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KENWOOD

DRV-330

GPS Integrated Dashboard Camera

INSTRUCTION MANUAL

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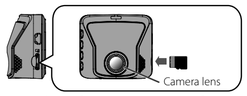
B5A-2534-10(E)

Just in case ...

To prevent your recorded files from being overwritten, turn the power to the device off, and then remove the memory card.



Formatting the memory card

As a rule of thumb, format the memory card before you use it and about once every two weeks.
We recommend that you save any necessary videos and still images to your computer.

1 Press the ⏻ button to display the menu.

2 Press the ▲ / ▼ buttons to select "Format", and press the ✓ button.

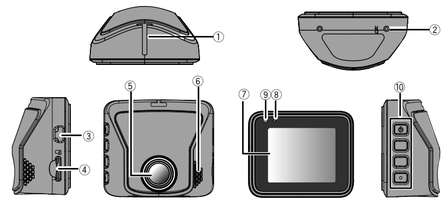
Press the buttons associated with the icons that appear.

A confirmation message appears.

3 Press the ✓ button.

Names and Functions of Parts

The following explains how to do the device's basic operations and settings.



① **Insertion slot for the mounting bracket**
② **Reset button** Resets the device.
③ **Mini USB port (DC5V)**
Connect the provided car charger cord or the separately-sold CA-DR150 on-board power cable for dashboard cameras.
You can also connect a USB cable (commercially available) to connect to a computer.
④ **microSD card slot** Insert an SD card for recording.
⑤ **Camera lens**
⑥ **Speaker**
⑦ **LCD display**
⑧ **Microphone** Records audio.

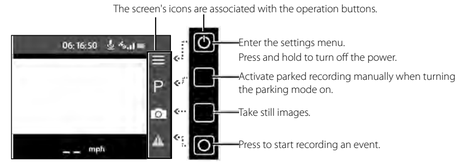
⑨ **Indicator LED**

Status	Charge	Recording status
Lit green	Charging	Not recording*
Not lit	Not charging	Not recording*
Flashing green and orange alternately	Charging	Recording
Lit red	—	Monitoring parking mode
Flashing red	—	Recording

* "Not recording" indicates that the menu is displayed or a recorded file is playing.

⑩ **Operation buttons**
Operate the device using these.

The functions of the 4 buttons are indicated by the icons that appear on the screen.
The functions of the buttons differ depending on the screen that is displayed.



The Device's Screens and Operations

Name of the screen	Screen	Button explanations
Continuous recording		☰: Displays the menu. P: Appears when the parking mode is on. Press to enter parking mode. 📷: Takes still images. ⚠: Starts recording an event.
Event recording		📷: Takes still images. ■: Stops recording the event and returns to continuous recording.
Parking mode While motion detection is engaged		↩: Press to show a message. Pressing ✓ stops the parked recording mode and returns to continuous recording. A bar appears on the right side of the screen if you select either "Both" or "Only Motion" in "Detection Method". If motion is detected, the bar extends upward.
Parking mode Impacts		↩: Press to show a message. Pressing ✓ stops the parked recording mode and returns to continuous recording.

Setting up the Device <Be Sure to Do This Prior to Using It>

Step1: How to Install/How to Wire

Recommended installation position

Install the device in a position where it will not block the front view of the driver (position where hidden by the rear-view mirror).

Install the device so that it is within the wiping range of the wiper.

Mounting the device to the center of the windshield behind the rear-view mirror will facilitate optimal video recording.

⚠ CAUTION

When passing the power cord through the front pillar or another part, observe the following points when performing the wiring work.

Wire the power cord farther forward or farther rearward than the airbag so that it does not interfere with the airbag.

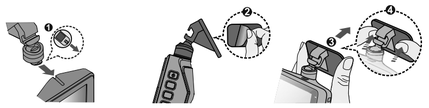
In the case of a vehicle in which the front pillar cover is fixed in place with special clips or the like, the clips may need to be replaced after you remove the front pillar cover. For how to remove the front pillar cover, the availability of replacement parts, and other information, contact the vehicle dealer.

