

Smarty

Drive Partner for your Safety

USER GUIDE

Model: BX4000



VER 2.0.1
1st Edition

- *Thank you for purchasing this Drive Recorder.*
- *Before using the Drive Recorder, please ensure that you read and understand this USER GUIDE.*
- *Please store the USER GUIDE in an easily accessible location.*
- *Before connecting and installing this Drive Recorder, please refer to the appropriate instruction manual for proper operation.*

INFORMATION TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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

**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.

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.

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

You should have a set of the following items for each BX4000 order.

1. Smarty BX4000 unit



2. 4GB SD memory card

(The PC Viewer software is in the provided SD card.)



3. GPS Antenna module



4. Remote Controller



5. Audio/Video output cable



6. Power Cable



7. Camera input cable



8. Wire Splice clip (5pcs)



9. Sticker (double sided tape 1pc)

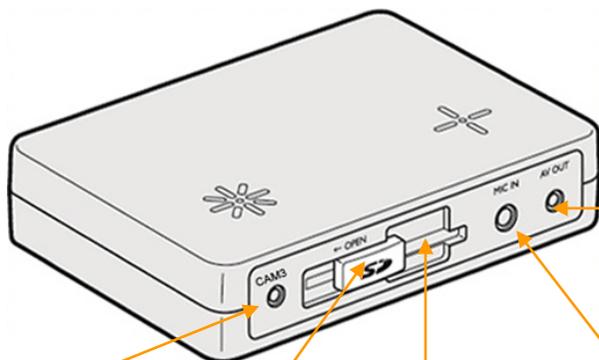


10. Velcro Sticker (1pc)



INTRODUCTION

FRONT



Audio/Video Output

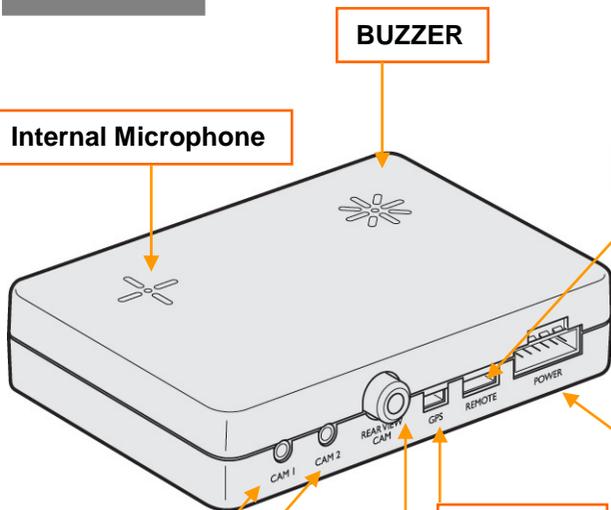
Camera 3 Input

SD Door

SD Slot

External MIC input

REAR



BUZZER

Internal Microphone

Remote Control Input

Camera 1, 2 Input

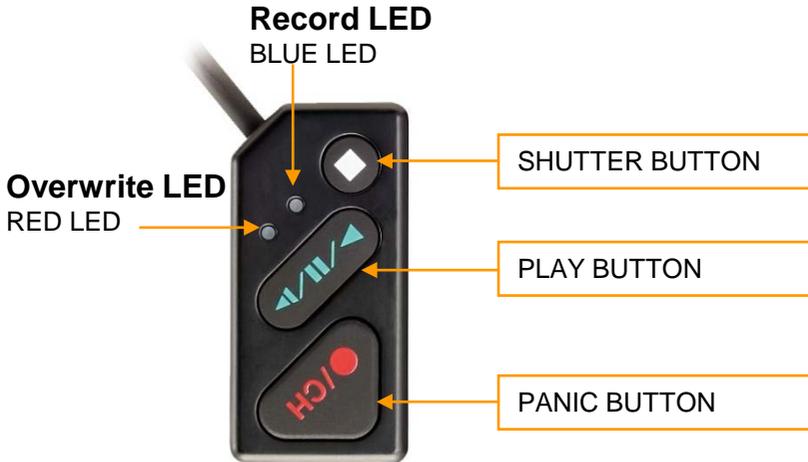
Rear View Camera 4 Input

GPS Input

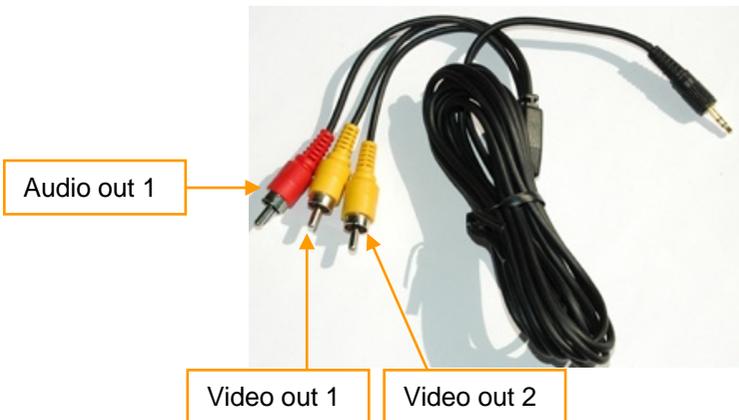
Power Input & Alarm (Car Signal) Input (Turn left, Turn right, Brake, Speed pulse)

INTRODUCTION

REMOTE CONTROLLER



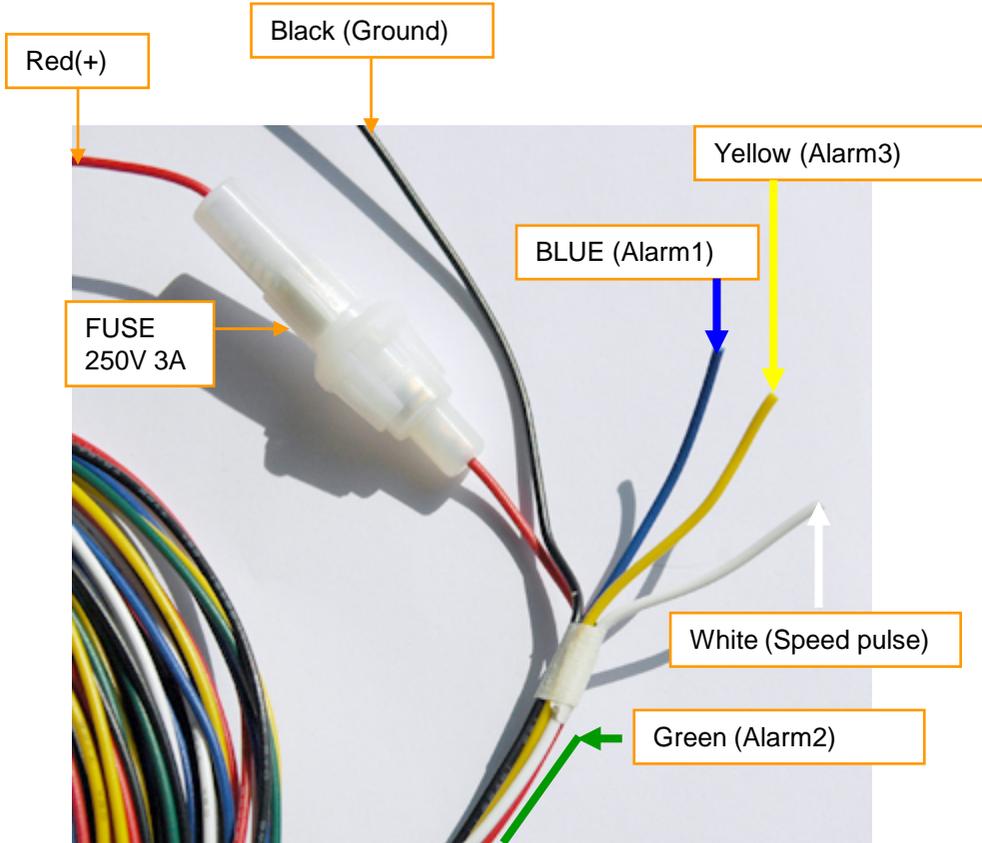
Audio Video Output Cable



[Note] The same screen will be shown through the Video out 1 & 2.

INTRODUCTION

Power & Car Signal Input



FUNCTION (MAIN UNIT)

Automatic start

Make sure that peripherals include cameras are properly connected.
Turn on the vehicle power, BX4000 will be automatically started. (Use the power cable provided.)

 Notice : The unit will not start recording immediately after the power is turned 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

The Event recording will be started automatically by Motion detection, Alarm1 to 3 or by the G-sensor level.

The Panic recording can be started by pressing the [PANIC] button.

Normal record (Continuous record)

The Normal(continuous) recording will be automatically started after power on. BX4000 will not make a separate event file during the continuous recording. It will mark the Event area as 'Alarm1~3', G-sensor, Motion detection or [PANIC] button in the continuous recording file, which can be easily searched for during playback.

Dual record (Event & Normal record)

If you set different record modes per camera, like camera1 set as Event record and camera2 set as Normal record, then camera1(Event record) will work according to the record setting for example 10frames per second recording. However camera2(Normal record)will record 1frame per second, if there is no event. If there is an Event, both cameras will record according to the record setting for example 10 frames per second recording.

