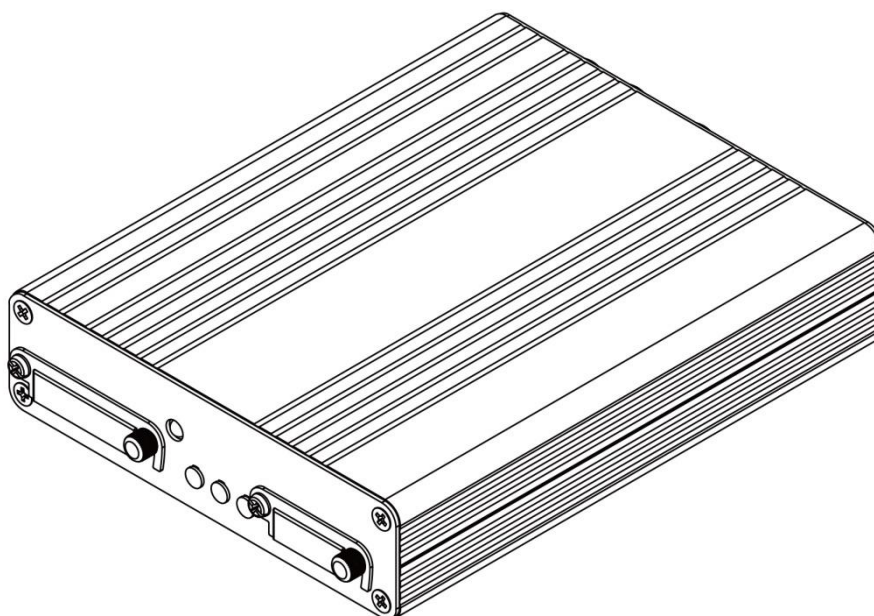




# Vehicle DVR System

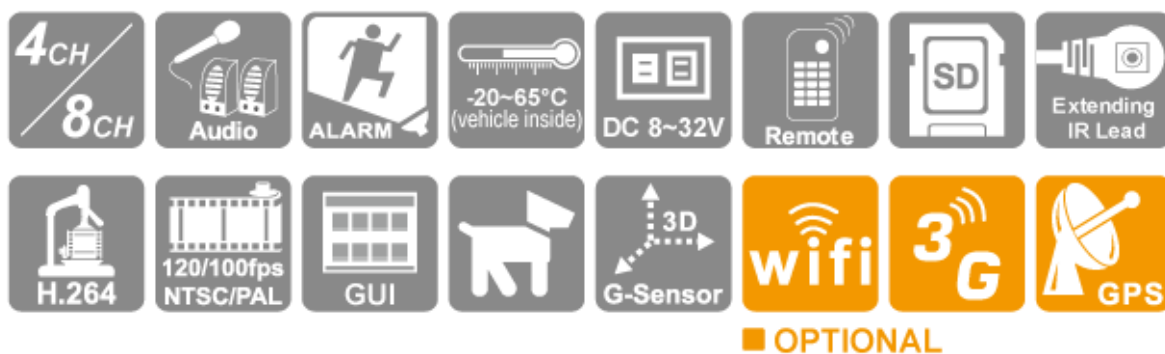
## User Manual

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2014 APR. V1.0

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# Safety Precautions

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To Whom It May Concern

Thankyou for purchasing the RoadHawk E10 DVR. Please contact your local dealer for any assistance. We will backup services via local dealers. Rights are reserved to upgrade software and hardware without notice beforehand. Please read this manual prior to use of this product.

## Installation Precautions

- Make sure power connections are disconnected before installation.
- System installation by professional installers only.
- Please use recommended and genuine SD Cards.
- Please contact local dealers in case of service requirements.

## In Use Precautions

- Please keep the inner components free from dust or liquids.
- Please do not disassemble the equipment. Please contact local dealers or the manufacturer for prompt service.
- Please remove the battery from remote control if not in use for long times.
- The equipment should be connected to vehicle ground .  
This is to keep the DVR away from static electricity damage.

### Surrounding

- Please use the DVR under recommended temperatures away from the sun and heat source.
- Please keep this equipment away from humid surroundings.
- Please keep this equipment away from smoke and dust.
- Please do not drop the equipment.
- Please keep this equipment in ventilated space.
- Please supply rated voltage and amperage to the equipment.
- Please keep flammable objects away from the equipment.

## CONTENT

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### A. PACKAGING

#### 1. Accessories

- 3Pin Power Cable x 1PCS
- Alarm Harness x 1PCS
- Mono Audio Microphone x 1PCS
- 3 Meter IR Cable Lead and Foam Tape x 1PCS
- Velcro x 1PCS
- Remote Control x 1PCS
- CD x 1PCS
- Quick User Guide x 1PCS
- Mounting Brackets
- GPS Antenna / Receiver

#### 2. Review

Please review the package first. The packaging material should be protected from impact during delivery. Please remove the PE bag to make sure no damage to the DVR.

### B. FEATURES

- Equipped with 4 cameras to record front/rear/left/right/inner of vehicle.
- VIDEO OUTPUT to monitor to playback video at site and LIVE view.
- H.264 video compression codec.
- Recording Resolution : D1 & CIF
- Graphic User Interface.
- 1 x audio / 3 x Alarm Input / 1 x Alarm Output.
- Reliable event log.
- Time and date record display on screen.
- System initialized after memory card loaded and power supplied.
- SD card recording for rugged use.
- Three axis G-Sensor.
- GPS provides speed, coordinate and route.

## C. SPECIFICATIONS

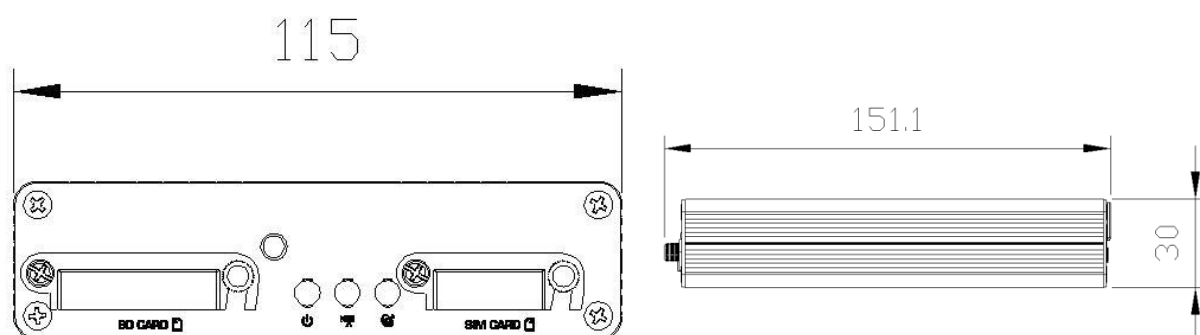
Item	Description		
Type	4ch Vehicle System		
Video Format	NTSC/PAL		
OS	Embedded Linux		
Video Input	4 Cameras		
Camera Power Output	4 x Power12V / 250mA		
Video Output	x1 Video Output		
Audio Input	x1 Audio Input		
Audio Output	x1 Audio Output		
Alarm I/O	x3 Alarm Input / x1 Alarm Output		
Operation Interface	GUI		
Language	English/Traditional Chinese/Simplified Chinese		
Recording Frame	NTSC	Max. 60 fps @D1	
	PAL	Max. 60 fps @D1	
	NTSC	Max. 120 fps @CIF	
	PAL	Max. 100 fps @CIF	
Display Mode	Full Screen / Quad		
Operation Mode	Recording / Playback		
Resolution	Live	NTSC	720 x 480
		PAL	720 x 576
	Record	NTSC	360x240@CIF/ 720x480@D1/
		PAL	360x288@CIF 720x576@D1/
Backup	SD Card		

