

Auto Capsule

COWON AD1
User's Guide ver. 1.1 EN

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- + This manual is based on the specifications of the product available at the point of publishing it. Note that the sample sentences, charts, pictures given as an example, detailed functions of a product, specifications of H/W and S/W recorded in this manual are subject to change without notice.

Precautions

1. Recording may fail depending on the given situation. The videos recorded with this product can only be used as a reference to examining the driving image.
2. This manual is based on the product available at the point of publishing it. It thus may contain errors or omissions in its technical editing.

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1 Before You Start!

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Before You Start!



Registration and Notes

Be sure to bring the product warranty when requesting for customer service. (Product warranty is issued when purchasing the product and cannot be re-issued. Please make sure to keep it in a safe place.)

- + Before using the product, read the authorization code on the product warranty or on the side of the product and register it in the homepage first.
- + Only the registered users are eligible for legitimate customer support and service . (Users who haven't registered the product must bring the product warranty with the date of purchase on.)

This product is a device for recording the driving image of a car.

Recording may fail depending on the given situation. The videos recorded with this product can only be used as a reference to examining the driving image.

- + Always back-up any important video files.
- + Company shall not be held accountable for any data loss, poor recording or recording error.

Before You Start!



Product Overview

- HD-quality video recording
 - + 2 mega-pixel CMOS image sensor is used to record a video in 720p HD (1280x720 pixels)/ 30 fps/ 16:9 wide.
- Wider recording angle
 - + Diagonal angles of up to 150° is available for wider viewability.
- Built-in microphone for high-quality audio
 - + Audio is recorded alongside the video.
- Multiple recording menus
 - + Real time recording, impact event recording, manual recording, motion sensitive recording (parking mode recording), and more recording modes are available.
- Built-in 3-axis acceleration sensor
 - + It detects the external impact via the 3-axis acceleration sensor for auto recording.
- Built-in backup battery
 - + Your last recording file is safely saved thanks to a built-in battery even for unexpected power outage.

Before You Start!

- Built-in RTC
 - + Recording files are created by precise date and time through the built-in RTC.
- Video-out
 - + A video-out terminal for checking the video being recorded is included.
- Multiple indicators for smooth operation
 - + Convenient and accurate operation is up for grabs through LED indicators, sound effects, and voice message.
- Options for diverse settings via PC viewer software
 - + Set your preferences such as voice recording and outputs, dimensions for the angle of view, memory usage ratio, and time settings through PC viewer software.
- 2 channels supported (rear-view camera is optional)
 - + A 2 channel video recording function is provided through a dedicated rear-view camera.
- Uninterruptible power equipment is included
 - A dedicated uninterruptible power equipment is provided, enabling video recording functions to be provided during parked mode.

Before You Start!



Safety Precautions

This section regards precautions to prevent users from compromising safety or experiencing property damage. Please read the followings carefully before use. (Company has nothing whatever to do with any accident caused by a user who failed to conform to warning and precautions.)

Warning



In the event that a user is likely to get killed or critically wounded when he/she does not conform to the instruction

Caution



In the event that a user is likely to get injured or experience financial loss when he/she does not conform to the instruction

Product



Changing the installation location of the product may result in a change in the camera angle. Adjust the camera angle after installing the product and test the recorded images.

- Normal recording cannot be guaranteed if the product is wrongly installed.



This product is a device that uses a camera to record video as you drive, therefore, the quality of the recorded videos may deteriorate when taken at the point of entering a tunnel, on a broad day when the shadow contrast and counterlight to the subject are severe, and in the middle of night with no light.

Video is not recorded during product booting.

*Please start driving after booting is complete.

Before You Start!



Avoid excessive car window tinting. It deteriorates the recording quality.

- The white balance of the video may vary depending on the degree of tinting.



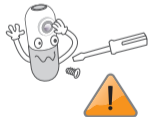
Always keep the front window clean and free from dust before recording to guarantee the most optimal recording quality.



In the event a product is damaged or disconnected from power due to a critical and impactful accident, the product may not work and fail to record the accident.



Foreign matters (e.g. fingerprints) on the lens of the black box may adversely affect the recorded videos. Always keep the lens clean and free from dusts.



Do not disassemble or alter the product at your discretion.

- It may cause electric shock, product damage or loss of recorded data.
- For mechanical inspection, maintenance, and repair needs, contact the store you bought the product or the official customer center.