Live screen on Monitor

BX4000 will display the live screen on the monitor.
The camera channel can be changed using the information OSD.
(Refer to page 13)

Playback in the car

Recorded files can be played back in the car.

PC Viewer Software

The software is pre-loaded on the SD card [pcsw] folder.

FUNCTION (MAIN UNIT)

SD Memory Card Format

Remove the power first. Press and hold the [PLAYBACK] & [PANIC] button. Then connect the power.

Press and hold the [PLAYBACK] & [PANIC] more than 2seconds after booting. Then SD card initialization will start.

Once complete, all video & log files will be deleted and the configurations will default to the factory settings.

 Notice : 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, BX4000 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 event recording.

RED LED (Overwriting)

The red LED will be turned on when start overwriting.

Buzzer

“Beep” sound will occur when event/panic recording starts (this can be turned off In the setting menu on the PC viewer, if required).

This also signals any system error.

VIDEO LOSS (warning)

“Beep” sound will occur continuously when video loss.

Check the camera and camera connection and turn off and on the unit to solve it. And make sure the number of cameras that you connect before turn on the unit.

The number of cameras can be set in the settings menu on the PC viewer.

OPERATION

1. Make sure that the power cable is properly connected and turn on the car power.
2. Blue LED & Red LED will turn on and slowly blinking simultaneously and then Blue LED will remain on. Blue LED light means BX4000 is now ready for the event recording and is started the Normal recording (Continuous recording).
3. The normal recording (Continuous recording) will be automatically started, if it set with your PC.
4. The event recording will automatically begin when triggered by Motion Detection, Alarm1 to 3 or by the G-sensor and will begin with one short “Beep” sound.
5. The panic recording can be started by pressing the [PANIC] button.

Removing the SD memory card

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

Inserting the SD memory card

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

System Error Buzzer

A “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]

OPERATION

INFORMATION OSD

Press [PLAY] button then the INFORMATION OSD (the summary of setting) will show up on the monitor as below,

	CAM1	CAM2	CAM3	CAM4
Activated	√	√	√	√
Record Mode	Normal	Normal	Event	Event
System : NTSC				Resolution : 720X480
Quality : Super				FPS : 5
Overwrite : ON				Audio : ON
G-Sensor Level : X:3, Y:3, Z:3				
G-Sensor Calibration : √				
Firmware Version : 2.0.1				
Current Time : 14:50:07 07 JUL 2011				

To change the live display channel, press [PANIC] button.

The INFORMATION OSD will be turned off automatically after 30 seconds.

To turn off the live view, press [PLAY] button or [SHUTTER] button.

LIVE VIEW

Turn on the BX4000 and press [PLAY] button to turn on the INFORMATION OSD (the summary of setting) . To change the live display channel, press [PANIC] button to select the camera. And then press [PLAY] or [SHUTTER] button to escape.

CAM 1 => CAM 2 => CAM 3 => CAM4 => 4 Cameras together



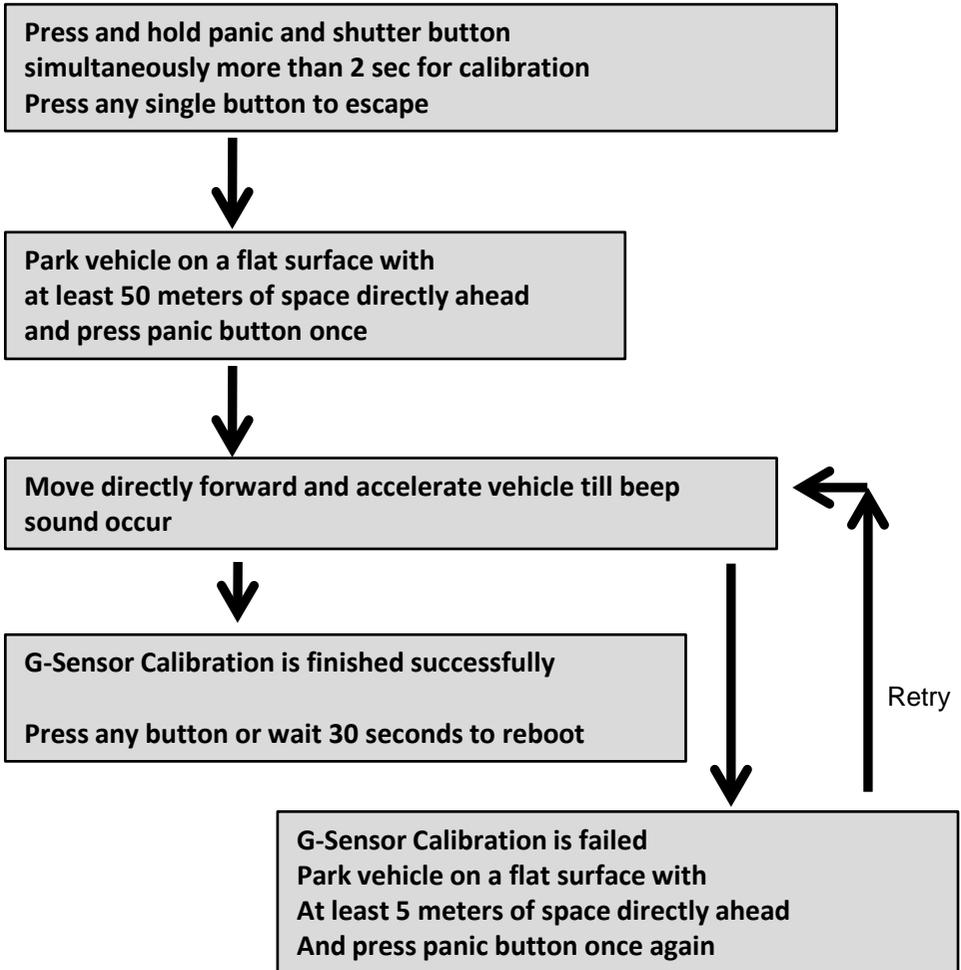
OPERATION

G-Sensor Calibration

G-Sensor Calibration is needed after installing the BX4000.

It detects the installed direction of the BX4000 for it to accurately record the journey direction.

Press and hold [PANIC] & [SHUTTER] button together and then power on. G-Sensor Calibration screen will be displayed.



This G-Sensor calibration is only needed at the first time the BX4000 is used.

OPERATION

PANIC RECORD BY PANIC BUTTON

The panic recording by [PANIC] button will start by pressing the [PANIC] button with one short “Beep” sound. Blue LED will be blinking during the panic recording.

BX4000 doesn't make a separate panic file during the continuous recording. It will mark the panic area by [PANIC] button in the continuous recording file which can be easily searched for during playback.

SNAPSHOT RECORD BY SHUTTER BUTTON

Press [SHUTTER] button.

Then BX4000 will take a snapshot of 1 image with 5seconds audio with one short “Beep” sound.

OPERATION

PLAYBACK

Press and hold [PLAY] button for more than 2seconds.
The latest recorded file will playback on the screen.

[WARNING] Recording cannot be done during playback.



Explanation of PLAYBACK control button

Channel change: Press [PANIC] button.

Move to the previous file: Press and hold [SHUTTER] & [PLAY] button.

Move to the next file: Press and hold [PANIC] & [PLAY] button.

PLAY/PAUSE: Press [PLAY] button.

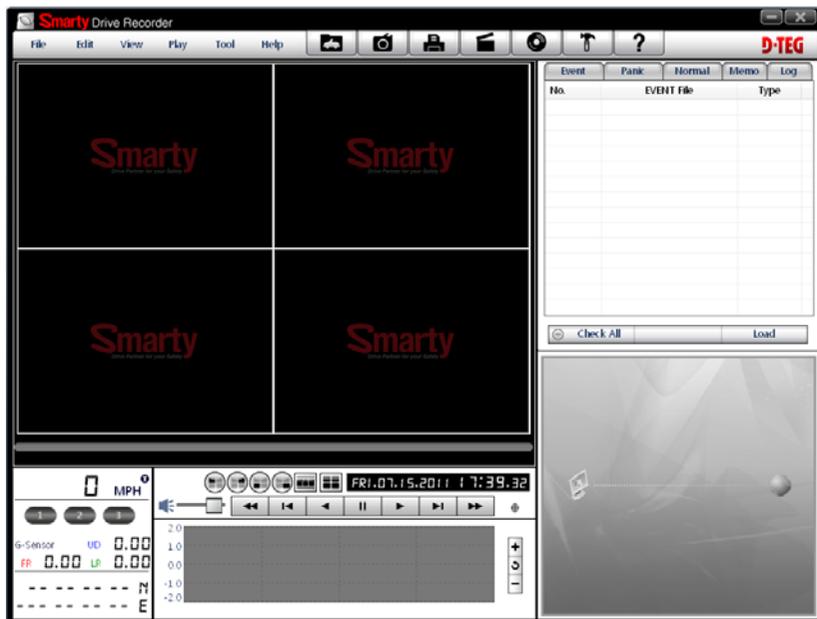
SLOW PLAY: Press [PLAY] button more than 1seconds.

Return to record mode: Press and hold [SHUTTER] button more than 2seconds.

Playback logic at the main unit.

