

BOYO®

VTR104HD User Manual



World



This Manual contains important information about the proper use and cautions in use of the product. Please read it carefully before use.

Before Use

- Thank you for purchasing VTR104HD.
- Product is an auxiliary product for recording video during drive. Also to provide evidence in case of an accident.
- Product does not however guarantee that all accidents are recorded. Minor shock may not detect sensor to record.
- Product may change without notice for further function improvement.
- This User Manual is published based on the current state of the product, and may contain typographical errors or omissions.
- Contents of this User Manual may be modified, changed or supplemented without notice for further improvement.

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Safety Precautions

Operational and Security Precaution

- Do not operate the product while driving. It may cause accident.
- The product must be installed at a point which would not obstruct the driver's view.
- Do not allow unauthorized disassembly or alteration to the product. It may cause malfunction, and the consequent product damage will not be covered under the warranty.
- If the product is damaged or power is cut off by a serious accident, the product may not be able to record such event
- Always keep the windshield clean to enable clear recording
- Since the product is purpose to record video data while driving, video quality may be deteriorated when driving through the tunnel, and at night or by contrast and backlight.
- Contaminated camera lens may deteriorate the video quality. Keep the lens clean
- Do not place the product under direct sunlight or inside the closed vehicle as it may cause malfunction
- Do not use chemicals or detergent to clean the product. Clean gently with soft cloth
- Use of the product at temperature below -20°C or above 60°C may cause malfunction or breakdown.
(This caution should be applied when product is unused.)
- Do not use the product in places in high temperature/humidity.
- Do not exert excessive force to the product (especially to LCD buttons and to bracket) as it may cause breakdown
- Operate the product for 3-5 minutes to check for correct recording, before each use.
- Extended exposure to sunlight and high temperature in the summer may cause malfunction
- Do not turn off power, or remove the SD card during firmware upgrading as it may cause malfunction
- Do not touch the cigar lighter cable with wet hand as it may cause electric shock.
- Do not use a damaged cigar lighter cable as it may cause electric shock or fire
- Do not place the cigar lighter cable in near heating devices
- Do not leave the product connected to the cigar lighter if not in use for a long period of time.
Remove the cable from the product.
- Insert the cigar lighter securely.
- Do not bend or pull the cigar lighter cable by excessive force, or place heavy objects on the cable.
(It may damage the cord and as a result it may cause electric shock or fire.)
- Do not touch the LCD excessive force as it may cause malfunction.

Safety Precautions

SD Card Precaution in use

- In order to confirm normal operation of the product, please check the image of a SD card and format it on a regular basis.
 - (PC format needed one to two times per month)
- Because an SD card is consumables, if it is used for a long time, you may lose the data or may not record due to an error, so please check it periodically.
- When the product is in recording or the power is on, do not eject the SD card forcibly. It may cause a failure of the SD card and data loss.
- If temperature gets too high in the vehicle, data storing may be disabled, or data may be damaged. Park your vehicle in the shade in the summer.
- When there is an accident or damage, please keep the SD card separately. Due to overwrite, important data may be deleted.
- When turning off the power of the body and removing the SD card before LED is turned off, the last recording file may not be saved, so please be careful.
- When driving a car, do not remove the SD card. Make sure to remove it safely when a car is in parking or stop.
- After turning on the power, make sure that it is in normal operation.
- Please note that the warranty is not covered for the SD card.
- Please purchase and use SD Card that manufacture recommended specification.
- The SD cards are excluded from the warranty, and we shall not take any responsibility for loss and damage of the data recorded in the SD card in any case
- When purchasing extra SD card, it is recommended as 8~32GB micro SD card in 10 class (MLC Type)

Product Feature

High Quality Lens and High Image Quality / Resolution support

- 2 Mega Pixel image sensor mounting in Front / Rear.
- Front : 115°, Back : 140°
- HD(1280×720) High Image Quality Resolution and total 30fps(Front 20 + Rear 10).

Various Recording Function and Video Data Acknowledgement

- Normal, Manual, Event, Motion and auto change to Parking recording mode
- Driving records can be stored with GPS data and Google map tracking can be (optional)
- G sensor built-in Automatic parking recording mode change and event recording mode.
- External video output. (real-time video image can be checked in another monitor)
- PC viewer program are provided to change various setting values and map data can be checked when using GPS.
- (In the general video player (e.g. Windows media player), recorded video can be played back)
- SD card can be formatted as the product itself, without connecting to a PC.
- Each capacity of a normal / event/ motion folder can be set in PC Viewer.