Avoid inserting or letting in metals or inflammables into the MicroSD card slot.

- It may cause a fire or electric shock.

Before You Start!



If water is spilled or foreign matters are seeped into the product, disconnect the power immediately and contact the customer center.



Do not use the product in a place where there is inflammable or explosive gas.

- Otherwise, ignition or explosion may ensue.



Refrain from operating the product while driving.

- It may cause a car accident.



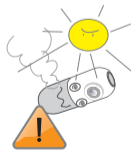
Keep the product away from the reach of babies, children, or pets.

- They may swallow small parts in the product.
- Your pet may drool over the product, which may cause short circuit in the battery unit, resulting in an explosion.



Do not use voltage other than the rated voltage specified by the product.

- It may cause an explosion, fire or mechanical failure.



Avoid high temperatures such as inside the closed car under hot weather or a place with direct sunlight.

- It may adversely affect the exterior or internal parts of the product, causing a fire.

Before You Start!



Use caution not to apply too much strength to the lens and the exterior of the black box, or a mechanical failure may ensue.



Do not cover the black box with a cloth or other types of covers.

- It may contain the heat inside the product, resulting in an exterior deformation or a fire.



Install the product in an area that doesn't disrupt a driver's visibility.

- Otherwise, it may cause an accident.



Do not spray water or wax directly to the product when cleaning the inside of a car.

- It may cause mechanical failure or electric shock.



If you use the product for a long time, it heats up inside. So use caution not to get burned by accidentally touching it.

- Avoid touching the metal area when removing the MicroSD card after using the product for long hours.



Always use the genuine products and parts from COWON SYSTEMS Inc.

- COWON SYSTEMS Inc. shall not be held accountable whatsoever for failures or accidents caused by using the product and parts from other sources.



Do not wipe the product with chemical substances or detergent.

- Wipe the product gently with a soft cloth.

Before You Start!

○ Power Connection



If you don't intend to use the product for a long while, unplug the power cable of the product.

- Otherwise, it may cause electric discharge of a car battery or a fire.
- A user shall be held accountable for the product damage or car breakdown.



Do not use wet hands when plugging/unplugging the cigar jack cable.

- It may cause an electric shock.



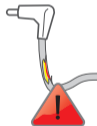
Do not remove the MicroSD card when the product is in use.

- It may cause mechanical malfunction.



Plug in the power cord completely with no looseness.

- Otherwise, it may cause a fire.



Do not use the damaged cigar jack cable.

- It may cause a fire or an electric shock.



To reset the product, shut down the power supply and reconnect it after a certain while, or remove the MicroSD card after turning off the product and insert it back again.

Before You Start!

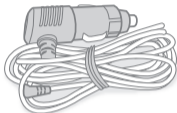
Package Components



Main device



Product holder



Cigar jack



MicroSD card



MicroSD card reader



Video In-Out Cable



Manual & PC viewer CD, Quick Guide



Double-coated tape



Uninterruptible Power Equipment



Cable organizer clips

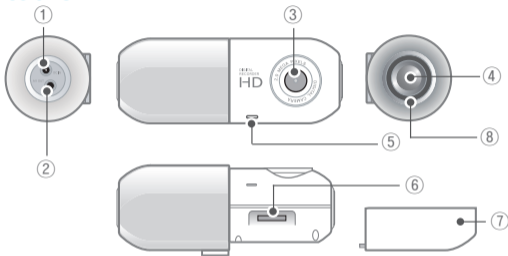


Rear-view camera (Optional)

- Note that the included items may vary according to the product specifications and may look different from the images provided in the manual.

Before You Start!

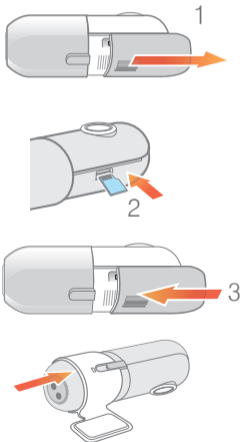
Name of Part and Functions



No.	Name	Description	No.	Name	Description
①	Cigar jack	It supplies the power to the main device.	⑤	Microphone	It is a microphone for recording voice.
②	Video In/Out	Terminal for outputting video being recorded or connecting rear-view camera.	⑥	MicroSD card slot	It is a slot for inserting the MicroSD card.
③	Recording lens	It records the front direction of a vehicle.	⑦	MicroSD card Protective lid	Use it to insert or remove the MicroSD.
④	Button	It is a button for manual recording.	⑧	Indicator lamp	It displays the operation status of the product.

