

Smarty

Drive Partner for your Safety



USER GUIDE

Model: BX1000 / BX1000 Plus

Ver 2.0.0 2nd Edition

- Thank you for purchasing this Drive Recorder.
- Please ensure that you read and understand this USER GUIDE and use it before connecting and installing this Recorder.
- Please store the USER GUIDE in an easily accessible location.

SAFETY ADVICE



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Please make sure you follow the safety advice/instructions given in the user guide.

Caution

**RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.**

Battery for RTC(Real Time Clock) inside

Caution

Connect your vehicle's power cable (cigarette jack) to the product after starting the vehicle.

The instant over voltage generated when starting up the vehicle may damage the product if it is already connected.

Caution

Install the product where it does not block driver's visibility and where there is no airbag installed. This could cause an accident or might injure passengers in case of accident

Caution

Damages due to production malfunction, loss of data, or other damages occurring while using this product shall not be the responsibility of the manufacturer. Although the product is a device used for recording videos, the product may not save all videos in the case of a malfunction. In the case of an accident, the sensor may not recognize the shock when the impact is light and as a result it may not begin recording automatically.

WARNING :
TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

GPS Reception

1. Activate the product in an area without large buildings to improve GPS reception.

The commercial purpose GPS has the average range error of more than 15 meters and the range error could be more than 100 meters due to environmental conditions like buildings, roadside trees etc.

2. The temperature range for optimum operation of the GPS receiver in your car is -10 ~ 50°C.

3. When using the product for the first time or after a long period (more than three days), it may take a little longer to recognize your current location.

It may take between five and thirty minutes to get GPS reception.

GPS reception may be impaired under the following circumstances

- 1) If there is an object at the end of the GPS antenna
- 2) If your vehicle has metallic elements on the windshields
- 3) If equipment generating electromagnetic waves that interfere with the GPS signal is installed in the vehicle e.g.: Other GPS devices such as a certain type of wireless activated alarms, MP3 and CD players and camera alarms using GPS.
- 4) If you are using a receiver connected by cable, electric interference can be avoided by simply changing the location of the receiver (antenna).
- 5) On heavily overcast or cloudy days, if the vehicle is in a covered location such as under a bridge or raised roadway, in a tunnel, an underground roadway or parking area, inside a building or surrounded by high-rise buildings.
- 6) If GPS signal reception is poor, it may take longer to locate your current position when the vehicle is moving than when it is stationary.

CONTENTS

1. Smarty BX1000 / BX1000 Plus unit



2. SD memory card

(The PC software is on the provided SD card.
The SD card capacity should be bigger than 2GB.)



3. power cable (cigarette jack)



4. Wire Splice clip (5pcs)

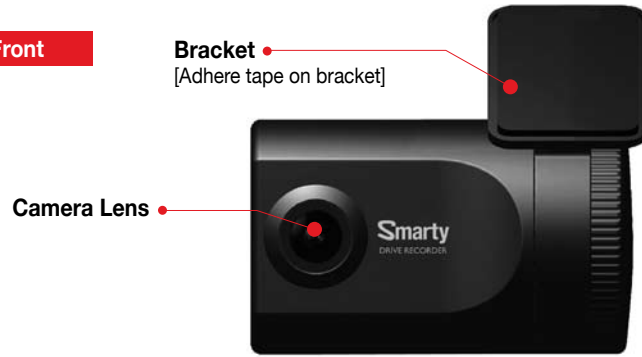


5. Sticker for windshield mounting (double sided tape 1pc)

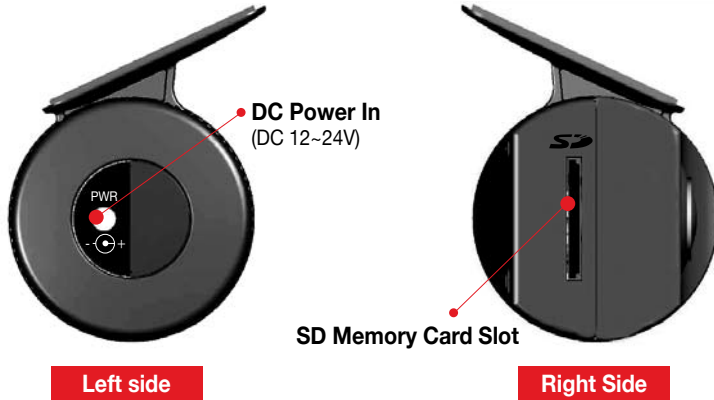


INTRODUCTION

Front

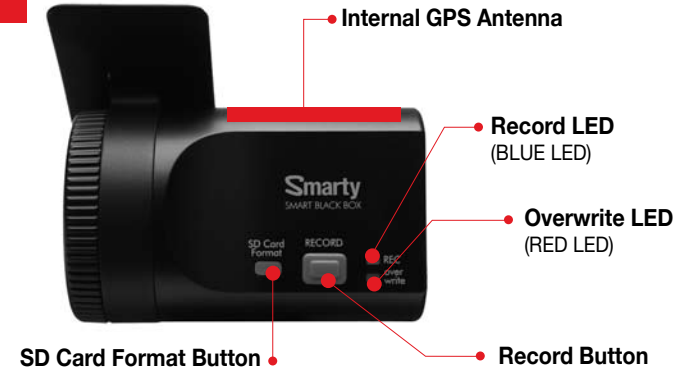


6



INTRODUCTION

Back



7

UNIT PARTS



NOTE Formatting [initializing] SD memory card can be done using SD Card Format Button. However we recommend that you format [initialize] the SD card using the PC Viewer Software on the PC.