High Quality Voice Record and Voice Guidance

- Operating instructions service by voice guidance
- Voice recording On/Off function and speaker output On/Off function.
- High performance microphone built-in

Back-up battery and Car constant power discharge protection function

- Stored recorded image safety by built-in high-capacity capacitor when power is off.
- Car constant power discharge protection function
- (Selectable ON/OFF on viewer, Not required another equipment for this function)
- Consume less than 2mA when power shutdown (Based on 12V)
- When using car constant power discharge protection functions, If user car voltage is 12V and the voltage of less than 11.8V is maintained for more than 30 seconds the product power will be shuts-off
(Note: Shutdown time depend on the Type of Car and car condition.)

Other

- Soft look and emotional design. (easy removable body)
- Security LED light are mounted on front body.

Standard Package



Body



3M tape for bracket



Direct Cable



Micro SD Card
8GB



Installation Accessories



Cigar Lighter
plug

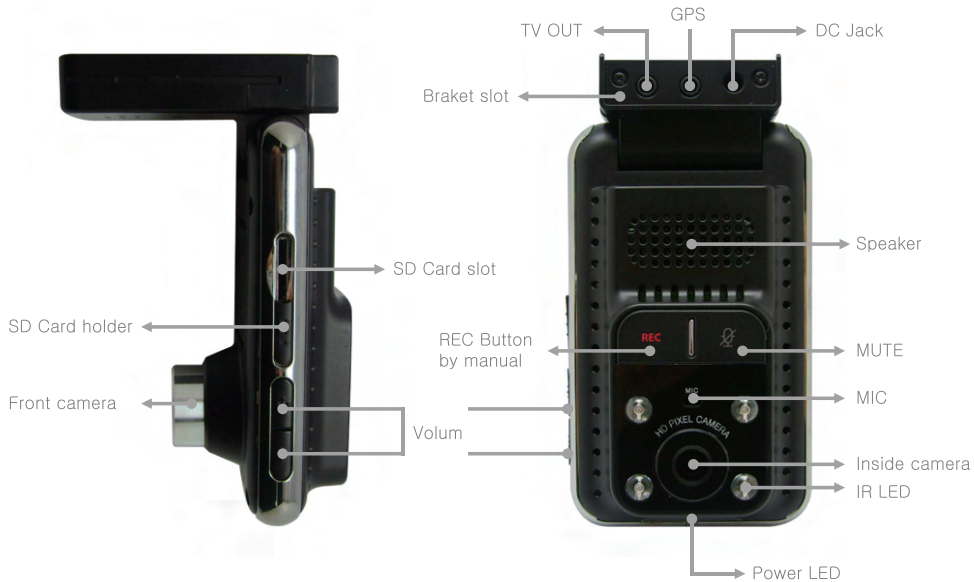


GPS



AV OUT

Product Parts



External GPS/TV-OUT Cable Installation

▶ External GPS Installation



Connect External GPS to GPS connection on Product body.

Attach GPS module at well visual place and tidy up a cable.



GPS module may be affected by main body or by other electronic devices if it is too close each other. Keep a distance as much as possible. The receiving signal may become poor depending on the climate, satellite status and geography in the neighborhood. The receiving signal may become poor if the windshield is heavy surcoated or fixed with metallic materials.

▶ TV OUT Cable Installation



Connect a TV-Out cable to the TV-Out jack on a Product body.

Connect a TV-Out cable to a AV-in jack you car navigation.



When connecting to your Car Navigation, you need an applied Car Navigation video cable. With a specific Car Navigation, installation may be restricted, and/or extra service charge may be incurred.

