

Smarty

Drive Partner for your Safety

HD

High-Definition

USER GUIDE

Model: BX1500 / BX1500+



VER 1.0

- *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 the 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

Each BX1500/BX1500+ order includes the following items

1. Smarty BX1500 / BX1500+ unit



2. SD memory card

(The PC software is on the provided SD card. The SD card capacity should be at least 4GB.)



3. Power cable (cigarette jack)



4. Video out cable (3m)



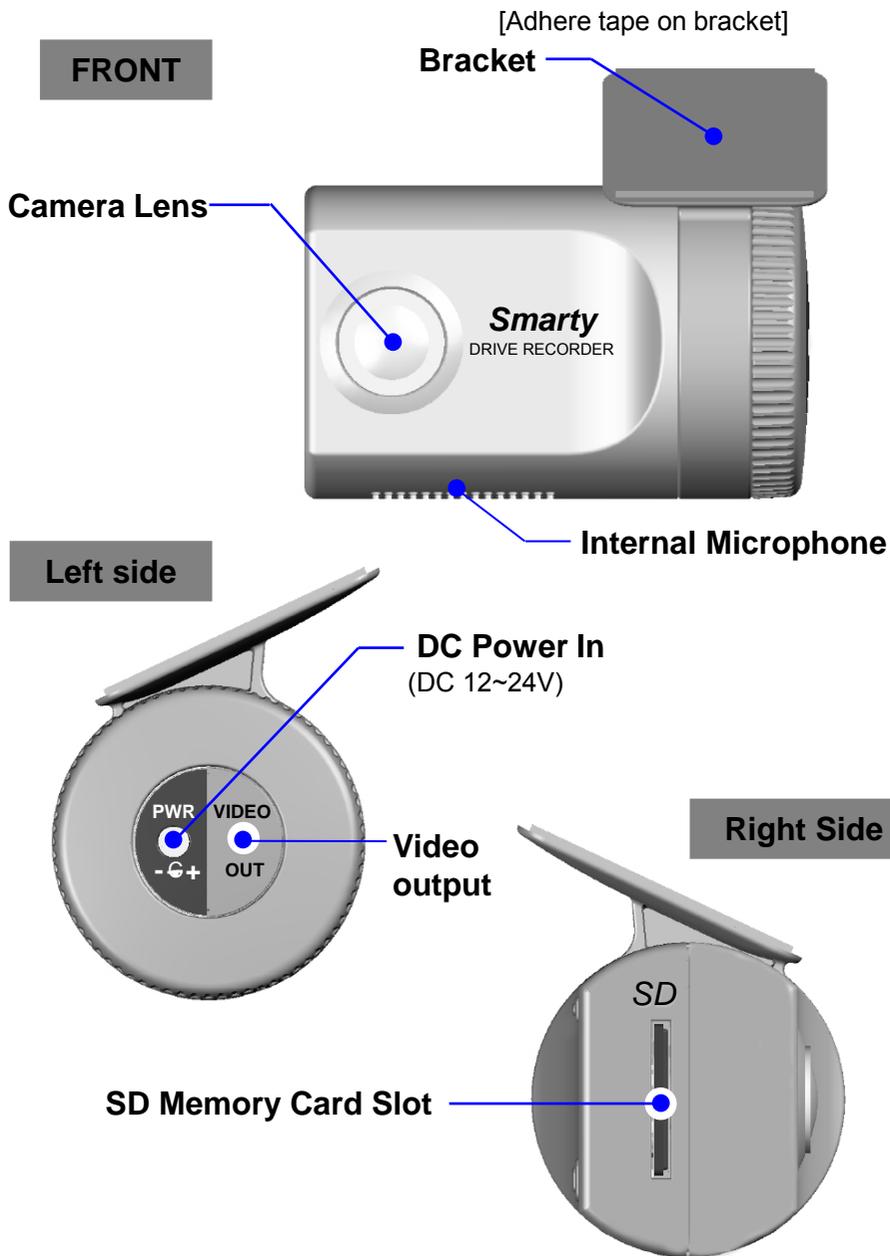
5. Wire Splice clip (5pcs)



6. 3M Adhesive for windshield mounting

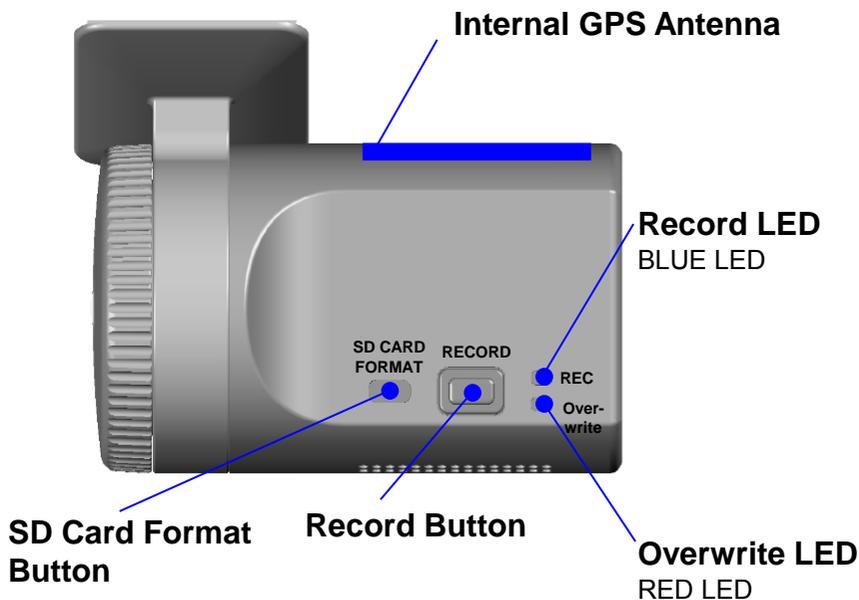


INTRODUCTION



INTRODUCTION

BACK



[Note] Formatting [initializing] SD memory card can be done using SD Card Format Button. However we recommend format [initialize] SD card using the PC Viewer software on your PC.



Holder : Before installing on the windshield, unscrew the cap and adjust the angle. Rotate clockwise to attach the body. The lens should preferably be parallel to the ground.

INSTALLATION

Park your vehicle on a flat level surface.

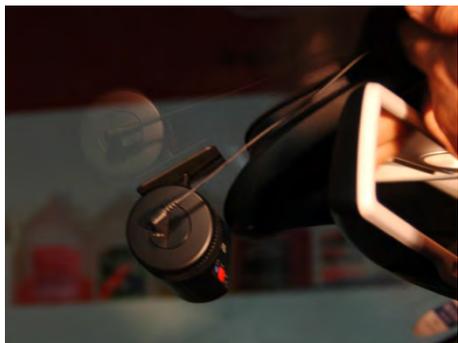
Turn off the engine before installing the BX1500 / BX1500+.

**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 BX1500/BX1500+ 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.**



[Attachment notes] 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 of the windshield and door pillar trim. Use the provided wire splice clip as seen in the picture on left.

- 4. The BX1500/BX1500+ requires a continuous 12~24volt power source from the vehicle. Plug in the power. The provided power cord cable route should be from the left side of the BX1500/BX1500+ towards your power source.**



⚠ Caution

When the impact is light like very light, such as 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 cord to the BX1500/BX1500+ after starting the vehicle. Then BX1500/BX1500+ will be automatically started. (Use the provided power cord.)

