

SJ-KV202 User's Manual





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Product Specifications

1. Cautions upon Use

Information

Contents intended to prevent potential dangers by notifying consumers on the level of damage (bodily, monetary) of product safety matters (electric shock, fire, explosion) in cases of consumer misuse. Read the following contents carefully for proper use.



Safety Warnings – Failure to observe the safety instructions within this category could result in serious injury or death.



Safety Cautions – Failure to observe the safety instructions within this category could result in system error or damage.

Product Related



Do not disassemble, repair or modify the product.

Such acts may result in electric shock. For inspections or repairs, please visit your place of purchase or a designated repair center. The occurrence of accidents due to disassembly, modification or other forms of abnormal operations may prevent you from receiving maintenance services.



Quickly turn off the power within abnormal states, such as smoke or burning smells coming from the device. Such as lead to fire or electric shock.



Do not pour water onto the device.

As the device is not waterproof, such acts could result in product malfunction and lead to fire or electric shock.

Product related



Never clean the product with chemical materials, such as benzene or thinners. Such materials may damage the device surface or cause internal malfunctions.



Do not subject the product to severe shock or introduce foreign objects. Please heed caution as the introduction of foreign substances could lead to product malfunction.



Always maintain the front side of the product in a clean state. If foreign substances or stickers are placed in front of the product lens, normal recording is not possible. In addition, placing other objects in the vicinity of the product may be visible through reflections in the mirror. Never place other objects nearby the product.



Firmly fasten the product when installing for the first time. Improper installation could result in abnormal product operation or the product may fall off while driving. Following installation, heed caution not to subject the product to excessive force and shock.



When connecting the product power, use the genuine power cable supplied by our company. The use of non-genuine power cables or connecting the cable to other products may result in malfunction or fire.



If the product breaks, continued use may lead to hand or face injury. Visit a service center for repair before use.

Driving related



Refrain from prolonged use with the ignition turned off.
Such acts could lead to battery discharge.



Do not watch or operate the product while driving.
Operating the product while driving may result in accidents.



Heed caution as the quality of recorded videos may not be good in cases of sudden changes to brightness, such as when entering a tunnel, when the backlight is very strong, or when there is no light source during the night.



Refrain from excessive front window tints.
Heed caution as videos recorded within vehicles with sun tints may be somewhat blurry or distorted.



Heed caution as event data may not be recorded within this product in cases of accidents under a certain impact level. In such cases, it is possible to use the manual recording feature to manually record such videos separately. If not, such are recorded as infinite recording files.



Heed caution as video data may not be recorded if the device power becomes disconnected during a major accident.



Power installation must be done by a installation specialist.
The method of installation may differ depending on the vehicle. User installations may result in vehicle and product malfunction.
Damage to the vehicle and/or product caused by user installation/disassembly is the sole responsibility of the user.

GPS Related



Commercial GPS products carry a margin of error of approximately 15m.

Buildings, underground roads, tunnels, and roadside trees could increase the margin of error or prevent the GPS from being properly received.



The time required to receive the GPS signal from the point of turning on the device could be more than 10 minutes depending on the weather or environmental conditions.

2. Package Components

Basic Components



[KV202 Device]



[Cigarette Jack Cable]



[Video Cable]



[Product Installation CD]



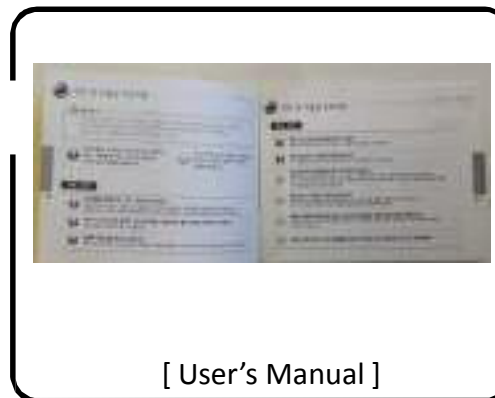
[Mount]



[Cable Clip]



[Micro SD Card]



[User's Manual]



[Supplementary
Adhesive Sticker]




- Check to see that all of the product components, shown above, are included.
- In case of missing components, please contact your place of purchase.
- The contents of this user's manual are subject to change without prior notice for product improvement.
- Additional basic components are sold separately.

3. Names of Product Components

Names of Product Components



Descriptions of Product Components

Name		Description
1) VIDEO output port		Displays live video of recorded scenes and plays recorded scenes.
2) USB port		When connected with a PC, plays recorded videos and used to copy files to storage devices.
3) Camera Lens		Films the front of the vehicle. (Heed caution so that foreign substances do not cover the front of the lens.)
4) Speaker		Outputs product operating states through voice guidance.
5) Button	Record Button 	Button related to recording, play, and settings.
	Cancel Button	Button related to canceling recording, play, and settings.
6) LED		Displays the various operating states through LED (red / green / orange).
7) Micro SD Slot		Micro SD card slot. (Check to see that the card side is facing the right side before inserting.)
8) Microphone		Built-in microphone records sounds.
9) DC Power Input terminal		This is the vehicle DC power input terminal. (12V ~ 24V)
10) GPS Input terminal		This is the GPS input terminal.
11) VIDEO input port		The rear view camera is connected through the video input port.
12) Mount		Structure that is convenient to attach to the room mirror. The mount is integrated with an external GPS.

4. Installing in the Vehicle


Cautions upon Installation

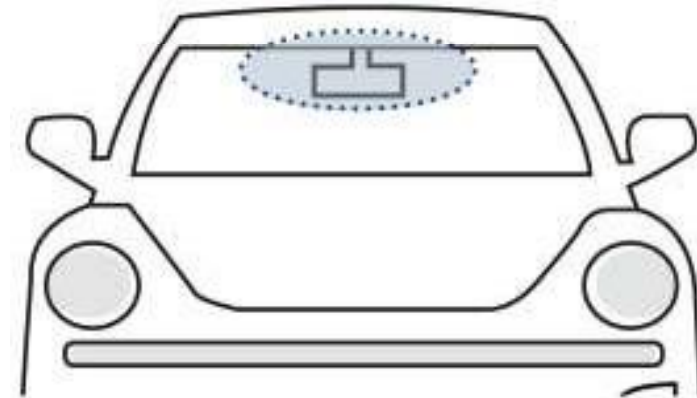
- Please refrain from repeated detaching/re-attaching once the product has been installed.
- Do not install or use the device outside of the vehicle.