Fix the power cord in place with commercially available soft tape or the like so that it does not interfere with driving.

1 Confirm that your car is parked in a level area.

2 Use a commercially available cleaning cloth to wipe off any dirt or grease from the location you are mounting the device.

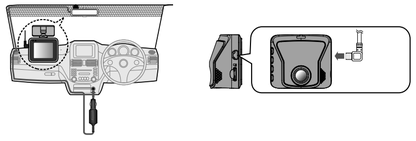
3 Follow the procedure below to mount the device securely inside the car.



Confirm the position in which to affix the device, and then affix it. To strengthen the bond of the adhesive tape, **let it set for over 24 hours before use.**

Connecting via the provided car charger

1 Connect the provided car charger to the car's lighter socket, connect the power cord to the device, and then arrange the cord.



2 Turn on the engine.

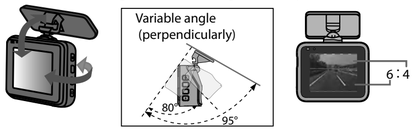
The power turns on and starts charging the device.
The lamp on the car charger lights green.

3 Let it charge like that for at least 3 minutes.

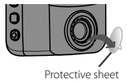
After it has charged for over 3 minutes, you can use it.

4 Adjust the mounted angle.

When you are actually using the device, make sure that the camera's field of view is parallel to level ground and that the ground-to-sky ratio is about 6 to 4.



5 Remove the protective sheet from the camera lens.



6 Press and hold the power button until the power turns off. Once again, press and hold the power button to turn it on again.

- Be sure to turn the power on again whenever you finish adjusting the angle.
In addition, turn the power back on whenever you leave the power on while removing the device from the bracket or after the angle has changed and you readjust it while the power is on.
The adjusted angle is recorded when the power is turned on.

Connecting via the CA-DR150 (optional accessory)

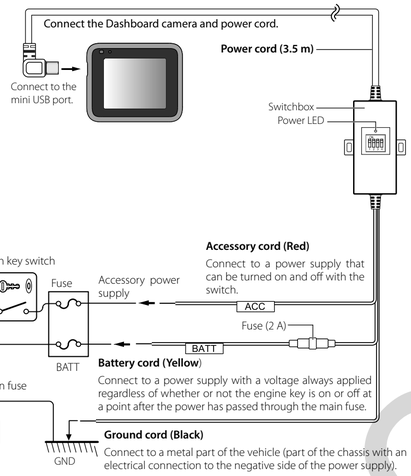
- Before connecting the device, be sure to read and understand the instruction manual that comes with the CA-DR150 (optional accessory), and then mount it safely. Additionally, read about the switch settings and wiring beforehand.

1 Do the settings for the "Voltage cut-off value settings" and "Off timer settings".

Be sure to read the instruction manual that comes with the CA-DR150 (optional accessory), and then do the settings.

2 Do the wiring.

The 5-V power supplied to the dashboard camera starts after a certain period (around 20 seconds), even though the accessory's power is on, to allow the dashboard camera to assess the power supply's voltage (12 V/24 V).



3 Turn the engine key to on and let the device charge like that for at least 3 minutes.

You can use it after it has charged for 3 minutes.

4 Adjust the mounted angle.

When you are actually using the device, make sure that the camera's field of view is parallel to level ground and that the ground-to-sky ratio is about 6 to 4.
Refer to the illustration in step 4 of "Connecting via the provided car charger".

5 Remove the protective sheet from the camera lens.

Refer to the illustration in step 5 of "Connecting via the provided car charger".

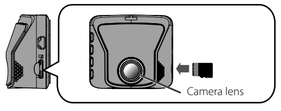
6 Press and hold the power button until the power turns off. Once again, press and hold the power button to turn it on again.

- Be sure to turn the power on again whenever you finish adjusting the angle. In addition, turn the power back on whenever you leave the power on while removing the device from the bracket or after the angle has changed and you readjust it while the power is on. The adjusted angle is recorded when the power is turned on.

Step 2: Inserting and Formatting a Memory Card

1 Press and hold the power button until the power turns off.

2 Confirm that the power is off, and then insert your memory card into the device.



To remove the memory card, press it so that it comes out a little, and then pull the memory card out. After that, turn the power on again.