 Notice : 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 20 seconds prior & 20 seconds post event.

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

Press the [RECORD] button to begin recording manually. Each manual file contains 20 seconds prior to activation & 20 seconds post activation.

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

The continuous recording will be automatically started after power on.

BX1500/BX1500+ doesn't make a separate event file during the continuous recording. It will mark the Event area by G-sensor or Record button at 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 initialization. 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 have installed the software to your PC before you format the card.

Built-in power backup (Super Capacitor)

When power to the unit is interrupted, BX1500/BX1500+ creates the last file using the internal Super Capacitor.

BLUE LED (RECORD)

The blue LED shows the power is on. The blue LED flash during the event 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 BX1500/BX1500+ after starting the vehicle.
2. Blue LED & Red LED will be slowly blinking simultaneously and then Blue LED will remain on. Blue LED light means BX1000/BX1000+ is now ready for the event recording.
3. The event recording will automatically begin by G-sensor with one short “Beep” sound.
4. The manual recording will start by pressing the [RECORD] button.

[Notice] Multiple impacts coverage

Flash memory continuously captures the video data during the second or third impact and record it to the first impact file.

When Record Method set as “Normal record”

1. Connect your vehicle’s power cable to the BX1500/BX1500+ 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 5seconds.
3. Blue LED light flashing every 5 seconds means BX1500/BX1500+ is now recording continuously.
4. The continuous recording(normal recording) will automatically begin just after power on.
5. The manual recording that started by pressing the [RECORD] button or the event recording by G-sensor make a 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

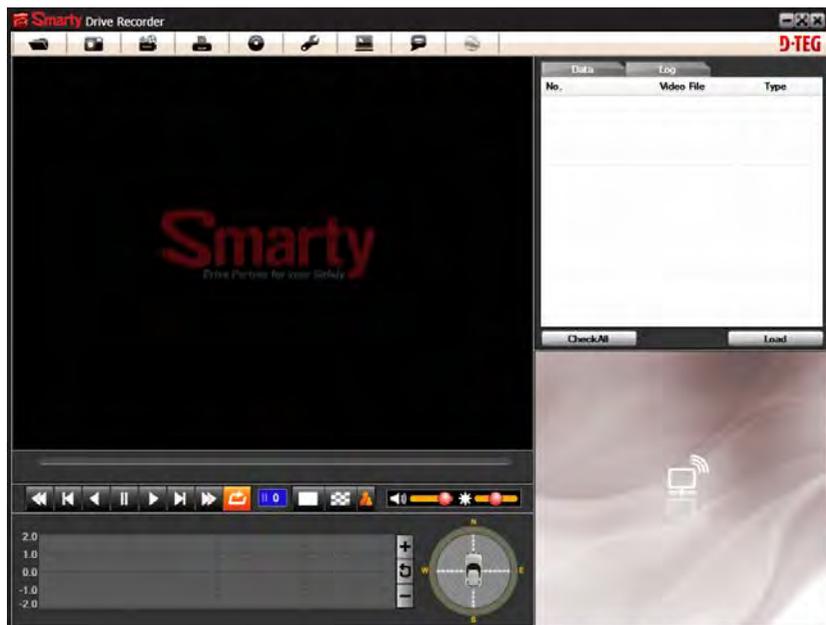
Turn off the power and then check the BLUE LED light. Once the LED light is off, insert the SD memory card.

System Error Buzzer

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

[Check the SD memory card when this occurs. To solve the problem, initialize the SD card or replace the SD card.]

BX1500/BX1500+ PC Viewer Guide



[PC SYSTEM REQUIREMENT]

Recommended PC specifications for PC Viewer software

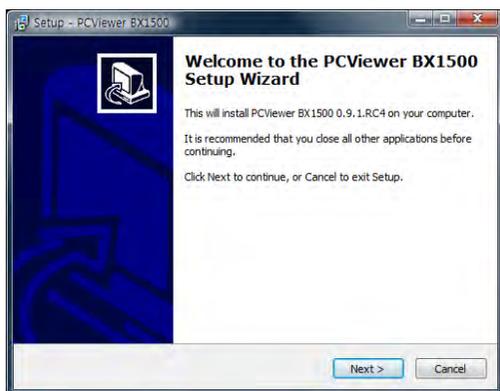
| | |
|-------------------|--|
| OS | Windows 2000, Windows XP Windows Vista, Windows 7 |
| CPU | Pentium4 2.6GHz or higher |
| RAM | 512MB or higher |
| Interface | SD Memory Card Reader |
| HDD Free space | Install 20MB or higher Backup 2GB or higher |
| Display | 1,024 x 768 pixel/High Color(16bit) or higher |

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

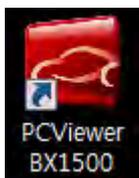
INSTALLING PROCEDURES

PC Viewer software is on the provided SD card.

1. Connect the SD card into your PC (if your computer does not have and SD card slot use the USB SD card reader) and open the “My Computer”
2. Right-click the “HDREC1” 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 BX1500”
Open the “Control Panel”
Select [Remove Program] and remove [PC Viewer BX1500]

Connect SD memory card

1. Connect SD memory card into your PC's SD card slot or a USB SD card reader.
2. Run "PC Viewer BX1500"
3. Select [File] and then click "Select Data Folder" or Click [OPEN] button



[OPEN] button

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



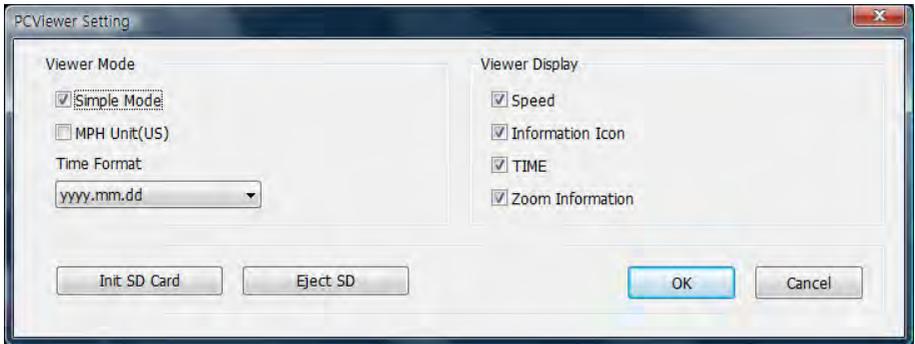
PC Viewer Setting

This setting is for the PC Viewer itself.

To set the Video Recorder (i.e. resolution, frame rate, etc. refer to page26).



[PC Viewer Setting] button

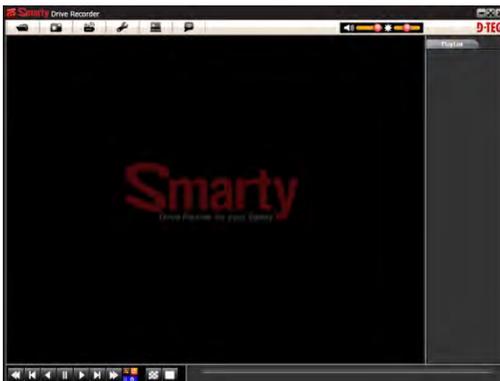


The 'date' formats and 'speed' unit will be set automatically according to the PC Windows setting. However it can be changed with this PC viewer setting menu.