## Vehicle DVR System

Search	Mode	Time/Date    Event Record
	Full Screen	Yes
Indicator	3 LED (REC 、 GPS 、 Power)	
Video Loss Alert	Yes	
Buzzer	Yes	
G-SENSOR	Three Axis G-Sensor	
GPS	Speed / Coordinate/ Route	
Remote Control	Cable Lead Provided	
Watch Dog	Auto Reboot after Power Cut	
Power Input	(1) DC 8V~32V (2)ACC Bonus Power Subject to Software	
Dimensions	151mmX115mmX30mm(LXWXH)	
Operation Temperature	-20°C~65°C	

### D. DIMENSIONS

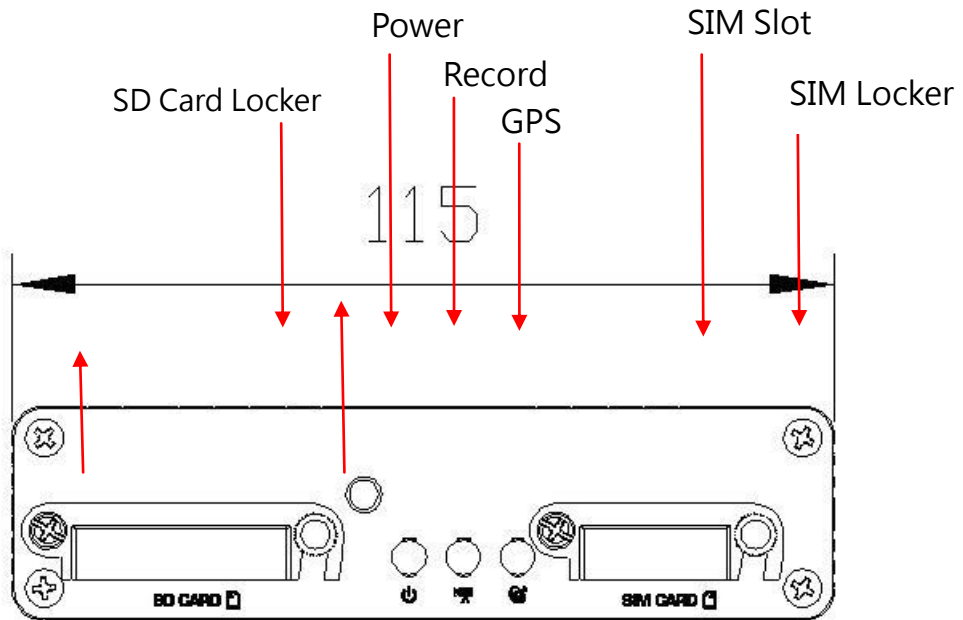
Unit : mm



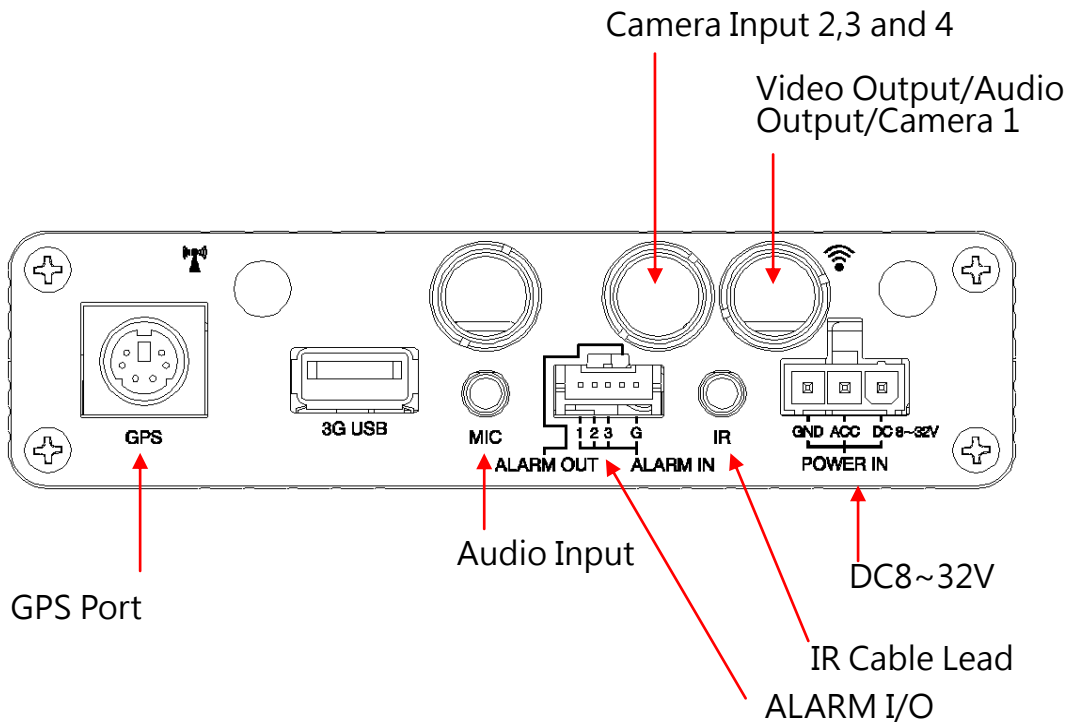


## E. FRONT / REAR PANEL

### 1. Front Panel



SD Card Slot



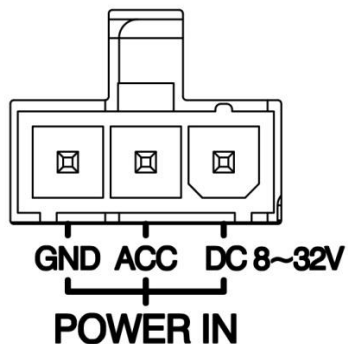
## 2. INSTALLATION GUIDE

### ■ Video Output / Audio Output / Video Input

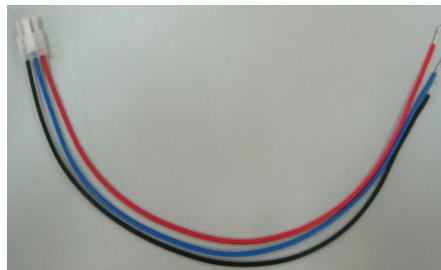


- V. Video Output
- A. Audio Output
- 1. Video Input
- 2. Video Input
- 3. Video Input
- 4. Video Input

### ■ Power I/O



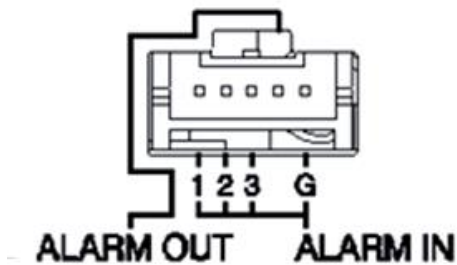
3Pin Power Cable



3Pin Power Cable Definition :

1. Red - DC8~28V Vehicle Power Input - Positive
2. Blue - ACC Control
3. GND –Ground Wire - Negative

### ■ Alarm I/O



1. Alarm IN 1 (Red+12V)
2. Alarm IN 2 (Brown+12V)
3. Alarm IN 3 (Yellow+12V)
4. Alarm OUT (Orange+12V)
- G. Ground Wire (Black)

### ■ Alarm IN Application

Monitor can switch to full screen of rear view or side view. Driver can view a blind spot when alarm is activated.

- CH 1 → Reversing Signal Input
- Ground → Connected with the 2 & 3 black wire of the power cable.