3 Press and hold the ⏻ button until the power turns on.

4 Format the memory card.

As a rule of thumb, format the memory card before you use it and about once every two weeks. See "Formatting the memory card" for more about these operations.

If you do not use parking mode, the setup ends here for you.
If you plan on using parking mode, continue to Step 3.

Step 3: Turning on Parking Mode

1 Press the ⏻ button to display the menu.

2 Press the ▲ / ▼ buttons to select "Parking Mode", and press the ✓ button.

Press the buttons associated with the icons that appear.

3 Press the ▲ / ▼ buttons to select "Detection", and press the ✓ button.

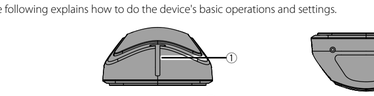
4 Press the ▲ / ▼ buttons to select "On", and press the ✓ button.

A confirmation message appears.

5 Press the ✓ button.

6 Press the ◀ / ▶ buttons to select either 1/3 or 3/3 for "Storage Allocation", and then press the ✓ button.

2/3 is a setting for which there is no area for parked recordings.The initial value is set to **2/3**.



- If you change the allocation, it erases the data in the memory card. Before changing this setting, we recommend that you save any necessary videos and still images to your computer.

Storage area allocation	Memory card capacity	Continuous (recording)	Event (recording)	Parked (recording)	Still images
1/3 of the allotted capacity	4 GB	Approx. 32 minutes	Approx. 3 minutes	Approx. 3 minutes	Approx. 75 images
	8 GB	Approx. 1 hour and 5 minutes	Approx. 7 minutes	Approx. 7 minutes	Approx. 150 images
	16 GB	Approx. 2 hours and 10 minutes	Approx. 15 minutes	Approx. 15 minutes	Approx. 300 images
	32 GB	Approx. 4 hours and 20 minutes	Approx. 30 minutes	Approx. 30 minutes	Approx. 600 images
2/3 of the allotted capacity	4 GB	Approx. 32 minutes	Approx. 6 minutes	There is no storage area for parked recordings.	Approx. 75 images
	8 GB	Approx. 1 hour and 5 minutes	Approx. 14 minutes		Approx. 150 images
	16 GB	Approx. 2 hours and 10 minutes	Approx. 30 minutes		Approx. 300 images
	32 GB	Approx. 4 hours and 20 minutes	Approx. 60 minutes		Approx. 600 images
3/3 Allocated by number of files (Continuous depends on the space remaining for other files)	4 GB	Approx. 32 minutes	Max. of 20 files	Max. of 10 files	Max. of 10 files
	8 GB	Approx. 1 hour and 5 minutes			
	16 GB	Approx. 2 hours and 10 minutes			
	32 GB	Approx. 4 hours and 20 minutes			

- The recording times and the numbers of still images are guidelines. The actual times may be shorter due to the recording conditions.
- When the storage area starts to run out, the old recordings are deleted as new recordings are recorded.

A confirmation message appears.

7 Press the ✓ button.

The parking mode setting turns on.

If you have connected the CA-DR150 (optional accessory), go to step 8.

8 Confirm that "Medium" is set as the selection for "Auto Entry" in the third operation in procedures 1 and 2 of "Step 3: Turning on Parking Mode".

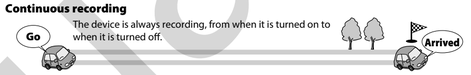
- The setting at the time of purchase for the device's "LCD Standby" is "Always On". The screen remains bright during the parked recording mode, as well. If you want to make the screen display darker, refer to "Changing the Settings for the Screen Display Time during Continuous Recording and Parking Monitoring" on the reverse side.

Recording Modes

Function 1: Continuous recording

Always records video while you are driving.

Continuous recording



If you turn the key to ACC, the device's power turns on and, after a few seconds, starts to automatically do continuous recording (always recording). In continuous recording, files are separated and saved.