Attach the device in a place where the driver's field of vision is not blocked.

Position of Installation

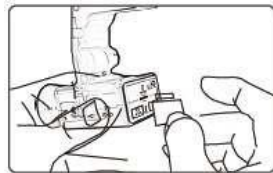
- Position:  recommended area of Black box installation
- After attaching the Black box to the recommended installation area, use the product handles to adjust the camera so that it is horizontal and facing the front.
(Here, heed caution so that there are no obstructions in front of the lens.)
Once power is turned on, the product led will turn on and **"Starting Infinite recording"** voice guidance is provided and recording will start.



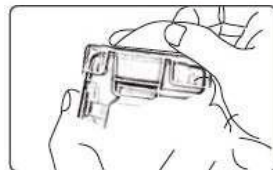
Connecting the Black box to the Vehicle



1 Connect the Main Unit and the Mount Place the groove at the top side of the main unit against the groove area on the mount and push until a “click” sound is heard.



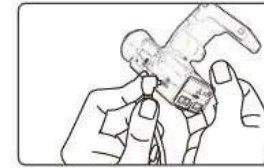
2 Insert the Memory Card When inserting memory cards, check to see that the correct side of the card is facing up before inserting into the slot.



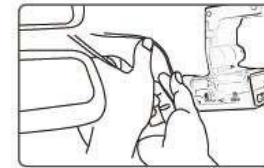
3 Remove Double-sided Tape Remove the double-sided tape attached to the mount.



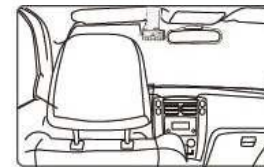
4 Connect the Main Unit and the Mount Attach the device at an appropriate position, turn the handles to adjust the footage angle of the product so that the camera is facing the front and the vehicle interior. Here, heed caution so that there are no obstructions in front of the lens.



5 Connect Cigarette Jack (Main Unit) Connect the cigarette jack cable with the main unit.



6 Organize Power Cable, Connect Power Use the cable clip to organize the power line and connect the power with the cigarette jack socket.



7 Vehicle Installation Complete After turning on the ignition, check to see whether the device LED turns on. Recording will start once the LED turns on and **"Starting Infinite power recording."** voice guidance is provided.

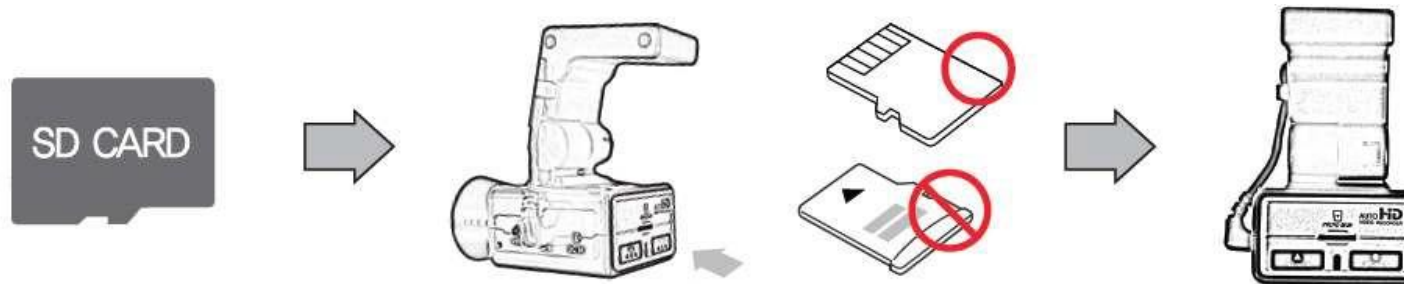
- Attaching the device in a position that interferes with driver's field of vision or with vehicle operations could result in accidents.



- Firmly attach the device so that it does not move or fall off while driving.

5. Inserting the Memory Card

Inserting the Memory Card



- Insert the memory card with the part where the cut edge facing up. (refer to the product image above)
- Fully insert the card into the card slot.
- After inserting, connect the power plug and check whether the memory card is properly inserted through the voice guidance.

Memory Card Recommendations and Cautions

- Supported Memory Cards : 8GB/16GB/32GB (MAKER : ADATA, Class 10 recommended)



Cautions upon Using Memory Cards

- If the card is not fully inserted, then footage may not record properly. Make sure to fully insert the card until you hear the 'click' sound.
- Heed caution not to touch card contact area (gold area) or introduce foreign substances.
- Do not use the memory card used within the Black box for other purposes. Such could lead to abnormal operation.
- When purchasing Micro SD cards, compatibility issues may exist even with some genuine products. If such occurs, visit your place of purchase.

5. Using the Memory Card

Recording Times by Memory Capacity

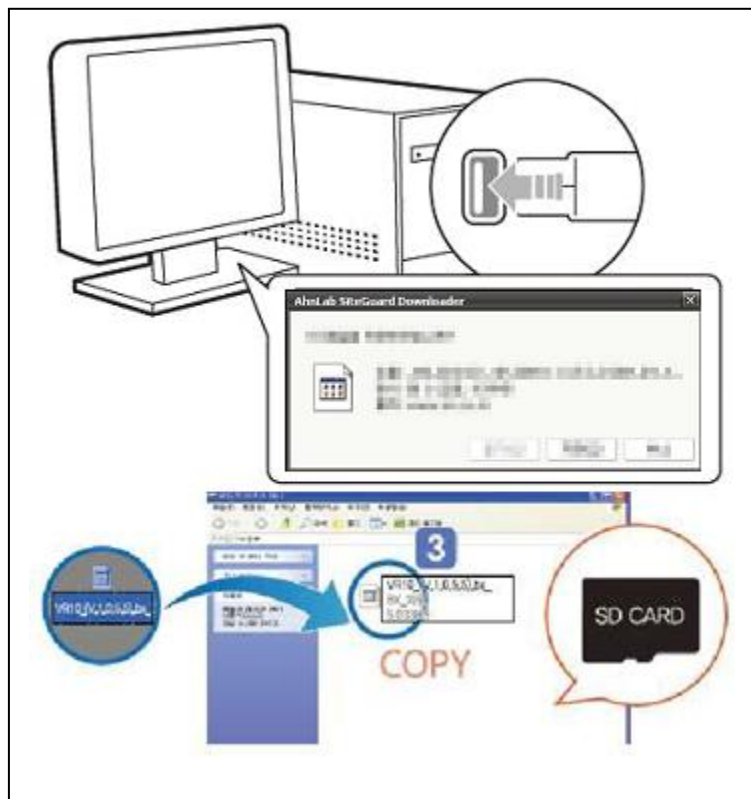
The recording times shown below are the maximum values calculated for each recording mode and may slightly differ upon actual use.