INSTALLATION

Park your vehicle on a flat level surface.
Turn off the engine before installing the BX1000 / BX1000 Plus.

**1. Insert the SD memory card into the SD card slot.
Please make sure to disconnect the power cable when
inserting or ejecting the SD memory card.**

**2. Attach the BX1000 / BX1000 Plus using the provided double
sided tape. The surface must be clean and dry before you
install. We recommended to install the product behind the
rear view mirror on the front windshield.**



NOTE Adhesive tape will not stick well with dust or oil, etc.
Warm temperatures are best (above 30 degrees centigrade) when applying tape.



INSTALLATION

**3. Adjust camera view. Make sure the lens has an unobstructed view.
Check from outside the vehicle to check the camera angle.**



Arrange the power cord neatly alongside
the windshield and door pillar trim.
Use the provided wire splice clip as
seen in the picture on left.

**4. BX1000 / BX1000 Plus unit requires a continuous 12-24V DC
power source from the vehicle. Plug in the power.
The provided power cord cable route should be from the left
side of the BX1000 / BX1000 Plus towards your power source.**



NOTE When the impact is light like a minor bump in the road, the G-sensor may
not recognize the impact and as a result it may not begin recording automatically.
Test and set your own G-sensor level for your vehicle.

FUNCTION

Automatic start

Connect your vehicle's power cable to the BX1000 / BX1000 Plus after starting the vehicle. Then BX1000 / BX1000 Plus will be automatically started. (Use the provided power cable.)

NOTE The unit will not start recording immediately after power on. It takes around 1 minute for the built-in power backup system to charge. Thereafter, the internal flash memory will be ready to record.

Event record (when Record Method set as "Event record")

The event recording will be automatically started by G-sensor.

G-sensor sensitivity can be set with your PC.

Each event file contains 15 seconds prior & 5 seconds post event.

Manual record (when Record Method set as "Event record")

Press the [RECORD] button to begin recording manually. Each manual file contains 15 seconds prior to activation & 5 seconds post activation.

Continuous record (when Record Method set as "Normal record")

The continuous recording will be automatically started after power on.

BX1000 / BX1000 Plus doesn't make a separate event file during the continuous recording. It will mark the Event area by the G-sensor or Record button in the continuous recording file which can be easily searched for during playback.

SD Memory Card Format

Remove the power first. Press the SD CARD FORMAT button and hold. Then connect the power for initialisation. Once complete, all video & log files will be deleted and the configurations will default to the factory settings.

NOTE PC Viewer Software is pre-loaded on the SD card. Please ensure you install the software to your PC before formatting the card

Built-in power backup (Super Capacitor)

When power to the unit is interrupted, BX1000 / BX1000 Plus creates the last file using the internal Super Capacitor.

BLUE LED(RECORD)

The blue LED shows the power is on. The blue LED blink during recording.

RED LED(OVERWRITE)

The red LED will be turned on during overwriting.

Buzzer

"Beep" sound will occur when recording starts (this can be turned off at setup page on PC viewer, if required) and to signal a system error.

OPERATION

When Record Method set as "Event record"

1. Connect your vehicle's power cable to the BX1000 / BX1000 Plus after starting the vehicle.
2. Blue LED & Red LED will be slowly blinking simultaneously and then the Blue LED will remain on. The Blue LED light means BX1000 / BX1000 Plus is ready for the event recording.
3. The event recording will automatically begin by the G-sensor with one short "Beep" sound.
4. The manual recording will start by pressing the [RECORD] button.

NOTE Multiple impacts coverage

Flash memory captures the video data from the second impact even as the first impact is still occurring. It will start writing, immediately after the first recording is finished.

When Record Method set as "Normal record"

1. Connect your vehicle's power cable to the BX1000 / BX1000 Plus after starting the vehicle.
2. Blue LED & Red LED will be slowly blinking simultaneously and then the Blue LED will remain on and flash every 5 seconds.
3. Blue LED light flashing every 5 seconds means BX1000 / BX1000 Plus is recording continuously.
4. The continuous recording (normal recording) will automatically begin just after the power is turned on.
5. The manual recording that started by pressing the [RECORD] button or the event recording by G-sensor make an event making in the continuous recording file.

Take out SD memory card

Turn off the power and then check the BLUE LED light. Once the LED light is off, take out the SD memory card.