Panic data	Event data	Normal data	Playback
(o)	(o)	(o)	Only Panic data playback
(o)	(o)	(x)	Only Panic data playback
(o)	(x)	(x)	Only Panic data playback
(x)	(o)	(o)	Only Event data playback
(x)	(o)	(x)	Event data playback
(x)	(x)	(o)	Normal data playback

BX4000 PC Viewer Guide



[PC SYSTEM REQUIREMENT]

Recommended PC specifications for PC Viewer software

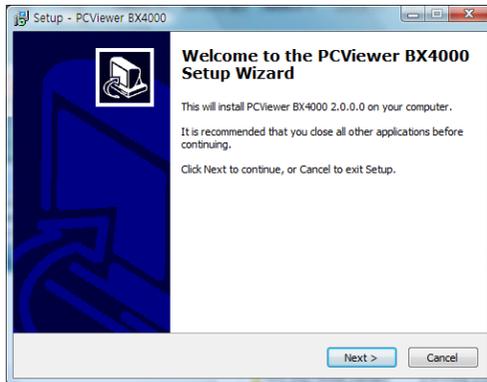
OS	Windows 2000, Windows XP Windows Vista, Windows 7
CPU	Pentium4 2.6GHz or higher
RAM	512MB or higher
Interface	SD Memory Card Reader
HDD Free space	Install 20MB or higher Backup 2GB or higher
Display	1,024 x 768 pixel/High Color(16bit) or higher

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

INSTALLING PROCEDURES

PC Viewer software is in the provided 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 "DRIVEREC4" drive and select [Open]
3. Double click [SETUP.EXE] in the [pcsw] folder.
4. Select the language and then follow the dialog box.



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



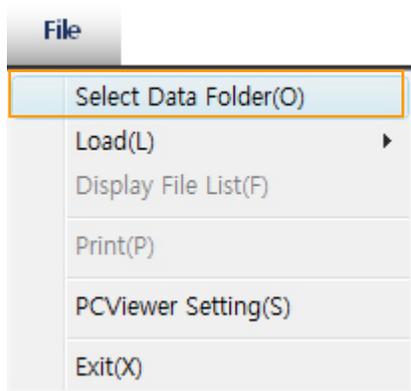
NOTE: To Un-install the "PC Viewer BX4000"

Open the "Control Panel"

Select [remove program] and remove [PC Viewer BX4000]

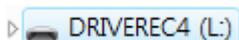
Connect SD memory card

1. Connect SD memory card in to the SD card reader.
2. Run “PC Viewer BX4000”
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.

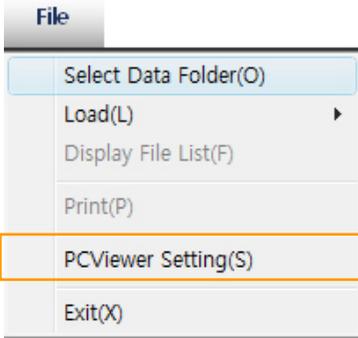


PC VIEWER SETTING

To set PC Viewer select [File] and then click" PC Viewer Setting"

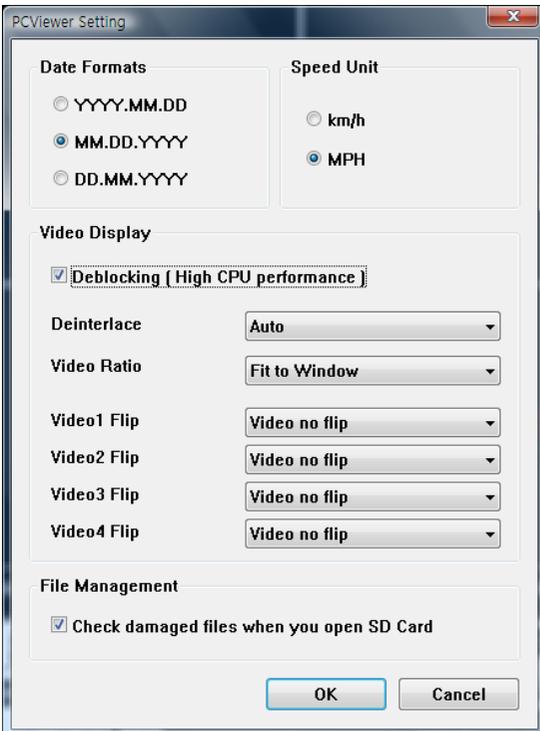
This setting is for the PC Viewer software itself.

To set the recorder, refer to page 27.

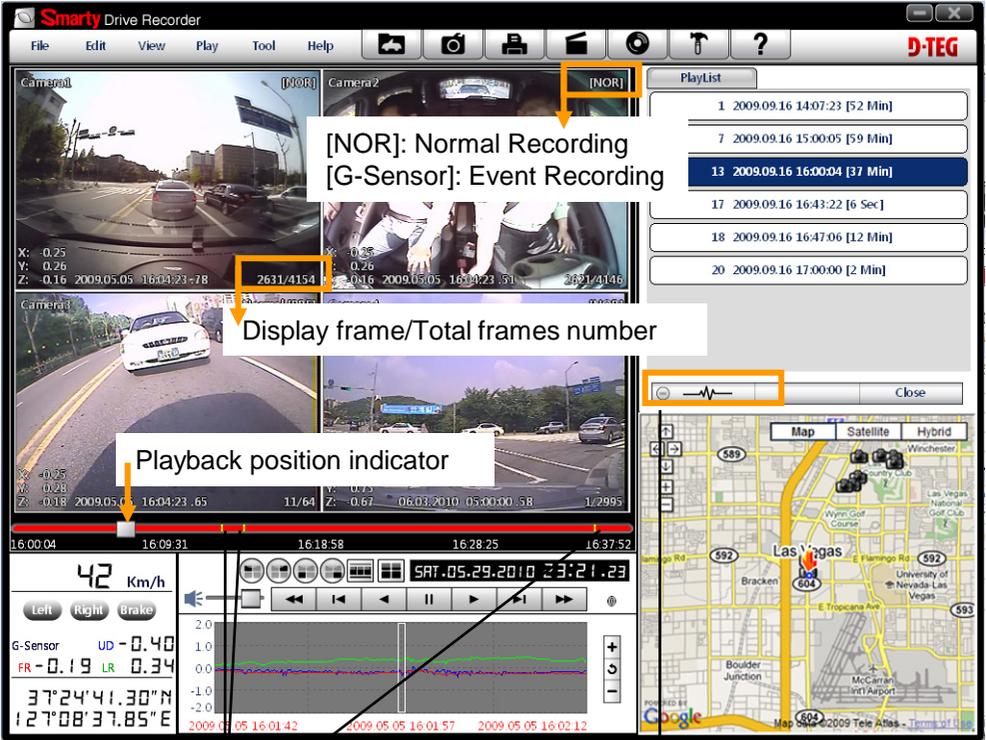


The 'date' formats and 'speed' unit will be set automatically according to the PC Windows setting. However it can be changed with this PC viewer setting menu.

To see the better quality playback pictures on your PC, check [Deblocking] box.

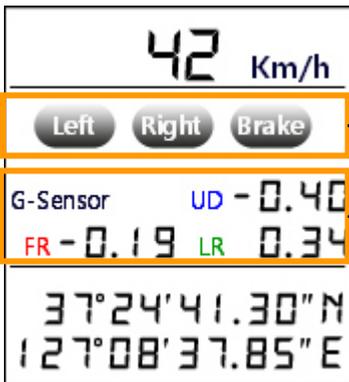


PLAYBACK SCREEN



The Yellow mark indicates there is an Event triggered by the G-sensor, Alarm1~3 or the [PANIC] button.

Event data search button is enabled when playing back Normal recorded files.



The 'icon name' can be changed in the setting menu.

Eg:



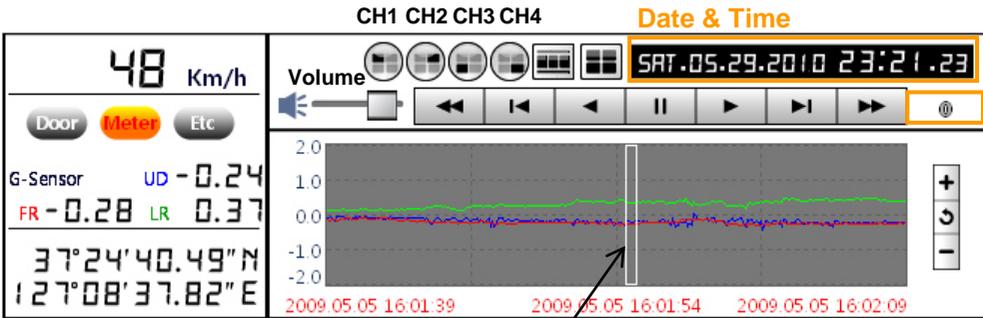
G-Sensor Data
 UD: Up/Down direction
 FR: Front/Rear direction
 LR: Left/Right direction

GPS location information(the north latitude, the east longitude)

PLAYBACK

6. Click  [PLAY] button for playback.

Playback speed 



The screenshot shows a playback interface with the following elements:

- Speedometer:** Displays 48 Km/h.
- Buttons:** Door, Meter, Etc.
- G-Sensor Data:** UD -0.24, FR -0.28, LR 0.37.
- Coordinates:** 37°24'40.49"N, 127°08'37.82"E.
- Channels:** CH1, CH2, CH3, CH4.
- Volume:** Control knob and buttons.
- Date & Time:** SAT.05.29.2010 23:21.23.
- Playback Controls:** Previous, Play, Next, and other navigation buttons.
- G-sensor Graph:** A waveform graph with a white vertical line indicating the current playback position. The x-axis shows timestamps: 2009.05.05 16:01:39, 2009.05.05 16:01:54, and 2009.05.05 16:02:09.
- Zoom Controls:** +, ↺, -.