LED Operation

► LED Operation

State	Green	Red	Purple
Booting/SD Format mode/End recording	-	Blink	-
FW Update	-	Fast Blink	-
Normal Recording(with GPS signal)	Blink	-	-
Event Standby(with GPS signal)	Light On	-	-
Event Recording(with GPS signal)	Fast Blink	-	-
Normal Recording(without GPS signal)	-	-	Blink
Event Standby(without GPS signal)	-	-	Light On
Event Recording(without GPS signal)	-	-	Fast Blink
SD Card error/No SD Card	-	Fast Blink	-

► IR LED Operation

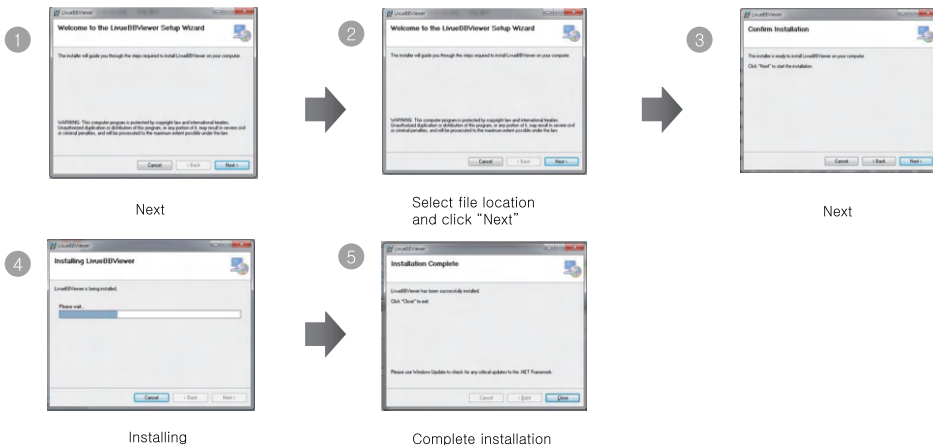
- When IR sensor indicate darkness LED will turn on.
- When IR sensor indicate brightenviroment for 10 mins LED will turn off.

Voice Guide

Status	Voice Comment
Power on	please take your seatbelt / do not operate the device while driving
Memory Error	please check the memory card
Firmware update	firmware update will start, please do not operate the device while updating
accessing SD Format	please press REC button for 5 seconds to delete the entire files
Start recording	start recording
Stop recording & power off	switching off, please wait
In the format process	organizing data
Volume control	zero / one / two / three
Memory format complete	entire data have deleted
Event mode	ding-dong
Memory cover error	please close the memory cover to save the data
Mute on	ding-dong
Mute off	ding-dong x 2

PC Original Viewer Program Installation

- Playback program is in packaged Micro SD card.
 - Insert this SD card into the USB card reader and connect to the computer.
 - An executable file is in the SD card as below figure.
- If you run "setup.exe", Blackbox Viewer will be installed. And then, installation will be continued according to the installation sequence of setup dialog box.



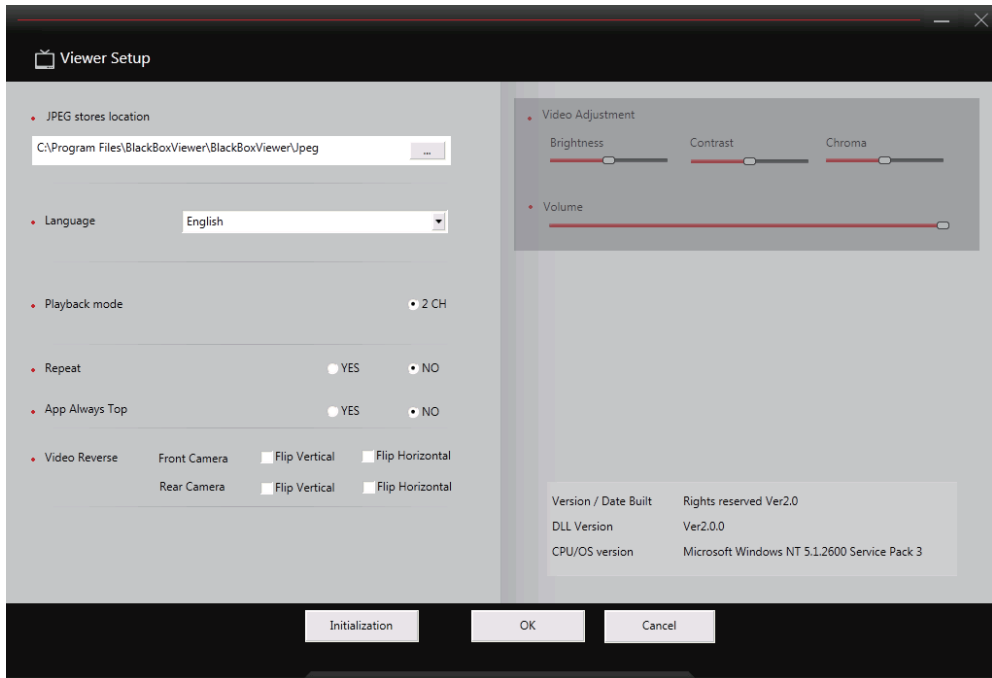
PC Original Viewer – Screen Configuration



