FULL HD 5 Megapixel
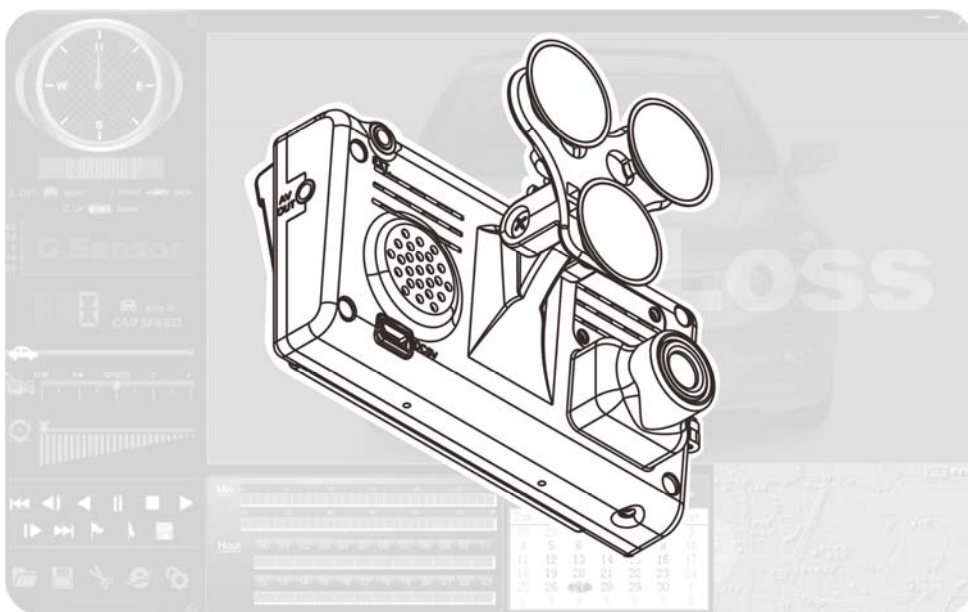## Vehicle Video Recorder User Manual

TYPE A : **Built-in GPS**
TYPE B : **W/O GPS** (Optional for G-Mouse)   2013   JAN   V3.0

Index

A. Feature description

- Built-in Full HD 5M CMOS Sensor. Viewing angle approx. 105 degrees.

- Suitable for all types of vehicles use. Small Design, Easy Installation。

- Equipped with 3 inch TFT LCD screen to make the adjustment of recording angle easily; also providing photo shooting manually.

- During playback of video footage and photo, the built-in screen direction sensor will detect screen side.

- Video record outside driving conditions and audio record inside the vehicle simultaneously.

- SD card Class 10 or above recommend. MAX to 32GB

- G-sensor sensitivity can be adjusted according to vehicles and road situations. When detecting a strong shock, system will start emergency recording and keep the files without being overwritten.

- Motion detection recording function during car stopping (External power source is needed)

- GPS and Image data are recorded and playable on client software. (Only available with GPS receiver)

- Lane Departure Warning System, to warn the driver with the beeper during driving off-lane. (Only available with GPS receiver)

- Speeding Warning Function. (Only available with GPS receiver)

B. Schematic diagram of the installation steps

Two types of brackets installation for selection, Suction-cups type and stick-holder type.

Suction-cups type		
A1. Make the bracket facing upward	A2.Assemble the suction cups	A3.Power line installs into USB port.

A4. Set up appropriate position by suction cups and fix power line.

Stick-holder type		
B1. Remove 3M sticker and adjust the best position to posted closely.	B2+B3. Stuck bracket into	latch and fix power line.

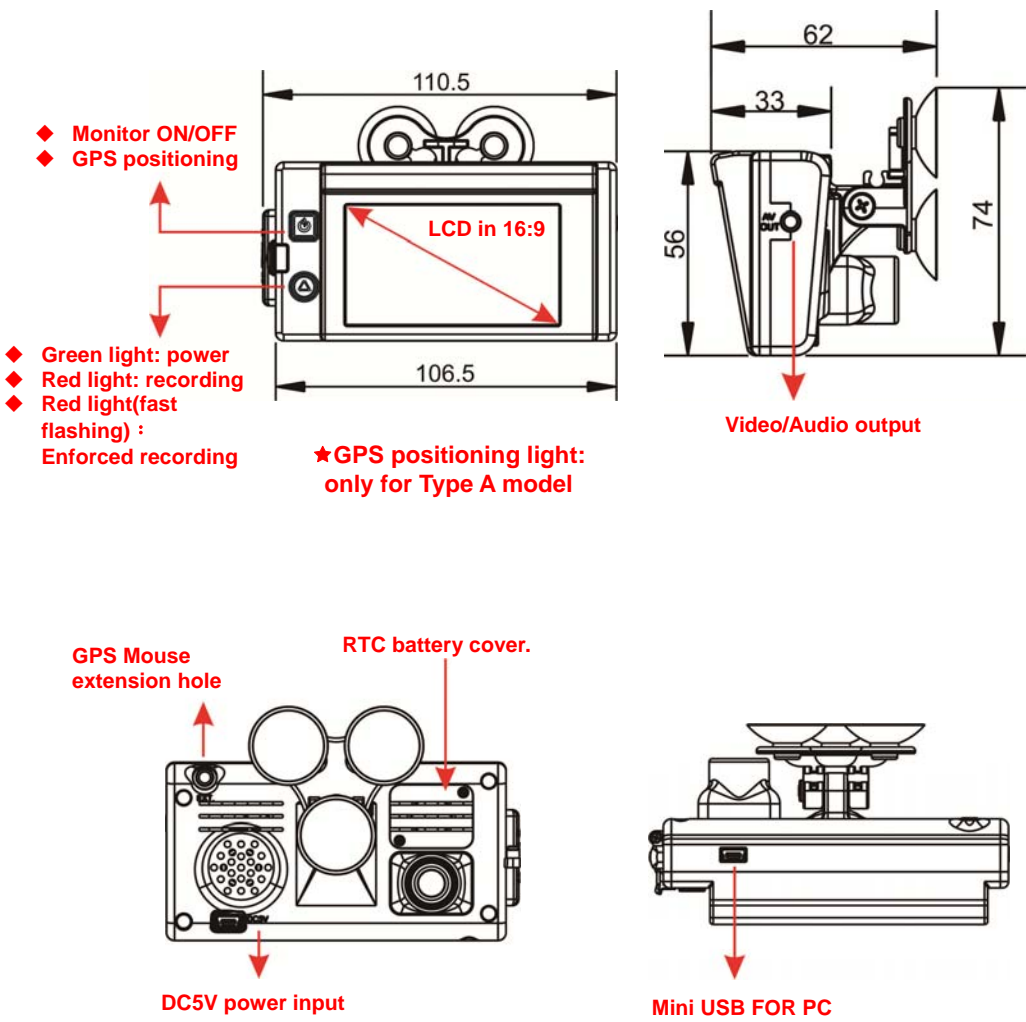|	Installation completed	
Plug in the cigarette adapter.	Machine on screen display	Blue light flashing: GPS positioning. Blue light on: GPS positioning ready. (GPS function only for Type A) Green light: Power. Red light: Recording.