Simple Mode

Check Simple Mode and press [OK] button.

Then PC Viewer skin will change to Simple Mode PC Viewer skin.



[Simple Mode PC Viewer]

Select file for playback

When Record Method set as "Event record"

| No. | Video File | Type |
|-----------------------------|---------------------|----------|
| <input type="checkbox"/> 34 | 2011.06.11 19:47:00 | G-Sensor |
| <input type="checkbox"/> 35 | 2011.06.11 20:05:44 | Switch |
| <input type="checkbox"/> 36 | 2011.06.11 22:15:28 | G-Sensor |
| <input type="checkbox"/> 37 | 2011.06.11 22:17:07 | G-Sensor |
| <input type="checkbox"/> 38 | 2011.06.11 22:30:00 | G-Sensor |
| <input type="checkbox"/> 39 | 2011.06.12 09:43:06 | G-Sensor |
| <input type="checkbox"/> 40 | 2011.06.12 09:44:35 | G-Sensor |
| <input type="checkbox"/> 41 | 2011.06.12 09:45:24 | G-Sensor |
| <input type="checkbox"/> 42 | 2011.06.12 09:46:24 | G-Sensor |
| <input type="checkbox"/> 43 | 2011.06.12 10:55:29 | G-Sensor |
| <input type="checkbox"/> 44 | 2011.06.12 13:08:20 | G-Sensor |
| <input type="checkbox"/> 45 | 2011.06.12 13:11:37 | G-Sensor |
| <input type="checkbox"/> 46 | 2011.06.12 13:49:03 | G-Sensor |
| <input type="checkbox"/> 47 | 2011.06.12 13:50:04 | G-Sensor |
| <input type="checkbox"/> 48 | 2011.06.12 13:51:04 | G-Sensor |
| <input type="checkbox"/> 49 | 2011.06.12 13:54:10 | G-Sensor |
| <input type="checkbox"/> 50 | 2011.06.12 14:02:09 | G-Sensor |

Check the event

"Switch" means recording was activated by button

"G-Sensor" means recording was activated by impact

Blank means previous event file is more than 1 min.

Load Button

Check all files Button

When Record Method set as "Normal record"

| No. | Video File | Type |
|-----------------------------|---------------------|--------|
| <input type="checkbox"/> 9 | 2011.06.13 21:18:00 | Normal |
| <input type="checkbox"/> 10 | 2011.06.13 21:21:00 | Normal |
| <input type="checkbox"/> 11 | 2011.06.13 21:24:00 | Normal |
| <input type="checkbox"/> 12 | 2011.06.13 21:27:00 | Normal |
| <input type="checkbox"/> 13 | 2011.06.13 21:30:00 | Normal |
| <input type="checkbox"/> 14 | 2011.06.13 21:33:00 | Normal |
| <input type="checkbox"/> 24 | 2011.06.14 09:10:39 | Normal |
| <input type="checkbox"/> 25 | 2011.06.14 09:12:00 | Normal |
| <input type="checkbox"/> 26 | 2011.06.14 09:15:00 | Normal |
| <input type="checkbox"/> 27 | 2011.06.14 09:18:00 | Normal |
| <input type="checkbox"/> 28 | 2011.06.14 09:21:00 | Normal |
| <input type="checkbox"/> 29 | 2011.06.14 09:24:00 | Normal |
| <input type="checkbox"/> 30 | 2011.06.14 09:27:00 | Normal |
| <input type="checkbox"/> 31 | 2011.06.14 09:30:00 | Normal |
| <input type="checkbox"/> 32 | 2011.06.14 09:33:00 | Normal |
| <input type="checkbox"/> 33 | 2011.06.14 09:36:00 | Normal |
| <input type="checkbox"/> 34 | 2011.06.14 09:39:00 | Normal |

Check the file

Normal means continuous recording. The maximum duration is 3 minutes.

Load Button

Check all files Button

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

FILE LOADING

6. Once click [Load] button, the [FileList] tab will be changed to the [PlayList] tab as below

When Record Method set as “Event record”

| PlayList | | |
|----------|-----------------------------|---------|
| 16 | 2011.06.11 08:52:56 [0'40"] | [Icons] |
| 17 | 2011.06.11 08:56:12 [0'40"] | [Icons] |
| 18 | 2011.06.11 08:57:41 [0'40"] | [Icons] |
| 19 | 2011.06.11 10:00:02 [0'40"] | [Icons] |
| 20 | 2011.06.11 10:01:26 [0'40"] | [Icons] |
| 21 | 2011.06.11 10:04:47 [0'40"] | [Icons] |
| 22 | 2011.06.11 10:06:33 [0'40"] | [Icons] |
| 23 | 2011.06.11 10:07:58 [0'40"] | [Icons] |
| 24 | 2011.06.11 10:09:21 [0'40"] | [Icons] |
| 25 | 2011.06.11 10:25:21 [0'40"] | [Icons] |
| 26 | 2011.06.11 10:28:04 [1'00"] | [Icons] |
| 27 | 2011.06.11 10:29:04 [0'22"] | [Icons] |
| 28 | 2011.06.11 13:47:11 [0'40"] | [Icons] |

Select file(s) to playback

Return to the [FileList]

When Record Method set as “Normal record”

| PlayList | | |
|----------|-----------------------------|---------|
| 25 | 2011.06.14 09:12:00 [3'00"] | [Icons] |
| 26 | 2011.06.14 09:15:00 [3'00"] | [Icons] |
| 27 | 2011.06.14 09:18:00 [3'00"] | [Icons] |
| 28 | 2011.06.14 09:21:00 [3'00"] | [Icons] |
| 29 | 2011.06.14 09:24:00 [3'00"] | [Icons] |
| 30 | 2011.06.14 09:27:00 [3'00"] | [Icons] |
| 31 | 2011.06.14 09:30:00 [3'00"] | [Icons] |
| 32 | 2011.06.14 09:33:00 [3'00"] | [Icons] |
| 33 | 2011.06.14 09:36:00 [3'00"] | [Icons] |
| 34 | 2011.06.14 09:39:00 [1'23"] | [Icons] |
| 35 | 2011.06.14 10:07:44 [1'16"] | [Icons] |
| 36 | 2011.06.14 10:09:00 [1'53"] | [Icons] |
| 37 | 2011.06.14 10:16:29 [1'04"] | [Icons] |

Select file(s) to playback

Return to the [FileList]

ICONS ON PLAYLIST



This file includes GPS data.



This file resolution is SXVGA (1280x960).



This file resolution is VGA (640x480).



This file recorded by G-Sensor.



This file recorded by Record button.



This file recorded by Normal (Continuous) record.