Insert SD memory card

Turn off the power and then check the BLUE LED light. Once the LED light is off, insert the SD memory card.

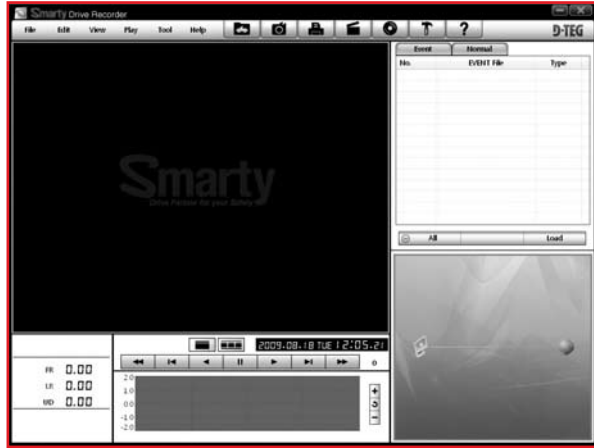
System Error Buzzer

A 'Beep Beep' sound will occur and the BLUE & RED LED lights will blink simultaneously when there is a system error or SD card is not inserted.

Check the SD memory card when this occurs.

SOFTWARE USER GUIDE

BX1000 / BX1000 Plus PC Viewer Guide



PC SYSTEM REQUIREMENT

Recommended PC specifications for PC Viewer software

OS	Windows 2000, Windows XP, Windows Vista
CPU	Pentium4 2.6GHz or higher
RAM	512MB or higher
Interface	SD Memory Card Reader
HDD Free space	Install 20MB or higher Backup 2GB or higher
Display	1,024 x 768 pixel/High Color(16bit) or higher

If the PC does not meet the minimum system requirement, the PC Viewer Software may not function properly.

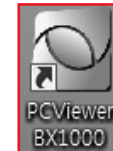
SOFTWARE INSTALLATION

PC Viewer Software is provided on the SD card.

1. Connect the SD card into your PC (if your computer does not have SD card slot use the USB SD card reader) and open the "My Computer"
2. Right-click the "DRIVEREC1" drive and select [Open]
3. Double click [SETUP.EXE] at [pcsw] folder.
4. Select the language and then follow the dialog box.



5. The "PCViewer" icon will be displayed on your desktop.

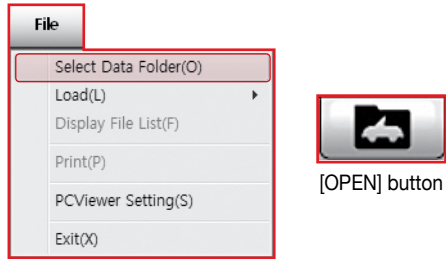


NOTE To Un-install the "PC Viewer BX1000"

Open the "Control Panel"
Select [Remove Program] and remove [PC Viewer BX1000]

CONNECT SD MEMORY CARD

1. Connect SD memory card into the SD card reader.
2. Run "PC Viewer BX1000"
3. Select [File] and then click "Select Data Folder" or Click [OPEN] button

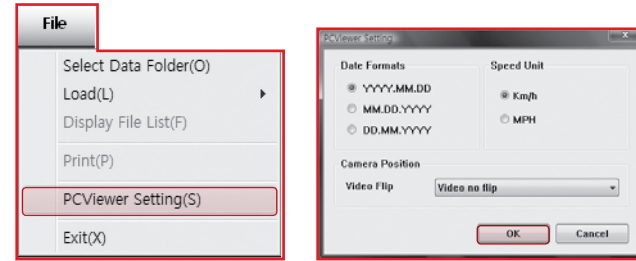


4. Select SD memory card folder at the folder select window.

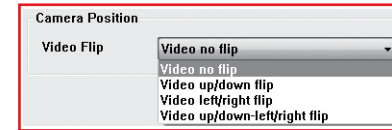


PC VIEWER SOFTWARE SETTING

This setting is for the PC Viewer itself. To set the Drive Recorder, refer to page 27.



The 'date' formats and 'speed' unit will be set automatically according to the PC windows setting. However it can be changed with this PC viewer setting menu.



SELECT FILE FOR PLAYBACK

When Record Method set as “Event record”

No.	EVENT File	Type
5	2009.01.07 06:46:00	G-Sensor
6	2009.01.07 06:46:34	G-Sensor
6	2009.01.07 22:51:57	G-Sensor
7	2009.01.07 06:48:07	G-Sensor
10	2009.01.07 22:44:17	G-Sensor
11	2009.01.07 22:45:10	Switch
12	2009.01.07 22:46:48	Switch
13	2009.01.07 22:48:09	Switch
14	2009.01.07 22:50:18	Switch
15	2009.01.07 22:51:11	G-Sensor

Check the event

“G-Senor” means recording was activated by impact

“Switch” means recording was activated by button

Check all files Button

Load Button

When Record Method set as “Normal record”