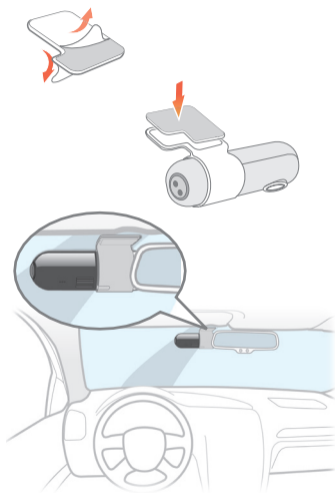
Before You Start!

Installation



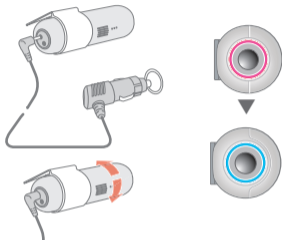
- 1 Press and push the protective lid to the side as shown in Fig. 1. Insert the MicroSD card as shown in Fig. 2. Push and close the lid to the direction of the arrow as shown in Fig. 3.
 - Make sure you insert the MicroSD card according to the designated direction.
- Q** If you forcibly insert the card in a wrong direction, it is likely to cause damage or failure. Note that you may need to receive paid repair service to fix this.

Before You Start!



- 2 Place the product in the holder and install it in a vehicle.
 - + Choose the location to install the product. A space behind the rearview mirror is recommended.
 - + Wipe up the foreign matters or moisture completely from the location of installation.
 - + Remove the release paper in double-coated tape and attach it to the holder. Double-check the location of installation to fix the product.
- q** Exercise caution when fixing the product as its adhesiveness deteriorates significantly if you detach it after it was installed.

Before You Start!



3 Connect the cigar jack.

Q When the product is connected to power, it sets off an alarm sound once to turn on a red LED indicator, and then, switch to a blue LED to start recording.

4 Camera angle adjustment and cable management

+ Adjust the camera angle of the main device according to a user's preferences. Arrange the cigar jack cable so that it won't interfere with driving.

Connecting Rear-View Camera (Optional)



+ Connect video in-out cable to the VIDEO IN/OUT terminal of the product to use.

+ The video in-out cable enables simultaneous connection of the rear-view camera and the vehicle monitor.

+ Arrange cable to not interfere with driving before using.

Q In the case of using changed channels (channel 1 \leftrightarrow channel 2), please format memory. If rear-view camera is connected (if using 2 channels), the front angle of view is fixed to be narrow. Angle of view can be adjusted only during 1 channel operation.

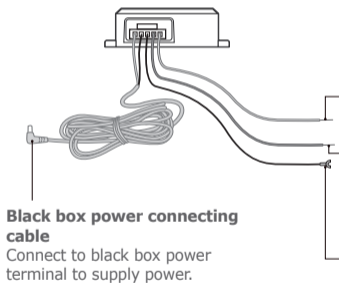
Before You Start!

● Uninterruptible Power Equipment

- + When installing the uninterruptible power equipment, proceed with the installation only after you have thoroughly reviewed the included product manual.

- + The power cable must be fixed at the designated position.

(If the cable is not connected properly, reverse voltage may occur and severe problems may arise in the product and the connected black box.)



- + To install product, connect to fuse box in the vehicle to use.
- + In a high-temperature environment, this product will automatically stop recording to protect product functions.
- + When recording is automatically stopped, the Red/Blue LED will flicker repeatedly, and if the temperature decreases, operation will automatically resume.

Before You Start!

● Separating the Product



Hold the indicator lamp of the product with your left hand and put your right-hand thumb on the connected area of the holder. Push the cigar jack port with your index finger to separate it more easily.

- It is recommended that the MicroSD card is formatted on a regular basis for stable use of the product.

2

Basic Use

- 24 Starting
- 24 Check MicroSD Card
- 25 Real Time Recording
- 28 Manual Recording
- 31 Event Recording
- 34 Parking Mode Recording

Basic Use

Starting

When connected with power, the indicator LED turns red alongside the power ON sound. Recording begins alongside the voice message notifying the start of real time recording with the indicator LED turning blue.