Memory Size	Classification	Infinite Mode (2CH 30fps recording)			Parking Mode (2CH 5fps recording)		Reference
		Infinite Recording	Event Recording	Manual (Forced) Event Recording	Parking Recording	Event/ Motion Recording	
8GB	Max saving time	32 minutes	7 minutes	5 minutes	36 minutes	23 minutes	<Standard> -HD level 2CH 30fps Infinite recording - H.264 Encoding - 8Mbps (high resolution) - High Profile <Memory occupation by recording mode> - Infinite Mode : 75% - Parking Mode : 25%
	Max No. of Files	64 Files	14 Files	10 Files	72 Files	46 Files	
16GB	Max saving time	64 minutes	15 minutes	10 minutes	71 minutes	48 minutes	
	Max No. of Files	128 Files	30 Files	20 Files	142 Files	96 Files	
32GB	Max saving time	131 minutes	32 minutes	22 minutes	149 minutes	98 minutes	
	Max No. of Files	262 Files	64 Files	44 Files	298 Files	196 Files	



Recording times may partially change with future firmware updates.

6. Firmware Update



1. Remove the Micro SD card from the device and use a card reader to connect with the PC.
2. Back up data currently in the memory card separately and format the memory card.
3. Copy the downloaded firmware into the SD card.
4. Insert the SD card with the firmware copied and turn the power on.
5. At such time, the red LED will remain on. Once the firmware upgrade is complete, the LED will change to green.
6. 7. Once upgrade ends, the downloaded firmware is automatically deleted.
7. 8. Once upgrade is complete, the device will automatically reboot and recording can begin.



Cautions upon using Memory Cards

- Problems may occur within SD cards that have been used for prolonged periods of time.
- Regularly format the SD card for use.
- For stable recording functionality, the entire capacity of the SD card is not used.

7. Key Product Features

Key Product Features

1. HD Resolution Real Time Recording



Within the HD (1280 x 720) resolution of the 16:9 WIDE screen, recording is conducted up to max 30 frames. A 2-million resolution camera suited to HD resolution has been equipped.

2. VIDEO-OUT Features



Navigation systems and external monitors can be connected to be play video and recorded files.

3. Voice Recording



Sounds are recorded through the built-in microphone. In addition, it is possible to turn off the microphone within the Configuration window for personal privacy protection.

4. Compatibility with various memory



Supports 8GB, 16GB, 32GB memory cards.

5. Mount Structure



Designed so that the Black box frame can be freely adjusted upwards/downwards while the wide viewing angle (145.5 degrees) enables monitoring of the vehicle exterior.

6. Dedicated Video Player



Through the dedicated PC program, the video and voice data saved within the memory card are used to view driving video, vehicle information, time information and location information. In addition, recorded videos can be captured to print or save as image files.

7. Configurations Feature

Through the Configuration window, users are able to modify the recording speed, video quality, sensor sensitivity, voice recording settings and other settings.

Various Recording Features

Various Recording Features



Infinite Recording

Normal video files are saved starting from device boot until turning off. If the data exceeds the capacity of the Micro SD card during continued recording, files are sequentially deleted starting with the oldest file in order to record new videos.

(saved as inf file name, Example: inf_20120410_121030A)

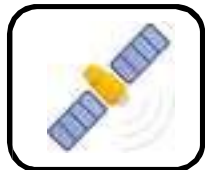


Event Recording (Impact Detection Recording)

In the case of an accident, sudden braking, sudden acceleration, sudden turn, or some other form of impact on the vehicle, the 3-axis acceleration sensor is used to save event files totaling 1 minute each comprised of 10 seconds prior to impact and 50 seconds after impact.

(Impact detection recording during Infinite recording saved as evt file name, Example: evt_20120410_121030A, Impact detection recording during Parking recording saved as epk file name, Example: epk_20120410_121030A)

GPS Driving Information Saving



Through GPS data, the dedicated program can be used to check various related information, such as driving routes, speed information and driving time information.



Manual Recording (Emergency Recording)

If the user presses the Manual record button, then the corresponding video will be saved as a manual recording file even when there is no impact.
(saved as man file name, Example: man_20120410_121030A)



Parking Mode Recording

Pressing the parking mode button to monitor a parked vehicle will slowdown the recording speed to 5 frames to enable recording over long periods of time.
(When automatic parking mode has been set, then parking mode will automatically start once the vehicle is parked.)
At such times, the product must be directly connected with the vehicle power. However, heed caution for vehicle battery discharge upon use.

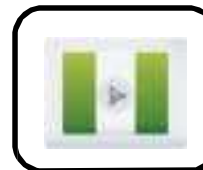
(saved as pak file name, Example: pak_20120410_121030A)



Motion Event Recording

When requiring parking recording that records only when there is movement, motion event recording can be used. The Configuration window can be used to set motion event recording for parking recording only when there is movement.
(saved as epk file name, Example: epk_20120410_121030A)

Play Features



When a video file must be checked urgently, a video cable can be used to directly connect the device with a navigation system or a car video device to play video files without having to connect with a PC.