No.	NORMAL File	Duration
2	2009.07.13 13:10:00	10 Min
3	2009.07.13 13:20:00	10 Min
4	2009.07.13 13:30:00	10 Min
5	2009.07.13 13:40:00	4 Min
6	2009.07.14 20:02:38	4 Min
7	2009.07.14 20:07:56	2 Min
8	2009.07.14 20:10:00	10 Min
9	2009.07.14 20:20:00	10 Min
10	2009.07.14 20:30:00	10 Min
11	2009.07.14 20:40:00	10 Min
12	2009.07.14 20:50:00	10 Min
13	2009.07.14 21:00:00	22 Sec
14	2009.07.14 21:14:41	5 Min
15	2009.07.14 21:20:00	2 Min

Check the file

Recording duration
The maximum duration is 10 minutes

Check all files Button

Load Button

5. Check the event or normal recorded file from the list using mouse or click [All] button. Then click [Load] button.

FILE LOADING

6. Click the [Load] button once, the [FileList] tab will be changed to the [PlayList] tab as shown below

When Record Method set as “Event record”

Now playback this file

Check this for the continuous playback

Return to the [FileList]

When Record Method set as “Normal record”

Now playback this file

Check this for the continuous playback

Return to the [FileList]

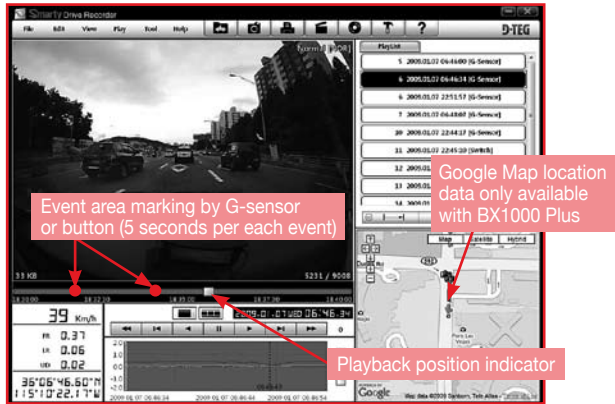
Event data search in the playback file

PLAYBACK SCREEN

When Record Method set as "Event record"

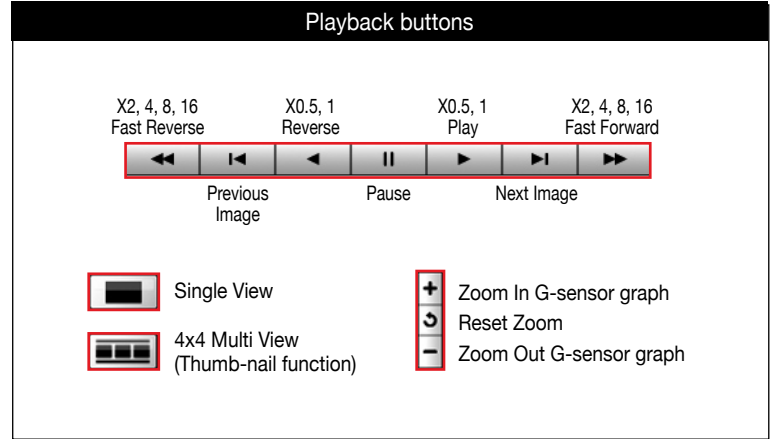
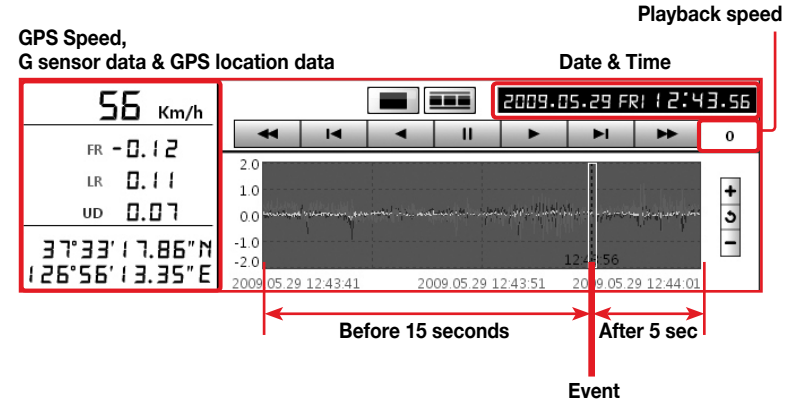


When Record Method set as "Normal record"