C. **Specification**

Items	Description
Chipset	Ambarella H.264 image compression chip
Sensor Device	Full HD 5M CMOS Sensor。
View Angle	View angle approx. 105 degrees.
Display	LCD 3 inch 16:9 monitor
Voltage	Start at 5V±5%；650mA, Remark: Please use 5V±5%, 1A Cigarette lighter adapter. The machine needs 4.8v to start.
Operating temperature	-10℃～+70℃ (Inside vehicle)
Storage device	For the performance issue, use SanDisk SD card Class 6 or above read/write speed 15MB/s recommend. (min capacity 4G, Max 32G)
Recording frame and content	1920x1080 (Full HD1080P/ 30F) 1280x720 (HD720P/ 30F). Auto record when power up system. Recording frame: 30fps (NTSC/PAL) only select one. ***NOTE: Due to the hardware limit, 720P is only for evaluation**
Camera mode	Resolution 3M, 5M, 8M(manual/ G-sensor/Timer)
Recording content	**TYPE A:** Date, time, image, sound, G-Sensor data , GPS data **TYPE B:** Date, time, image, sound, G-Sensor data , GPS data (with external GPS Mouse only)
Recording format	Specific format for player software(recording mode).
Microphone	Build-in Dual High Sensitivity Microphone.
Input device	(a) Enforced recording button, monitor ON/OFF button, Remote controller (b) GPS Mouse external extension hole.
Out Device	(a) TV-Out (1 Vp-p composite video output, 75 ohms), two kind of system: NTSC/PAL (b) Green light: Power / Red light: Recording (c) Blue light: GPS 3D Positioning(No lighting for TYPE B without external GPS mouse) (d) Mini USB for PC connection
Time Setup	Auto-calibrating by GPS signals. If GPS is not available, the built-in clock will be used.
G-Sensor	Build in Internal 3D G-Sensor

Accessories	(a) 5V cigarette Power adapter (b) Remote controller (c) Product CD (d) Suction cup bracket (e) Bracket holder (f) Quick user guide
optional	(a) 16G_Class 6 SD card. (b) 5M RCA Video output cable (c) External GPS Mouse (4P Phone Jack Connect)
Important Notice	(a) GPS positioning speed will be affected by weather, window films, etc. Windows film may contain metal substances and have impact on GPS positioning. (b) The light indicator distinguish between day and night mode, When power-on it will enter night mode first. (c) Machine must be installed in the area that wipe can be reached. (d) SD card must be formatted by machine or client software first to be used properly. (e) After SD card formatted, user needs to set up time zone data from OSD. Or Auto-calibrating by GPS signals directly, then the video file can be recorded the right time data. (f) Due to power consumption is over standard USB (signal output 500mA), when connected to the computer power supply, please use other power line. (g) For power cable installing, try not to bypass above the machine(GPS patch), Set the cable to bracket latch then wiring to the car ceiling, it can receive the GPS signal better. (h) The machine reserved for the RTC battery cover for easy changing battery (CR1220). (i) In camera mode, the screen will display in 4:3 mode, the resolution will be (2592x1944/5M)，Use different lenses, the picture will be a slight cover corner angle phenomenon.

D. Product dimensions, panel functions and remote control description

UNIT: mm

◆ **Monitor ON/OFF**
◆ **GPS positioning**

110.5

LCD in 16:9

◆ **Green light: power**
◆ **Red light: recording**
◆ **Red light(fast flashing)：Enforced recording**

106.5

★GPS positioning light: only for Type A model

62

33

56

74

Video/Audio output

GPS Mouse extension hole

RTC battery cover.

DC5V power input

Mini USB FOR PC

5

Key mapping table for remote controller:

Playback

Camera/ Camcorder/
Motion Mode Switch

Manual Force Recording

Volume Down

Volume Up

Stop Voice Recording

Speaker On/Off

Menu

Up / Down /
Left / Right

Confirm

Fast Rewind

Fast Forward

Play

Stop

Pause

E. Main menu operating description

1. OSD List Menu

■ Setup Menu

🔀 Setup	
Language	ABC
Date / Time	🕐
Time Zone	🌐
Unit Of Speed	km/h
Show speed	✅

🔀 Setup	
Alarm speed	🔴
TV standard	📺
Frequency	Hz
Mic. OFF/ON	🎤
WH Balance	🌗A

🔀 Setup	
Effect	🎨
Sensor SEN	≣
Format	🔳
Default	🔁

　　　1/3　　　　　　　　　　　2/3　　　　　　　　　　　3/3

■ Camcorder Menu　　　　　■ Camera Menu

📹 Camcorder	
Resolution	1080P30
Quality	≣
G sensor	≣
Capture Mode	📹

📷 Camera	
Resolution	5M
Capture Mode	NOR
Cap. Period	📷
G sensor	≣

■ LDWS Menu　　　　　　　■ Motion Menu

📶 LDWS	
LDWS OFF/ON	📶
LDWS cal	
LDWS sensitive	≣

🐛 Motion	
Motion type	◀▶
Motion spot zone	
Spot size	🖼
Motion sensitive	≣

■ Please use IR controller to select function

List Function	Key on IR Controller
List Moving	◀ ▶ [LEFT OR RIGHT]
Bar Moving	▲ ▼ [UP OR DOWN]
Confirmation	⊃ [CONFIRM]
Go to Previous Menu or Main Menu	Menu [MENU]