Quad while no alarm



No alarm

Full Screen while alarm input

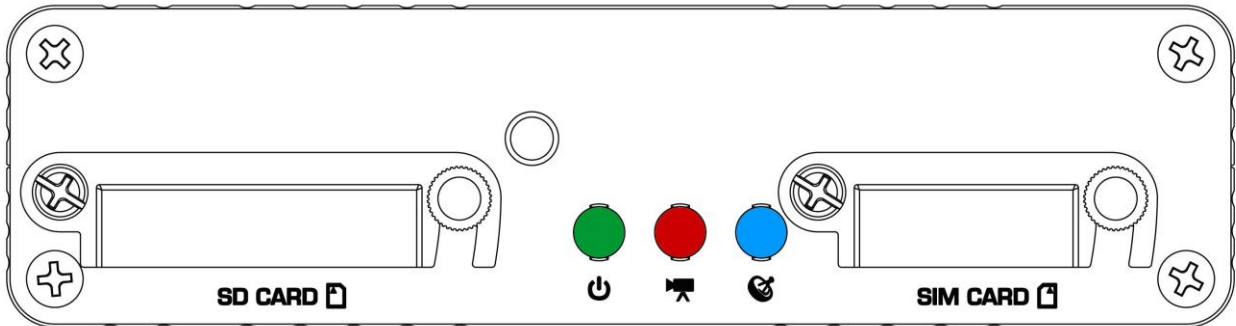


Alarm trigger

### ■ Alarm OUT Application

12V, Max1.5A output connected with beeper or siren

### F. RECORD / STOP



#### 1. Reboot/Record

System is ready 40 seconds after reboot. The SD card indicator will start to flash when the system is recording video.

##### Indicators

- Green – is on when the system receives power from the vehicle.
- Red – SD card recording it flashes.
- Blue – flashes when receiving valid GPS signal.

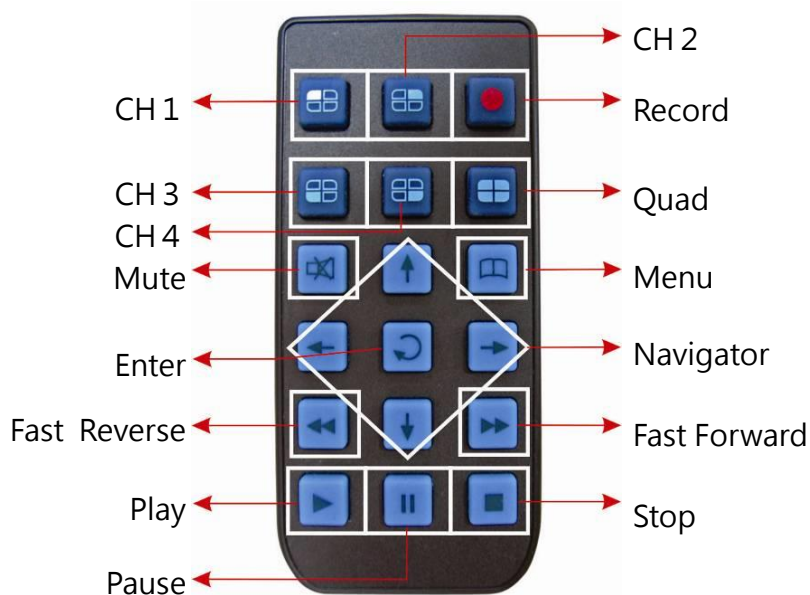
#### 2. Power Off/Stop Recording

When power to the system is stopped, the unit will stop recording video.

## G. REMOTE CONTROL

Remote control playback and PC site playback are available.




### ◆ Remote Control



Description		
	Navigator	Up/Down/Left/Right in Menu Mode
	Menu	Enter Menu or Return
	Enter	Enter Menu or Save Setting
	CH1~CH4	CH1 to CH4 Selection in Live or Playback Mode
	Quad	Quad Display in Live Mode
	Record	Manual Recording in Live Mode
	Mute	Audio Not Recorded in Live Mode
	Play	Playback Files in Live Mode
	Stop	Stop Playback and return in Playback Mode

## Vehicle DVR System

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	<b>Pause</b>	Pause in Playback Mode
	<b>Fast Forward</b>	Fast Forward in Playback Mode
	<b>Fast Reverse</b>	Fast Reverse in Playback Mode

## H. GUI & Operation

### ■ Live View -Quad



### ■ Live View –Full Screen



### ◆ Instructions

- Press 1 to 4 to display CH1 to CH4
- Press quad for quad display
- Press Menu to enter menu
- Press Play for playback mode

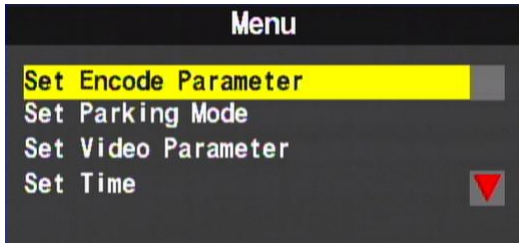
### ◆ On screen GUI icons

- : Recording
- : GPS on
- : Audio Recording
- : Manual Recording
- : G-Sensor Triggered
- **0 km/h**: Speed of the Vehicle

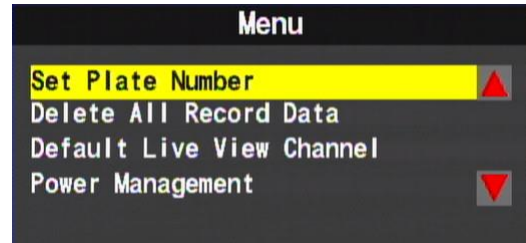


## I. OSD menu

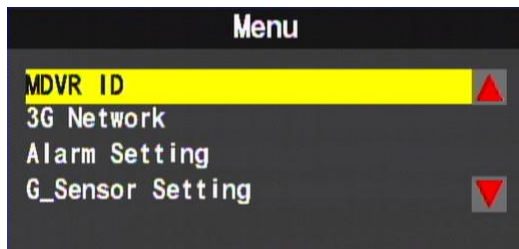
### (1) Menu



Menu 1 of 5



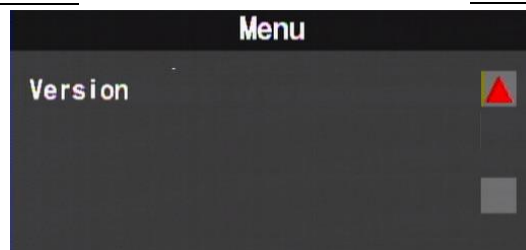
Menu 2 of 5



Menu 3 of 5



Menu 4 of 5



Menu 5 of 5

#### Instructions:

- Press Menu in live mode to enter the menu.
- Enter menu and press navigator buttons to locate the option.  
Press enter to enter option.
- Press Menu to exit

## (2) Menu and Configuration

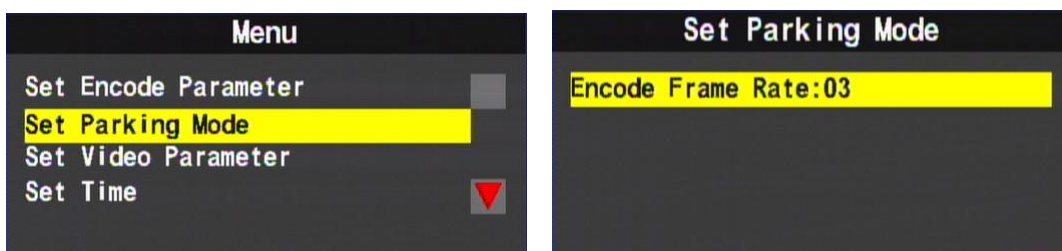
### 1. Set Encode Parmeter



#### ◆ Recording Configuration

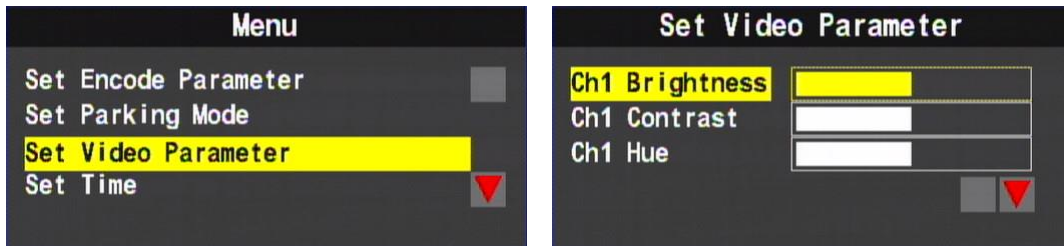
Frame Rate	NTSC	D1	5fps-10fps
		CIF	5fps-30fps
	PAL	D1	5fps-15fps
		CIF	5fps-25fps
Quality	Normal	Better	Best