PLAYBACK SCREEN

When Record Method set as "Normal record"

| Frame No. | Start Time | End Time | Duration | Resolution | Record Method |
|-----------|---------------------|---------------------|----------|------------|---------------|
| 1 | 2009.01.01 09:00:05 | 2009.01.01 09:00:05 | [2'55"] | SXVGA | Normal |
| 2 | 2009.01.01 09:03:00 | 2009.01.01 09:03:00 | [3'00"] | SXVGA | Normal |
| 3 | 2009.01.01 09:06:00 | 2009.01.01 09:06:00 | [0'54"] | SXVGA | Normal |
| 4 | 2011.06.14 09:20:10 | 2011.06.14 09:20:10 | [0'50"] | SXVGA | Normal |
| 5 | 2011.06.14 09:21:00 | 2011.06.14 09:21:00 | [2'27"] | SXVGA | Normal |

Playback Icons

Playback position indicator



This file recorded by Normal (Continuous) record.



This file recorded by G-Sensor.



This file recorded by Record button.



This file resolution is SXVGA (1280x960).



This file resolution is VGA (640x480).



Pre-recorded frame



Post-recorded frame



Continuously recorded frame

PLAYBACK

7. Click play button for playback.

Click & Drag the white bar to move the playback position.

Volume & Brightness

2.0
1.0
0.0
-1.0
-2.0

09:22:28 09:22:43 09:22:59

Before 20seconds After 20seconds

Event

Compass (Moving Direction)

Playback buttons

| | | | |
|--------------------------------------|-------------------------|-----------------|------------------------------|
| X2, 4, 8, 16 Fast Reverse | X0.5, 1 Reverse | X0.5, 1 Play | X2, 4, 8, 16 Fast Forward |
| | | | |
| Previous Image | Pause | Next Image | |
| | | | |
| Single View | Video up/down flip | | |
| | | | |
| 4x4 Multi View (Thumb-nail function) | | | |
| | | | |
| Zoom In G-sensor graph | Playback speed | | |
| | | | |
| Reset Zoom | | | |
| | | | |
| Zoom Out G-sensor graph | | | |
| | | | |
| Continuous playback next file | Playback this file only | | |
| | | | |

PLAYBACK

NOTE: PC Keyboard hot buttons

| Function | PC Hot Keys |
|--------------------------------|---|
| 1280x768 mode | 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 maps (Supported by “BX1500+” model only)

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



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

To see the map, the PC must be connected to the Internet.

**The playback position will be shown on the map with an arrow.
The blue markings show the route taken.**

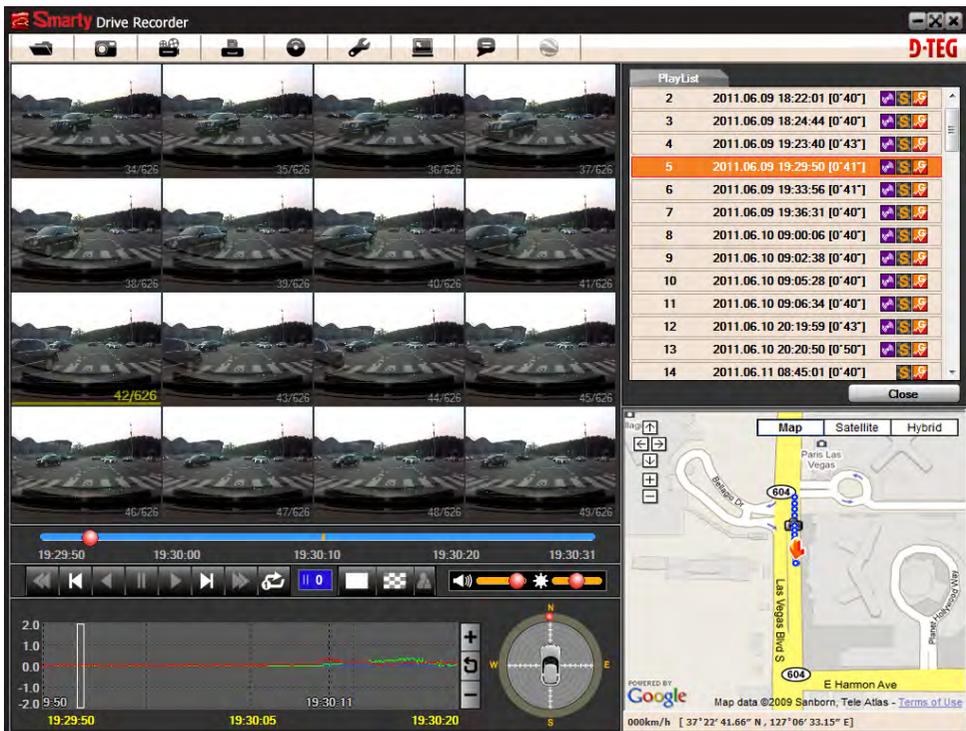
Double click the blue mark to change the video playback position to that point.

The camera icon indicates that there is a recorded file.

When the unit is set to Normal recording mode, there is no route & camera icon on the map.

Thumb-nail Function

7. Click the  button for 4x4 multi view (Thumb-nail function)

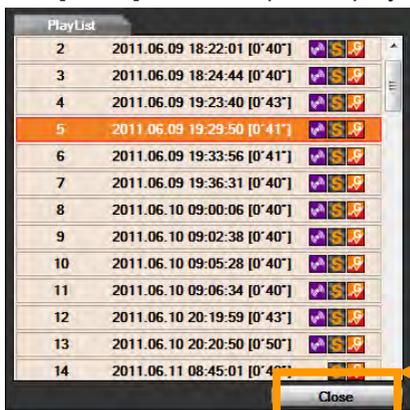


The screenshot shows the 'Smarty Drive Recorder' software interface. At the top, there's a toolbar with various icons. Below it is a 4x4 grid of video thumbnails showing a road scene. To the right is a 'PlayList' window with a table of entries. Below the thumbnails is a playback timeline with a progress bar and control buttons. At the bottom right is a map window showing the current location on a road network.

| Item | Date | Time | Duration | Icons |
|------|------------|----------|----------|--------|
| 2 | 2011.06.09 | 18:22:01 | [0'40"] | 📹 ⚙️ 📍 |
| 3 | 2011.06.09 | 18:24:44 | [0'40"] | 📹 ⚙️ 📍 |
| 4 | 2011.06.09 | 19:23:40 | [0'43"] | 📹 ⚙️ 📍 |
| 5 | 2011.06.09 | 19:29:50 | [0'41"] | 📹 ⚙️ 📍 |
| 6 | 2011.06.09 | 19:33:56 | [0'41"] | 📹 ⚙️ 📍 |
| 7 | 2011.06.09 | 19:36:31 | [0'40"] | 📹 ⚙️ 📍 |
| 8 | 2011.06.10 | 09:00:06 | [0'40"] | 📹 ⚙️ 📍 |
| 9 | 2011.06.10 | 09:02:38 | [0'40"] | 📹 ⚙️ 📍 |
| 10 | 2011.06.10 | 09:05:28 | [0'40"] | 📹 ⚙️ 📍 |
| 11 | 2011.06.10 | 09:06:34 | [0'40"] | 📹 ⚙️ 📍 |
| 12 | 2011.06.10 | 20:19:59 | [0'43"] | 📹 ⚙️ 📍 |
| 13 | 2011.06.10 | 20:20:50 | [0'50"] | 📹 ⚙️ 📍 |
| 14 | 2011.06.11 | 08:45:01 | [0'40"] | 📹 ⚙️ 📍 |

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.