2. Setup Menu

◆ Language Setting

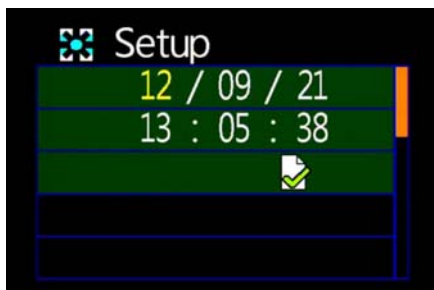|	
Setup	**Setup**
Language `ABC`	English `ABC`
Date / Time 🕐	Date / Time 🕐
Time Zone 🌐	Time Zone 🌐
Unit Of Speed km/h	Unit Of Speed km/h
Show speed ✅	Show speed ✅

★English / French / German / Italian / Japanese / Korean / Portuguese / Russian /
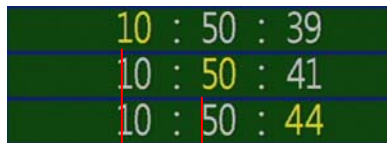Traditional Chinese / Spanish / Simplified Chinese / Turkish / Dutch…etc

◆ Date/Time Setting

Setup	**Setup**
Language `ABC`	12 / 09 / 21
Date / Time 🕐	13 : 05 : 38
Time Zone 🌐	✅
Unit Of Speed km/h	
Show speed ✅	

LIST FUNCTION	▲ ▼ [UP/DOWN]
LIST MOVING	◀ ▶ + ⤶ + ▲ ▼ [R/L]+[CONFIRMATION]+[UP/DOWN]
CONFIRMATION	⤶ [CONFIRM]
Go to Previous Menu	[Menu] [MENU]
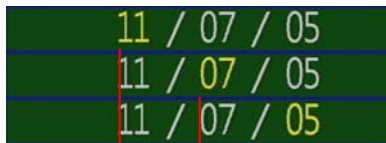
11 / 07 / 05	10 : 50 : 39
11 / 07 / 05	10 : 50 : 41
11 / 07 / 05	10 : 50 : 44
Y M D	H M S

★Year: Last digits of year (11 means 2011).
Hour: 24 hour.

◆ Time Zone Setting

Setup		**Setup**	
Language	ABC	Language	ABC
Date / Time		Date / Time	
Time Zone		UTC +8	
Unit Of Speed	km/h	Unit Of Speed	km/h
Show speed		Show speed	

★Select time zone as specific area

◆ Unit On Speed Setting

Setup		**Setup**	
Language	ABC	Language	ABC
Date / Time		Date / Time	
Time Zone		Time Zone	
Unit Of Speed	km/h	km/h mph	
Show speed		Show speed	

★km/h(kilometer) or mph(knot)

◆ Show Speed Setting

Setup		**Setup**	
Language	ABC	Language	ABC
Date / Time		Date / Time	
Time Zone		Time Zone	
Unit Of Speed	km/h	Unit Of Speed	km/h
Show speed		✖ ✔	

★Cancel / Open

◆ Speed Alarm Setting

Setup		**Setup**	
Alarm speed		Alarm off	
TV standard	TV	TV standard	TV
Frequency	Hz	Frequency	Hz
Mic. OFF/ON		Mic. OFF/ON	
WH Balance		WH Balance	

★Cancel / 40 Kmh / 45 Kmh / … / 195 Kmh / 200 Kmh for example

◆ TV Standard Setting

Setup		Setup	
Alarm speed	🔴	Alarm speed	🔴
TV standard	TV	**NTSC** PAL	
Frequency	Hz	Frequency	Hz
Mic. OFF/ON	🎤	Mic. OFF/ON	🎤
WH Balance	🅰	WH Balance	🅰

★NTSC / PAL

◆ Light Frequency Setting

Setup		Setup	
Alarm speed	🔴	Alarm speed	🔴
TV standard	TV	TV standard	TV
Frequency	Hz	**50Hz** 60Hz	
Mic. OFF/ON	🎤	Mic. OFF/ON	🎤
WH Balance	🅰	WH Balance	🅰

★50Hz / 60Hz

★Light frequency flashes as electricity frequency, causing specific light wavelength which is sensed by eyes. General speaking, the higher of light frequency, the brighter of environment around eyes.

◆ Microphone Off / On Setting

Setup		Setup	
Alarm speed	🔴	Alarm speed	🔴
TV standard	TV	TV standard	TV
Frequency	Hz	Frequency	Hz
Mic. OFF/ON	🎤	🚫 🎤	
WH Balance	🅰	WH Balance	🅰

★Off / On

◆ White Balance Setting

Setup		Setup	
Alarm speed	🔴	Alarm speed	🔴
TV standard	TV	TV standard	TV
Frequency	Hz	Frequency	Hz
Mic. OFF/ON	🎤	Mic. OFF/ON	🎤
WH Balance	A	A ☀ ☁ ☲ 🔦	

★Automatic / Sunny Day / Cloudy Day / Fluorescent / Incandescent

A ☀ ☁ ☲ 🔦	：Automatic
A ☀ ☁ ☲ 🔦	：Sunny Day
A ☀ ☁ ☲ 🔦	：Cloudy Day
A ☀ ☁ ☲ 🔦	：Fluorescent (Yellow Background)
A ☀ ☁ ☲ 🔦	: Incandescent (Bright-White Background)

★ "Automatic" is recommended when on-road recording is operating to prevent blur image. "Automatic" is set as default.

Please compare the following pictures which show the specific image under the above 3 "EFFECT" setting.

A	Automatic	Default	
☀	Sunny Day		Sunny
☁	Cloudy Day		Cloudy/Dark/Sunset
☲	Fluorescent		Fluorescent (Yellow Light Background)
🔦	Incandescent		Incandescent (White Light Background)

◆ Effect Setting

Setup			Setup	
Effect	▮▮		Effect	▮▮ ▮▮ ▮▮
Sensor SEN	≡		Sensor SEN	≡
Format	🖳		Format	🖳
Default	🔁		Default	🔁
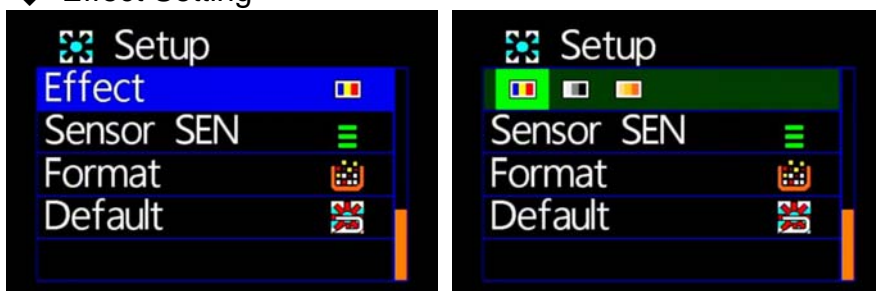
★Color / B&W / Classic

★After "Effect" is set, it is automatically functioned under snap shot or camera operating situation.