PLAYBACK

7. Click play button for playback.



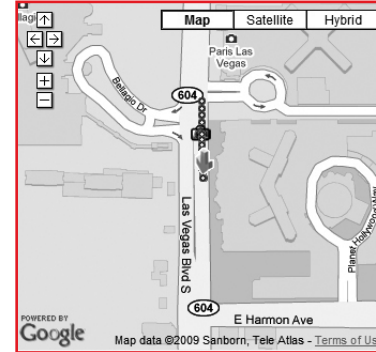
PLAYBACK

NOTE: PC Keyboard hot buttons

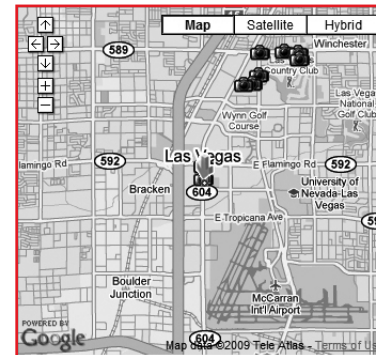
Function	PC keyboard hot buttons
1024x768 mode	Enter Return to the previous mode: Enter
Full screen mode	Alt + Enter Return to the previous mode: Enter
Playback speed control	Ctrl + F 0.5 => 1
Reverse playback speed control	Ctrl + B 0.5 => 1
Pause / Play	Space
Previous Image	→ Direction button.
Next Image	← Direction button

GOOGLE MAP (Supported by the "BX1000 Plus" only)

The route taken will be displayed on the Google map at lower right corner of the software.



Zoom Out



⚠ To see the route & position on Google Maps, the GPS data should be recorded with video.

To see Google Maps, the PC should be connected to the Internet.

The Playback position will be shown on the map with an arrow.

The blue markings show the route taken.


Double click the blue mark to change the video playback position to that point.

The camera icon indicates that there is a recorded video file.

The total camera icons shown will be less than 100, even if there are more than 100 events

When the unit is set to 'Normal' recording mode, there will be No route & camera Icon on the map.

THUMBNAIL FUNCTION

7. Click the  button for 4x4 multi view (Thumbnail function)



Click the thumbnail image to change the playback position.
Click right the mouse button to single image playback mode.

8. Click [Close] button to quit the playback.



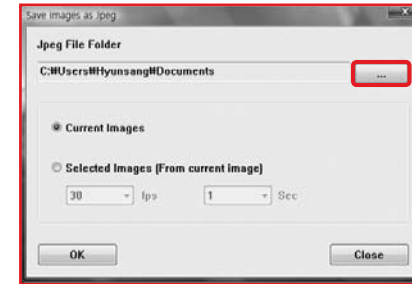
Click [Close] to finish the playback.
Then the [PlayList] window will be changed to the initial status.

SAVE JPG FILE & AVI FILE

9. Pause the playback and click 'Save Image' icon to make a JPG file.



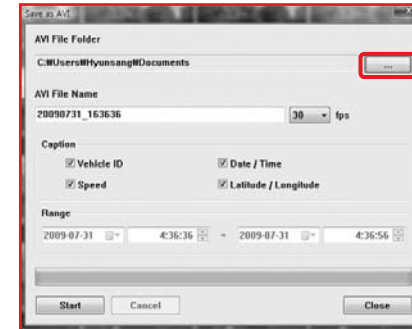
'Save Image' icon



10. Click 'Save AVI' icon to make a AVI file.



'Save AVI' icon

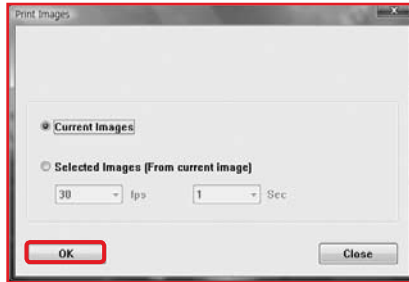


PRINT IMAGE

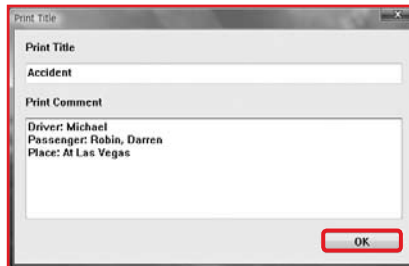
11. Pause the playback and click 'Print Image' icon.



Print image icon



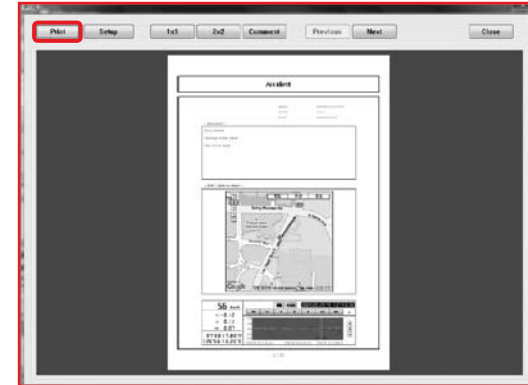
Type in the File Name [Print Title] & any comments [Print Comment] using the Keyboard.



The 'Print Comment' window allows up to 7 lines total.

MAKE REPORT

12. Click [Print] button in the print preview windows for printing.
The File Name [Print Title], Comment [Print Comment], G-sensor graph & map (for BX1000 Plus Model only) will be printed on the first page.



Click [2x2] and then click [Print] to print 4 images in one page.