8. How to Operate the Product

Operating the Product

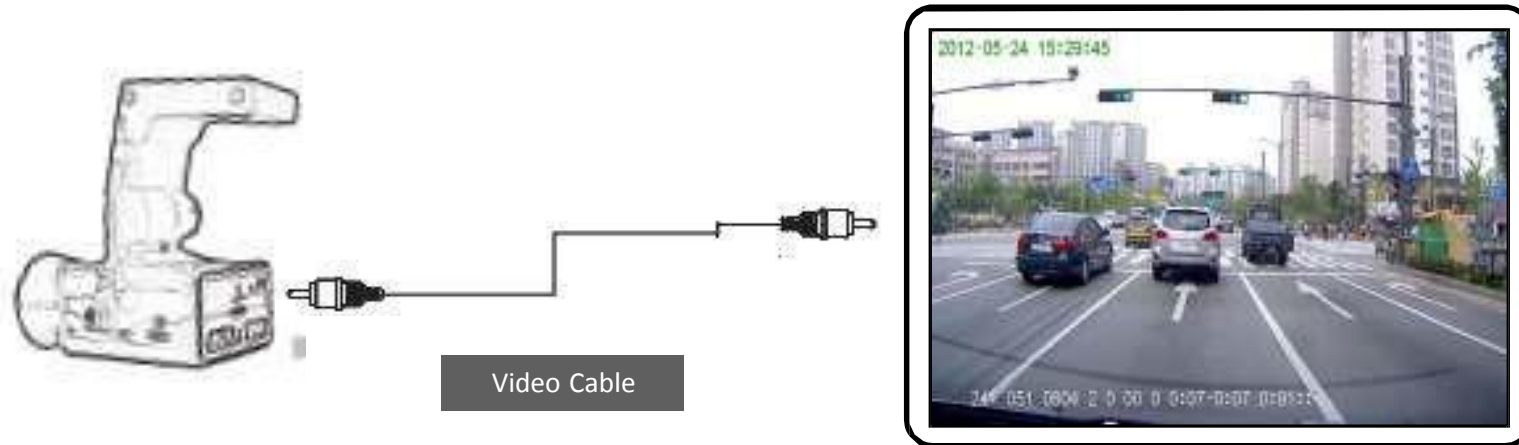
Power ON	<p>After product installation, if the vehicle power or the ignition is turned on, the orange (red + green) LED will light up. After booting for approximately 15 seconds, the LED will blink as green and the 'Starting infinite recording' voice guidance will sound to indicate that recording is starting in infinite recording mode.</p> <p>Information : After power is connected, the mode will always start as infinite recording mode. (However, when the parking mode feature is turned on, the mode will start as parking recording mode if the mode before the power was turned on had been parking recording mode.)</p>
Power off	<p>If the vehicle ignition is turned off or the power cable is removed, then the 'System will end' voice guidance will sound and the orange LED will blink. The device will completely turn off after the LED turns off.</p> <p>Information : The power will turn off after the LED is completed off.</p>
Infinite Recording	<p>Once booting is complete, the green LED will turn on and the 'Starting infinite recording' voice guidance will sound and recording mode will start.</p> <p>Information : Recording will not begin until the green LED turns on. Upon connected the rear camera, the 'rear camera has been connected' voice guidance will sound prior to the Infinite Recording voice guidance. Blocking Voice Recording For personal privacy protection, Voice Recording can be turned off by using the program Configuration window and setting the voice recording volume to 0.</p>

Operating the Product

Event Recording	<p>An accident, sudden braking, sudden acceleration, sudden turn, or some other form of impact on the vehicle is detected by the built-in sensor. The 'Starting event recording' voice guidance will sound and the red LED will blink fast to indicate that an event video is being recorded. Once event recording is complete, the green LED will blink and the device will automatically convert back to infinite recording mode.</p> <p>Information : After power is connected, the mode will always start as infinite recording mode. (However, when the parking mode feature is turned on, the mode will start as parking recording mode if the mode before the power was turned on had been parking recording mode.)</p>
Manual Recording	<p>During infinite recording, if the user wants to record a video even though there is no impact, press the [] button. The 'Starting event recording' voice guidance will sound and the red LED will blink fast to indicate that a manual video is being recorded. Once manual recording is complete, the green LED will blink and the device will automatically convert back to infinite recording mode.</p>
Parking Mode Recording	<p>Parking Mode Recording is comprised of manual parking mode recording and automatic parking mode recording. For manual parking mode, the manual parking mode setting must be enabled within Configuration. Pressing and holding the [] button will start parking mode recording. For automatic parking mode, the automatic parking mode setting must be enabled. Upon parking, the 'Starting parking recording' voice guidance will sound and the orange (Red + Green) LED will blink to indicate that parking mode recording will start. In Parking mode, the recording speed is slowed down to 5 frames to ensure recording over long periods of time.</p> <p>Information : In the case of manual parking mode recording, recording takes place in parking mode until the [] button is pressed to cancel mode and restore infinite recording.</p>
Parking Mode Event Recording	<p>Parking mode event recording is comprised of impact detection event recording and motion event recording. Impact detection event recording is same as the impact detection event recording within infinite recording.</p> <p>Motion event recording records only when movement is detected during parking.</p>

9. Voice Guidance on Product States and LED Display




- 1) When a video file must be checked urgently, it is possible to connect the product directly with a navigation system or car video device with a video cable without having to connect with a PC.



- 2) In order to start the video play mode, the power must be on and a cable must be used to connect the black box video output port with the external monitor input port. Also, the video device must be turned on.

3) Operating Method

File Play


In Recording Mode, press the [] button to pause recording. In this state, pressing and holding the [] button will direct to the most recently recorded file and display the initial play screen. Press and hold the [] button to play the recorded file.

In the play screen, press and hold the [] button to stop playing and display the initial play screen.

Previous File

In the play screen, pressing the [] button will go to the previous video file.


Next File






In the play screen, pressing the [] button will go to the following video file.

Information : When connecting with the navigation, first consult with the navigation manufacturer.
For some products, a RCA to STEREO (Y jack) must be purchase separately for connection.