Please compare the following pictures which show the specific image under the above five "White Balance" setting.

Illustration	Effect	Picture
▮▮ ▮▮ ▮▮	Color	
▮▮ ▮▮ ▮▮	B&W	
▮▮ ▮▮ ▮▮	Classic	

◆ Sensor Sensitivity Setting

Setup			Setup	
Effect	▮▮		Effect	▮▮
Sensor SEN	≡		Sensor SEN	_ ≡ ▤ ≡
Format	🖳		Format	🖳
Default	🔁		Default	🔁
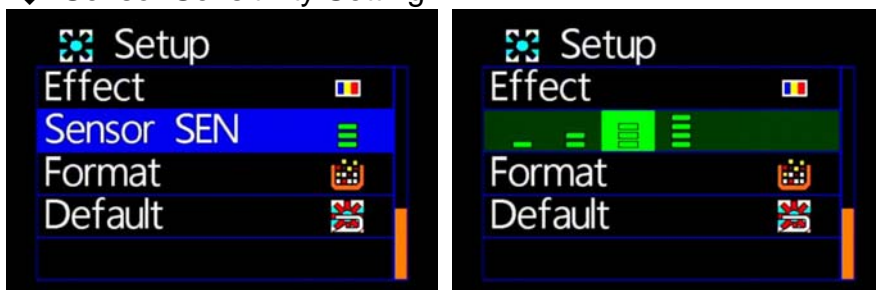
★More stripes appear; More sensitive

★When vehicle drives through darker areas, "sensitivity" decides whether "white balance" is going to be functioned or not. If "sensitivity " is set more sensitive, as vehicle drives into darker areas, " white balance" will automatically be on, and under the situation, it may cause the video image too bright.

◆ Format Setting
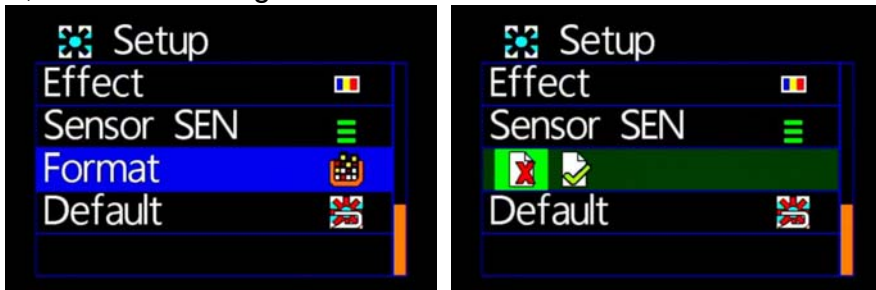
★Cancel / Confirm Formatting

★When selecting "Cancel Formatting", it goes to "Main Menu."
★During formatting, existed data will be erased. Please backup the needed data before the process
★Brand-new SD cards must be formatted before using.

◆ Default Setting
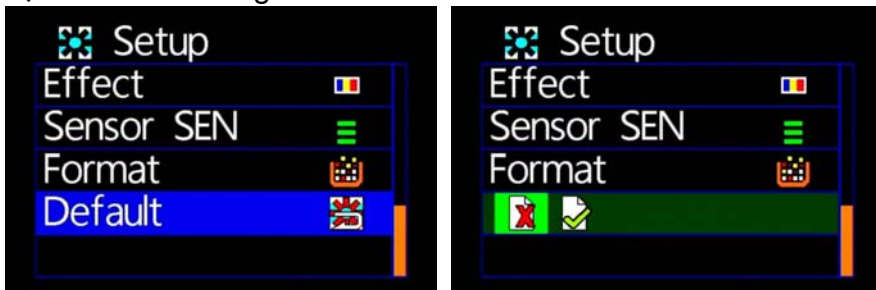
★Cancel Factory Default Setting / Confirm Factory Default Setting

★When selecting "Default", it goes to "Main Menu".
★When going to "Default", it will automatically go to factory default setting. For changing further setting, please go to main menu.

3. **Camcorder Menu**

◆ Resolution Setting
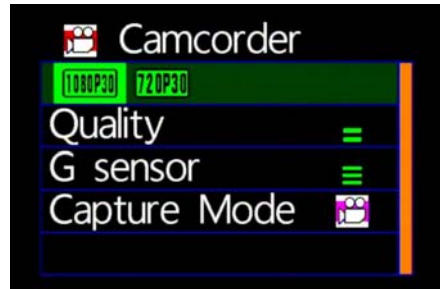
★2 resolution: 1080P(30) / 720P(30)

◆ Quality Setting
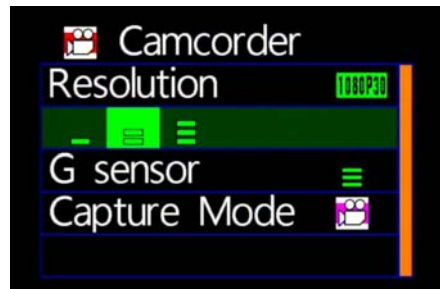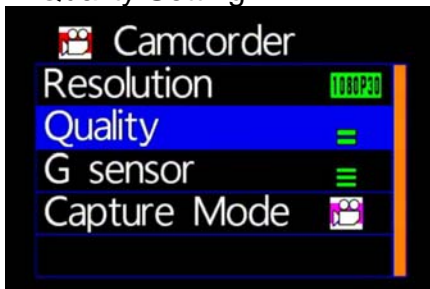
★Notice: More stripes appear; more video resolution does

◆ G-Sensor Setting
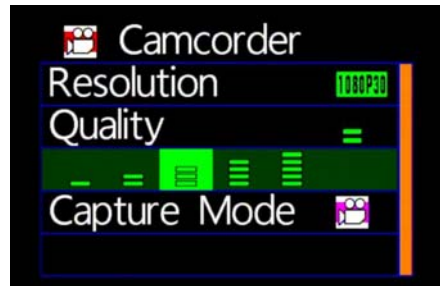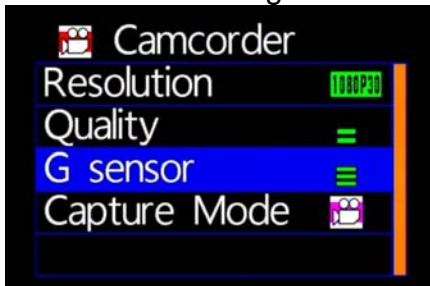
★NOTICE: More Stripes; More Sensitivity to trigger G-sensor easily for forced recording.