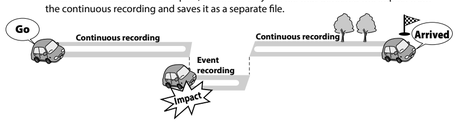
- The recording data is saved to the "Video" folder.
- Recorded files are automatically overwritten starting from the oldest file.
- You can set the recording time for 1 file in the settings menu's [Video Recording] — [Video Clip Length]. (Reverse side) At the time of purchase, this is set to 3 minutes.

Function 2: Event recording

Records when it detects an impact while you are driving.

Event recording

When the device detects an impact, it extracts only the file that detected the impact from the continuous recording and saves it as a separate file.



The device detects sudden impacts, rapid acceleration, abrupt turns, unexpected collisions, and such, and records the event.
If you want to manually start an event recording, press the event recording button. When an event has been recorded, the device returns to continuous recording (always recording).

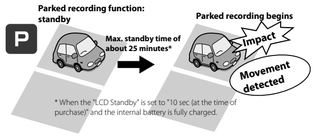
- The recording data is saved to the "Event" folder.
- Recorded files are automatically overwritten starting from the oldest file.
- You can set the recording time for 1 file in the settings menu's [Recording settings] — [Recording time settings]. (Reverse side) At the time of purchase, this is set to 3 minutes.

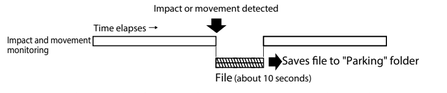
Function 3: Parking recording

Records when it detects impacts or movements while you are parked, as well.

Parked recording

Recording begins if the device detects impacts or movements for about 25 minutes after your car is parked in a parking lot, or someplace, and you turn off the device.





- To use the parked recording function, refer to "Step 3: Turning on Parking Mode"
- Recorded files are automatically overwritten starting from the oldest file.

In parking mode, the device monitors for impacts with your vehicle and movements within the range of the lens. If it detects movements or impacts with your vehicle while monitoring, it activates parked recording.

- The data for parked recording is saved in the "Parking" folder.
- The parked recordings extend to a maximum of 60 seconds, depending on the detection of impacts and movements.
- Parked recordings start a few seconds after the device detects impacts or movements.
- You can set the sensitivity for monitoring methods in the settings menu's [Parking Mode] — [Detection Method].

■ If You Want to Use the Parked Recording Function Longer

Use the separately-sold CA-DR150 on-board power cable for dashboard cameras and turn parking mode on.

- To do continuous recording while parked, set the [Auto Entry] settings to [Manual]. While overwriting older files without switching to parking mode, the device continues recording to the "Video" folder until it reaches the off timer settings value.

Function 4: Still image recording

Takes a still image of the displayed video.

1 Press the 📷 button.

- The recording data is saved to the "Photo" folder.
- Still image files are automatically overwritten starting from the oldest file.
- You cannot take still images while doing parked recording, displaying menus, or playing back recorded files.

Playing a Recording File

Use the device to play back files that are recorded on it.

1 Press the ⏻ button to display the menu.

2 Press the ▲ / ▼ buttons to select "File Playback", and press the ✓ button.

Press the buttons associated with the icons that appear.

3 Press the ▲ / ▼ buttons to select a folder that you want to play back, and then press the ✓ button.

4 Press the ◀ / ▶ buttons to select a file that you want to play back, and then press the ✓ button.

The playback menu appears when you press the ··· button while playing back a file.
You can select the menu by pressing the ▲ / ▼ buttons.

Play/Pause:

Press the ✓ button to play back a file you are viewing.

Move to Event:

Press the ✓ button to move a file you a viewing to the "Event" folder.

Delete:

"Are you sure you want to delete it?" appears when you press the ✓ button.
If you press it again, the file you are viewing is deleted.

Using the PC Application

KENWOOD ROUTE WATCHER II is a PC application for displaying video recorded with the device.

System Requirements for KENWOOD ROUTE WATCHER II

OS: Microsoft Windows 10, Windows 8.1, Windows 7*
(except for the Windows 10 Mobile, Windows RT)
* Windows 7 Service Pack 1 must be installed.
OS: Apple Mac OS X 10.11 (El Capitan) or later

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Installing the Software

- Install the software in a computer environment in which you have administrator's rights.