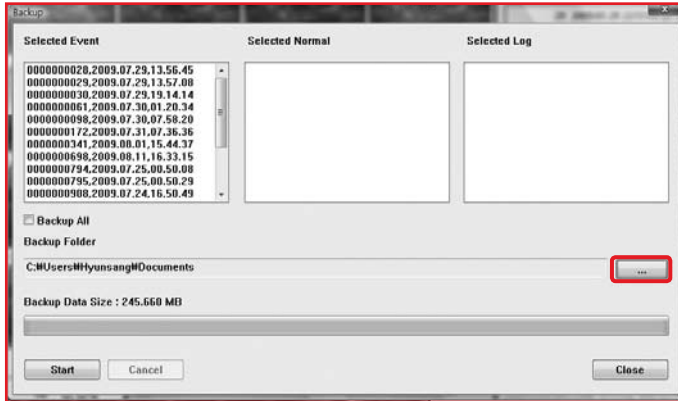


BACKUP EVENT/LOG FILES

13. Click [Backup Event/Log files] icon to backup the files to the PC.



[Backup Event/Log files] icon



Select [Event data] or [Normal data] and select [Log data] first, before clicking the [Backup Event/Log files] icon. Then selected Event or Normal or Log data list are on the Backup windows.

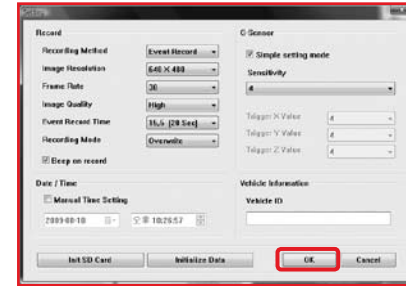
To backup the whole data from SD card to the PC, check [Backup All]

SETTING DRIVE RECORDER

14. Click [Recorder Setting] icon for setup.



[Recorder Setting] icon



Caution

Backup the SD data first, before clicking initialize SDcard button. Once done, the old data cannot be recovered.

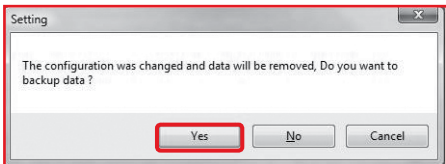
Recording Method	Event Record (Automatically starts Recording by G-sensor event or Record Button) Normal Record (Automatically starts continuous Recording just after Power on)
Image Resolution	640x480(High), 320x240(Low)
Frame Rate	'30' fps means Real Time recording Event Record supports 10, 15, 30 fps Normal Record supports 1, 5, 10, 15 fps
Image Quality	High (Large file size, but good picture quality) Low (Small file size, but low picture quality)
Event Record Time	This menu is for Event Record. Pre-record/Post-record time can be set here.
Recording Mode	Overwrite (The image data is overwrites the oldest files when the SD memory is full.) One time (The recording stops automatically when the SD memory is full.)

SETTING DRIVE RECORDER

Beep on record	“Beep” sound ON/OFF when Event recording start
G-sensor setting	Check simple setting mode and then change the sensitivity. High sensitivity like 8 or 9 means recording will be started at very low impact.
Date / Time	Automatically synchronize with GPS time. However Manual time setting is also available.
Vehicle ID	Type your Vehicle ID
Initialize SD card	All data will be deleted and set the configuration of the Drive Recorder will default to the factory settings.
Initialize Data	All data will be deleted.

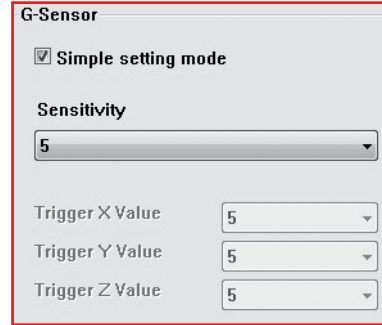
28

Caution Once the record setting was changed, all recorded data in SD card will be removed automatically.



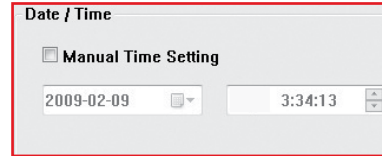
Select Backup [YES] or [NO] before lost the all recorded data.

SETTING DRIVE RECORDER



G-Sensor setting

If G-sensor sensitivity value is too high like 8 or 9, it becomes too sensitive, so it will detect even a light impact or light turn. If G-sensor sensitivity value is too dull, so it might not detect a notable incident. So, sensitivity should be set in consideration of the vehicle's suspension and condition and also the road condition.

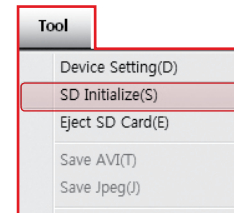


[BX1000] doesn't have the GPS time sync. function, so please click the manual time setting, and set your time before installing it in your car.

29

[BX1000 Plus] has the automatic GPS Time Synchronize function. with the internal GPS. The time recording is done based on UTC at the BX1000 Plus and automatically converts to the local time at the PC according to the PC time zone setting when playing back using the PC Viewer.