★Each time for triggering force recording, it will be automatically saving 3 more minutes before and after the accident.

◆ Capture Mode Setting

: Motion mode / **:** Normal mode

★During Motion mode, it will be switched to normal recording mode after restart

★To start the function of motion and LDWS recording, please turn on this.

4. Camera Menu

◆ Resolution Setting
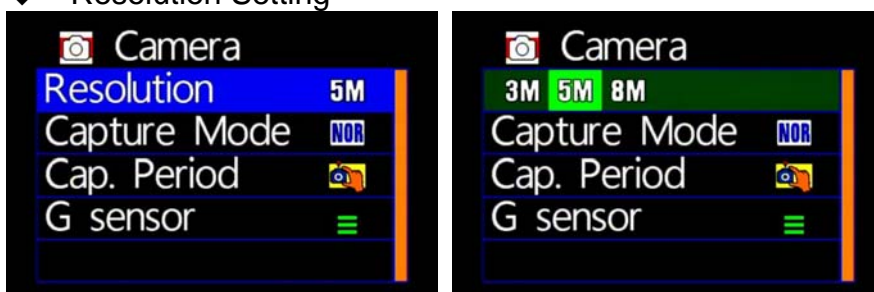
★3 Resolution modes: 3M/ 5M/ 8M

◆ Capture Mode Setting

★NOR: Normal, G-S: G Sensor mode, three continuous snapshots

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◆ Capture Frequency Setting

★Normal / 30sec /1 minute/5 minutes /30minutes

◆ G-sensor Setting

★Notice: Higher sensitive of G-sensor, Easier to trigger forcing video recording.
After force recording is triggered, 3 consecutive pictures will be taken
automatically.

5. LDWS Menu

◆ LDWS setting

★ LDWS on / LDWS off

◆ LDWS Calibration
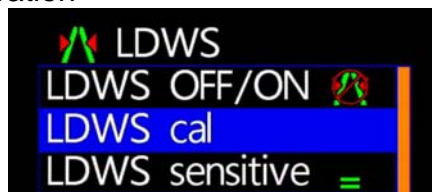
Setting LDWS：
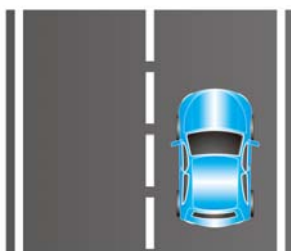
1. Drive the vehicle on the middle of the road

2. Open "LDWS" and select " LDWS confirmation"
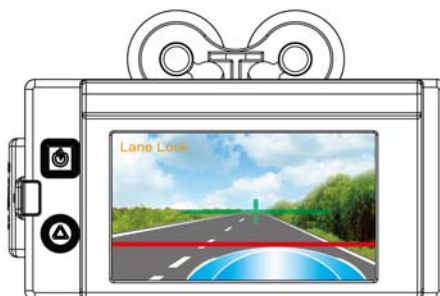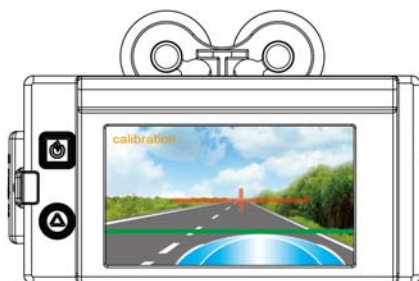
3. Use the keys of ▲▼ ◀▶ on remote controller to adjust the " CROSS" in the exact middle of the road. If setting fails, " Can't get Lane" will be appeared. Use ⊃ to change horizontal line.

4. Use the keys of ▲▼◀▶ on remote controller to adjust horizontal line above engine cover. When the line can be recognized by VVR, "Lane Lock" will appear.
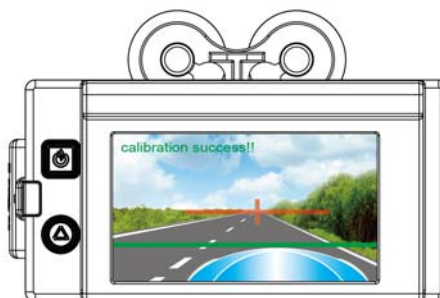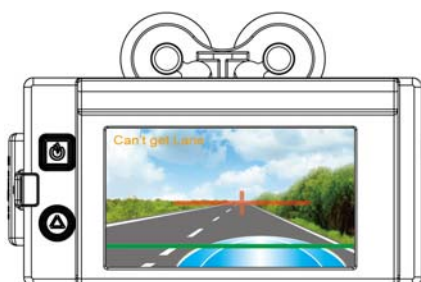
5. Please wait for few seconds in order for the device to be calibrated after the key ▲"Force Video" is pressed.

6. After calibration is completed, "calibration success!!" will appear in GREEN color, then press [Menu] "menu"

◆　LDWS Sensitive Setting
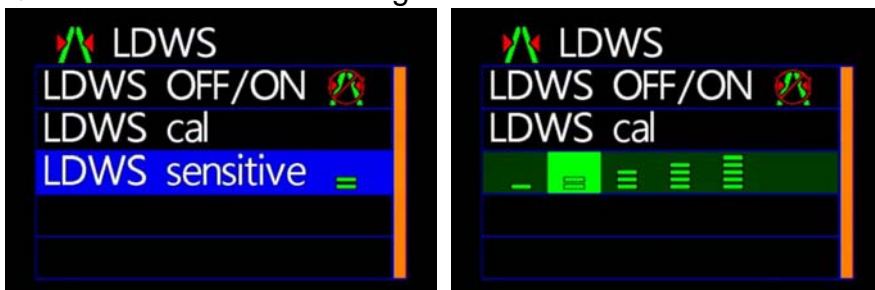
★ More Stripes, More Sensitivity

6. Motion Menu

◆　Motion Type Setting
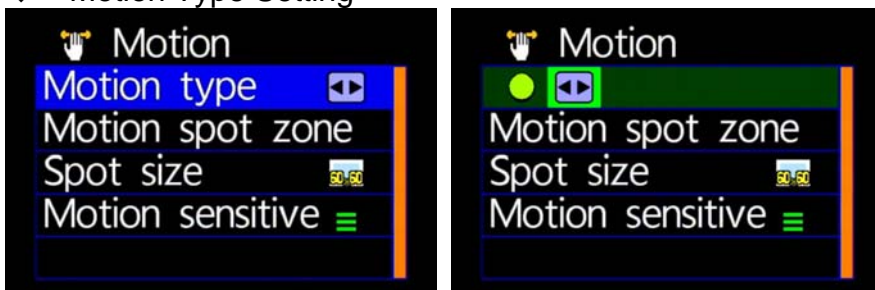
★ 🟢 : Constant Motion Recording.