A close-up view of the 'PlayList' window from the software. The list of items is visible, with item 5 highlighted. At the bottom of the window, there is a 'Close' button, which is highlighted with a yellow box and an arrow pointing to it from the right.

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

Save as JPG & convert video to AVI file

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



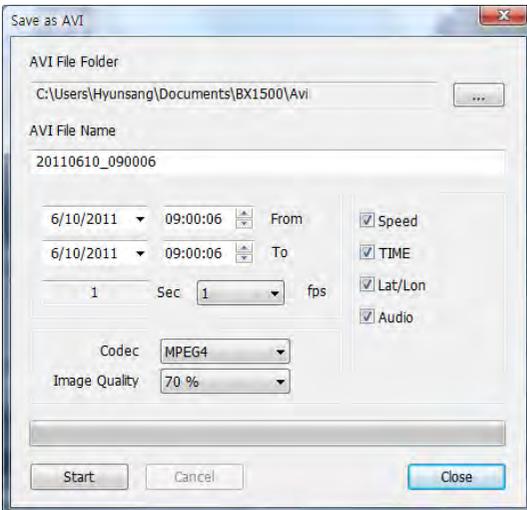
'Save Image' icon



10. Click the 'Save AVI' icon to make an AVI file.

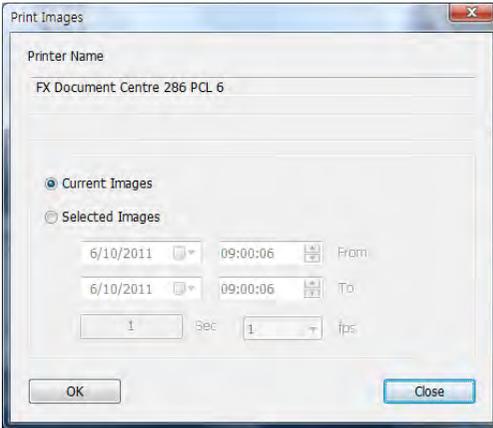


'Save AVI' icon

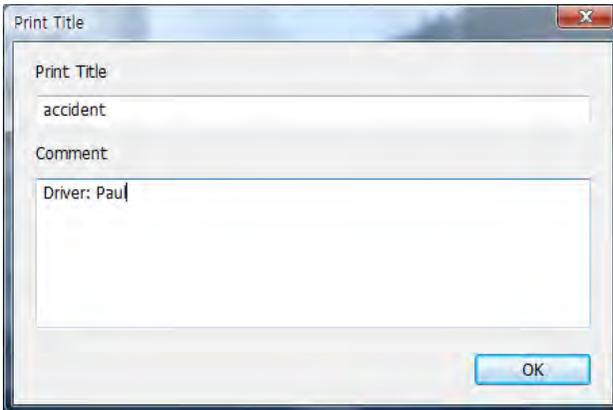


Printing an event report

11. Pause the playback and click the printer icon.



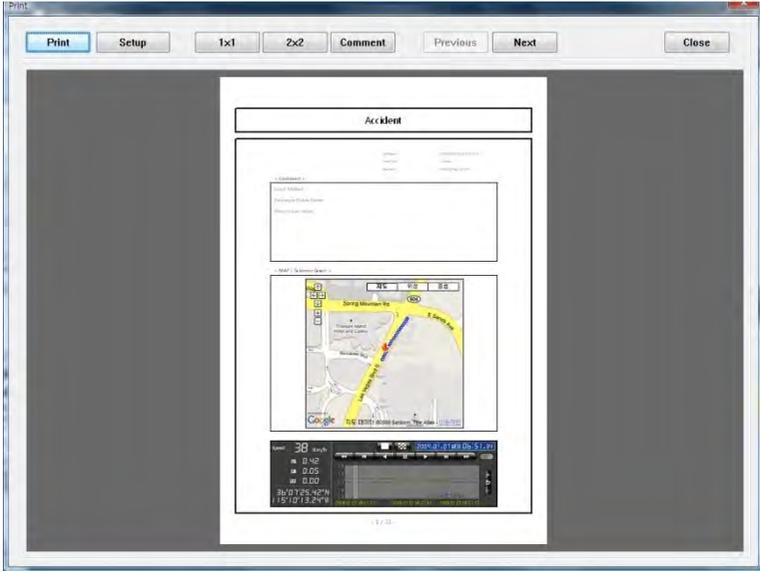
Type in the Title [Print Title] & any comments [Comment] using the Keyboard.



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 BX1500+ Model only) will be printed on the first page.



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

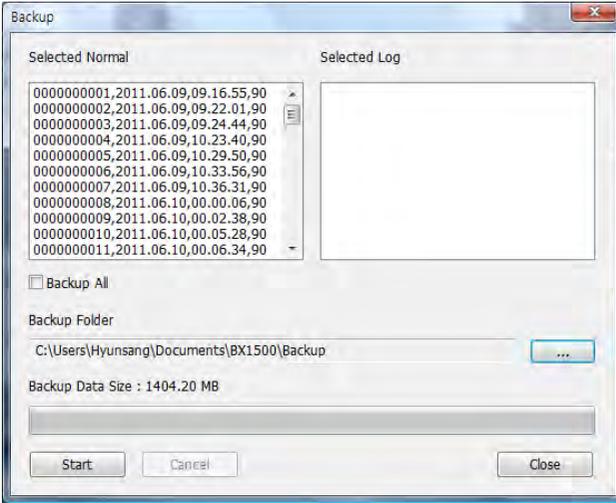


Backup Event/Log files

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 the selected Event, Normal, and Log data files are backed up on Windows to your preferred destination.

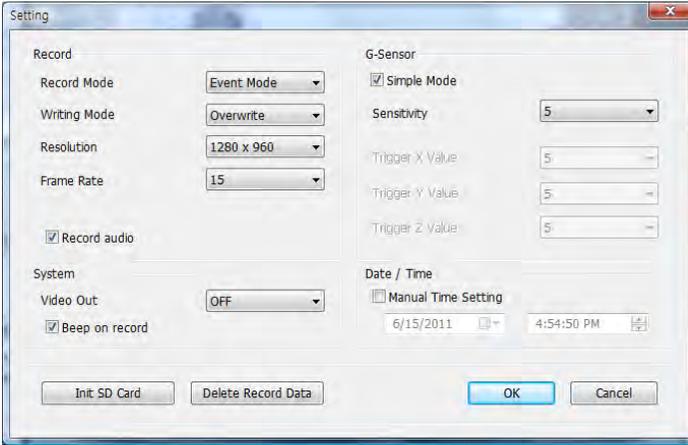
To backup the entire SD card data to the PC, check [Backup All]

Drive Recorder Settings

14. Click [Recorder Setting] icon for setup.



[Recorder Setting] icon



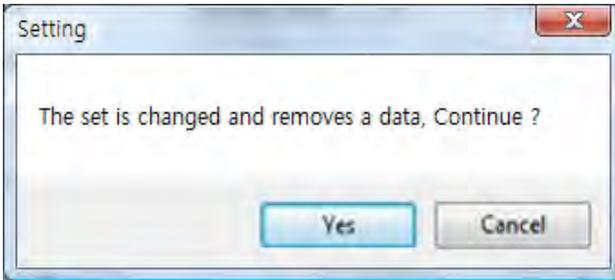
⚠ Caution
 Backup the SD data first, before clicking initializing the SD card. The old data is removed when you save new settings.