LED: RED On



LED: BLUE On

Power connected ▶ "Start real time recording" with the power on sound ▶ Ready for recording

Check MicroSD Card



"No MicroSD card inserted"

When no MicroSD card is detected while preparing for recording, the product keeps prompting voice message "No MicroSD card inserted" with the indicator LED switching between red and blue.

Basic Use



Real Time Recording

Recording begins alongside the voice message notifying the start of real time recording. The indicator LED turns blue.



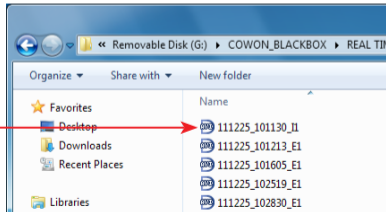
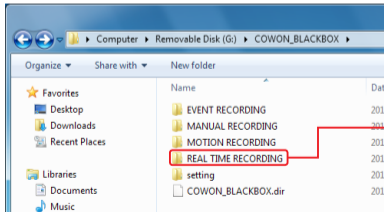
Voice message: "Start real time recording." ► Real time recording **BLUE** On



Real Time Recording File Management

A recording file is generated every minute and the recorded files are stored in the Real Time Recording folder in the MicroSD card. Up to 50 sub folders are created for file management. The file is named as "yymmdd_hhmm_I1.avi" according to the specific time it was recorded.

e.g.) File recorded on Oct 25, 2011 at 9:38:32 p.m. > 111025_213832_I1.avi



* If you store data beyond the designated capacity of the MicroSD card, it automatically deletes older files to save the new one.

Basic Use

Real Time Recording Files

About 47 MB(Image quality 'average') file in the 30 fps avi format in 720p resolution

Video	Audio
Encoding Formats: H.264 (MPEG4 AVC)	Encoding Formats: PCM
Resolution: 1280 x 720	Sampling Rate: 22.05 KHz
Frame Rate: 30 fps	Channel: Mono
Bit Rate: 6 Mbps	Bit Rate: 353 Kbps

(Based on use of 1 channel)

Operation during Real Time Recording

+ When pressing the button briefly

When pressing the button briefly during real time recording, the manual recording begins alongside the sound effect with the indicator LED flickering in red. When the manual recording is complete, the indicator LED turns blue and the real time recording continues.



LED: **RED**



LED: **BLUE** On

Press the button briefly ▶ Sound effect ▶ Manual recording ▶ Manual recording complete
▶ Real time recording

Basic Use

+ When pressing and holding the button

Press and hold the button during real time recording. Parking mode recording will begin alongside the voice message notifying the start of parking mode recording with the indicator LED turning red.



LED: **RED** On

Press and hold the button ▶ “Start parking mode recording” ▶ Parking mode recording

+ When impact is detected

When the acceleration sensor detects impact during real time recording, the event recording begins alongside the sound effect with the indicator LED flickering in red.

When the event recording is complete, the indicator LED turns blue and the real time recording continues.



LED: **RED**



LED: **BLUE** On

Impact detected Sound effect ▶ Event recording ▶ Event recording complete ▶ Real time recording

+ When Button is Shortly Pressed Twice

If the button is shortly clicked on twice during constant recording, sound recording is stopped or restarted.

The voice prompt “stopping sound recording” or “starting sound recording” will be outputted depending on status.

Basic Use

Manual Recording

Starting Manual Recording

Press the button briefly during real time recording to begin the manual recording alongside the sound effect. The indicator LED flickers in red during manual recording.



Completing Manual Recording

It records a total of 30 seconds including 15 seconds before and 15 seconds after from the point of pressing the button and completes the manual recording session. When the manual recording is complete, the indicator LED turns blue and the real time recording continues.



LED: RED



LED: BLUE On

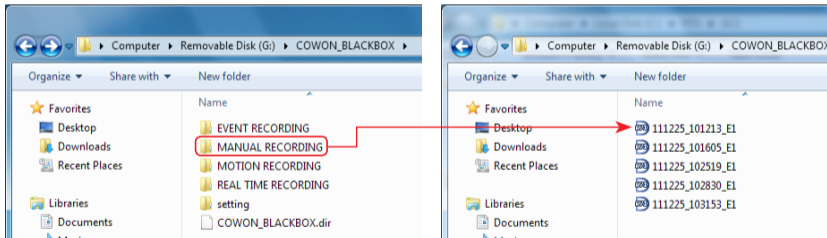
Press the button briefly ▶ Sound effect ▶ Manual recording ▶ Manual recording complete
▶ Real time recording

Basic Use

Manual Recording File Management

Recording files are created in 30-second basis (previous 15 sec + next 15 sec). The files are saved in the Manual Recording folder in the MicroSD card. Up to 50 sub folders are created for file management. The file is named as "yymmdd_hhmm_N1.avi" according to the specific time it was recorded.

e.g.) File recorded on Oct 27, 2011 at 11:34:28 p.m. > 111027_233428_N1.avi



- * If you store data beyond the designated capacity of the MicroSD card, it automatically deletes older files to save the new one.