Drag & Move the white line to move the playback position.

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

 Sing View (CH1, CH2, CH3, CH4)  Quad View

 4x4 Multi View (Thumb-nail function)

 Zoom In G-sensor graph
 Reset Zoom
 Zoom Out G-sensor graph

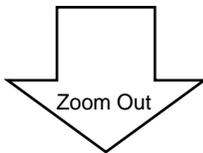
PLAYBACK

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 (Event Recording File)

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



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

To see the map, 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 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 is no route & camera icon on the map.

Thumb-nail Function

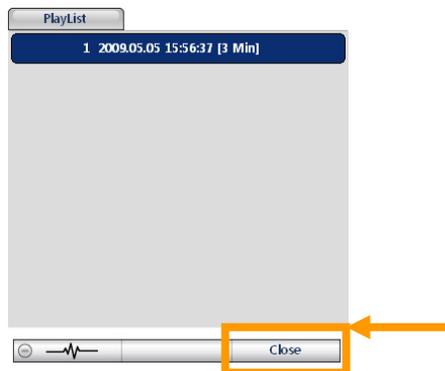
7. Click  button for 4x4 multi view (Thumb-nail function)



Click the thumb-nail image to change the playback position.

Click right button of mouse to go back to single/Quad image playback mode.

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



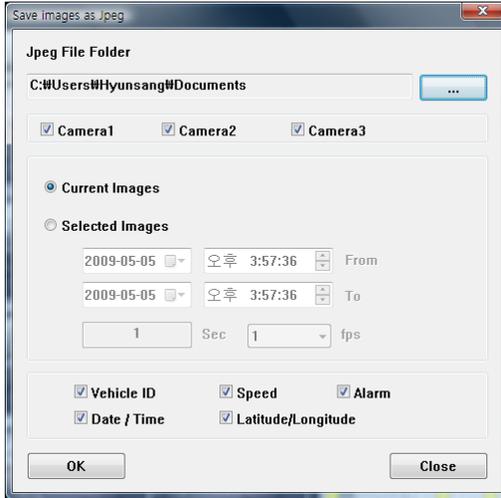
Click [Close] to finish the event playback. Then the [PlayList] window will be changed to the initial status.

Save JPG file & AVI file

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



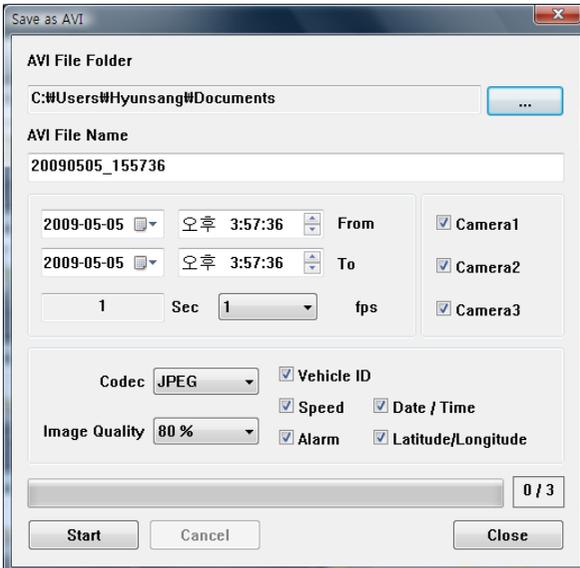
'Save Image' icon



Pause the playback and Click 'Save AVI' icon to make a AVI file.



'Save AVI' icon

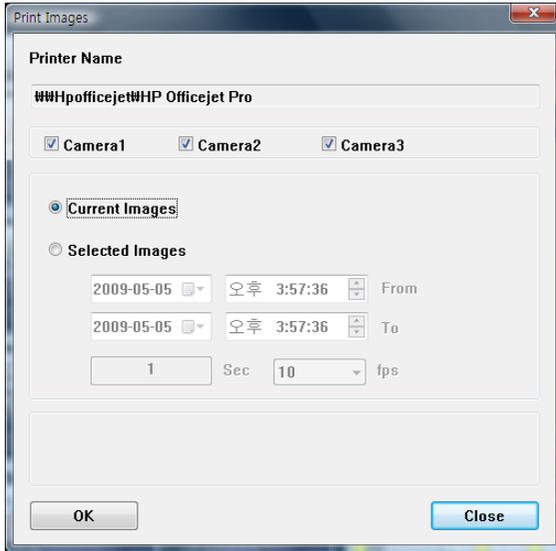


Print image

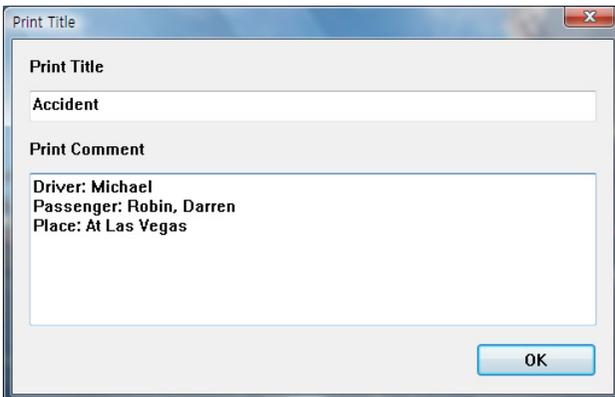
11. Pause the playback and click 'Print Image' icon.



Print image icon

A dialog box titled 'Print Images' with a close button in the top right. It contains a 'Printer Name' field with the text '##Hofficejet#HHP Officejet Pro'. Below this are three checked checkboxes for 'Camera1', 'Camera2', and 'Camera3'. There are two radio buttons: 'Current Images' (selected) and 'Selected Images'. Under 'Selected Images', there are date and time pickers for 'From' and 'To', both set to '2009-05-05' and '오후 3:57:36'. Below these are input fields for '1' and '10' with labels 'Sec' and 'fps' respectively. At the bottom are 'OK' and 'Close' buttons.

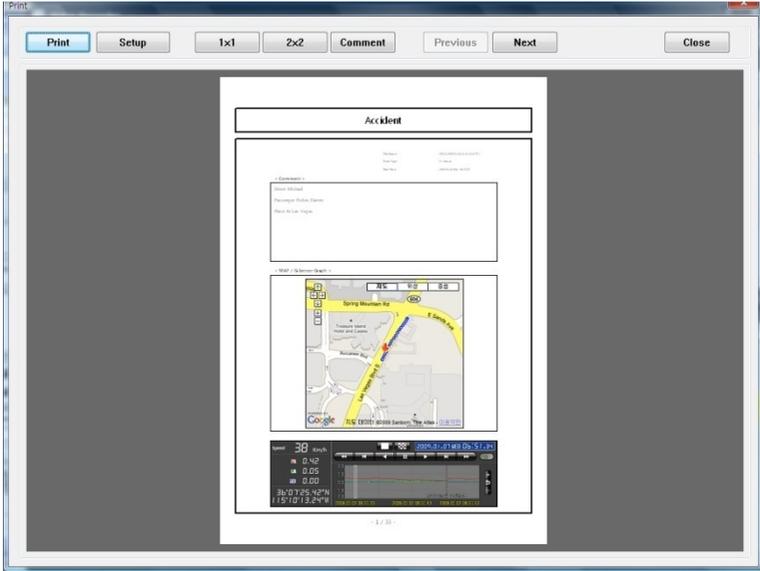
Input [Print Title] & [Print Comment] using Keyboard.

A dialog box titled 'Print Title' with a close button in the top right. It has a 'Print Title' label and a text input field containing the word 'Accident'. Below that is a 'Print Comment' label and a larger text area containing the text: 'Driver: Michael', 'Passenger: Robin, Darren', and 'Place: At Las Vegas'. At the bottom right is an 'OK' button.

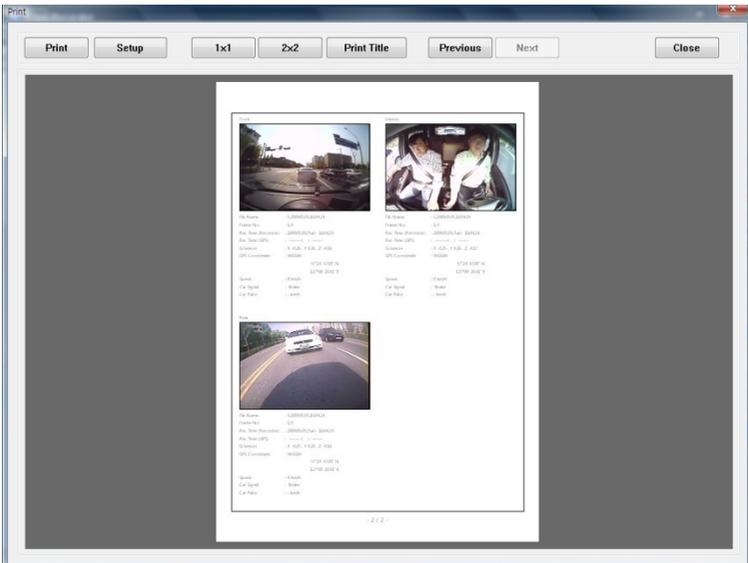
Total Print Comment window allows up to 7 lines total.