NEW SD Memory card should be initialized through Tool menu.



- STEP1. Insert new SD memory card into the PC.
- STEP2. Run “PC Viewer BX1000”
- STEP3. Select [Tool] and then click [SD Initialize]

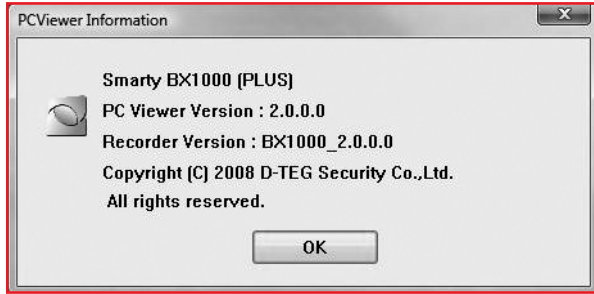
We recommend the [SD initialize] at least once per month to prevent the BX1000 / BX1000 Plus from any software errors.

PRODUCT INFORMATION

15. Click [About] icon to check the product information.



About icon

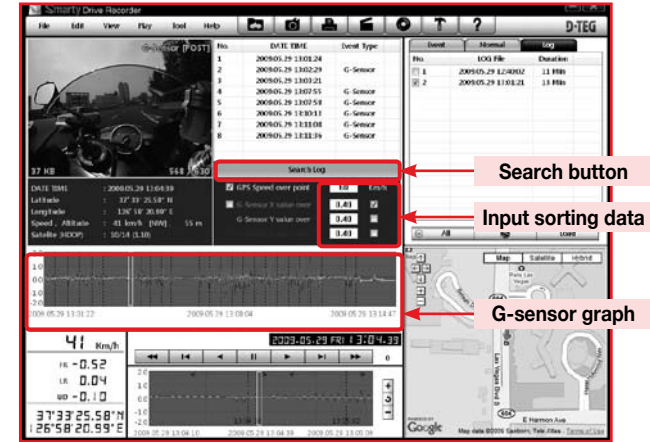


LOG FILE PLAYBACK

16. Select [LOG] windows and then check the log from the log list using mouse or click [Check All] button. Then click [Load] button.

Log data

Log data will be recorded during driving even if there are no events. The total log data size is no more than 60MB. The log data overwrites the oldest data when 60MB is reached. Using this log data, we can use the data sorting function which helps to find a specific data like more than 80mph(or 80km), for example.



GPS speed, G sensor X value, G sensor Y value, G sensor Z value, can be checked first on the small check box at right side of each value.

Then input data for data sorting.

If there is recorded video data, [Switch] or [G Sensor] mark will be displayed on list.

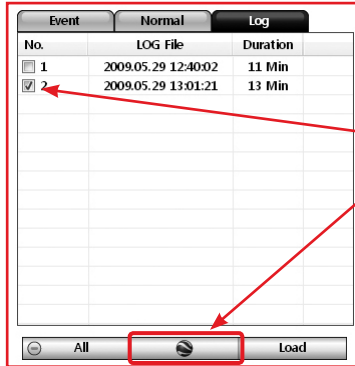
G sensor X value: Front & Back (like Quick brake or Quick Start)

G sensor Y value: Left & Right (like Quick Turn)

G sensor Z value: Up & Down (like prominence and depression)

GPS LOG TO KML CONVERTER (for Google Earth)

To see the whole route on Google Earth, select the log file and click Google Earth button. (BX1000 Plus only)



STEP1. Install the Google Earth on your PC.
(<http://earth.google.com/>)

STEP2. Check the log file

STEP3. Click Google Earth button

The route will then be shown on Google Earth.

We recommend you use Google Earth Version 5.0 or above.



Tip. Click [Car Track] and then Click [Play Tour] button

SPECIFICATION

Image sensor	1/4" CMOS
DSP	Standard DSP
Angle of View	170°
Video resolution	640x480, 320x240
Recording Speed	Up to 30 fps
Recording Modes	Continuous By impact By emergency button.
Recording time	2GB (37minutes~ 36hours) 16GB (7hours~167hours)
Backup	SD Memory Card
Memory	2GB SD memory card (supports SDHC cards of up to 32GB)
GPS	Internal GPS (BX1000 Plus only)
G-Sensor	Internal 3-axis G-sensor
RTC	Internal battery
Buzzer	Recording start, error
LED	2 LED (Record, Overwrite)
Supper Capacitor	Enable recording of last file and shut down
PC software	Supplied
Power input	12V to 24V DC (cigarette plug)
Power consumption	3.6W
Size (LxØ) / Weight	80mm X 50Ø / 100g
Operation Temp.	-10°C ~ 50°C