Basic Use

Manual Recording Files

Same as those from real time recording with about 23 MB file in the 30 fps avi format in 720p resolution.

Operation during Manual Recording

No conversion to parking mode recording or event recording induced by impact is supported by pressing a button while the manual recording is underway.

Basic Use

Event Recording

Starting Event Recording

When the acceleration sensor detects impact during real time or parking mode recording, the event recording begins alongside the event sound effect. The indicator LED flickers in red during event recording.



LED: **RED**

Completing Event Recording

It records a total of 30 seconds including 15 seconds before and 15 seconds after from the point of pressing the button and completes the event recording session. After the recording is done, it returns to the previous mode before the event occurred.

If the previous mode was real time recording, the indicator LED turns blue to continue real time recording. If the previous mode was parking mode recording, the indicator LED turns red to return to the parking mode recording.



LED: **RED**



LED: **BLUE** On

Real time recording ▶ Impact detected ▶ Sound effect: Event ▶ Event recording
▶ Event recording complete ▶ Real time recording

Basic Use

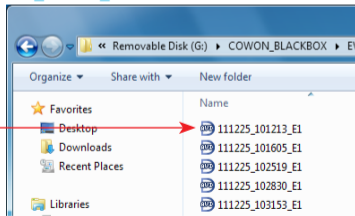
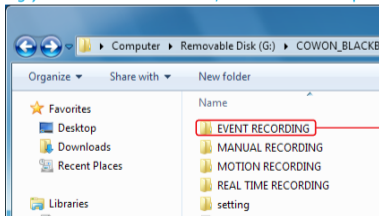


Parking mode recording ▶ Impact detected ▶ Sound effect: Event ▶ Event recording ▶ Event recording complete ▶ Parking mode recording

Event Recording File Management

Recording files are created in 30-second basis (previous 15 sec + next 15 sec). The files are saved in the Event Recording folder in the MicroSD card. Up to 50 sub folders are created for file management. The file is named as "yymmdd_hhmm_E1.avi" according to the specific time it was recorded.

e.g.) File recorded on Oct 25, 2011 at 9:38:46 p.m. > 111025_213846_E1.avi



* If you store data beyond the designated capacity of the MicroSD card, it automatically deletes older files to save the new one.

Basic Use

● Event Recording Files

Same as those from real time recording if the previous mode was real time recording with about 23 MB file in the 30 fps avi format in 720p resolution.

If the previous mode was parking mode recording, it is about 10 to 18 MB file in the 15 to 23 fps avi format in 720p resolution. (Based on use of 1 channel)

● Operation during Event Recording

No conversion to parking mode/real time recording or event recording induced by impact is supported by pressing a button while the event recording is underway.

Basic Use

Parking Mode Recording

Terminology

Parking mode recording refers to the mode that switches to a standby mode to stop recording if no motion is detected within the angle of view. If motion is detected, it converts to the recording mode and starts recording for a certain while.

Starting Parking Mode Recording

Press and hold the button during real time recording. Parking mode recording will begin alongside the voice message notifying the start of parking mode recording with the indicator LED turning red.



LED: **RED** On

Real time recording ▶ Press and hold the button ▶ Voice message: "Start parking mode recording."
▶ Parking recording

Standby Parking Mode

If there is no motion, it stops recording and switches off to standby mode.

Basic Use

Parking Mode Recording

When it detects any motion, it records a total of 30 seconds including 15 seconds before and 15 seconds after from the point of detecting it. The indicator LED flickers in red during parking mode recording. After the recording is done, it returns to the standby parking mode.



LED: RED On



LED: RED



LED: RED On

Standby parking mode ▶ Motion detected ▶ Parking mode recording ▶ Recording complete
▶ Standby parking mode

Exiting Parking Mode Recording

Press and hold the button during parking mode recording. Real time recording will begin alongside the voice message notifying the start of real time recording with the indicator LED turning blue.