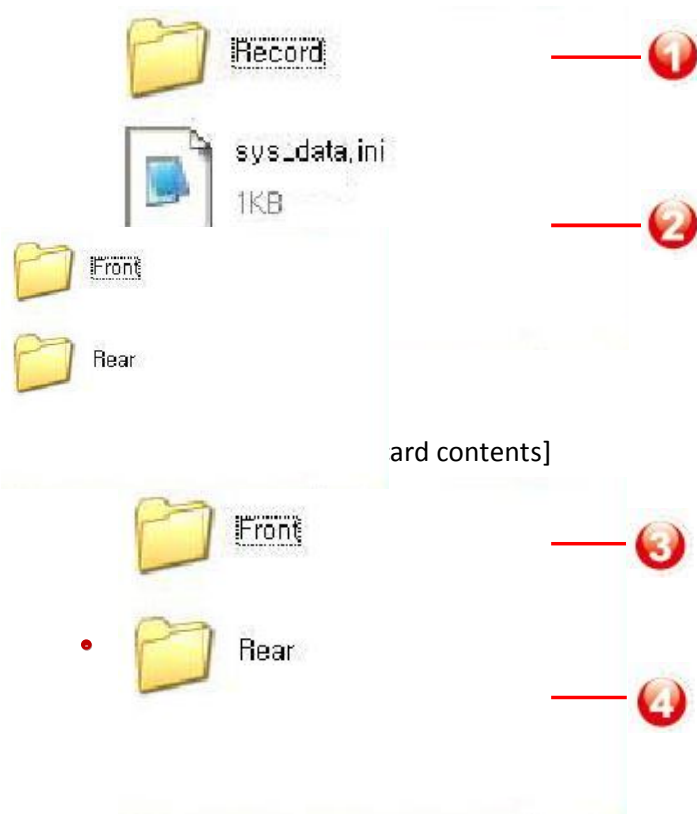
9. Voice Guidance on Product States and LED Display

State	Operating State	Button Operation	RED LED	GREEN LED	Voice Guidance
Power ON	Power turned On	-	15 seconds ON	15 seconds ON	-
Power OFF	Power turned Off	-	Normal blinking	Normal blinking	"The system will end"
GPS Connection	GPS initially connected	-	-	-	"The GPS has been connected."
Start Infinite Recording	After power is connected, immediately converts to infinite recording mode	-	OFF	Normal blinking	" Starting Infinite Recording."
End Infinite Recording	In infinite recording mode, stops infinite recording	 Shortly press	OFF	ON	
Event Start	In infinite mode, changes to event recording	-	Fast blinking	OFF	"An event has been detected."
Event End	Automatically converts from event recording to infinite mode	-	OFF	Normal blinking	-
Start Manual Recording	Changes from infinite recording mode to manual recording mode	Shortly press	Fast blinking	OFF	"An event has been detected."
End Manual Recording	Automatically converts from manual recording mode to infinite recording mode	-	OFF	Normal blinking	-
Start Parking Recording	Changes from recording stopped state to parking recording mode	Press and hold	Normal blinking	Normal blinking	" Starting parking recording."
End Parking Recording	Changes from parking recording mode to parking recording stopped state	Shortly press	OFF	ON	-
Start Parking Mode Event	Changes from parking mode to event (impact/motion) recording	-	Fast blinking	OFF	"An event has been detected."
End Parking Mode Event	Changes from event recording to parking recording	-	Normal blinking	Normal blinking	-

State	Operating State	Button Operation	RED LED	GREEN LED	Voice Guidance
Change Play Mode	Changes from recording stopped state to play mode	 Press and hold	OFF	OFF	-
Start Play Mode	Plays current file in play mode	 Press and hold	OFF	OFF	-
End Play Mode	Changes from play mode to recording stopped state	 Press and hold	OFF	OFF	-
Select Next File	Selects next file in play mode	 Shortly press	OFF	OFF	-
Select Previous File	Selects previous file in play mode	 Shortly press	OFF	OFF	-
Eject Micro SD	When ejecting Micro SD	-	ON	OFF	"Please re-insert the SD card."
Insert Micro SD	When inserting Micro SD	-	OFF	ON	-
Insert Defective SD	When inserting a defective SD	-	-	-	"This SD card cannot be used."
When requiring SD Card Formatting	When SD card requires formatting	-	-	-	"The SD card must be formatted."
When conducting SD Card Formatting	When conducting SD card formatting	-	-	-	"SD card format is conducted."
When connecting rear view camera	When connecting rear view camera	-	-	-	"The rear camera has been connected."
When disconnecting rear view camera	When disconnecting rear view camera	-	-	-	"The rear camera has been disconnected."
System Error	When camera and recording device reset has failed	-	-	-	"System error. System will restart."
High/Low Temperature State	High temperature over 80 degrees Low temperature under -20 degrees	-	-	-	"The temperature protection feature will operate."

10. Checking through the Micro SDCard

1. Eject the Micro SD card from the device and use a card reader to connect with the PC.
2. Once connected with the PC, a removable disc will be started.
3. As shown in the figure, pressing “open folder to view files” will display the folder.



[DCIM folder contents]

epk_20120613_133803A.mov	16,384KB	KMPlayer.mov	2012-06-13 1:38
epk_20120613_140052A.mov	16,384KB	KMPlayer.mov	2012-06-13 2:00
evt_20120613_132754A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:27
evt_20120613_135816A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:58
inf_20120613_132258A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:22
inf_20120613_132359A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:23
inf_20120613_132459A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:24
inf_20120613_132600A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:26
inf_20120613_132700A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:27
inf_20120613_132845A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:28
inf_20120613_132945A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:29
inf_20120613_133046A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:30
man_20120613_133341A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:33
man_20120613_135935A.mov	65,536KB	KMPlayer.mov	2012-06-13 1:59
pak_20120613_133529A.mov	16,384KB	KMPlayer.mov	2012-06-13 1:35
pak_20120613_133630A.mov	16,384KB	KMPlayer.mov	2012-06-13 1:36
pak_20120613_133731A.mov	16,384KB	KMPlayer.mov	2012-06-13 1:37
pak_20120613_133854A.mov	16,384KB	KMPlayer.mov	2012-06-13 1:38

[DCIMA folder contents >]

10. Checking through the Micro SDCard

1

Record : Folder with recorded files

- As folder in which recorded video files are saved, includes DCIMA/DCIMB folders.
- Front folder : Folder where front camera video files are saved
- Rear folder : Folder where rear camera video files are saved
- Front/Rear folders include Infinite/ event/ parking/ parking event/ manual files.