Make Report

12. Click [Print] button in the print preview windows for printing.
[Print Title] & [Print Comment] & G-sensor graph & map will be printed on the first page.



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



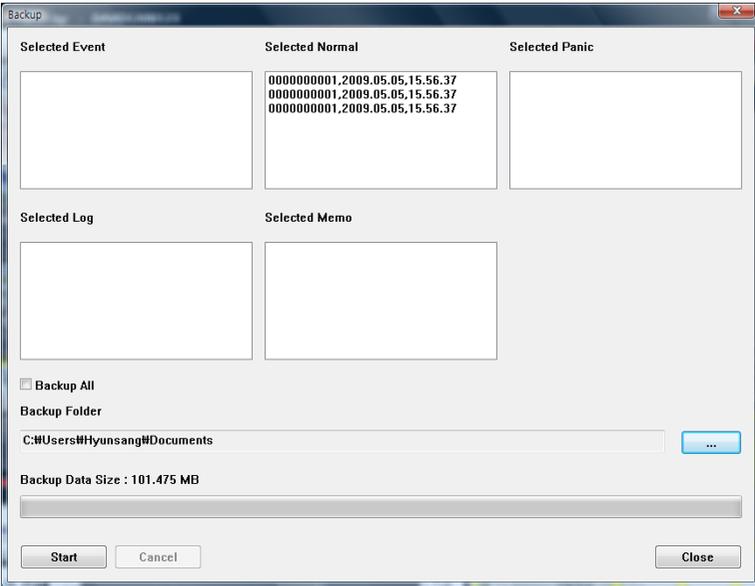
To print CH1~3 together select 1frame only.

Backup

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



[Backup] icon



Check & Load [Event], [Normal], [Panic] [Log] & [Memo] data first, before clicking the [Backup] icon. The selected files will appear in the lists in the Backup windows.

OR

Check [Backup All] and press [Start] button to backup all files.

Setting Drive Recorder

14. Click [Setting Drive Recorder] icon for setup.



[Setting Drive Recorder] icon

Setting

Camera

Camera1	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Motion	Normal Mode	Motion Sensitivity	3
Camera2	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Motion	Normal Mode		
Camera3	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Motion	Event Mode		
Camera4	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Motion	Normal Mode		

Record Audio

Alarm

Alarm1	<input type="checkbox"/> Use	<input type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Alarm1
Alarm2	<input type="checkbox"/> Use	<input type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Alarm2
Alarm3	<input type="checkbox"/> Use	<input type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Alarm3

Record

Resolution: 720 X 480 Fps: 5

Overwrite: Overwrite Quality: Super

PreEvent: 15 Sec PostEvent: 5 Sec

Max Number of Panic Button Record: 10

G-Sensor

Event Record

Simple Setting Mode

Sensitivity: 3

Trigger X Value: 3

Trigger Y Value: 3

Trigger Z Value: 3

System

Vehicle ID: []

Password: [] (1000 ~ 9999)

Search on system

Video Type: NTSC

Buzzer: On

Car Pulse Type: Reset

Date / Time

TimeZone : GMT 9 H 0 M

DST (Daylight Saving Time)

Manual Time Setting

7/21/2011 5:03:04 PM

Init SD Card Delete Record Data OK Cancel

Caution

Backup SD card data first, before clicking initialize SD card button OR before changing the Record Mode from Normal Mode to Event Mode or vice versa. All normal recording data or all event recording data in SD card will be automatically deleted to make a free space on the SD card. Once done, the old data cannot be recovered.

Initialize SD card : All data will be deleted and set the configuration of Drive Recorder will default to the factory settings.

Record Mode Change: All normal recording data or all event recording data in SD card will be automatically deleted to make a free space at SD.

Setting Drive Recorder

Camera			
Camera1	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Motion	Normal Mode
Camera2	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Motion	Normal Mode
Camera3	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Motion	Event Mode
Camera4	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Motion	Normal Mode
<input checked="" type="checkbox"/> Record Audio			
			Motion Sensitivity: 3

To record Camera2 or Camera3, Camera4 check "Use" box.

To record Audio, check "Record Audio" box.

To use Motion Detection as an Event, check "Motion" box per camera.

Record Mode	Normal Mode: Continuous recording will automatically start after booting the BX4000. Event Mode: Recording by Motion Detection, G-sensor, Alarm1~3 or [PANIC] button.
Motion Sensitivity	Select Motion Detection Sensitivity from 1 to 5. 5 (High): The most sensitive 4 3 (middle): Default value 2 1 (LOW): Insensitive

To record by Motion Detection

Check Motion per camera and set Record Mode as Event Mode.

Dual Recording (If you set different record modes per camera)

Like camera1 set as Event record and camera2 set as Normal record, then camera1(Event record) will work according to the record setting for example 10frames per second recording, when there is a event. However camera2(Normal record)will record 1frame per second, if there is no event. If there is an Event, both cameras will record according to the record setting for example 10 frames per second recording

Setting Drive Recorder

Record

Resolution Fps

Overwrite Quality

PreEvent PostEvent Sec

Max Number of Panic Button Record

Resolution	720x480, 720x240
Frame Rate	1 Camera supports 1~30 fps@ 720x480, 1~30 fps @ 720x240 2 Cameras supports 1~15 fps @ 720x480, 1~30 fps @ 720x240 3 Cameras supports 1~10 fps @ 720x480, 1~15 fps @ 720x240 4 Cameras supports 1 ~ 5 fps @ 720x480, 1~15 fps @ 720x240
Quality(4 level)	Super (Large file size, but good picture quality) Low (Small file size, but low picture quality)
Pre Event Post Event	Pre-record/Post-record time can be set here. Pre-record time is 5~30sec, if total frame rate is below 10fps @ 720x480. Pre-record time is 5~15sec, if total frame rate is 30fps @ 720x480. Post-record time is 5~300sec, if total frame rate is below 20fps @ 720x480. Post-record time is 5~15sec, if total frame rate is 30fps @ 720x480.
Overwrite	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.)

If you set Event mode only, the Max Number of Panic button Record will be 5~500.

If you set different record modes per camera (Normal Mode and Event Mode), the Max Number of Panic button Record will be 5~10.

Setting Drive Recorder

To record the car signal with video, set the Alarm configuration as below,

Alarm

Alarm1	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Left
Alarm2	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Brake
Alarm3	<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Right

To use the Alarm as an Event trigger, (i.e: so Event recording will start when a door is open or Meter is on) set the Alarm configuration as below,

Alarm

Alarm1	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Door
Alarm2	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	Meter
Alarm3	<input checked="" type="checkbox"/> Use	<input checked="" type="checkbox"/> Event Record	<input checked="" type="checkbox"/> Trigger High	etc

G-Sensor setting

If G-sensor sensitivity value is too high like 5, 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 no detect a notable incident.

So, sensitivity should be set in consideration of a vehicle's suspension, condition and also the road condition.

G-Sensor

Event Record

Simple Setting Mode

Sensitivity

Trigger X Value

Trigger Y Value

Trigger Z Value

If you don't want to record an Event triggered by G-sensor, un-check Event Record box.

Setting Drive Recorder

System

Vehicle ID

Password (1000 ~ 9999)

Buzzer Video Type

Search on system

Car Pulse Type

Vehicle ID	Type in your Vehicle ID
Password	Enter 4 numbers from 1000 to 9999 as a password [Search on system] function (Playback on a car) will not work after set the password.
Buzzer	“Beep” sound ON/OFF when Event recording starts
Video Type	This should be set by Camera Video type.
Search on system	To use the playback function on the recorder.

Date / Time

TimeZone : GMT H M

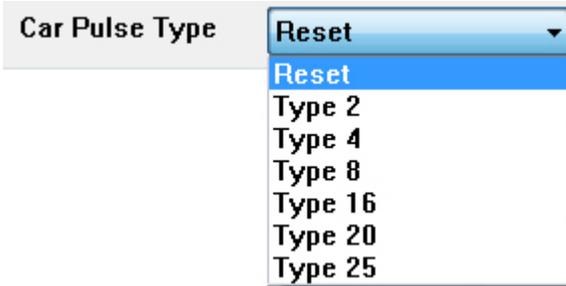
DST (Daylight Saving Time)

Manual Time Setting

To record the exact time, this time zone setting is important.

Once you set the time zone, automatically synchronize time using GPS time. However Manual time setting is also available.

Setting Drive Recorder



Before “Car Pulse Type”, connect White (Speed pulse)cable to speed pulse line at your car. Please ask the speed pulse line to your car maker or car repair shop.