PC Original Viewer – Screen Configuration

Item	Function	Item	Function
1	1CH / 2CH select screen	16	FastRewind
2	Viewer Configuration	17	Playback or Pause
3	System Configuration	18	Stop
4	Screen Capture	19	FastForward
5	Print	20	File Skip
6	Zoom	21	Control Volume
7	Play List/Map Button	22	Total File Time/Playback Time
8	Playback FileLocation	23	Brightness/Contrast/Chroma
9	REC file list / Map Display	24	GPS signal condition
10	Playback Video Image	25	Driving speed
11	Playback Control	26	Latitude/Longitude
12	Full Screen	27	G-sensor information
13	Flip Horizontal		
14	Flip Vertical		
15	File Skip Back		

PC Original Viewer – Viewer Configuration



PC Original Viewer – Viewer Configuration

Item	Description
JPEG stores location	Set location for captured JPEG image.
Language	Select language.
Playback mode	Select display channel.
Repeat	Select repeated playback.
App location	Select App is always the top of another window.
Video reverse	Select videoreverse.
Device select	Select the model.
Video adjustment	Control Brightness/Contrast/Chroma
Playback speed	Control playback speed
Volume	Control recording volume level

PC Original Viewer – Configuration

Setup

- Mode Setup: Normal
- Front Camera Video Quality: Super High Video Quality
- Time Setting: 2015-07-27T16:31:58
- Recording Volume: [Slider]
- Voice Guide Volume: [Slider]
- Set Time?: [Slider]
- G-Sensor Sensitivity: 2
- Overwrite Function (Event): [Slider]
- Standard Time: +12:45
- Summer Time: Yes
- TV-OUT: [Slider]
- Recording Frame: [Slider]

Camera Sensor [Sensor Initialization]

Contrast [Slider]

Brightness [Slider]

Color [Slider]

SD Card Folder Capacity Adjustment
※ Some files would be deleted during start-up.

0% 20% 40% 60% 80% 100%

Movie Event

Serial Number : Rev1.000000000000

Firmware Ver. : v2014031200000000

[Initialization] [OK] [Cancel]

PC Original Viewer – Configuration

Item	Description
Mode Setup	Select the recording mode
Time Setting	Set your current time in PC
Front Camera Video Quality	Select video quality in a front camera
Rear Camera Video Quality	Select video quality in a rear camera
REC Time	Select recording time for each file
REC Channel	Select a recording channel
Motion Sensitivity	Select a motion sensitivity level
Voice Guide Volume Level	Select voice guide volume level
RECVolume Level	Select a recording audio level
Breaking Voltage	Select a breaking voltage for a constant power discharge protection function
Parking Mode Change	Select a parking mode auto-change function
LCD Screensaver Setting	Select LCD screensaver function
Video Out Format	Select a video out format
LCD Video Format	Select LCD video out format
OSD Setting	Select OSD out on LCD
Front LED Setting	Select front security LED function
Apply Time Setting	Apply set time to Product
Standard time	Auto-apply an actual location when using GPS
SD Card Folder Capacity Adjustment	Select the capacity of each recording mode in SD card
Camera Sensor	Select Brightness, Contrast, Chroma Back to default value after click sensor initialization
G-Sensor	Select a shock sensor sensitivity level
Summer Time	Select apply a summer time

Configuration Default Setting

Item		Status
mode		Infinite
Front Video quality		High
Audio volume		2
Voice information volume		2
G-sensor sensitivity		3
Data Overwrite		Yes
GMT Time		+09:00
Sumer time apply		No
TV-out frequency		NTSC
Recording FPS		20/10
Camera Sensor	Contrast	Middle
	Brightness	Middle
	Color	Middle
Ratio between infinite / event	Movie	60
	Event	40

Recording mode and Button function

1. Recording : Device records video with turn on engines
2. Recording type : It is separated between Driving mode and Parking(Motion) mode
3. Recording Classification : Normal, Event, Motion