2

sys_data.ini : System Information

- Save user set information : resolution, impact detection, even setting, camera setting, etc.
- **Voltage value of infinite and parking modes for automatic parking mode**

3

Front folder : Folder where front camera video files are saved

- Includes Infinite/ event/ parking/ parking event/ manual files related to front camera videos.

4

Rear folder : Folder where rear camera video files are saved

- Includes Infinite/ event/ parking/ parking event/ manual files related to rear camera videos.

5

Parking event recording files (epk) : Event files (impact/motion) that occur during parking recording mode

6

Infinite event recording files (evt) : Event files (impact) that occur during infinite recording mode

7

Infinite recording files (inf) : Files recorded during infinite recording mode

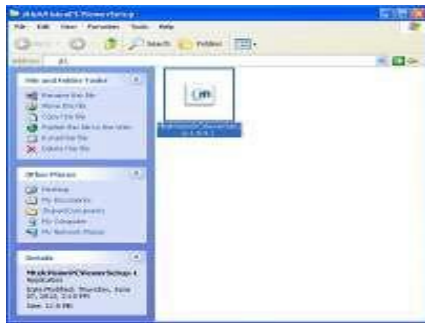
8

Manual recording files (man) : Files recorded manually during infinite recording mode

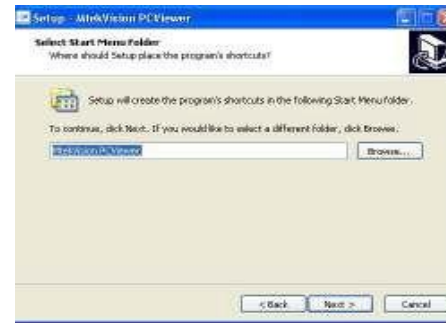
9

Parking recording files (pak) : Files recorded during parking recording mode

11. Installing the PC Viewer



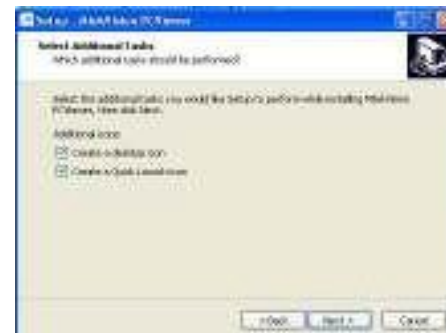
1) In the installation CD, double click the PCViewerSetup-1.0.8.0.exe file.



4) To continue, click "Next". To save as a different name, enter the desired name.



2) In the installation window, click "Next" to start installation.



5) Check the desired icons you want to create and click "Next".

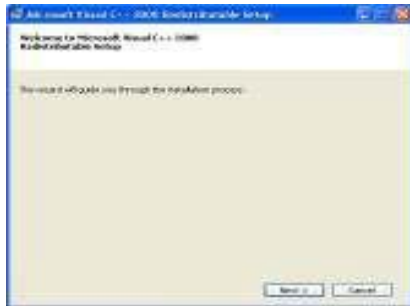


3) Designate the folder where you wish to save. If there are no changes, click "Next".



6) Once the installation setup is complete, click "Install" to conduct installation. To return to a previous screen, click "Back".

11. Installing the PC Viewer



1) To install Microsoft Visual C++ 2008 Redistributable, click "Next".



5) Once installation is complete, click "Finish".



2) Check the "I agree" box and click "Install".



4) After installation is complete, click "Finish".



6) Once the PC Viewer is properly installed, the PCViewer.exe and PCViewerConfEditor.exe files will be created, as shown in the figure.

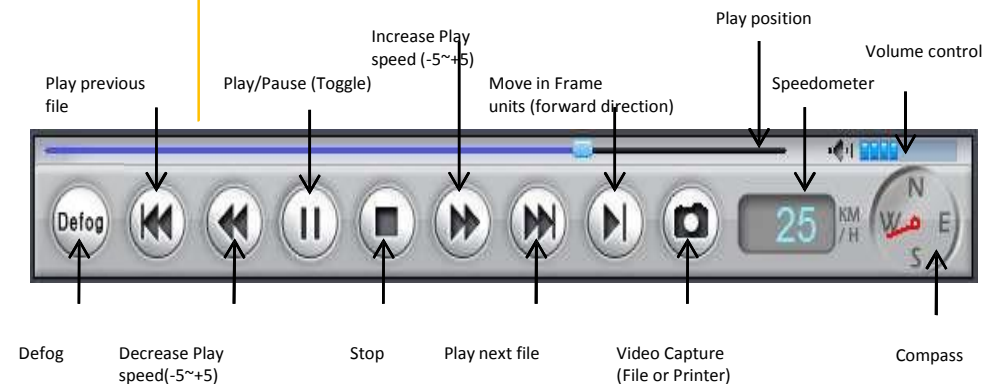
12. PC Viewer Features - 1



- 1 Main Screen
- 2 Play Control
- 3 File List & Sensor (G-Sensor) Information
- 4 Map
- 5 Settings Button

Information :
PC Viewer image and functions may partially change with future updates.

1. Main Screen
Recorded files in file list are shown simultaneously as 2CH video.
2. Play Control
 - 1) Play: After selecting the file to play, the file can be played by clicking the play button or double-clicking the file from the file list.
 - 2) Play in Frame units: The $\left[\right]$ button can be used to play in Frame units.
 - 3) Speedometer / Compass: If GPS information exists within the video, displays the speed and direction.
 - 4) Video Capture: The currently playing video screen is saved or printed.



12. PC Viewer Features - 2

3. File List

1) Add Video Files



- ① Add Directory using Buttons
 - Click the + button to select directory
 - Select the Directory to open then press **OK**
- ② Add File using Buttons
 - Click the + button to select file
 - Select the file to open then press **OK**
- ③ Add Directory using Drag & Drop
 - Drag & Drop is possible within the UI except only the Map area.
 - Same as adding by using the + button.
- ④ Add File using Drag & Drop
 - Drag & Drop is possible within the UI except only the Map area.
 - Same as adding by using the + button.