### 2. Set Parking Mode



- ◆ You can set the frame rate during "Parking Mode" .
- ◆ Recording frame rate setting for "Parking Mode" .
- ◆ Frame rate - 5, 10, 15, 20, 25, 30 Max. 15 @D1 · Max. 30 @CIF

### (3) Set Video Parameter



- ◆ Channel – press on the remote control
  - ◆ Brightness/Contrast/Hue – press on the remote control
- Press enter to save the configuration.

### (4) Set Time



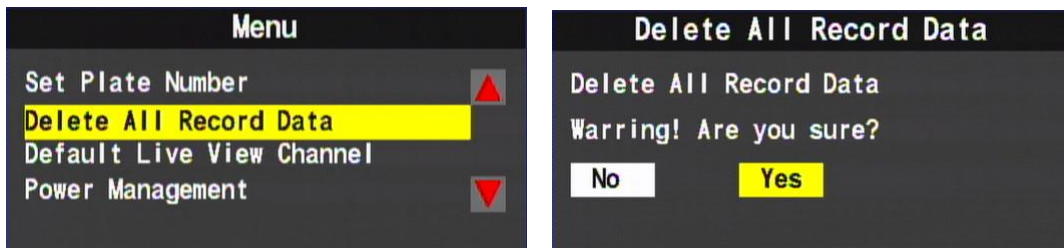
- ◆ “yy/mm/dd/mm/ss/Time Zone”
- ◆ Auto Time Calibration by GPS

### (5) Set Plate Number



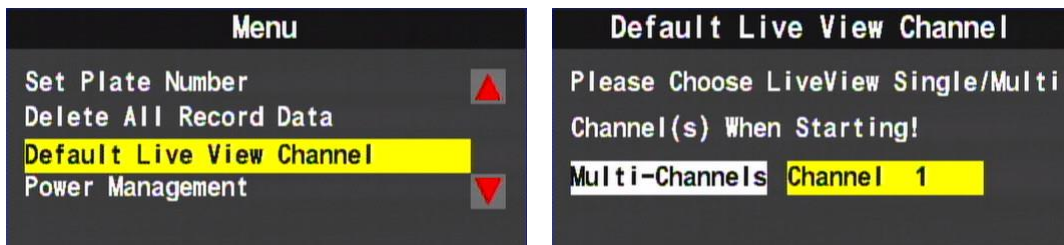
- ◆ Range of Input - A~Z & 0~9 .

### (6) Delete All Record Data



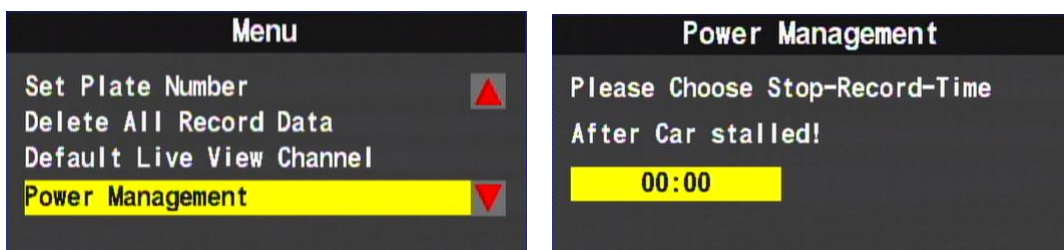
※ All the files on the SD card will be deleted.

### (7) Default Live View Channel



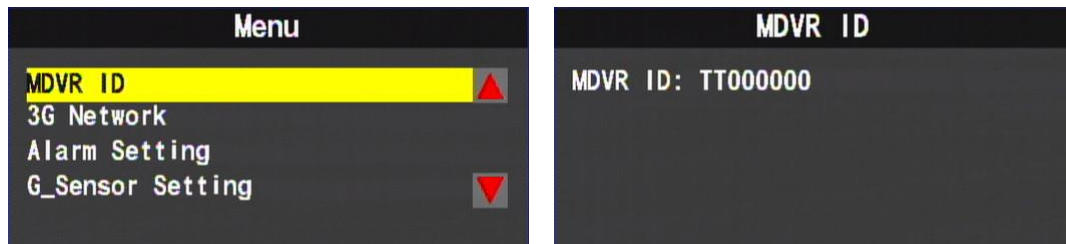
- ◆ Choose which camera is displayed for LIVE view by default when the system is started.

### (8) Power Management



- ◆ You can set how long the system will record video for once the vehicle has been turned off.

### (9) MDVR ID



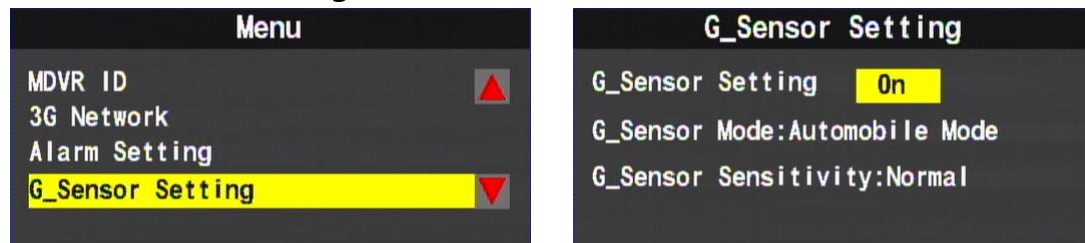
- ◆ MDVR ID –the unique serial number of this device.

### (10) Alarm Setting



- ◆ Alarm Option-Off /CH1 to CH3
- ◆ The selected channel will come up with full screen upon alarm trigger.

### (11) G\_Sensor Setting

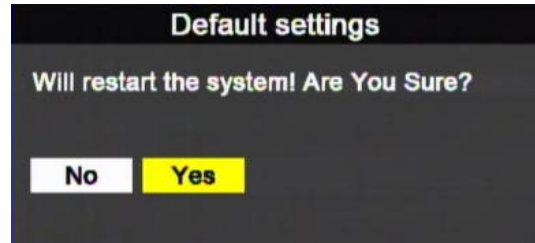
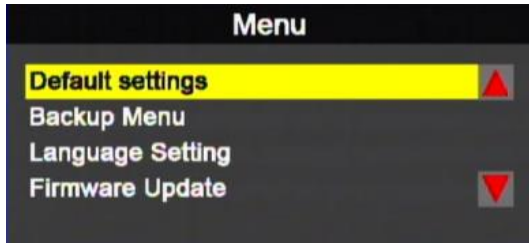


- ◆ G\_Sensor Option- : On/Off
- ◆ G\_Sensor Mode-Automobile Mode & Truck Mode
- ◆ G\_Sensor Sensitivity-Lowest/Low/Normal/High/Highest

★Video file of the impact moment will be saved not overwritten in condition of G-Sensor trigger.