★ 🔵 :Full Screen Motion Recording. (For this setting,

it is not necessary to setup the motion detection areas)

◆　Motion Sport Zone Setting
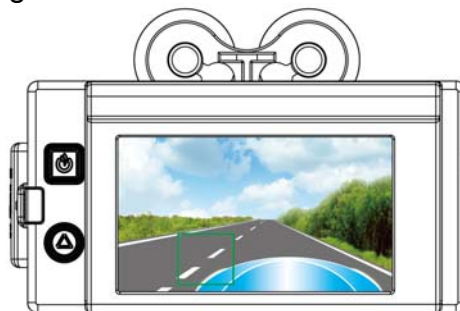
★Use remote controller to sense the movement location
★When setup for constant motion recording mode,
please select the designated areas for motion detection.

◆ Spot Size Setting
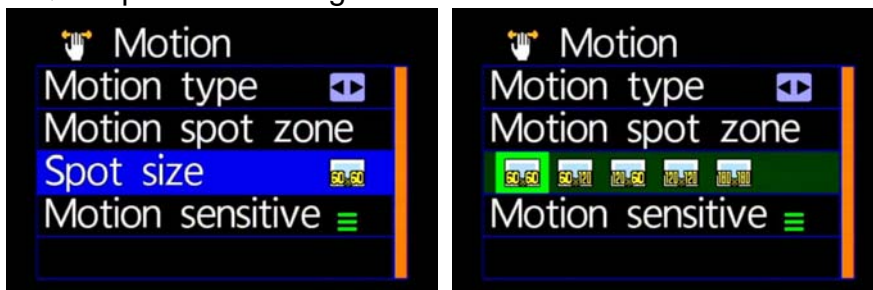
★Sizes: 60x60 / 60x120 / 120x60 / 120x120 / 180x180

◆ Motion Sensitivity Setting
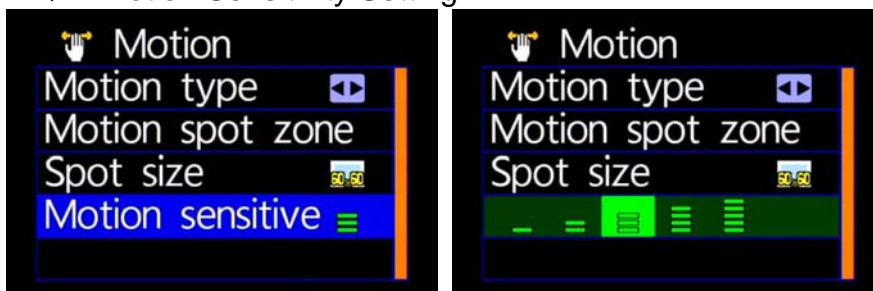
★More Stripes, More Sensitivity

F. Playback

1. Direct playback on machine side

Build-in accelerometer, the system automatically determine the level of the screen visualization, and make the screen self-rotated to normal position.

2. Video modes

Press " Playback" on remote controller into Playback modes. Select the timing of the video by pressing "Play"
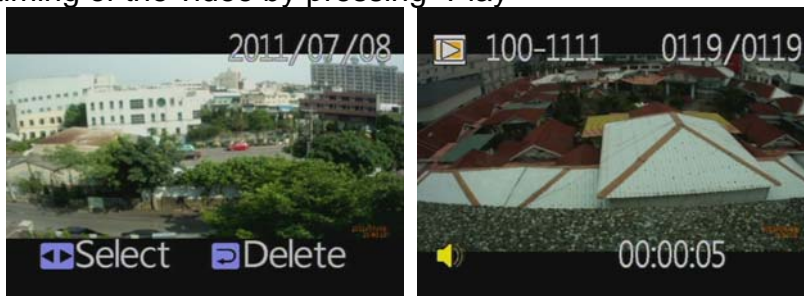
◆ **Playback settings - Deleting a single file**
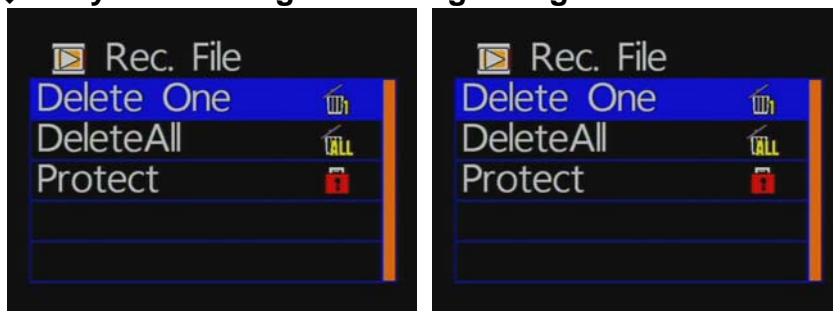
★ You must disable the protection function first in order to process the deleting procedures.

◆ **Playback settings- Delete All**
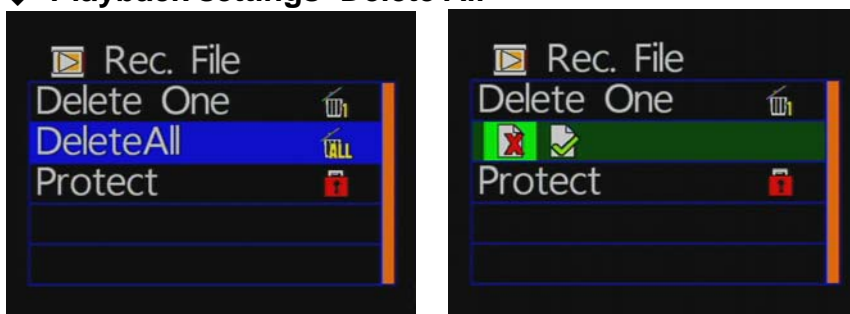
★ You must disable the protection function first in order to process the deleting procedures.