1 Download the installer from http://www.kenwood.com/cs/ce/.

2 Install according to the on-screen instructions.

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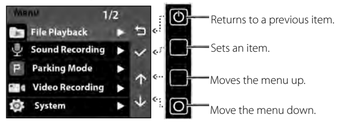
Various Settings

Displaying the Menu

1 Press the ⏻ button to display the menu.

The menu appears.
- When you are in parked recording mode, press the power button to cancel it.
- Recording halts while the setup menu is on display.

■ Menu Screen Operations



Menu		Item	Function explanation
File Playback		Video* Event Parking Photo	Select the folder and file to play back. While playing the file back, you can move it and delete it.
Sound Recording		On* Off	Set whether or not to record sound at the same time as recording video.
Parking Mode	Detection	On Off*	Set whether or not to use parking mode. A screen to set the storage area and to format the memory card appears when the parking mode is set to "On". Save any files you need to a computer, etc., before you change any settings. For information about how to do these settings, see step 3 of "Setting up the Device" on the front of this manual.
	Detection Method	Both* Only G-sensor Only Motion	Set the detection method that starts the parking mode's video recording. Only G-sensor: Monitors impacts with your vehicles. Only Motion: Monitors movements within the range of the lens.
	Auto Entry	Easy Medium* Difficult Manual	While the device's power is on, if the unit has not felt any vibrations from the vehicle for about 5 minutes, it determines that the vehicle is parked, and activates parked recording mode. Set the sensitivity of the sensors that activate the parked recording mode. Easy: parked recording mode activates when there are subtle vibrations Difficult: parked recording mode activates when there are harsh vibrations Manual: manually activate the parking mode without automatic activation To activate the parking mode manually: Press the ✓ button.
	Motion Detection	Low Medium* High	Set the sensitivity at which the movements of people and vehicles in the range of the lens are detected.Low (hard to detect) ↔ High (easy to detect)
	G-Sensor Sensitivity	Low Medium* High	Set the sensitivity to detect impacts with your vehicle. Low (hard to detect) ↔ High (easy to detect)
Video Recording	Video Clip Length	1 min 3 min* 5 min	Set the recording time per file that is recorded during continuous recording (always recording) and event recording.
	WDR	On* Off	Set the function that reduces underexposure and overexposure when there is a big difference in the lighting of the scene.
	EV	-1 to 0* to 1	Set the brightness of the screen and the exposure level (brightness) of the image being recorded.
	G-Sensor Sensitivity	Low(1) to (4*) to High(6)	Set the detection sensitivity for impacts that are stored to the event recording area, according to the impact that occurred during normal recording. High: easy to detect Low: hard to detect
	Stamps	Coordinates* G-sensor	Set the information to be recorded in the recorded image. The information appears at the bottom right of the recorded image and in KENWOOD ROUTE WATCHER II.
	Speed stamp	On* Off	Set whether or not to show the speed you were driving in the recorded files.
	Text stamp	—	If you enter text (a maximum of 12 characters), it appears at the bottom right of the recorded files during playback.
System	Satellites	—	Shows the reception status of the GPS signal.
	Date/Time	Use GPS time*	This automatically sets the date and time. You must set the "Time Zone" and "Daylight Saving Time".
		Manual	Manually set the date and time.
	System Sound	On* Off	Set whether or not to have warning sounds or menu operation sounds.
	Volume	🔊	Set the volume for playing back video files.
	LCD Standby	Always On* 10 sec 1 min 3 min	Set the amount of time until the screen display turns off when it is not in use. Press any of the device's buttons to turn the screen display back on.
	Language	Select the language used for the setting items. Default is "English".	
	Distance Unit	Metric Imperial*	Set the units for distance and speed.
	Storage Allocation	1/3 2/3* 3/3	Set the storage areas for saving continuous recordings, event recordings, parked recordings, and still images. Changing the settings formats and deletes all data. Make a backup of the necessary files in your memory card before doing this.
	Restore to Defaults	A message appears. Press the ✓ button to return the menu's settings to the factory default. Press the ✓ button to format and erase all data. Make a backup of the necessary files in your memory card before doing this.	
	Version	Shows the version.	
Format	Format the memory card. Doing this formats and deletes all data.Make a backup of the necessary files in your memory card before doing this.		