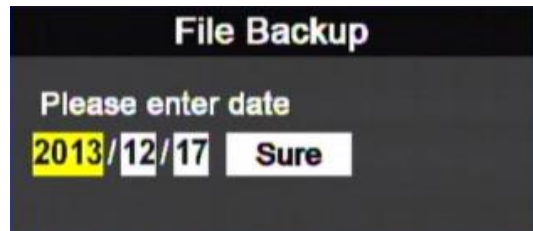
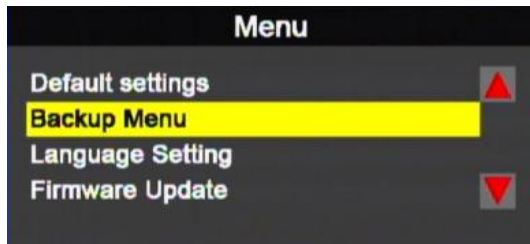
**WARNING:** If the G\_Sensor sensitivity is set too low, the camera may not create an EVENT file if there is a collision. In all cases after a collision, turn off the system and remove the SD card to prevent data being overwritten.

### (12) Default Settings



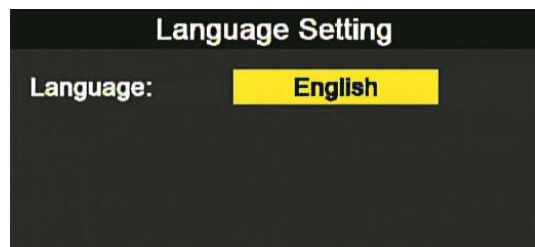
- ◆ Returns the system to factory pre-set condition.
- ◆ System will reboot after default setting.

### (13) Backup



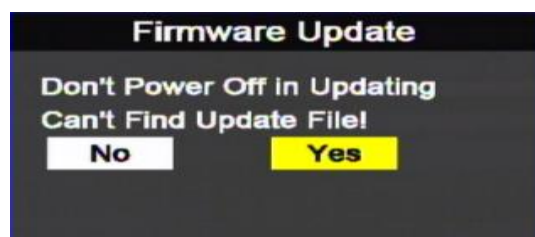
- ◆ Can backup files via list or search. Press Enter to enter playback mode and start backup files.

### (14) Language Settings



- ◆ Language Option -English / Traditional Chinese / Japanese / Korean / Russian/Spanish / Deutsch

### (15) Firmware Update



- ◆ Use USB Flash Memory to upgrade the firmware.
- ◆ DO NOT cut the power off during upgrade. System will reboot when the upgrade is done.



### (16) Version



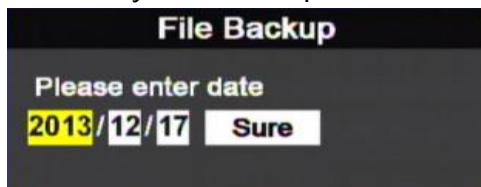
- ◆ Shows the latest version of the firmware installed on the device.

## J. Playback Setup

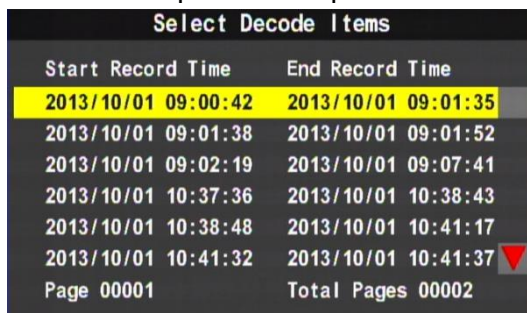
On site playback and PC playback are available.



- ◆ On site playback

- (1) Press Play in live mode to enter playback mode.
- (2) Press Play to enter option



- (3) Select the option and press enter to see the file list.





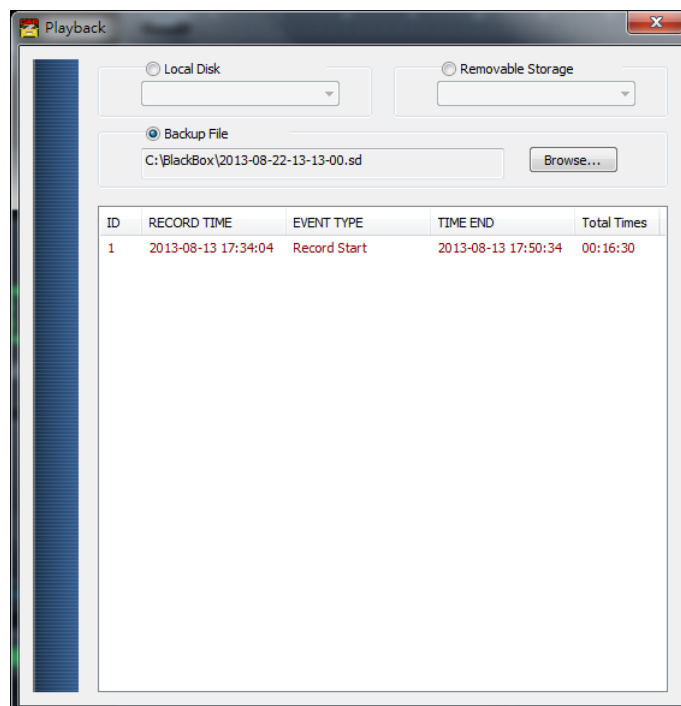
-  - Manual Recording
-  - G-Sensor Recording

- (4) Select a file and press Enter to start playback.




### ◆ PC Playback

- (1) Install the software  CarBox2.exe from the supplied CD-ROM  
Or download it from the RoadHawk website.
- (2) Reminder – Right click the mouse on the CarBox icon and select  
"Open as administrator" to run the software on Windows 7 OS.
- (3) Insert the SD card from the DVR in to the computer.
- (4) Click Playback icon  to enter playback mode.
- (5) Select the storage device and the file list comes up.  
Click a file to start playback.