To receive the speed from car using the White (Speed pulse) line, select the speed pulse type of your car.

If you don't know the speed pulse type of your car, select “Reset” and drive more than 30minutes.

Then BX4000 will compare the speed pulse and GPS speed and automatically set your car pulse type.

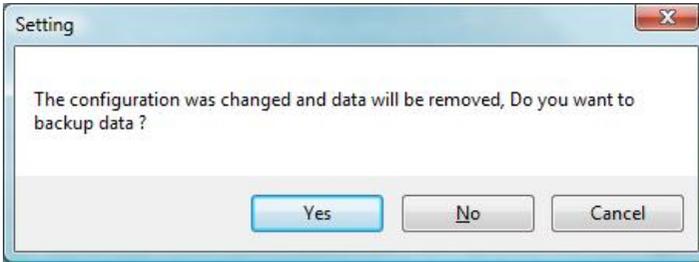
Setting Drive Recorder



Initialize SD card : All date will be deleted and set the configuration of Drive Recorder will default to the factory settings.

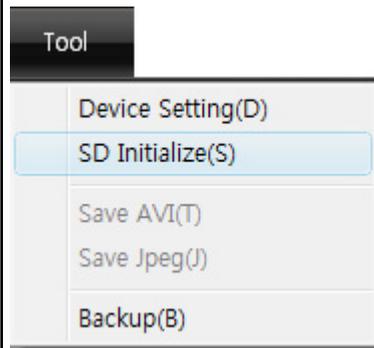
Delete Record Data : All date will be deleted.

⚠ 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.

NEW SD Memory card initializing should be done using Tool menu.



STEP1. Insert new SD memory card into the PC.

STEP2. Run "PC Viewer BX4000"

STEP3. Select [Tool] and then click [SD Initialize]

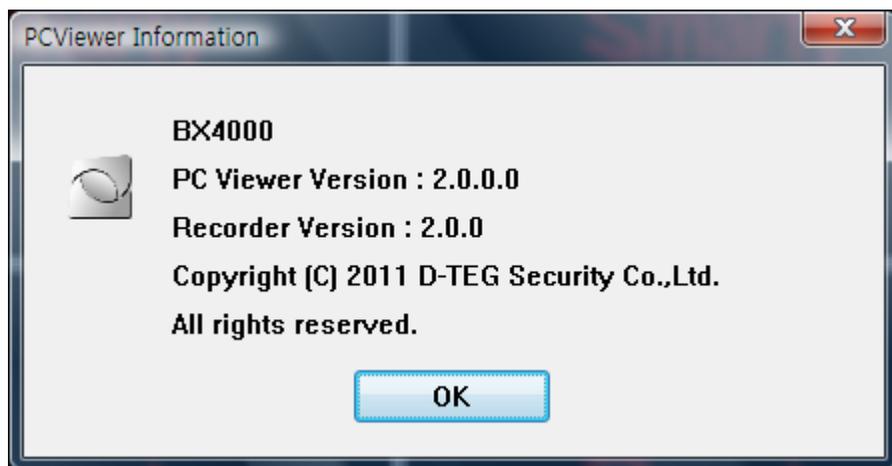
We recommend the [SD initialize] at least once per month to prevent the BX4000 from any software errors.

Setting Drive Recorder

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



About icon



LOG FILE PLAYBACK

16. Select [LOG] tab 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 can not exceed 48MB. The unit overwrites the oldest data when 48MB is reached. Using this log data, we can use the data sorting function to help find specific data (for example, to find all the times when the vehicle was travelling at more than 80mph(or 80km).

The screenshot displays the Smarty Drive Recorder software interface. At the top, there is a menu bar (File, Edit, View, Play, Tool, Help) and a toolbar with various icons. The main window is divided into several sections:

- Top Left:** A camera view showing the driver's perspective from the vehicle.
- Top Center:** A table listing log events with columns for No., DATE TIME, and Event Type. The table contains 8 rows of data.
- Top Right:** A table for selecting log files to load, with columns for No., LOG File, and Duration. Two files are listed and checked.
- Middle Left:** A panel showing vehicle status information such as DATE TIME, latitude, longitude, speed, altitude, and satellite count.
- Middle Center:** A "Search Log" panel with a search button and input fields for "GPS Speed over point" (60 Km/h) and "G-Sensor X value over" (0.40). There are also checkboxes for "G-Sensor Y value over" and "G-Sensor Z value over".
- Middle Right:** A "G-sensor graph" showing a waveform of sensor data over time.
- Bottom Left:** A speedometer showing 18 km/h and a G-sensor graph for a specific time interval.
- Bottom Right:** A map view showing the vehicle's location on a street (Las Vegas Blvd S).

Annotations with arrows point to the "Search button", "Input sorting data" (the search input fields), and "G-sensor graph".

GPS speed, G sensor X value, G sensor Y value, G sensor Z value data can be used to narrow a search for journey information. The small check box at right side of each value should be ticked before the data for search is inputted. If any recorded video data matches the search query, a list will show up with [Switch] or [G Sensor] indicators to show how the recording was triggered.

- G sensor X value: Front/Back movement (like a harsh brake or quick start)
- G sensor Y value: Left/Right movement (like a harsh turn)
- G sensor Z value: Up/Down movement (like a bump or depression)

GPS LOG TO KML CONVERTER (for Google Earth)

Google Earth icon

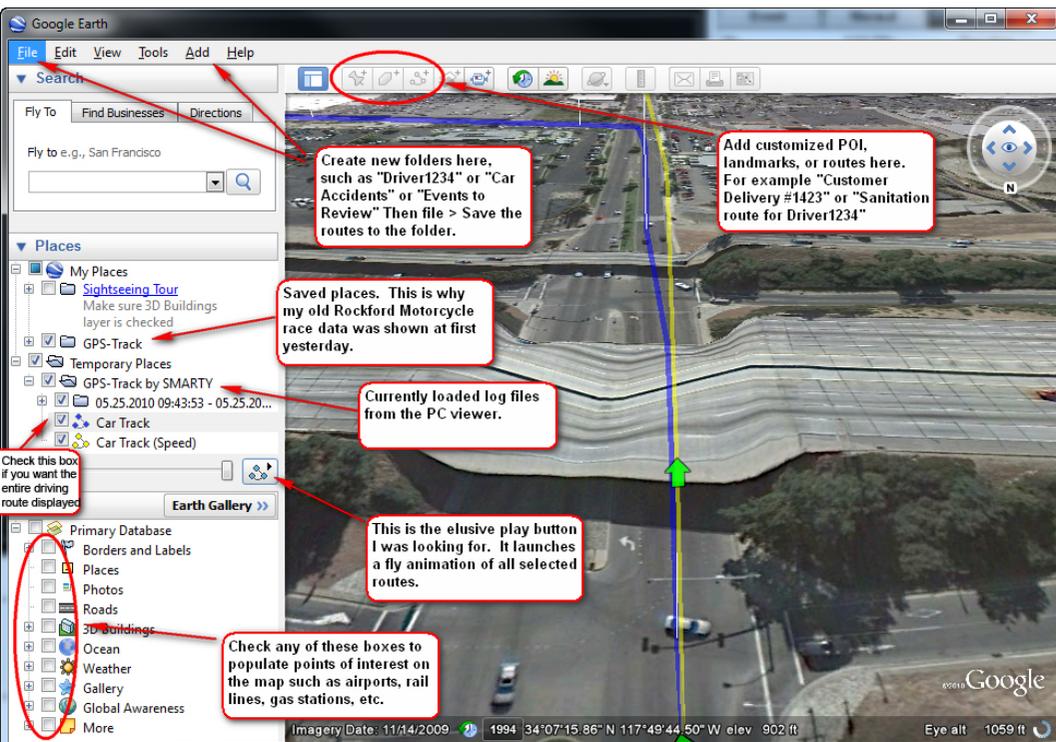
To see the whole route on Google Earth, select a log file and click Google Earth button.