Recording mode	Recording	Automatic Recording	Manual Recording (with REC Button)	Recording time	Storing Folder
Driving mode	Infinite	-	-	Select 30/60/120 sec from configuration	Normal
	Event	G-sensor Detecting shocks	Press once	Recording 10 seconds before Event/Motion, Recording 20 seconds after Event/Motion	Event
Parking (Motion) mode	Motion	Converting into motion recording mode without any shocks for 10 minutes	Press for 3 seconds		Recording 10 seconds before Event/Motion, Recording 20 seconds after Event/Motion
	Event	G-sensor Detecting shocks	Press once	Event	

Type of button	Button function			
	Short	Long	Slide up	Slide down
REC	Event record	SD card format	-	-
Volume Up	Raise volume	-	-	-
Volume down	Reduce voice volume	-	-	-
Memory slot cover	-	-	Start record	Stop record
Mute	Mute on/off	-	-	-

※ Memory slot cover should be covered to operate the recorder.

1. Playback in a standard video player (GOM, Quicktimer, Window Media Player)

1) Remove a SD Card from Product

Open a SD Card slot cover and press softly,
then a SD Card can be removed easily.

2) Connect a SD Card to PC

Insert a SD card to SD Card Reader or adapter,
and connect it to PC.



3) Playback

Open a removal disc, you can see each folders. And click
files to playback which is stored in each folders.



- Each recorded video is saved in below folder automatically.
- Normal : Normal (Constant) record
- Event : Event record which is detected a shock by shock sensor.
- Motion : Motion record which is detected by motion detection sensor. (Parking mode)
- GPS Information is displayed in the original viewer.

2. Playback from own viewer software

1~2) it is a normal video player with the same playback method

3) operate the viewer software



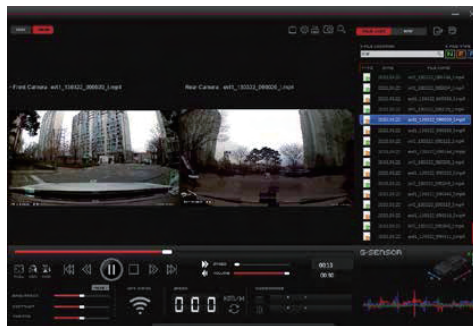
4) open files

Click the magnifying glass located at file location in up right of the viewer then, files will automatically list up



5) Playback

By choosing the file on the right hand side of the viewer file can be played back.

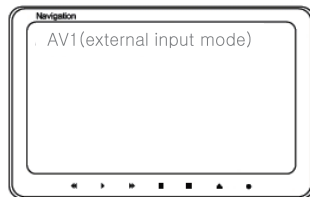


3.playback from monitor / navigation

1) connect the AV cable to the port with correct monitor/navigation (AV cable : optional part)



2) change the External display mode real time video can be displayed.

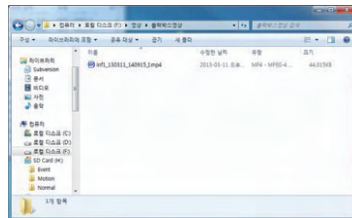
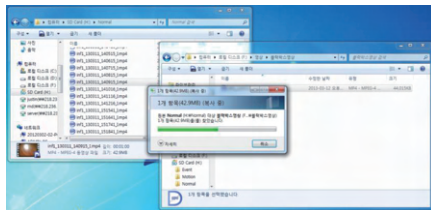
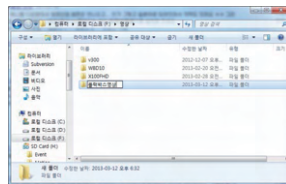
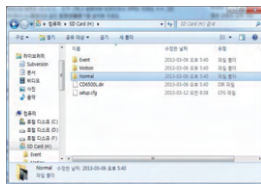
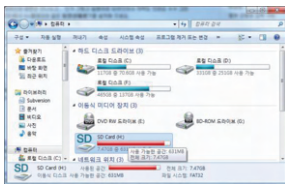


* external device (monitor/navigation) must have input port, for the AV cable purchase please ask related manufacturer.

* since external devices have different specification please refer to their manuals.