◆ Playback file setting-protect

Notice: When an icon of lock is appear, this specific video data is protected.
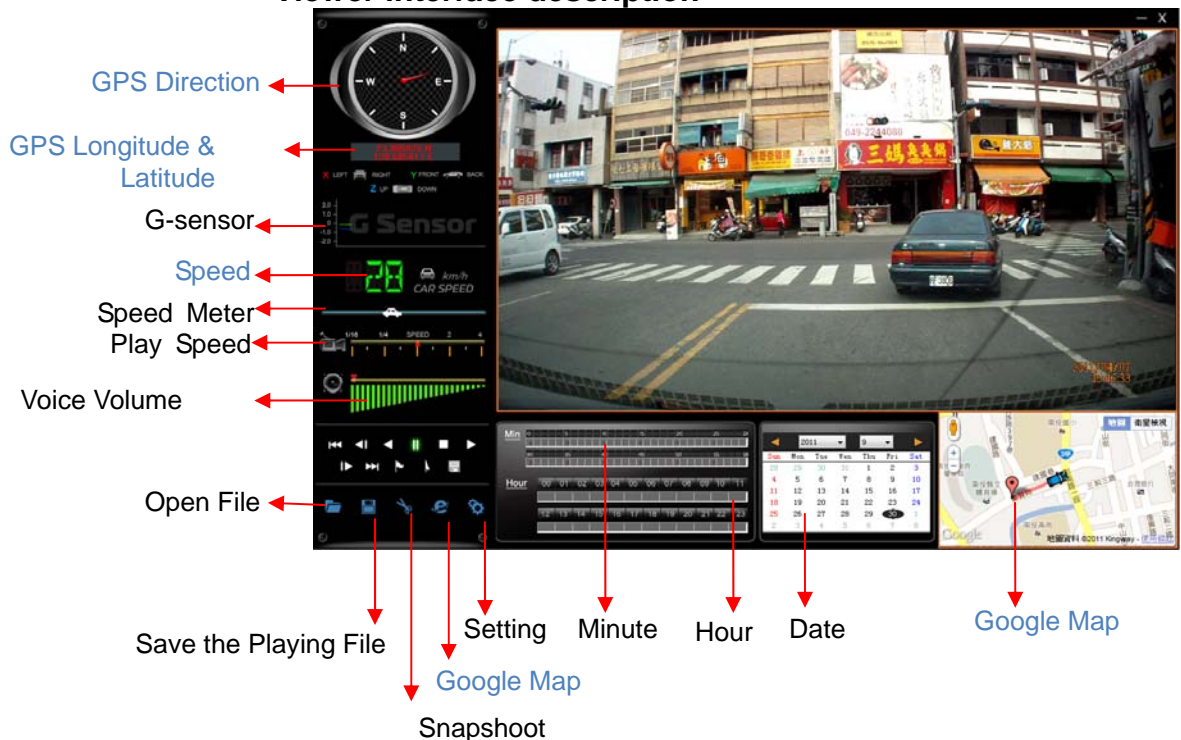
3. Snapshot playback
Press " Playback" on remote controller under Snapshot mode.
Select the timing of snapshot pictures.

Rotation	⬕ [Confirm] key
Next	◀ ▶ [R/L]key
Zoom	▲ ▼ [U/D]key

◆ Photo playback settings-Delete one

★ You must disable the protection function first in order to process the deleting
procedures.

◆ Photo playback settings-Delete All

★You must disable the protection function first in order to process the deleting
procedures.

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◆ **Photo playback settings-protect**

Notice: When an icon of lock is appear, this specific video data is protected.

◆ **Photo playback settings-Autoplay**
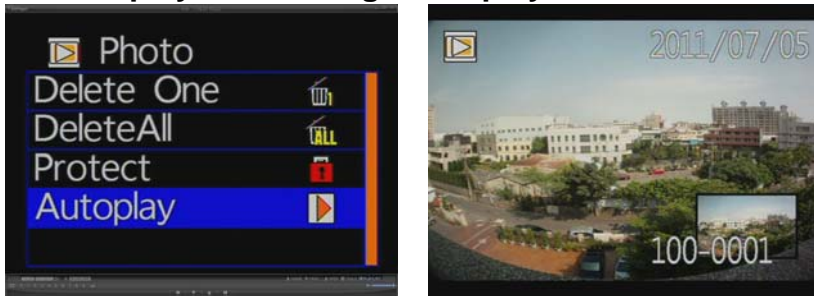
Each Snapshot will display in every 5 seconds. Press "Menu" for stop.

G. Software operating instruction

1. Remove SD card from card slot of host side
2. Put the SD card to the card reader
3. Connect card reader to the USB port of PC side
4. Choose the file to play: Execute "TransportStream.exe" , which is located in the product CD folder, Screen shown as below. Choose "Open the document" , and choose the file of memory card or hard disc and then click "Play key" for playback.

◎Note: To perform this software, please install Direct X 9.0 or above.

Viewer interface description

GPS Direction

GPS Longitude & Latitude

G-sensor

Speed

Speed Meter

Play Speed

Voice Volume

Open File

Save the Playing File

Snapshoot

Google Map

Setting   Minute   Hour   Date

Google Map

★ GPS direction & Coordinate, Speed and Google Map should match up specific models within GPS function.

1. Operating Interface Description:

1	⏮	Return to last file key
2	◀❚	Forward playback
3	◀	Playback key
4	❚❚	Pause key Go to next file key
5	◼	Stop key
6	▶	Play key
7	❚▶	Forward playback
8	▶▶	Rearward playback
9	⚑	Mark starting point of back up file
10	⚑	Mark ending point of back up file
11	🖫	Backup the marking file
12	📂	Open document, select the file to play
13	💾	Backup the current playing file
14	✂	Snapshoot tool
15	𝑒	Google map
16	⚙	Configuration, Set machine-related settings

2. Player Interface Description:
- Show latitude and longitude position

- G-sensor : Impact sensor analyzer, forced saving the accident video before and after 1 to 3 minutes, not covered by other new files, protect the integrity of the incident video.

  X: Induct about level of vehicles moving
  Y: Induct around level of vehicles moving
  Z: Induct Height fluctuation around level of vehicles moving

■ Play BAR
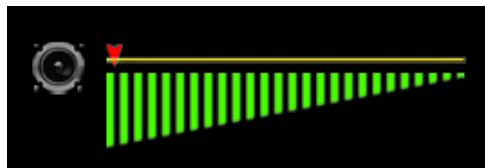Press left button of mouse and move around to pull BAR with fast-moving.