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

STEP2. Check the log file

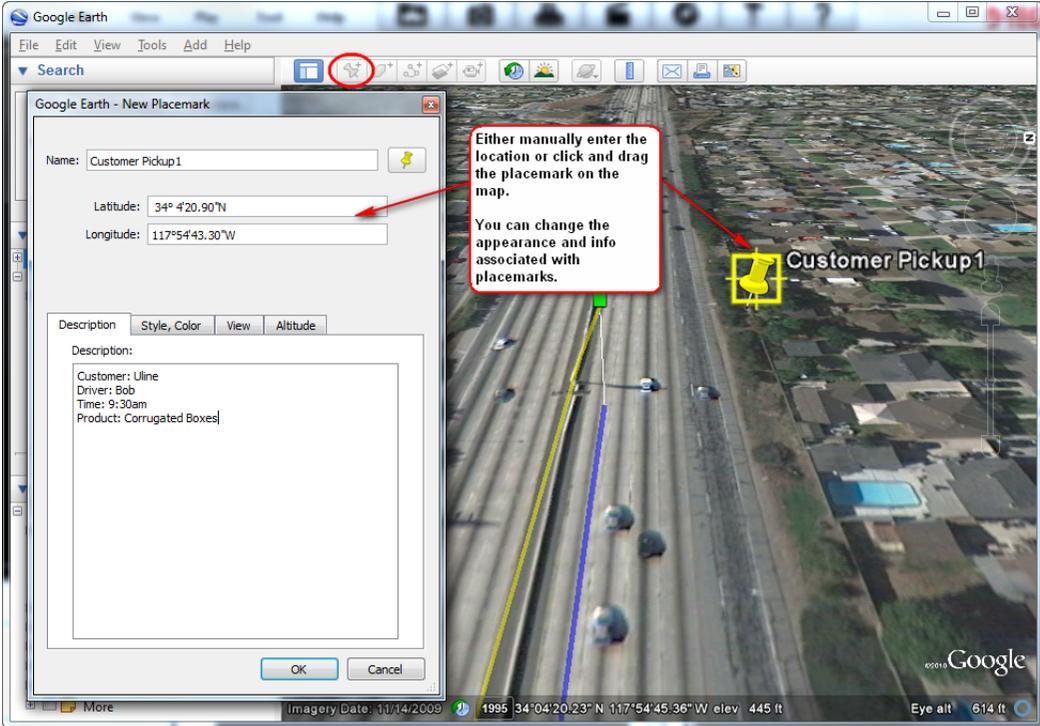
STEP3. Click Google Earth button

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



GPS LOG TO KML CONVERTER (for Google Earth)

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

Recording / Storage Time Table (NTSC)

Note: This is a guideline only. Actual results may vary depending on a variety of factors (Video signal, image, etc.)

1 Camera Continuous Recording

Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x480 (D1)	High	30	2 hours	4 hours	9 hours	18 hours	720x480 (D1)	Low	30	3 hours	5 hours	11 hours	22 hours
		15	4 hours	8 hours	16 hours	32 hours			15	5 hours	10 hours	20 hours	40 hours
		10	6 hours	11 hours	22 hours	44 hours			10	7 hours	14 hours	27 hours	55 hours
		5	9 hours	17 hours	34 hours	69 hours			5	11 hours	22 hours	44 hours	89 hours
		3	13 hours	26 hours	52 hours	105 hours			3	15 hours	30 hours	59 hours	119 hours
		2	18 hours	36 hours	71 hours	142 hours			2	18 hours	36 hours	71 hours	142 hours
720x240 (Half D1)	High	1	16 hours	32 hours	64 hours	127 hours	720x240 (Half D1)	Low	1	22 hours	44 hours	89 hours	178 hours
		30	4 hours	9 hours	18 hours	36 hours			30	5 hours	11 hours	22 hours	43 hours
		15	8 hours	16 hours	32 hours	64 hours			15	10 hours	20 hours	40 hours	79 hours
		10	11 hours	22 hours	44 hours	87 hours			10	14 hours	27 hours	55 hours	110 hours
		5	17 hours	34 hours	69 hours	137 hours			5	22 hours	44 hours	89 hours	178 hours
		3	22 hours	45 hours	89 hours	178 hours			3	30 hours	59 hours	119 hours	237 hours
		2	26 hours	52 hours	105 hours	210 hours	2	36 hours	71 hours	142 hours	285 hours		
		1	32 hours	63 hours	127 hours	254 hours	1	44 hours	89 hours	178 hours	356 hours		

2 Cameras Continuous Recording

Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x480 (D1)	High	15	2 hours	4 hours	8 hours	16 hours	720x480 (D1)	Low	15	2 hours	5 hours	10 hours	20 hours
		10	3 hours	6 hours	11 hours	22 hours			10	3 hours	7 hours	14 hours	27 hours
		5	4 hours	9 hours	17 hours	34 hours			5	6 hours	11 hours	22 hours	44 hours
		3	6 hours	11 hours	22 hours	45 hours			3	7 hours	15 hours	30 hours	59 hours
		2	7 hours	13 hours	26 hours	52 hours			2	9 hours	18 hours	36 hours	71 hours
		1	8 hours	16 hours	32 hours	64 hours			1	11 hours	22 hours	44 hours	89 hours
720x240 (Half D1)	High	15	4 hours	8 hours	16 hours	32 hours	720x240 (Half D1)	Low	15	5 hours	10 hours	20 hours	40 hours
		10	5 hours	11 hours	22 hours	44 hours			10	7 hours	14 hours	27 hours	55 hours
		5	9 hours	17 hours	34 hours	69 hours			5	11 hours	22 hours	44 hours	89 hours
		3	11 hours	22 hours	45 hours	89 hours			3	15 hours	30 hours	59 hours	119 hours
		2	13 hours	26 hours	52 hours	105 hours			2	18 hours	36 hours	71 hours	142 hours
		1	16 hours	32 hours	63 hours	127 hours			1	22 hours	44 hours	89 hours	178 hours

3 Cameras Continuous Recording

Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x480 (D1)	High	10	2 hours	4 hours	7 hours	15 hours	720x480 (D1)	Low	10	2 hours	5 hours	9 hours	18 hours
		5	3 hours	6 hours	12 hours	23 hours			5	4 hours	7 hours	15 hours	30 hours
		3	4 hours	7 hours	15 hours	30 hours			3	5 hours	10 hours	20 hours	40 hours
		2	4 hours	9 hours	18 hours	35 hours			2	6 hours	12 hours	24 hours	47 hours
		1	5 hours	11 hours	21 hours	42 hours			1	7 hours	15 hours	30 hours	59 hours
720x240 (Half D1)	High	10	4 hours	7 hours	15 hours	29 hours	720x240 (Half D1)	Low	10	5 hours	9 hours	18 hours	37 hours
		5	6 hours	11 hours	23 hours	46 hours			5	7 hours	15 hours	30 hours	59 hours
		3	7 hours	15 hours	30 hours	59 hours			3	10 hours	20 hours	40 hours	79 hours
		2	9 hours	17 hours	35 hours	70 hours			2	12 hours	24 hours	47 hours	95 hours
		1	11 hours	21 hours	42 hours	85 hours			1	15 hours	30 hours	59 hours	119 hours

4 Cameras Continuous Recording

Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x480 (D1)	High	5	2 hours	4 hours	9 hours	17 hours	720x480 (D1)	Low	5	3 hours	7 hours	14 hours	27 hours
		3	3 hours	6 hours	11 hours	22 hours			3	4 hours	7 hours	15 hours	30 hours
		2	3 hours	7 hours	13 hours	26 hours			2	4 hours	9 hours	18 hours	36 hours
		1	4 hours	8 hours	16 hours	32 hours			1	6 hours	11 hours	22 hours	44 hours
720x240 (Half D1)	High	5	4 hours	9 hours	17 hours	34 hours	720x240 (Half D1)	Low	5	7 hours	14 hours	27 hours	55 hours
		3	6 hours	11 hours	22 hours	45 hours			3	7 hours	15 hours	30 hours	59 hours
		2	7 hours	13 hours	26 hours	52 hours			2	9 hours	18 hours	36 hours	71 hours
		1	8 hours	16 hours	32 hours	64 hours			1	11 hours	22 hours	44 hours	89 hours

Recording / Storage Time Table (PAL)

Note: This is a guideline only. Actual results may vary depending on a variety of factors (Video signal, image, etc.)

1 Camera Continuous Recording													
Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x576 (D1)	High	25	3 hours	5 hours	10 hours	21 hours	720x576 (D1)	Low	25	3 hours	6 hours	13 hours	25 hours
		12	5 hours	10 hours	19 hours	38 hours			12	6 hours	12 hours	24 hours	47 hours
		8	6 hours	13 hours	26 hours	51 hours			8	8 hours	16 hours	32 hours	65 hours
		4	10 hours	19 hours	39 hours	78 hours			4	13 hours	25 hours	51 hours	102 hours
		2	13 hours	26 hours	52 hours	105 hours			2	18 hours	36 hours	71 hours	142 hours
720x288 (Half D1)	High	1	16 hours	32 hours	63 hours	127 hours	720x288 (Half D1)	Low	1	22 hours	44 hours	89 hours	178 hours
		25	5 hours	10 hours	21 hours	42 hours			25	6 hours	13 hours	25 hours	51 hours
		12	10 hours	19 hours	38 hours	76 hours			12	12 hours	24 hours	47 hours	95 hours
		8	13 hours	26 hours	51 hours	102 hours			8	16 hours	32 hours	65 hours	129 hours
		4	19 hours	39 hours	78 hours	155 hours			4	25 hours	51 hours	102 hours	203 hours
		2	26 hours	52 hours	105 hours	210 hours	2	36 hours	71 hours	142 hours	285 hours		
		1	32 hours	63 hours	127 hours	254 hours	1	44 hours	89 hours	178 hours	356 hours		