LED: BLUE On

Parking mode recording ▶ Press and hold the button ▶ Voice message: "Start real time recording." ▶ Real time recording

Automatic Parking Mode Transition

The default setting of the automatic parking mode transition function Auto Capsule is ON.

Start Parking Mode : If G sensor does not detect movement for 10 minutes, parking recording will automatically start.

End Parking Mode : If G sensor detects movement for a certain amount of time or an event occurs, product will automatically transition to constant recording.

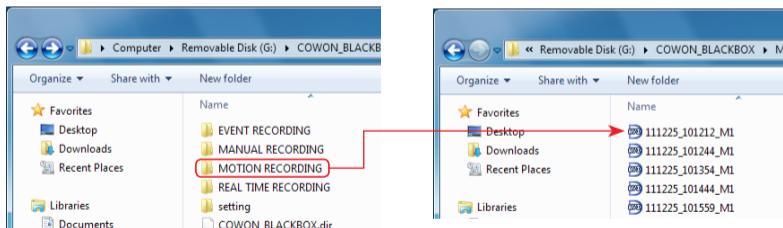
Basic Use

○ Parking Mode Recording File Management

Recording files are created in 30-second basis (previous 15 sec + next 15 sec) from the point of detecting motions. The files are saved in the Motion Recording folder in the MicroSD card.

If it continues detecting motion while recording, the recording time is extended up to 1 minute. Up to 50 sub folders are created for file management.

The file is named as "yymmdd_hhmm_M1.avi" according to the specific time it was recorded. e.g.) File recorded on Oct 26, 2011 at 5:31:41 p.m. > 111026_173141_M1.avi



* If you store data beyond the designated capacity of the MicroSD card, it automatically deletes older files to save the new one.

Basic Use

○ Parking Mode Recording Files

About 10 to 37 MB file in the 15 to 23 fps avi format in 720p resolution.

○ Operation during Parking Mode Recording

Manual recording is not supported by a button operation while parking mode recording is underway.

+ When impact is detected

When the acceleration sensor detects impact during parking mode recording, the event recording begins alongside the sound effect with the indicator LED flickering in red. When the event recording is complete, the indicator LED turns red and the parking mode recording resumes.



LED: RED



LED: RED On

Impact detected Sound effect ▶ Event recording ▶ Event recording complete
▶ Real time recording

+ When pressing and holding the button

Press and hold the button during parking mode recording. It ends the parking mode recording and starts the real time recording alongside the voice message notifying the start of real time recording with the indicator LED turning blue.



LED: BLUE On

Press and hold the button ▶ "Start real time recording" ▶ Real time recording

3

More Functions

- 39 When MicroSD is removed while recording
- 39 When the power cable is unplugged while operating
- 40 When the impact event occurs during parking mode recording
- 41 If using microSD card format function

More Functions

○ When MicroSD is removed while operating

When the MicroSD card is removed while any recording mode is underway (e.g. real time recording, manual recording, event recording, parking mode recording), the product automatically reboots to returns to a standby recording mode and start checking the MicroSD card.

If the MicroSD card is removed without caution during recording, the file being recorded won't be saved.

In addition, it may cause critical damage to the card. Use extra caution when it comes to the MicroSD card.

○ When the power cable is unplugged while operating

When the power cable is unplugged during real time recording or parking mode recording, it ends the recording process and the product is automatically turned off with the Power OFF sound.



LED: RED



LED: OFF

Real time recording ▶ When the power cable is unplugged ▶ Sound effect: Power OFF

More Functions

When the power cable is unplugged during real time recording or parking mode recording, it ends the recording process and the product is automatically turned off with the Power OFF sound.



LED: **RED**



Event recording ▶ Unplug power cable ▶ Recording complete ▶ Sound effect: Power OFF ▶ Power OFF

If you remove the MicroSD card before the product shuts down completely with the power-off sound, the last file being recorded may not be stored.

○ When the impact event occurs during parking mode recording

It ends the parking mode recording. If there was event recording during parking mode recording and you're about to switch the mode to the real time recording, the voice message alerts a user beforehand that there was event recording during parking mode recording.



LED: **BLUE** On

Parking mode recording ▶ Press and hold the button ▶ Events while parked Voice message: "You have recorded events while parked" ▶ Real time recording

More Functions

- If using microSD card format function



If the power plug is connected while the multifunction button is simultaneously pressed for a long time, the format function of the microSD card equipped within can be used.