To save video file on your PC

1. Enter to removal disc after insert SD card to your PC.
2. Go to the folder where recorded video files are stored.
3. Create the new folder in same location.
4. Drag the particular file to the new file to copy.
(If you drag a folder, the whole folder will be copied.)



Firmware Upgrade

- Auto Firmware Upgrade
 - 1) Turn off the recorder and take the memory card out
 - 2) Connect the memory card to your PC and backup the data
 - 3) Format the memory card (please refer to the PC page)
 - 4) Put the firmware file into the memory card
 - 5) Once Put the memory card into the recorder, update starts immediately.

How to format the memory card

1) By using PC

Put the memory card into your PC and click my computer → click “right side” and click the “format” → click 32KB and proceed the formatting



Please backup the manual and software file before formatting. However, please choose fat32 when formatting otherwise the recorder could not be operated correctly. We suggest the ratio size as 32KB.

2) From the device.

- Press REC button long while switching on and it will access to the format mode.
- When the formatting completes the recorder will beep and reboots.

REC Time

► Default Setting

Picture quality	16GB		32GB	
	Infinite (60%)	Event (40%)	Infinite (60%)	Event (40%)
Very High	Approx 2.36 hour	Approx 1.48 hour	Approx 5.30 hour	Approx 3.42 hour
High	Approx 3.24 hour	Approx 2.18 hour	Approx 7.12 hour	Approx 4.48 hour
Normal	Approx 7 hour	Approx 4.42 hour	Approx 14.42 hour	Approx 9.48 hour



* when the memory card has insufficient storage recorder will overwrite from the oldest file

* storage folders has ratio and this individual folders will also overwrite from the oldest file as well as event folder.

Specification

Item	Specification	Item	Specification
Camera	Front/back 2M Pixels	Video Out	NTSC / PAL Composite
G - Sensor	Built-in 3x - G sensor	Audio record	Built-in MIC
GPS	External GPS(Optional)	Voice information	Built-in Speaker
Video compression	H.264/AVC	Memory storage	Micro SD card(SDHC)
Audio compression	PCM	DC input	DC 12V ~ 24V Free Voltage
Recording Ch	2ch(front/back)	Dimension/weight	85(w)x48(H)x36(D)mm 88g(w/o bracket)
Resolution	Front/Back 720p	Storage Temp.	-40°C ~ +85°C
FPS	(adjustable from viewer software) 2CH-front 20FPS, back 10FPS 1CH-front 30FPS	Operating Temp.	-20°C ~ +60°C
Picture quality	2ch : very high/high/normal		

FAQ

1. Power is not turned on.
 - ※ Check once again if the power cable is properly connected. If the problem is not solved, please contact manufacture.
2. The map is not shown when a video is played on a PC original viewer program .
 - ※ Check your Internet connection.
Check if your Internet Explorer is v7.0 or higher.
3. Power is connected, but LED is not lightning .
 - ※ Check if the power cable is connected properly. Then if still LED dose not lightning, the product or the memory card may be defective.
Please contact manufacture
4. GPS signal dose not recognize. (GPS is sold separately.)
 - ※ GPS signal reception may be interrupted temporarily depending on the environment and locations.
Drive your car to other location where GPS signal reception is abled. Please wait 3-5 minutes in the GPS signal reception area.
If the signal still dose not recognized, please contactmanufacture
5. The product does not recognize the memory card.
 - ※ Remove the Micro SD memory card from Product after power OFF, and check for any foreign material or abnormality around the connecting terminal. Format the SD memory card and try again. If the memory card is old, please replace with a new one.



Precaution before use

1. Pleasecheck for any defect on the product before installation. The Company shall not take responsibility for any cost or expense incurred as a result of the failure to check before installation
2. If installation was held at a service center other than those designated by the Company, the Company shall not take a responsibility for cost or expense charged at such center.
3. If the constant power protect function is set 'OFF', monitoring during parking will be performed only for a certain period of time. If the vehicle battery voltage is lowered for selfprotection, power to the device may be disconnected even in the Parking Mode disabling the recording.
4. The Micro SD card should be formatted every other week, as it may cause a recording error, a disabling saving file or playback error.
5. The Micro SD card is a consumable. Use of an aged SD card may cause error. Please replace on a regular basis
6. When a car accident occurred, turn off power of the product immediately, remove the Micro SD card and save the accident file on your PC. If the file is erased due to the times away, the Company shall not take responsible.