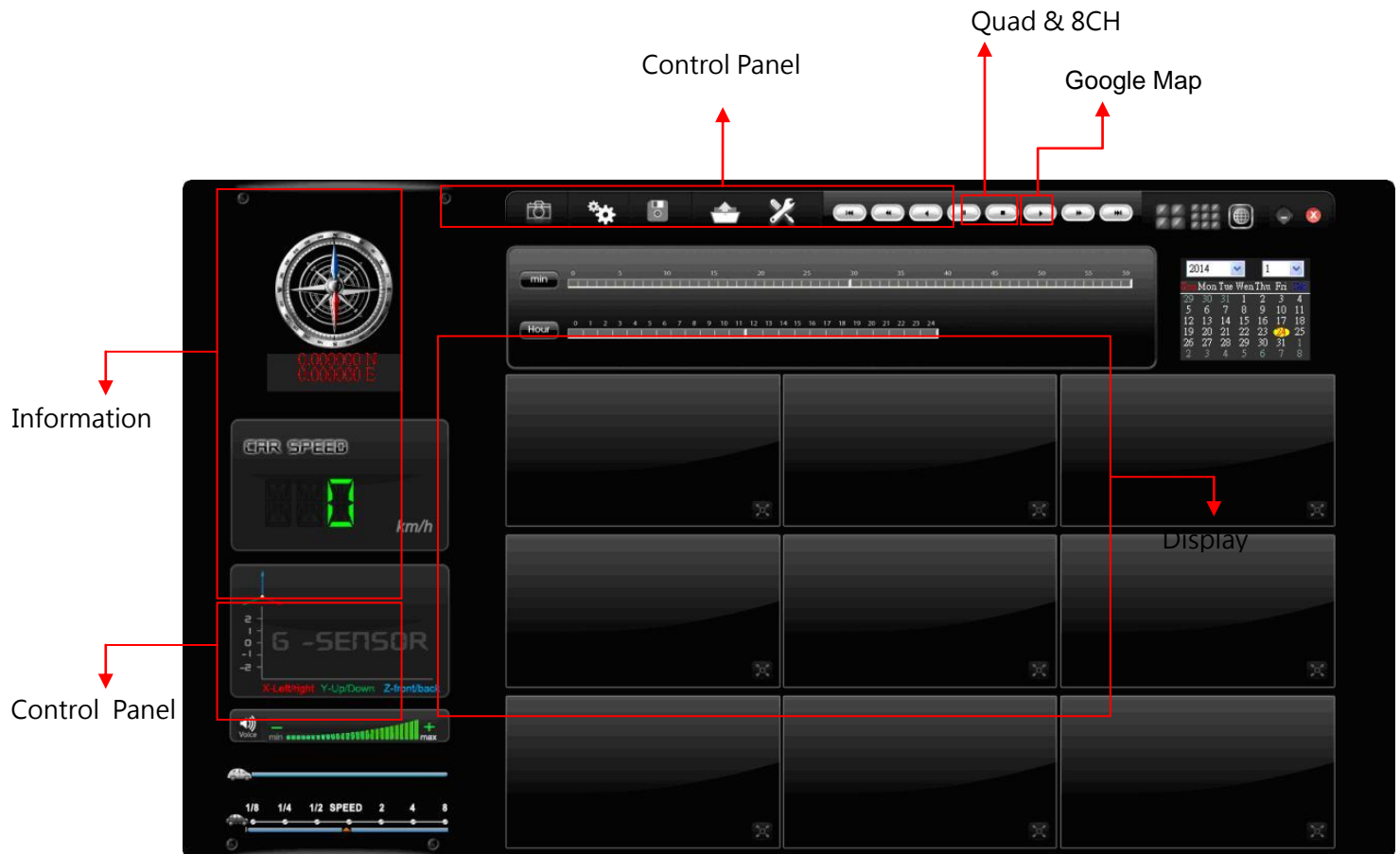
File List

## K. PC Player

◆ Execute player CarBox2.exe  layout as below

★ DirectX 9.0 is Required

◆ Interface




★GPS / Speed / Google Map optional

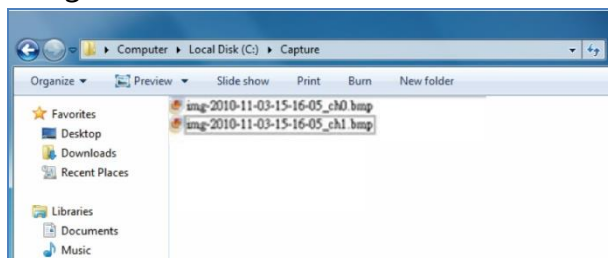
(1). Playback Tool



1		Previous File
2		Previous Frame
3		Reverse
4		Pause
5		Stop
6		Play
7		Next Frame
8		Next File
9		Backup File
10		Configuration
11		Google Map
12		Open File
13		Snapshot
14		Tool

### ◆ Snapshot

Click the icon  image will be saved as a .bmp file.  
Image will be saved in the file named as "Snapshot" .



### ◆ Arrangement



Storage Device

Use PC to read storage device before recording.  
Recording format and other settings can be set accordingly.

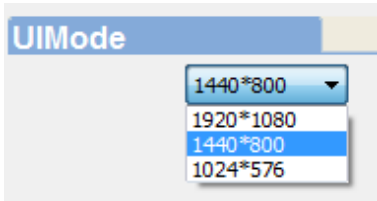
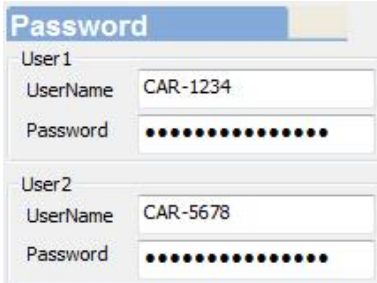
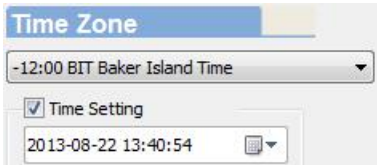
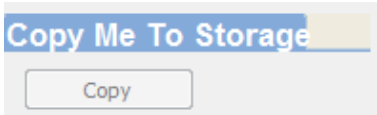


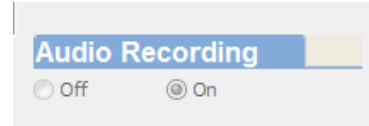
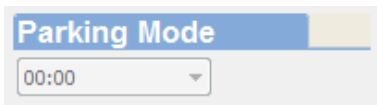
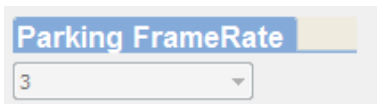
Save the configuration and put the storage device in to the DVR.  
The recording will follow the rules set in the configuration.

The Configuration window includes the following sections:

- Video Quality:** A dropdown menu currently set to 'High'.
- Video Frame Rate:** A dropdown menu currently set to '15'.
- Video Format:** A dropdown menu currently set to 'D1'.
- Car Information:** A text input field with a '0/10' character limit.
- UIMode:** A dropdown menu currently set to '1440\*800'.
- Password:** Fields for 'User1' (Username and Password) and 'User2' (Username and Password).
- Time Zone:** A dropdown menu set to '+08:00 CST China Standard Time' and a 'Time Setting' field showing '2014-04-24 10:44:41'.
- Copy Me To Storage Card:** A 'Copy' button.
- Unit Of Speed:** Radio buttons for 'Km/h' (selected), 'Mile/h', and 'Knot'.
- G-sensor Sensitivity:** A dropdown menu set to 'Normal'.
- Parking Mode:** A dropdown menu set to '00:00'.
- Parking FrameRate:** A dropdown menu set to '3'.

Buttons at the bottom include 'OK' and 'Cancel'.

Quality		Picture Quality – high/normal/low
Frame Rate		Frame per Second D1 – 5fps to 10fps · CIF – 5fps to 30fps °
Resolution		Resolution D1 & CIF
Information		License plate number or name of the driver


UI Mode		Size of the software is adjustable 1920*1080 / 1440*800 / 1024*576
Password		Password is to protect the storage device being read, written and formatted. Password up to 15 characters. ★ Password must not be forgotten.
Time Zone		Set to GMT in the UK.
Copy Me to Storage		Copy playing software to SD card. User can install the software to any computer from SD card.
Unit of Speed		Setup the unit of speed Km/h Mile/h Knot
G-sensor Sensitivity		G-sensor Mode and Sensitivity
Audio Recording		Audio recording ON/OFF
Power Management		Recording time after ignition off.
Parking Mode		Recording frame rate after ignition off.