RECORDING TIME TABLE

Resolution	Quality	Size	FPS	2GB	4GB	8GB	16GB
640x480	HIGH	40KB	1	555 min	1408 min	3115 min	109 hours
			5	111 min	282 min	623 min	22 hours
			10	55 min	141 min	311 min	11 hours
			15	37 min	94 min	208 min	7 hours
	LOW	20KB	1	1109 min	2816 min	6229 min	167 hours
			5	222 min	563 min	1246 min	44 hours
			10	111 min	282 min	623 min	22 hours
			15	74 min	188 min	415 min	15 hours
320X240	HIGH	15KB	1	1479 min	3755 min	8306 min	167 hours
			5	296 min	751 min	1661 min	58 hours
			10	148 min	375 min	831 min	29 hours
			15	99 min	250 min	554 min	19 hours
	LOW	10KB	1	2219 min	5632 min	10000 min	167 hours
			5	444 min	1126 min	2492 min	87 hours
			10	222 min	563 min	1246 min	44 hours
			15	148 min	375 min	831 min	29 hours

NOTE: Limitation of the event file number

The total recording file number will be less than 1,000.

If the unit records more than 1,000 files, there is a possibility that the booting time will be more than 1 minute. Therefore, the number of files are limited to a maximum of 1,000.

So the maximum recording time is 167 hours.

1,000 files x 10 minutes = 10,000 minutes = 167 hours

TECHNICAL SUPPORT & WARRANTY

TECHNICAL SUPPORT

For Technical Support, please contact your local distributor.

LIMITED WARRANTY

This product is supplied with 1 year warranty. The Warranty excludes products That have been misused, (including accidental damage) and damage caused by normal wear and tear. In the unlikely event that you encounter a problem with this product, it should be returned to the place of purchase.

OPTIONAL ACCESSORY (Permanent Power Cable)

Model name: DPWR-100

The permanent power supply cable will allow you to hard wire the BX1000 series to the fuse box of your vehicle.



The ground cable should be contacted at the car body.



Connect (+) to the reserve Fuse.

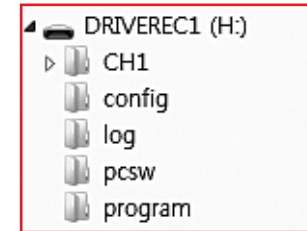
APPENDIX (Upgrade)

- 1) Upgrade the BX1000 / BX1000 Plus main unit first.
- 2) Install new PC viewer software on your PC.
- 3) Initialize the SD card using new PC viewer software.

NOTE To get the upgrade firmware, please contact your local distributor.

1. Prepare Firmware

Make a [program] folder on the SD root folder as shown below,



Copy "BX1000_X.X.X.bin" file in to the SD card [program] folder.

2. Upgrade BX1000 / BX1000 Plus

Insert the prepared SD card to BX1000 / BX1000 Plus unit and turn on the power.

The Blue & Red LED will blink quickly while the unit is upgrading. It will also 'beep' continuously. Upgrading the unit usually takes about 2 to 3 minutes.

WARNING Do not turn off the power during upgrade.

If the upgrade fails, the BX1000 / BX1000 Plus unit should be returned to your local distributor.

Once the upgrade is finished, the unit will automatically turn off / on the power.

If BX1000 series records as normal, turn off the power.

Insert the SD card into your PC and initialize it using the software.

APPENDIX (Upgrade BX1000 / BX1000 Plus)

3. Uninstall the old version PC Viewer Software from the PC

PC Windows [Start] => [Control panel]
And uninstall [PCViewer]

4. Install the new PC Viewer

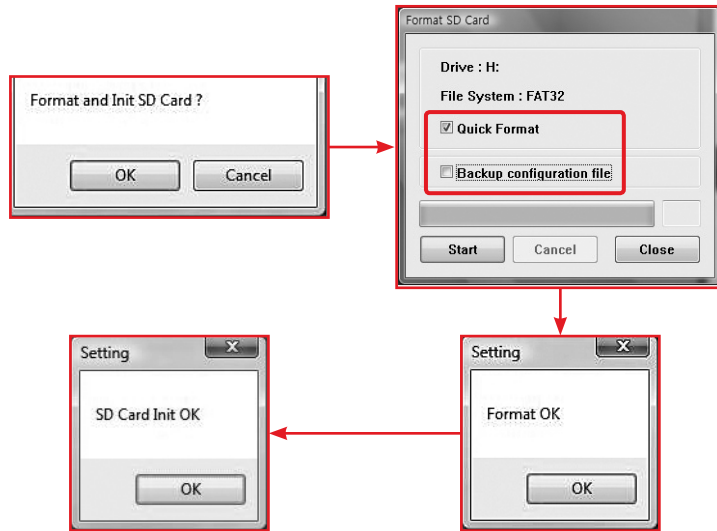
Run setup.exe and install the new PC Viewer X.X.X.X

NOTE After installation the new PC Viewer, initialize the SD card.
The new software will automatically be copied to [pcsw] folder at SD card.

To initialise the SD card.

Run the 'PC Viewer' software and select [Tool] > [SD initialize]

38



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Drive Partner for your Safety

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