2) Delete Video Files

- ① Use the '-' button to delete
- ② Use the DEL key to delete

Information :

PC Viewer image and functions may partially change with future updates.

3) Select Video Type

When the right-side mouse button is pressed within the file list title area, the selection menu shown below is displayed. The file list is sorted in ascending order.

Type	Date&Time	Front Camera	Rear Camera
Event	2012-05-06 17:40:47	0	X
Event	2012-05-06 18:07:56	0	X
Event	2012-05-06 18:18:18	0	X
Event	2012-05-06 18:28:40	0	X
Always	2012-05-07 20:11:58	0	X

4) Sort File List

When opening a directory of the same structure as in the Black box memory card, the file list is sorted in ascending order according to the date and time.

Other added files are not sorted and added at the very end.

Double-clicking the file list header will resort the file list. Each time the header is clicked, the sorting order is changed between ascending and descending order.

Type	Date&Time	Front Camera	Rear Camera
Event	2012-05-06 17:40:47	0	X
Event	2012-05-06 18:07:56	0	X

12. PC Viewer Features - 3

4. Partial Video Zoom-In

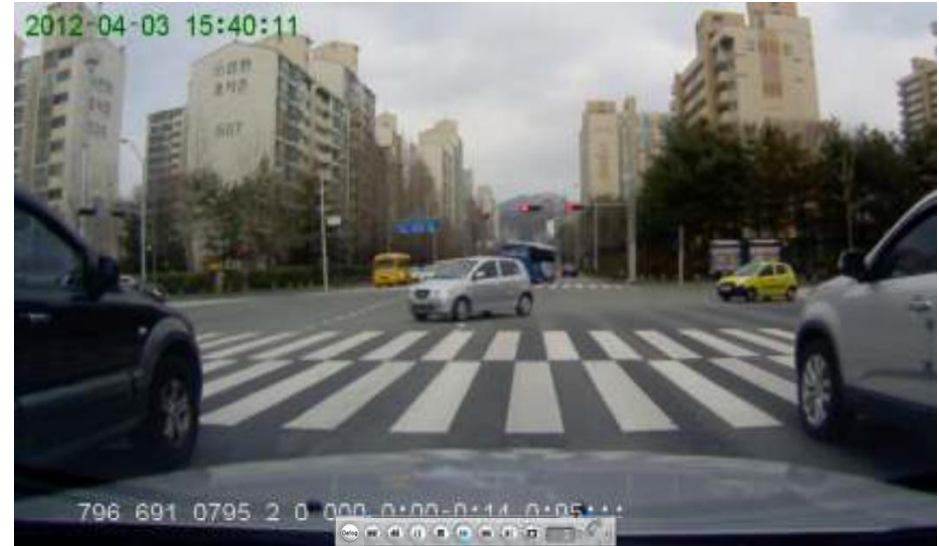


- 1) **Partial Video Zoom-In**
Select the area to zoom-in on by dragging with the mouse. The zoom-in area is shown on the opposite side. If the area is not properly selected, then video zoom-in is canceled.
- 2) **Cancel Partial Video Zoom-In**
Within the zoom in video, right-clicking with the mouse will cancel video zoom-in.

Information:

PC Viewer image and functions may partially change with future updates.

5. Full Screen Mode



- 1) **Full Screen Mode**
Double-clicking the play screen will convert to Full Screen mode.
- 2) **Cancel Full Screen Mode**
Double-clicking the screen or pressing the ESC key will cancel Full Screen mode.
- 3) **Play Control Bar**
Moving the mouse towards the bottom-side of the screen will display the play control bar.

12. PC Viewer Features - 4

6. Map

If GPS information exists within the video, then the map is displayed at the bottom right side.



Upon clicking, the play position will jump to the selected position to begin playing. Jump play the same role as the play progress bar.

If GPS information does not exist or the Internet is not connected, then a logo is displayed within the map display area.

7. Automatic Recognition of Black Box Memory

If the program is started with the black box connected to the system, the videos within the black box memory are automatically added to the list.

If the black is connected to the system after the program has started, the following window is displayed. Clicking the window will automatically add the videos within the black box memory to the list. At this time, the previous list is reset.



Information:

PC Viewer image and functions may partially change with future updates.

8. Video Capture

While playing, clicking the video capture button will save or print the current screen.

9. Defog

Feature used to capture current screen and make the image clearer.

The +, - buttons are used to enlarge/reduce the image while the mouse is dragged to move the image.



: Reset video size

Defog scale: 0 ~ 15 (0: original image)