| | |
|--------------|--|
| Record Mode | Event Mode (Automatically starts Recording by G-sensor event or Record Button) Normal Mode (Is always recording when powered by 12V) |
| Writing Mode | Overwrite (The oldest data is overwritten when the SD memory is full.) One time (The recording stops automatically when the SD memory is full.) |
| Resolution | 1280x960(SXVGA), 640x480(VGA) |
| Frame Rate | 30 means real-time recording 640x480 Record supports 1, 2, 3, 5, 10, 15, 30 fps 1280x960 Record supports 1, 2, 3, 5, 10, 15 fps |
| Record audio | Check it to record Audio |
| Video Out | OFF, NTSC, PAL Set it OFF, to set 15fps at 1280x960. If set it NTSC or PAL, the maximum recording frame rate of 1280x960 is 10fps. |

Drive Recorder Settings

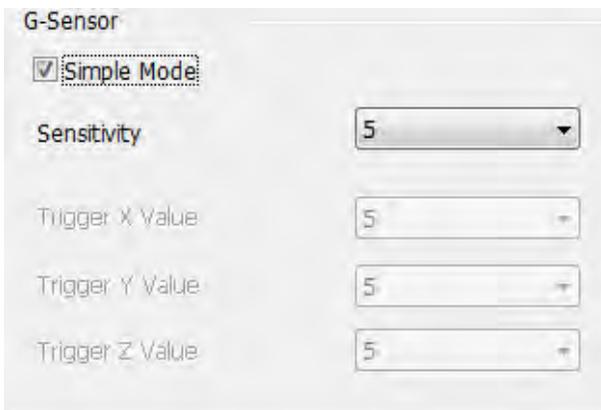
| | |
|--------------------|--|
| Beep on record | “Beep” sound ON/OFF when Event recordings are started |
| G-sensor setting | Check simple setting mode and then change the sensitivity. High sensitivity (8 or 9) means recording will be started at very low impact. |
| Date/Time | Automatically synchronize with GPS time. However Manual time setting is also available. |
| Initialize SD card | The SD configuration of the Drive Recorder will default to the factory settings. All video and GPS data will be deleted. |
| Delete record data | All data will be deleted. |

⚠ Caution Once the record settings are changed, all recorded data on the SD card will be removed.



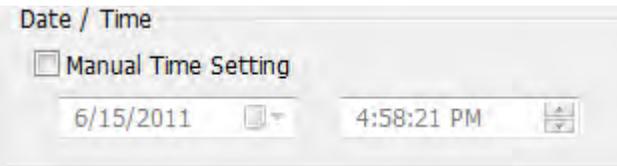
Backup the recorded file first and then change the settings to avoid losing all recorded data.

Drive Recorder Settings



G-Sensor setting

If G-sensor sensitivity value is high (8 or 9), it may be too sensitive, it will detect even a light impact or light turn. If G-sensor sensitivity value is a low setting (1 or 2), it might not detect a notable incident. Sensitivity should be set in consideration of a vehicle's suspension 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.

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

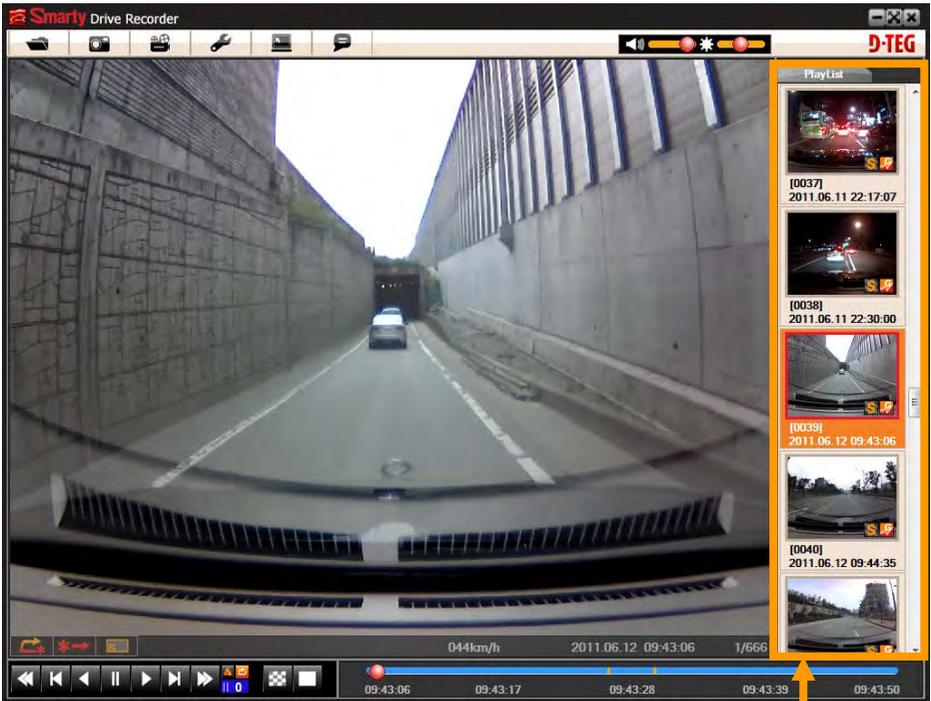
If you use a **NEW SD Memory card**, initializing must be done first.

- STEP1. Insert new SD memory card into the PC.
- STEP2. Run "PC Viewer BX1000"
- STEP3. Select [] record setting and then click [Init SD card]

We recommend the [Init SD card] at least once per month to reduce the possibility of any software errors.

Simple Mode Viewer

With this option, the video is maximized and a panel of video previews appears in the right panel.

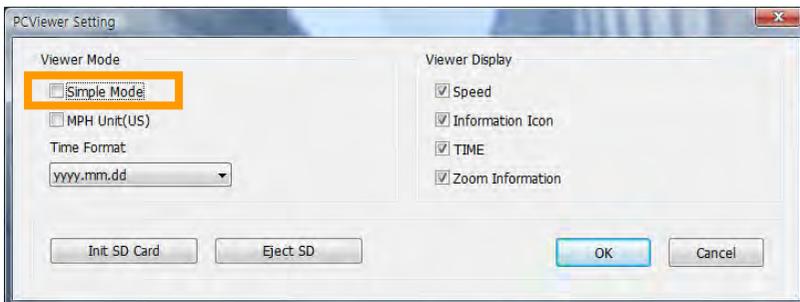


Preview images

To change it to Normal Mode Viewer:



Click [Setting viewer program] icon



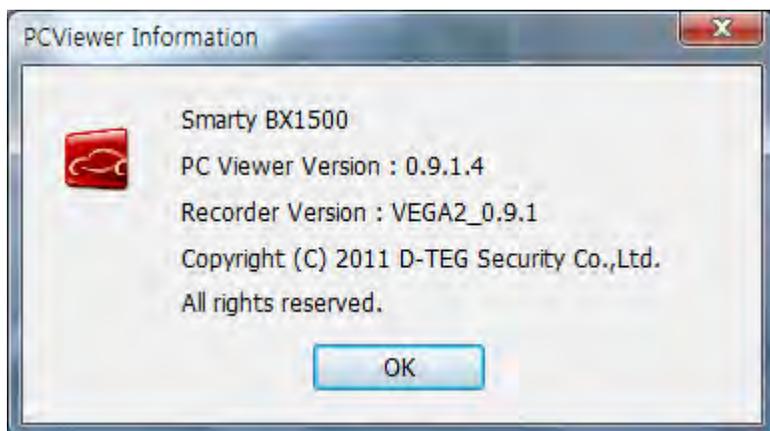
Un-check Simple Mode and press [OK]

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 or video. The maximum amount of log data saved is 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 specific data or driving behaviors, such as more than 80mph(or 80km) or 1G of X-axis force exceeded.