When microSD card formatting starts, a sound notifying the start of microSD card formatting is alerted while the LED lights up, and a sound is alerted and the Red/Blue LED lights up while microSD card is being formatted.

When microSD card formatting is completed, a sound notifying completion of microSD card formatting is alerted and the LED lights up, and the system is automatically reset.

4

Other Information

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Other Information



MicroSD Card Management

Memory Management

1. Real Time Recording

Folder Name: Real Time Recording

Allocated Space: 60% of the entire space (approx. 4.47 GB for 8-GB card)

File Capacity: 72 files (a minute-basis 62-MB files)

2. Event Recording

Folder Name: Event Recording

Allocated Space: 20% of the entire space (approx. 1.49 GB for 8-GB card)

File Capacity: 45 files (a 30 sec-basis 33-MB files)

3. Manual Recording

Folder Name: Manual Recording

Allocated Space: 10% of the entire space (approx. 762 MB for 8-GB card)

File Capacity: 22 files (a 30 sec-basis 33-MB files)

4. Parking Mode Recording

Folder Name: Motion Recording

Allocated Space: 10% of the entire space (approx. 762 MB for 8-GB card)

File Capacity: 11 files (a minute-basis 62-MB file)

5. Margin area

Each area has a margin area corresponding to that of 1 file

* The above is for an 8GB memory space. The allocated space varies depending on the memory capacity of your MicroSD card.

* If formatting 8 GB of memory, actual available memory area is approximately 7.45 GB

* Based on the setting values of the largest recording video file size.

Other Information



Button Operation

See a table below for button operations according to recording modes.

Mode	Press the button briefly	Press and hold the button	If button is shortly pressed twice	Remarks
Real time recording	Starts manual recording	Starts parking mode	Sound recording stopped/ restarted	
Manual recording	No action	Starts parking mode	No Action	
Event recording	No action	Starts parking mode	No Action	
Parking mode recording	No action	Starts real time recording	No Action	



LED Status Indicator

See a table below for LED indicator's status according to recording modes.

Mode	LED Status	Remarks
Booting	RED On	
Real time recording	BLUE On	
Manual recording	Flickers in RED	
Event recording	Flickers in RED	
Standby parking mode	RED On	
Parking mode recording	Flickers in RED	
Alert for no MicroSD card	Flickers in RED/BLUE	

Other Information



Voice Message and Sound Effects

See a table below for voice messages and sound effects according to recording modes.

Mode	Voice message/Sound effect	Remarks
Booting	Booting	Sound effect
Starting real time recording	"Start real time recording"	Voice message
Starting manual recording	Event	Sound effect
Starting event recording	Event	Sound effect
parking mode recording	"Start parking mode recording"	Voice message
Alert for events while parked	"You have recorded events while parked"	Voice message
Alert for no MicroSD card	"No MicroSD card inserted"	Voice message
Before turning off	Power OFF	Sound effect

Product Specifications

Before You Start!

Basic Use

More Functions

Other Information

Category	Specification	Remarks
Model	COWON AD1	
Number of Channel	2 channels	720P @ 30fps
Camera	Front : 2-mega pixels CMOS Camera Rear : 0.3mega pixels CMOS Camera	1/3.0 inches
Resolution	Using 1 channel : 720P HD(1280x720) Using 2 channels : 720P HD(Front, 1280x720), 480P VGA(Rear-view, 640x480)	
Number of Frames of View	Using 1 channel : 30fps Using 2 channels : Front 20fps, Rear 10fps	For a narrow angle
Video Encoding	H.264 (MPEG-4)	
Audio Encoding	PCM	
Recording Angle	D=150° / H=113.4° / V=82°	Based on lens
Storage Memory	Compatible with a MicroSD card of up to 32 GB	
Recording mode while driving	Real Time Recording Manual Recording Event Recording (Auto Impact Recording)	
Recording mode while parked	Parking Mode Recording (Motion detection recording) Event Recording (Auto Impact Recording)	Uninterruptible power equipment needed
Video-out	CVBS (Composite)	
Dimension	38Ø x 102 mm (main device)	
Weight	88 g (main device)	
Operating Temperature	-20°C ~ +50°C	
Rated Voltage	DC 12V to 24V	Uninterruptible power equipment

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