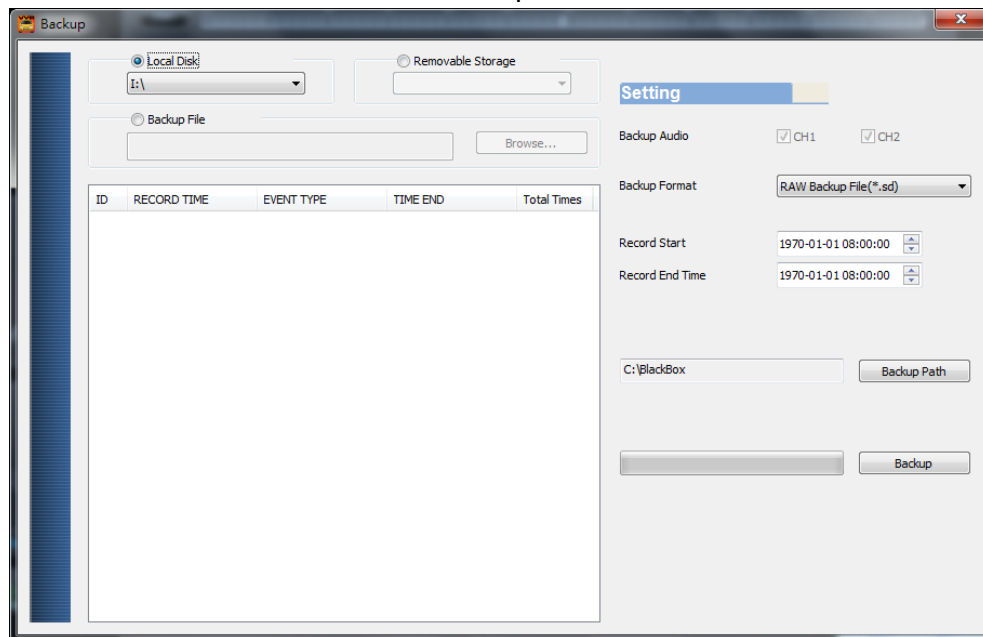
◆ Backup



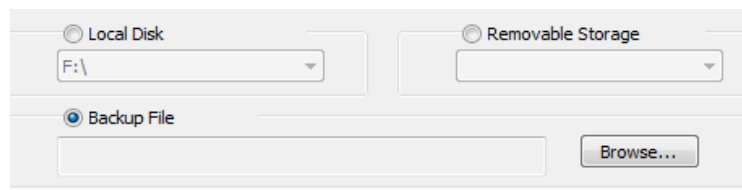
## Start Backup

Save the video files to PC for fast playback.

Click the icon  to enter backup interface.



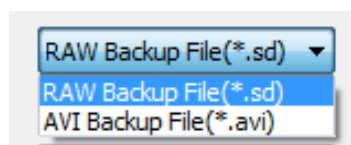
1. Select a storage device.



2. Select a file

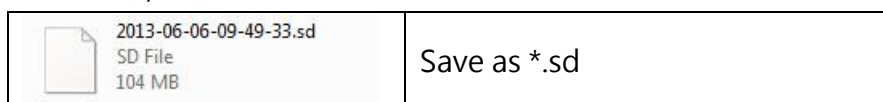
ID	RECORD TIME	EVENT TYPE	TIME END	Total Times
1	2013-08-13 17:34:04	Record Start	2013-08-13 18:26:27	00:52:23
2	2013-08-13 18:26:27	G Sensor By Not Ov...	2013-08-13 18:26:46	00:00:19


3. Select a file format



Backup Format

● SD Format / AVI Format



 <div>2013-06-06-09-50-56-CHN01 00:00:30 55.2 MB</div>	Save as .avi
---	--------------

Save as \*.sd speed, GPS and G-Sensor will be included.

Save as \*.avi only video and audio available.

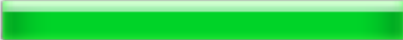
4. Start time and end of the time can be selected.

Record Start	2013-08-13 17:34:04
Record End Time	2013-08-13 17:50:27

5. Browse the file folder

C:\BlackBox	Backup Path
-------------	-------------

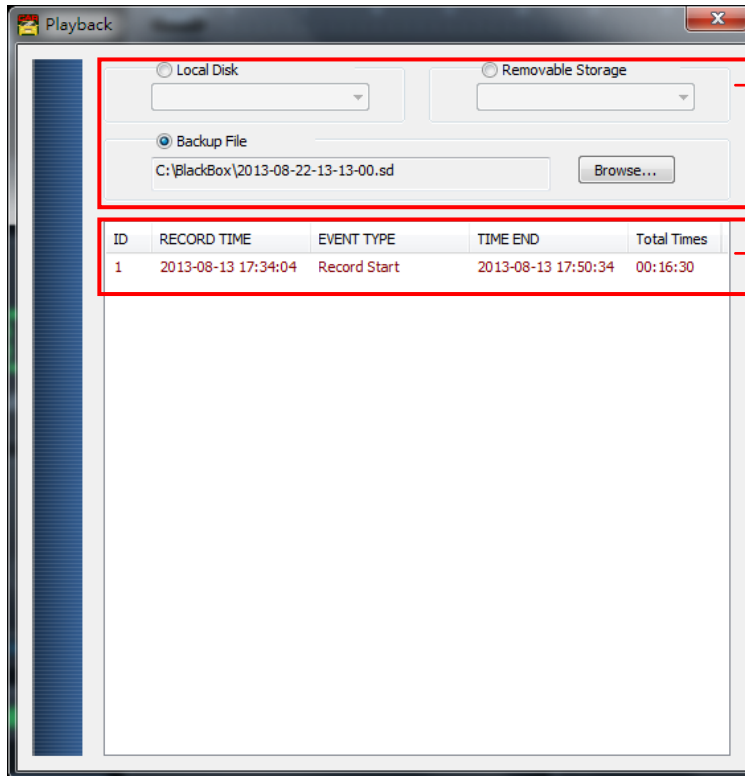
6. Start Backup

	Backup
--	--------

## ◆ Playback



Playback video from the SD card or backup files.



1. Choose the Local Disk, Removable Storage or Backup File

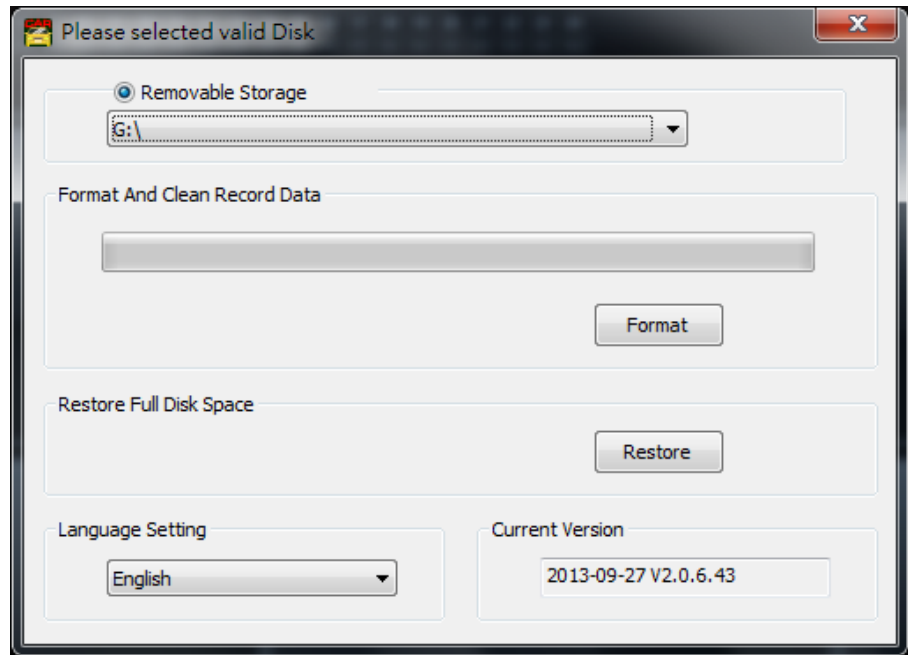
2. Choose the file



◆ Format



Please read FORMAT/RECOVERY for details.



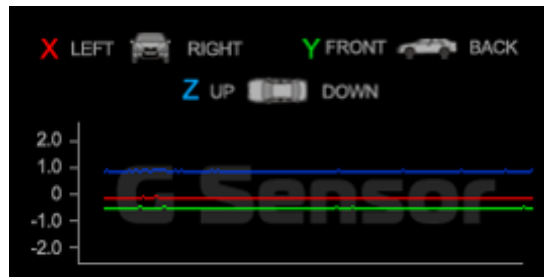
(2). GPS Coordinates and vehicle direction.