Save : Saves resulting file

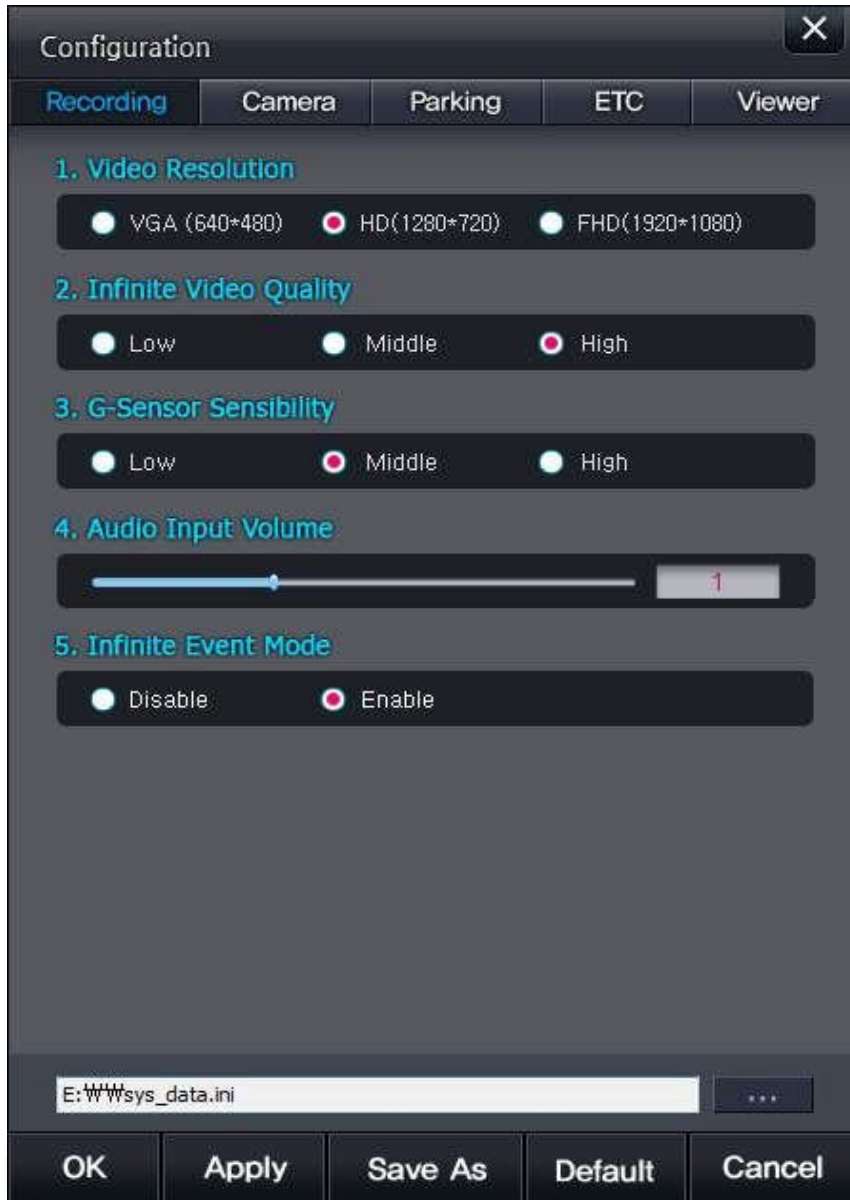
Print : Prints resulting file



10. G-Sensor Information

G-sensor information can be viewed by clicking the Sensor Tab.

12. PC Viewer Features - 5



Recording

1. Video Resolution : Set infinite video resolution
2. Infinite Video Quality : Set infinite video quality
3. G-Sensor Sensibility : Sets event sensitivity during infinite recording
4. Audio Input Volume : Adjusts volume upon recording (when set to 0, sound is not recorded)
5. Infinite Event Mode : Set whether to detect events during infinite recording

Information :

Configuration menus can be used by clicking the Configuration button on the top right side of the PC Viewer or by starting the PCViewerConfEditor.exe file.

Information :

Settings files can be opened by Drag & Drop, but applies only to sys_data.ini files . If the file name is different, use the Open button to open.

Information :

Configurations are normally saved within the sys_data.ini file within the Black box memory card. However, "Viewer" settings limited to the PC Viewer are saved within the PC registry.

- 1 Saves setting and closes Configuration.
- 2 Applies changes
- 3 Changes file to save settings
- 4 Restores default values
- 5 Closes the Configuration screen
- 6 Opens a Settings file

Information:

PC Viewer image and functions may partially change with future updates.

12. PC Viewer Features - 6



Camera

1. Brightness
: Sets camera brightness
2. Contrast
: Sets camera contrast
- Sharpness
: Sets camera sharpness
- Frequency
: Sets camera frequency
- Camera Rotate Mode
: Sets whether to rotate front camera screen.



ETC

1. Language
: Supports only English
2. Watermark
: Sets whether to display watermark information on video recording
3. Audio Output Volume
: Sets speaker volume level
4. Boot Recording
: Enable/Disable automatic booting recording
5. Preview Camera Selection
: Select TV-out preview video



Parking

1. Parking Video Quality
: Sets parking video quality
2. Parking Event Mode
: Sets whether to detect events during parking recording
3. Impact Event Sensibility
: Sets impact event sensitivity during parking
4. Motion Event Sensibility
: Sets motion event sensitivity during parking recording
5. Parking AE Gain
: Adjusts the AE Gain level during parking recording
6. Background Recording
: Feature used to save only event recordings during parking recording
7. Detect Parking Mode
: Sets whether to enter parking mode through either manual or auto entry settings

Information :

Motion Events will operate upon setting to Save Event Only during parking recording

Information:

PC Viewer image and functions may partially change with future updates.



13. Product Specifications

Category		Specifications		Reference
CPU		MV8670		
Product Classification		Front HD 30fps, Rear HD 30fps 2Chs Black Box		
Color/Size/Weight		Black / 79mm x 53mm x Ø30mm		
Supported Capacity		micro SD	8GB / 16GB / 32GB	Maker : ADATA, Class 10 recommended
Camera	Sensor	2M HD CMOS Sensor		Based on Front Camera.
	Viewing Angle	Diagonal 147.5 degrees/ Horizontal 110.8 degrees / Vertical 79.5 degrees		
	Resolution	720p HD(1280 x 720) , VGA (640 x 480)	HD 720p 30fps (2CH)	
Sound	Built-in Microphone		Voice recording (No-sound recording feature included)	
	Built-in Speaker		8ohm	Voice Guidance
Acceleration Sensor		3-Axis Acceleration Sensor	+2g / -2g	
Input Support		DC 12V / 24V Support		
Current Consumption		MAX 400mA @12V		
Operating Temperature		0°C ~ 55°C		

Category	Specification			Reference
Recording Method	Infinite Mode	Infinite Recording		1 minute recording
		Event Recording (Impact / Manual)		1 minute recording – 10 seconds before event / 50 seconds after
	Parking Mode	Parking Recording	Parking Recording	1 minute recording
			Event Recording (Impact / Motion)	1 minute recording – 10 seconds before event (excluding motion) / 50 seconds after
		Event Only Recording (Impact / Motion)		1 minute recording – 10 seconds before event (excluding motion) / 50 seconds after
	When power is turned OFF, saves currently recording video			SuperCap applied for saving of last recording video.
Video Saving	MOV (Video: H.264, Audio : ADPCM)			
Interface	GPS / Video Out (TV out) / Video In (rear camera) / USB			
Video Output	CVBS 1Vp-p			
Exclusive Viewer	O	Map Synchronization (Naver/Google)	Licensing must be acquired by Brand companies	
General Viewer	KM player			
Basic Accessories	RCA CABLE / Cigar Jack / USB Cable			
Options	GPS			