and it will release then remove the card from the slot of the recorder.

How to use the image player software

When inserting the SD memory card, you can see two folders, %Manual+ and %Software+.

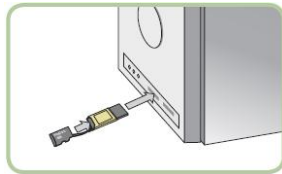


Click on %Manual+, you can find the e-manual for your reference.



Click on %Software+, you can find the Black box Player for the installation.

Running the player software



1. Connecting the SD memory card to a computer.
- Combine SD memory card with USB gender and connect USB gender to the computer.



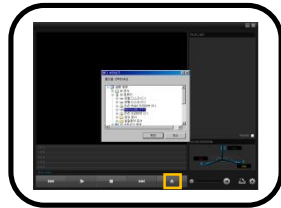
2. Running the software
- Execute a player software from the SD memory.
(\Software\BlackboxPlayer.exe)



3. The player software screen will then appear.

Note

Make sure insert the correct side of SD memory card to the USB gender.



4. Opening a recording image file
- Press this button and select a saved recording on SD memory card.



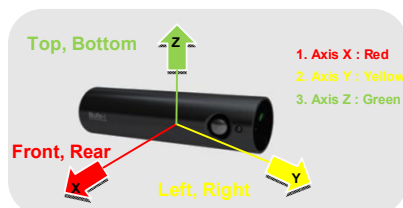
5. File list
- The saved image files will appear and play from the oldest file first.(It creates a new file every 20 seconds.)



6. A then a new screen of the recording appears.



7. Three axis acceleration sensor impact indication.
- There is an axis indicator in the right bottom corner of the display and a car drawing to indicate the degree of impact on front-rear, top-bottom or left-right sides..

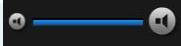

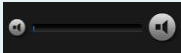


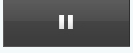






Note

" The saved image files in SD memory card can be played through other media players.

" The Three axis acceleration sensor is designed to detect impacts and not to detect small vibrations. This is because it is to be designed to determine what happened in an accident.


Image Player Functions

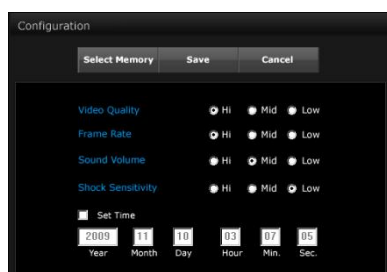
Button	Description	Button	Description
	Volume Control		Stop
	Mute Setting		Play
	Open files		Pause
	Move back two seconds		Print Image
	Move forward two seconds		Recorder Configuration menu

Configuration Menu

The user can change the settings for the recorder

In the configuration menu.

Press  this button and configuration window will Open.



Select Memory : Select the recording file path in SD memory card for the product settings. (Mute : /SD memory card/Setting)

Save : Save the changes on SD memory for the device.

Cancel : Cancel the current changes.

Video Quality : Set the video quality

Frame Rate : Set the frames for recording.

(Hi : 28~30fps, Mid : 13~15fps, Low : 7~9fps)

Sound Volume: Set the volume for buzzer.

Shock Sensitivity : Set shock sensitivity on the device.

Set Time : Set time on the device to the current local time.

Select Memory : Select the recording file path in SD memory card for the product settings. Cancel : Cancel the current changes.

Note

~ Any changes in the settings on SD memory are automatically applied to the device after SD memory is combined with the recorder and powered on.

Product Specification and Certification

Product Specification

- ~ Camera : 0.30 Mega Pixels CMOS (1 Camera)
- ~ Resolution : 640 x 480 (VGA)
- ~ Field of View: Front 120° (possible to record inside the vehicle by camera)
- ~ Recording Frame : 30 fps (640x480)
- ~ Shock Sensor : 3-axis acceleration shock detection sensor built-in
- ~ Recording Type : Normal Recording/ Event Recording/ Manual Recording
- ~ Compression Method: MPEG4
- ~ Storage Media: Micro SD Memory card (2GB~16GB)
- ~ Audio Recording : Supported
- ~ ACT Power: DC 12V~24V (TVS)

Note

- ~ Firmware updates are available when required and for performance enhancements.
- ~ The specification of the product is subject to be change for performance enhancements without notice.

Certificates

- ~ **CE : Industrial Safety, Europe**
- ~ **FCC : Federal Communications Commission, U.S**

Product malfunction check list

If your product does not work properly, please check the followings points before you call for A/S.

If the following measures do not work then please contact your retailer or local call center.

Symptoms	Solution조치
Saved recorded images in SD memory are not available.	~ Remove and reinsert the SD memory card. ~ Following that try formatting SD memory card. ~ Then try replace the old SD memory card to a new one.
The recorder does not recognize a memory card.	
What happens when the SD memory card is full?	~ It overwrites the oldest data with the new data in sequential order.
The quality of the recorded images is no good.	~ Check if the protective film on the lens of the recorder has been removed. ~ Check if any substance is stuck on the lens. ~ Check if any substance (including sun tint film) is stuck on the wind shield.
The product does not switch on at all.	~ Check the power connection points are connected and secure. ~ Check if you are using the power cable that was provided with the product.