2 Cameras Continuous Recording													
Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x576 (D1)	High	12	2 hours	5 hours	10 hours	19 hours	720x576 (D1)	Low	12	3 hours	6 hours	12 hours	24 hours
		8	3 hours	6 hours	13 hours	26 hours			8	4 hours	8 hours	16 hours	32 hours
		4	5 hours	10 hours	19 hours	39 hours			4	6 hours	13 hours	25 hours	51 hours
		2	7 hours	13 hours	26 hours	52 hours			2	9 hours	18 hours	36 hours	71 hours
		1	8 hours	16 hours	32 hours	63 hours			1	11 hours	22 hours	44 hours	89 hours
720x288 (Half D1)	High	12	5 hours	10 hours	19 hours	38 hours	720x288 (Half D1)	Low	12	6 hours	12 hours	24 hours	47 hours
		8	6 hours	13 hours	26 hours	51 hours			8	8 hours	16 hours	32 hours	65 hours
		4	10 hours	19 hours	39 hours	78 hours			4	13 hours	25 hours	51 hours	102 hours
		2	13 hours	26 hours	52 hours	105 hours			2	18 hours	36 hours	71 hours	142 hours
		1	16 hours	32 hours	63 hours	127 hours			1	22 hours	44 hours	89 hours	178 hours

3 Cameras Continuous Recording													
Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x576 (D1)	High	8	2 hours	4 hours	9 hours	17 hours	720x576 (D1)	Low	8	3 hours	5 hours	11 hours	22 hours
		4	3 hours	6 hours	13 hours	26 hours			4	4 hours	8 hours	17 hours	34 hours
		2	4 hours	9 hours	17 hours	35 hours			2	6 hours	12 hours	24 hours	47 hours
		1	5 hours	11 hours	21 hours	42 hours			1	7 hours	15 hours	30 hours	59 hours
		8	4 hours	9 hours	17 hours	34 hours			8	5 hours	11 hours	22 hours	43 hours
720x288 (Half D1)	High	4	6 hours	13 hours	26 hours	52 hours	720x288 (Half D1)	Low	4	8 hours	17 hours	34 hours	68 hours
		2	9 hours	17 hours	35 hours	70 hours			2	12 hours	24 hours	47 hours	95 hours
		1	11 hours	21 hours	42 hours	85 hours			1	15 hours	30 hours	59 hours	119 hours

4 Cameras Continuous Recording													
Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB	Resolution	Quality	FPS per Camera	4GB	8GB	16GB	32GB
720x576 (D1)	High	4	2 hours	5 hours	10 hours	19 hours	720x576 (D1)	Low	4	3 hours	6 hours	13 hours	25 hours
		2	3 hours	7 hours	13 hours	26 hours			2	4 hours	9 hours	18 hours	36 hours
		1	4 hours	8 hours	16 hours	32 hours			1	6 hours	11 hours	22 hours	44 hours
720x288 (Half D1)	High	4	5 hours	10 hours	19 hours	39 hours	720x288 (Half D1)	Low	4	6 hours	13 hours	25 hours	51 hours
		2	7 hours	13 hours	26 hours	52 hours			2	9 hours	18 hours	36 hours	71 hours
		1	8 hours	16 hours	32 hours	63 hours			1	11 hours	22 hours	44 hours	89 hours

Buzzer / LED specification

* Buzzer specification

Condition	Buzzer No.	Buzzer On	Buzzer Off
Event	1	1 sec	-
SHUTTER(Snap shot)	1	200 msec	-
Press button and then changed mode	1	200 msec	-
SD card fail	continuously Stop by pressing [PANIC] button	500 msec	500 msec
SD card full at [One time] record mode	continuously	2 sec	2 sec

* LED specification

Status		Blue LED	Red LED
Power on		ON	ON
Bootling		ON/OFF	ON/OFF
Before Overwriting	Pre Event recording	ON	OFF
	Continuous recording	ON/OFF	OFF
	Event recording	Quickly	OFF
	Event recording during continuous recording mode. (5seconds)	ON/OFF Quickly	OFF
	SHUTTER recording	ON/OFF Quickly	OFF
During Overwriting	Pre Event recording	ON	ON
	Continuous recording	ON/OFF	ON
	Event recording	Quickly	ON
	Event recording during continuous recording mode. (5seconds)	ON/OFF Quickly	ON
	SHUTTER recording	ON/OFF Quickly	ON
One Time record mode (When SD card full)		OFF	ON/OFF Slowly
During Playback OSD menu		ON/OFF	ON/OFF
SD Card fail		ON/OFF Slowly	ON/OFF Slowly

SPECIFICATION

Model: BX4000

Video In	CH1- 5V camera in, CH2- 5V camera in, CH3- 5V camera in, CH4- camera in
Audio In	1CH (Internal / External Microphone)
AV Out	1 Video out, 1 Audio out
Continuous record Event record	NTSC: 720x480 (30fps) 720x240 (60fps) PAL: 720x576 (25fps) 720x288 (50fps)
Recording time	2hours ~ 356hours (14days 20hours)
Shutter record	Still Image + Audio (5 sec)
Main memory	4GB SDHC (support 32GB SDHC)
GPS	External GPS Module
G Sensor	Internal 3-axis G-Sensor
RTC	Internal battery
Car Signal	Brake, Left Turn, Right Turn, Speed Pulse
Alarm Input	3 (Door, Meter, etc.)
Compression	MPEG4 (Continues recording) MJPEG (Event recording)
Remote controller	PANIC button, PLAYBACK button, SHUTTER button
LED	2 (Red/Blue)
Analysis Software	PC Viewer (support Google Earth)
Super Capacitor	Enable recording last file and shut down
Power consumption	8.3W (when recording 4cameras)
Size/Weight	70mm X 99 mm X 21mm, 100g,

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 Item

<p>DTR-100</p> 	<p>DC 5V, CMOS camera for BX4000 1/4" CMOS Digital Sensor 310K pixels Angle of View: 170° [horizontal(131°) vertical (96 °)] Effective Pixel: 648 (H) x 488 (V) (NTSC/PAL) Video out: 1.0 Vp-p (Composite) Min. Illumination: 1 lux Operating Temperature: -20°C ~ 60°C Input Voltage: 5V, Power consumption: 0.5W 30mm x 35mm x 25mm, 50g, Wire : L=5000±10mm</p>
<p>STR-100</p> 	<p>DC 5V, CCD camera for BX4000 1/3" Sony Super HAD CCD II Angle of View: 90° Effective Pixel: 510(H) X 492(V) (NTSC), 500(H) X 582(V) (PAL) Video out: 1.0 Vp-p (Composite) Min. Illumination: 0.1 lux Operating Temperature: -20°C ~ 60°C Input Voltage: 5V, Power consumption: Max 200mA 43mm x 38mm x 35mm, 70g, Wire : L=5000±10mm</p>
<p>IR Camera STR-100IR</p> 	<p>DC 5V, CCD camera for BX4000 1/3" Sony Super HAD CCD II Angle of View: 145° Effective Pixel: 510(H) X 492(V) (NTSC), 500(H) X 582(V) (PAL) Video out: 1.0 Vp-p (Composite) Min. Illumination: IR LED On 0 lux Operating Temperature: -20°C ~ 60°C Input Voltage: 5V, Power consumption: Max. 320mA(LED ON) 43mm x 38mm x 35mm, 70g, Wire : L=5000±10mm</p>
<p>Rear View Camera STR-131</p> 	<p>CMOS Rear View Camera, Waterproof (IP 68) 1/4" Hi Resolution CMOS Angle of View: 162° Effective Pixel: (H)640 x (V)480 (NTSC / PAL) Video out: 1.0 Vp-p (Composite) Min. Illumination: 1 lux Operating Temperature: -30°C ~ 85°C Input Voltage: DC 12V (±20%) Low Power consumption: Max. 35mA 28.00 x 29.00 x 26.00 mm, 113g, Include 8m extension cable</p>
<p>MIC-100</p> 	<p>External Microphone for BX4000 Directivity : Uni-directional Sensitivity : -36±5dB(finished product) At 3V, 2.2Kohm, 0dB=1V/Pa 1KHz Impedance : 2.2K Ohm@1KHz Max. Operating voltage : 10V Stand Operating voltage : 3V Frequency : 100~10,000Hz Current Consumption : 0.5mA Max. Operating Temperature: -40°C ~ 85°C Dimension : Φ9.7 x 5.0mm Plug: Φ3.5mm, mono straight shape, Wire : L=2600±10mm</p>
<p>SH-100</p> 	<p>Steel Housing for BX4000 Dimension : 155.00 x 130.00 x 24.00 mm, 330g</p>

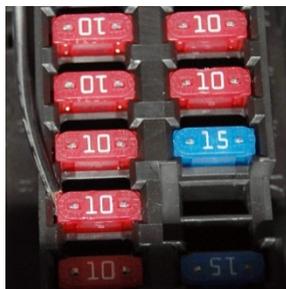
Optional Item (Safe Power Cable)

Model name: DPWR-300

The safe power supply cable will allow you to hard wire the Drive Recorder series to the fuse box of your vehicle.



The safe power supply cable will automatically cut off the battery power when battery voltage dropped below 12V or 24V.



**Connect (+) to the fuse box.
It should be connected to an battery circuit.**



The ground cable should be connected to car chassis.

MEMO

MEMO

Smarty

Drive Partner for your Safety

CE0678

D-TEG Security Co., Ltd.

3F, Jungmin Bldg, 382-2, Yatap-dong, Bundang-gu,
Seongnam, Gyeonggi-do 463-827, Korea

Tel: 82-31-706-2514 , Fax: 82-31-706-2519

Email: dteg@d-teg.com

Homepage: <http://www.d-teg.com>