■ Driving Speed

■ Playback speed
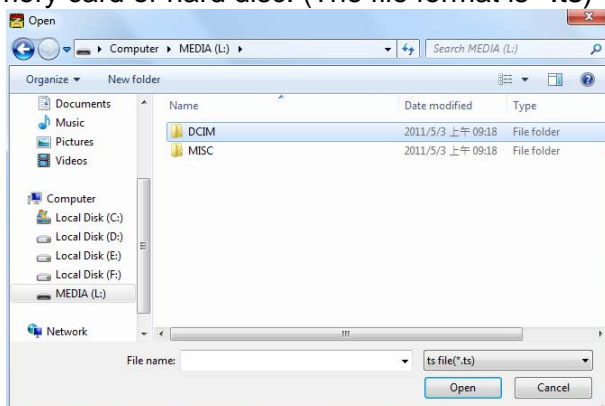Fast forward with 2 times or 4 times, and playback with 0.25 times, 0.0625 times.
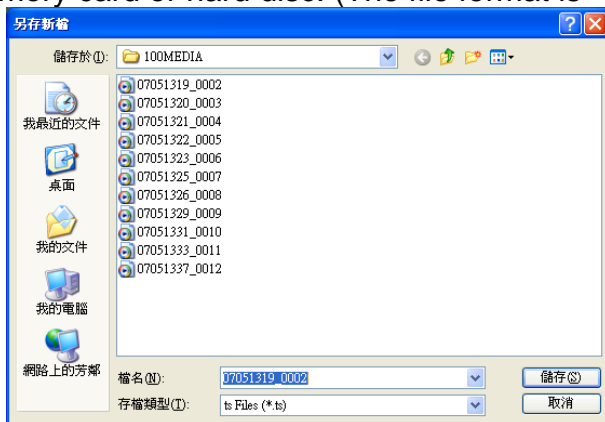

■ Volume control

■   Select the file to playback

Select " Open the document" , and then choose the file of memory card or hard disc. (The file format is *.ts)

■   Save the playing file

Select "Save the playing file" , and then choose the file of memory card or hard disc. (The file format is *.ts)

■   Snapshoot Tool

Play record from SD card first and then use Snapshoot tool to capture the screen. When select Snapshoot tool, it will appear the following window. (The picture of display screen will save in capture storage folder path.)
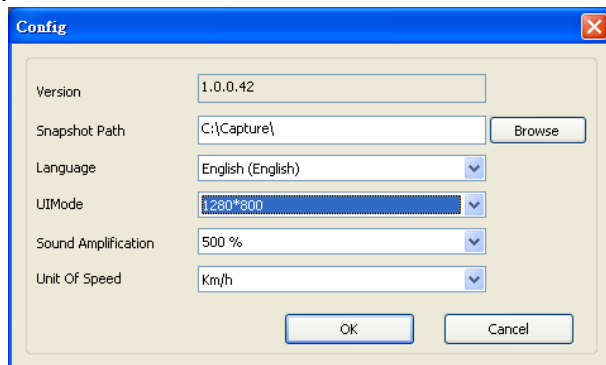
■ Google Map

Click [icon] and then appear the window of Google Map to view the tracking of Vehicle. (This function needs to connect Internet.)

■ [icon] Related settings

Software version related information and SD card data storage settings.

(a) Storage path of Snapshot: the location to save images in the computer

(b) Language: select language settings of playback software. (The settings will work after re-open the software)

(c) The mode of User Interface: Set the display mode of host. (To change the configuration option, it must insert SD card into the Vehicle Video Recorder). It provides 3 different resolutions for selecting: 960x600, 1280x800, 1920x1080.

(d) Sound Amplification: max. 10 times

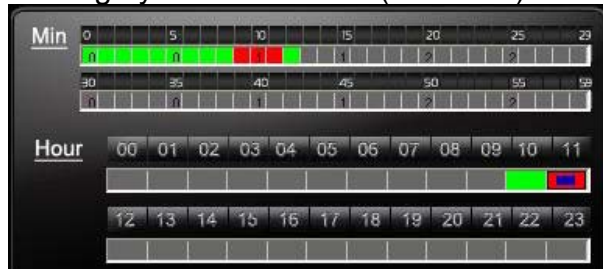(e) Unit of Speed: Km/h, Mile/h, Knot

■ **Playback date selection**

● Quick switching by minutes

Click the minutes table to change the recording footage immediately.

● Selecting by Hours/Minutes (24-hours)

After select the "Date" with Gray-brown color, on Hour/Minutes table will display Red/Green color.
Green: normal record
Red: force record

- Selecting by date

Launch the Player, click the "open" to select the file or path of storage. Then on date table with Gray-brown color indicate the recording footage.

H. Formatting memory card

When should you need to format the SD card?
When you purchase a new SD card, you have to format it for vehicle video recorder to record properly.

Procedures for new SD card formatted as follows:

1. Insert SD card into the SD slot of Vehicle Video Recorder and then open the menu. Find the format option and then begin to format SD card.

2. Connect power cable to machine, use remote controller to enter index menu and select format operation.

Formatting Steps：

Step 1	Step 2	Step 3

3. After formatting is completed, leave the index menu and back to live screen. Then the SD card formatting is done and ready to use.

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I. Record Time Estimation (based on constant record mode with 8GB card)

＊The chart of estimated record time listed below is for reference only.
The length of time recorded can be varied due to variation in image size may be somewhat different.

Video Format (NTSC / PAL)		
Resolution / Video Quality	1080P30	720P30
High	110 Min	115 Min
Normal	115 Min	135 Min
Low	135 Min	155 Min

J. Appendix: The Indication of Bright and Dark Spot of LCD

Q: What is Bright/Dark Spot?

A :   • Bright Spot: At dark background, we found the abnormal bright spots, we called those spot are "Bright Spot"

    • Dark Spot: At multiple color background (excluded dark background), we found the abnormal dark spot, we called those spot are "Dark Spot"

Q: The indication of Bright and Dark Spot
  (a) There is no bright spot allowed in Area A, only single dark spot or none is allowed.
  (b) The maximum amount of bright spots and dark spots allowed in Area B are two of each.
  (c) The max total amount of bright and dark spots in Area A and B are three or under

1/4	1/2	1/4	
B	B	B	1/4
B	A	B	1/2
B	B	B	1/4

The Diagram of Area A and B

⚠️ **Notcie**

(1). There is 30 days exchanges refer to the indication of bright and dark.

(2). Please keep the receipt and contact your local dealer for exchanging merchandise.

(3). The maximum valid date is 30 days.