The screenshot shows the Smarty Drive Recorder software interface. On the right, there is a 'Log' table with columns for 'No.', 'LOG File', and 'Duration'. The table lists log files from 19 to 34, all with a duration of 60 minutes. A red box highlights the search panel on the left, which includes a 'Search' button and a search criteria table. The search criteria table has columns for 'G' and 'G' with values of 0.40. A red arrow points from the search panel to the log list. Another red arrow points from the log list to the G-sensor graph at the bottom. The G-sensor graph shows a plot of G-sensor data over time, with a red box highlighting the graph area. A red arrow points from the G-sensor graph to the search panel. The interface also shows a video playback window in the center, a map on the right, and a compass at the bottom right.

| No. | LOG File | Duration |
|-----|---------------------|----------|
| 19 | 2011.06.10 09:00:00 | 60 Min |
| 20 | 2011.06.10 10:00:00 | 60 Min |
| 21 | 2011.06.10 11:00:00 | 60 Min |
| 22 | 2011.06.10 12:00:00 | 60 Min |
| 23 | 2011.06.10 13:00:00 | 60 Min |
| 24 | 2011.06.10 14:00:00 | 60 Min |
| 25 | 2011.06.10 15:00:00 | 60 Min |
| 26 | 2011.06.10 16:00:00 | 60 Min |
| 27 | 2011.06.10 17:00:00 | 60 Min |
| 28 | 2011.06.10 18:00:00 | 60 Min |
| 29 | 2011.06.10 19:00:00 | 60 Min |
| 30 | 2011.06.10 20:00:00 | 9 Min |
| 31 | 2011.06.10 20:10:14 | 50 Min |
| 32 | 2011.06.10 21:00:00 | 60 Min |
| 33 | 2011.06.10 22:00:00 | 60 Min |
| 34 | 2011.06.10 23:00:00 | 60 Min |

| Search | Unit | Value |
|---|------|-------|
| <input checked="" type="checkbox"/> speed | Km/h | 40 |
| <input checked="" type="checkbox"/> G | G | 0.40 |
| <input checked="" type="checkbox"/> G | G | 0.40 |
| <input checked="" type="checkbox"/> G | G | 0.40 |

GPS speed, G sensor X value, G sensor Y value, G sensor Z value,
Can each be checked first on the right side of each value. And then specify the input data for data filtering.
If there is recorded video data, [Switch] or [G Sensor] a black dotted line will be displayed on the graph.

- G sensor X value: Front & Back (i.e. hard brake or quick acceleration)
- G sensor Y value: Left & Right (i.e sharp turn)
- G sensor Z value: Up & Down (prominence and depression)

GPS LOG TO KML CONVERTER (for Google Earth)



Google Earth icon

To see the whole route on Google Earth, select a log file and click Google Earth button. (BX1500+ only)

STEP1. Install the Google Earth on your PC. It is free of charge.
(<http://earth.google.com/>)

STEP2. Check the log file

STEP3. Click Google Earth button

Then the route will be exported to Google Earth, which will automatically launch.

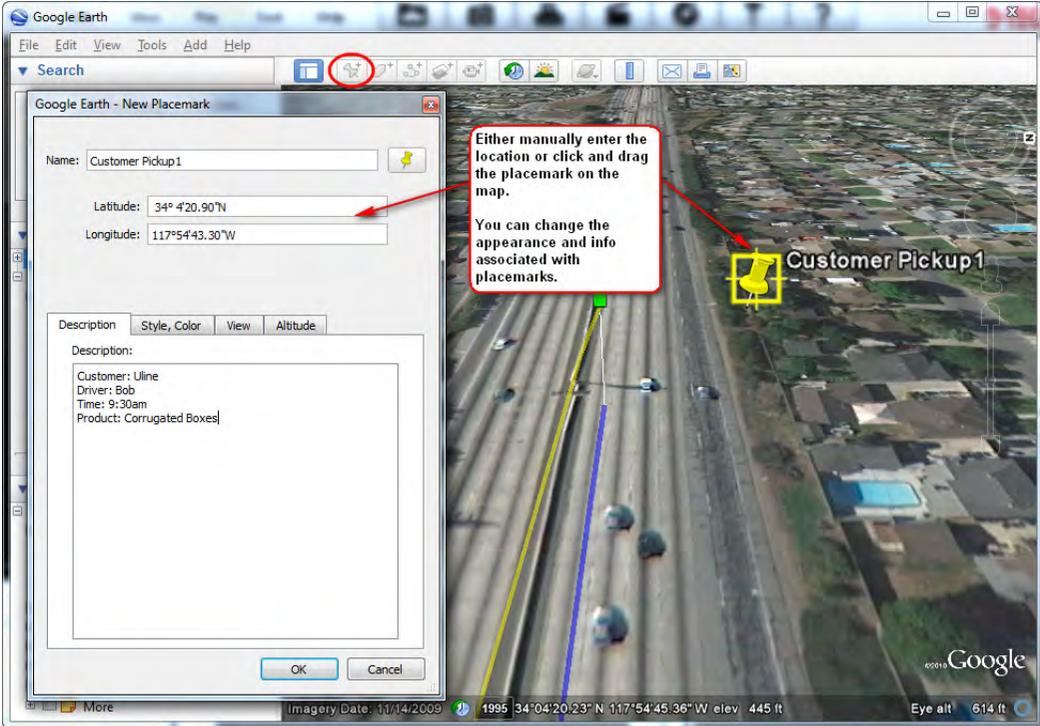
The screenshot shows the Google Earth desktop application with several red callout boxes providing instructions:

- Top toolbar:** A red circle highlights the 'Add' button (a square with a plus sign) and the 'Google Earth' button (a globe icon).
- Places Panel:** A red circle highlights the 'My Places' folder. A callout box says: "Create new folders here, such as 'Driver1234' or 'Car Accidents' or 'Events to Review' Then file > Save the routes to the folder."
- Places List:** A red circle highlights the 'GPS-Track' folder. A callout box says: "Add customized POI, landmarks, or routes here. For example 'Customer Delivery #1423' or 'Sanitation route for Driver1234'".
- Places List:** A red circle highlights the 'GPS-Track by SMARTY' folder. A callout box says: "Saved places. This is why my old Rockford Motorcycle race data was shown at first yesterday."
- Places List:** A red circle highlights the '05.25.2010 09:43:53 - 05.25.20...' folder. A callout box says: "Currently loaded log files from the PC viewer."
- Places List:** A red circle highlights the 'Car Track' folder. A callout box says: "This is the elusive play button I was looking for. It launches a fly animation of all selected routes."
- Places List:** A red circle highlights the 'Car Track (Speed)' folder. A callout box says: "Check any of these boxes to populate points of interest on the map such as airports, rail lines, gas stations, etc."
- Map:** A red circle highlights a green arrow pointing to a route on the map. A callout box says: "box if you want to see the route".