Direction

Coordinate

### (3). G-SENSOR



#### G-SENSOR

X – left / right forces of the vehicle.

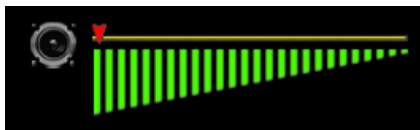
Y – front / rear forces of the vehicle.

Z – up / down forces of the vehicle.

### (4). Speed Meter



### (5). Volume



### (6). Slide Bar



### (7). Playback Speed



### (8). Playback date selection

Quick selection by minutes



Selection by date



Selection by Hours/Minutes (24-hours)



min

0

5

10

15

20

25

30

35

40

45

50

55

59

Hour

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

2013

10

	Mon	Tue	Wed	Thu	Fri
29	30	1	2	3	4
5	6	7	8	9	10
11	12	13	14	15	16
17	18	19	20	21	22
23	24	25	26	27	28
29	30	31	1	2	3
4	5	6	7	8	9

## L. FORMAT/RECOVERY

### ◆ Delete All Record Data

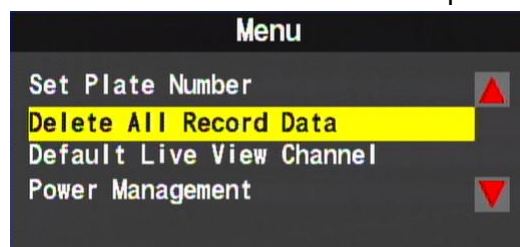
All the storage devices must be formatted beforehand and on a monthly basis to keep the SD card in good condition.

※ Files should be saved to PC prior to format.

Format SD card in DVR and on PC software are both available.

#### (1) Format in DVR

1. Use remote control to enter menu select the option Delete All Record Data



2. Select "yes" to proceed with Delete All Record Data.



3. Live mode comes up after Delete All Record Data is done.




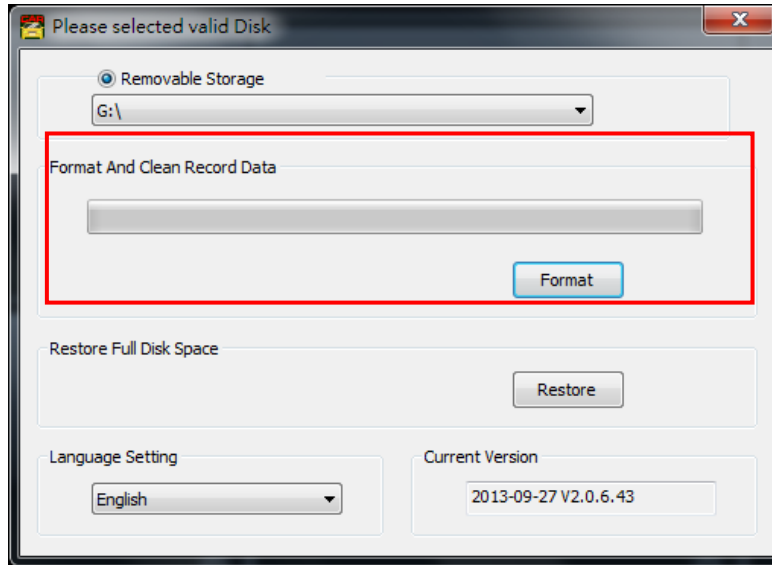
#### (2) Format on PC

1. Put the SD card in to the PC and execute the software CarBox2.exe

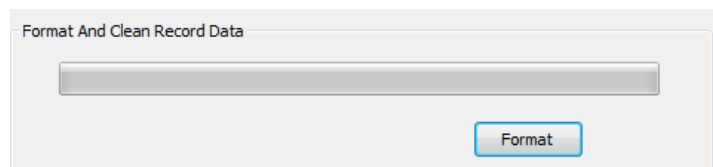


°

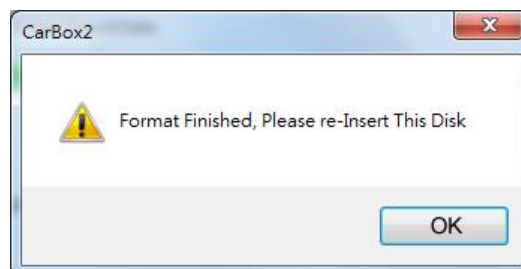
2. Click the icon  to enter Format Tool box.



4. Click Format



5. Select Yes



## ◆ Restore the Storage Device


Prepares the SD card for use in the DVR.

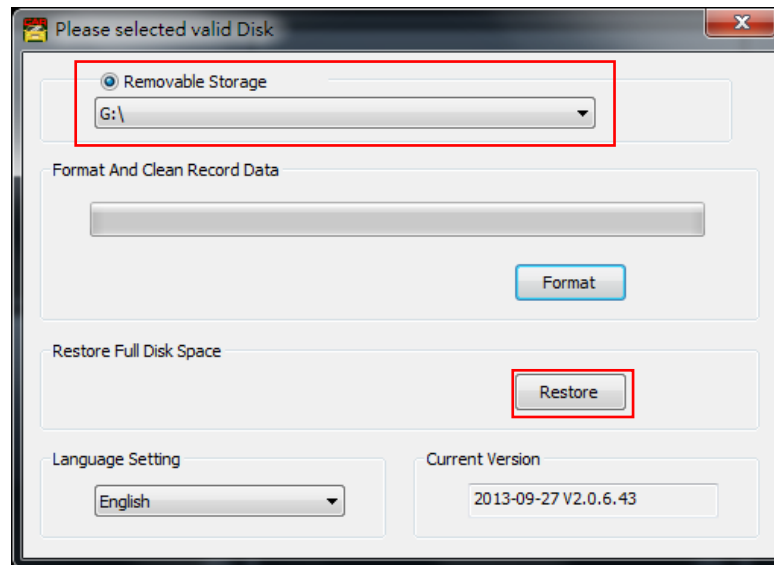
※Files should be saved to PC prior to Restore.

(1) Restore in DVR

1. Put the storage device in PC and execute the software CarBox2.exe



2. Open  Format Tool Dialog. Select a storage device and click Restore.



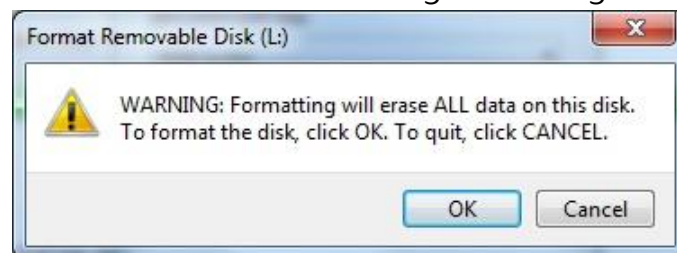
3. Restore this disk. Click Yes to restore.



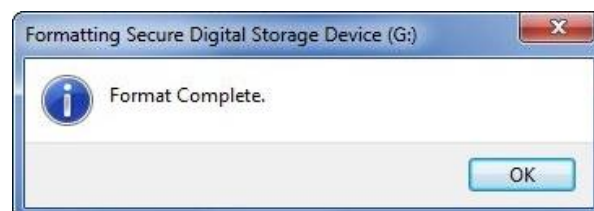
4. Restore Disk Completed.  
5. Follow Windows format procedure to complete the process.



6. Click 「Yes」 to start formatting the Storage.



7. Click "OK" to finish restore SD Card.



8. Press 『OK』 to finish.