The interface also shows the 'Earth Gallery' panel on the left, the 'Fly To' search bar, and the 'My Places' tree view. The map displays a 3D street view of a city with a blue and yellow route overlaid. The status bar at the bottom shows the imagery date as 11/14/2009 and coordinates 1994 34°07'15.86" N 117°49'44.50" W elev 902 ft.

Google Earth Cont'd

Google Earth lets you import the log data and save routes, add place marks (i.e. customer pick up locations, or other points of interest), add driving routes (to compare with the actual route taken, and it lets you save it all within Google Earth for easy and free data management!



You can view and download Google Earth tutorials and user guides here:

http://earth.google.com/support/bin/static.py?page=guide_toc.cs

SPECIFICATIONS

| | |
|-------------------|---|
| Image sensor | 1/4" CMOS Digital Sensor 1.3M pixels |
| Angle of View | BX1500/BX1500+ : 120° (horizontal: 88° , vertical: 65°) BX1500+ 170 : 170° (horizontal : 131° vertical : 96°) |
| Video resolution | 1280x960(SXVGA), 640x480(VGA) |
| Frames per second | 30 frames @ 640x480, 15frames @ 1280x960 |
| Recording | By continuous, By impact, By emergency button |
| Recording time | before 20 sec after 20 sec Continuous recording: Min 65min ~ Max 148hours |
| GPS | Internal GPS |
| G-Sensor | Internal 3-axis G-sensor |
| Memory | SD/SDHC flash memory card (support 4GB, 8GB, 16GB, 32GB) |
| RTC | Internal battery |
| Buzzer | Recording start, error |
| LED | 2 LED (Record, Overwrite) |
| Supper Capacitor | Enable recording last file and shut down |
| PC software | PC Viewer |
| Power input | 12V ~ 24V (cigarette plug) |
| Power consumption | 2.8W |
| Size/Weight | 80 mm X 50 Ø , 100g |
| Operation Temp. | -10°C~60°C |

RECORDING TIME TABLE

| Resolution | Quality | FPS | 4GB | 8GB | 16GB | 32GB |
|------------|---------|-----|----------|----------|----------|-----------|
| 1280x960 | SUPER | 1 | 278 min | 556 min | 19 hours | 37 hours |
| | | 2 | 225 min | 450 min | 15 hours | 30 hours |
| | | 3 | 189 min | 379 min | 13 hours | 25 hours |
| | | 5 | 144 min | 287 min | 10 hours | 19 hours |
| | | 10 | 90 min | 179 min | 6 hours | 12 hours |
| | | 15 | 65 min | 130 min | 4 hours | 9 hours |
| | HIGH | 1 | 556 min | 1111 min | 37 hours | 74 hours |
| | | 2 | 450 min | 901 min | 30 hours | 60 hours |
| | | 3 | 379 min | 758 min | 25 hours | 51 hours |
| | | 5 | 287 min | 575 min | 19 hours | 38 hours |
| | | 10 | 179 min | 358 min | 12 hours | 24 hours |
| | | 15 | 130 min | 260 min | 9 hours | 17 hours |
| 640x480 | SUPER | 1 | 556 min | 1111 min | 37 hours | 74 hours |
| | | 2 | 497 min | 995 min | 33 hours | 66 hours |
| | | 3 | 453 min | 907 min | 30 hours | 60 hours |
| | | 5 | 383 min | 766 min | 26 hours | 51 hours |
| | | 10 | 275 min | 551 min | 18 hours | 37 hours |
| | | 15 | 216 min | 431 min | 14 hours | 29 hours |
| | | 30 | 130 min | 260 min | 9 hours | 17 hours |
| | HIGH | 1 | 1111 min | 2222 min | 74 hours | 148 hours |
| | | 2 | 995 min | 1990 min | 66 hours | 133 hours |
| | | 3 | 907 min | 1814 min | 60 hours | 121 hours |
| | | 5 | 766 min | 1533 min | 51 hours | 102 hours |
| | | 10 | 551 min | 1102 min | 37 hours | 73 hours |
| | | 15 | 431 min | 863 min | 29 hours | 58 hours |
| | | 30 | 260 min | 521 min | 17 hours | 35 hours |

Technical Support & Warranty

TECHNICAL SUPPORT

For Technical Support, please contact your local distributor.

LIMITED WARRANTY

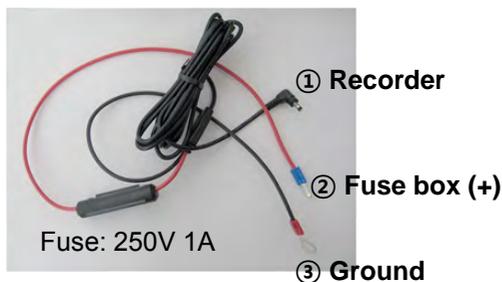
This product is supplied with 1 year warranty from date of sale. The Warranty excludes products:

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 Smarty BX series to the fuse box of your vehicle.



Connect (+) to the reserve fuse. It should be connected to power that is initiated with engine start. (i.e. radio)



The ground cable should be contacted to the car body/chassis.

Optional Accessory (Permanent Power Cable)

Model: LNB-100

The Locking cover can protect the SD card from unwanted removal or tampering.

LNB-100 includes: A locking cover, an end block with two-position lock, and barrel key. End block must be adhered with super glue.



Before



After

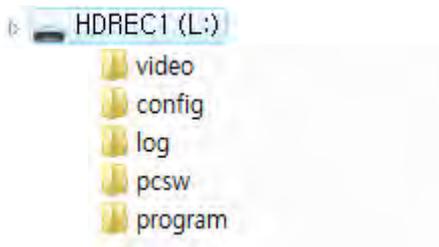
APPENDIX (Firmware Upgrade)

First, upgrade the BX1500/BX1500+ main unit,
Second, install new PC viewer software on your PC,
and then initialize the SD card using new PC viewer software.

[NOTE] To get the upgrade firmware, please contact your local distributor.
New firmware is released occasionally by D-Teg.

1. Preparing Firmware

Make [program] folder at SD root folder as below,



Copy “BX1500_X.X.X.bin” file in to the SD card [program] folder.

2. Upgrade BX1500/BX1500+

Insert the prepared SD card to BX1500 Series and turn on the power.

The Blue & Red LED will be quickly blink 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 upgrading.
If the upgrade fails, the “Smarty BX1500/BX1500+” unit should be
returned to your local distributor.**

Once the upgrading is finished, the unit will automatically turn off and on the power.

If BX1500 series records as normal, turn off the power.

Insert the SD card into your PC and initialize it using the software once
you have successfully tested the unit.

APPENDIX (Upgrade)

3. Uninstall the old version PC Viewer 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 initialize the SD card.

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