* Settings at the time of purchase

Changing the Settings for the Screen Display Time during Continuous Recording and Parking Monitoring

You can set the time until the display screen darkens (the screen turns off) when it is not in use.
At the time of purchase, this is set to "Always On". The screen remains bright, even in parking mode.
You cannot set the brightness for each mode separately, such as during parking mode.

The screen darkens at the set time when it is not in use if this is set to anything other than "Always On".

- The function in which the screen display darkens (the display turns off) does not work in instances such as displaying the menu, during parked recording, and during event recording, except for when doing continuous recording and monitoring parking.
- The monitoring time for parking mode shortens if anything other than 10 seconds is set for the display time.

1 Press the ⏻ button to display the menu.

2 Press the ↑ / ↓ buttons to select "System", and press the ✓ button.

Press the buttons associated with the icons that appear.

3 Press the ↑ / ↓ buttons to select "LCD Standby", and press the ✓ button.

4 Press the ↑ / ↓ buttons to select the time you want to set, and then press the ✓ button.

Changing the Set Recording Time for Continuous Recordings and Event Recordings

1 Press the ⏻ button to display the menu.

2 Press the ↑ / ↓ buttons to select "Video Reording", and press the ✓ button.

Press the buttons associated with the icons that appear.

3 Press the ↑ / ↓ buttons to select "Video Clip Length", and press the ✓ button.

4 Press the ↑ / ↓ buttons to select the time you want to set, and then press the ✓ button.

Setting the Date and Time

Set the date and time of the device.

1 Press the ⏻ button to display the menu.

2 Press the ↑ / ↓ buttons to select "System", and press the ✓ button.

Press the buttons associated with the icons that appear.

3 Press the ↑ / ↓ buttons to select "Date/Time", and press the ✓ button.

4 Press the ↑ / ↓ buttons to select an item , and press the ✓ button.

When "Use GPS time" was selected, the timezone settings is displayed.

Press the ↑ / ↓ buttons to select the timezone , and press the ✓ button.

5 Press the ↑ / ↓ buttons to select the "Daylight Saving Time", and press the ✓ button.

Daylight Saving Time:Off*/+1 hour/+30 min/-1 hour/-30 min

When "manual" was selected, the "Date/Time" is displayed.
See the following for information about operations.

Manually Setting the Date and Time

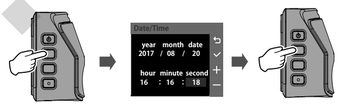
1 Do the processes until step 4 of "Setting the Date and Time", and then select "manual".

2 Press the ↑ / ↓ buttons to select the items, (year, month, date, hour, minute, and second), and then press the → button.

Press the buttons associated with the icons that appear.

3 Repeat the process for step 2 to change the values until "second".

4 Press the confirmation button with "second" selected.



Precautions and notices

Precautions and notices

- **Warning!** Do not operate the device while driving. Using this product does not change the requirement for a driver to take full responsibility for his or her behavior. This responsibility includes observing all traffic rules and regulations in order to avoid accidents, personal injury or property damage.
- For your own safety, do not operate the controls of the product while driving.
- A window mount is needed when using the recorder in a car. Make sure that you place the recorder in an appropriate place, so as not to obstruct the driver's view or deployment of airbags.
- Make sure that no object is blocking the camera lens and no reflective material is placed near the lens. Please keep the lens clean.
- If the car's windscreen is tinted with a coating, it may impact the recording quality.
- Connect the charger to a proper power source. The voltage requirements are found on the product case and/or packaging.
- Do not use the charger if the cord becomes damaged.
- Do not attempt to service the unit. There are no serviceable parts inside. Replace the unit if it is damaged or exposed to excess moisture.

Caring for your device

- Taking good care of your device will ensure trouble-free operation and reduce the risk of damage.
- Keep your device away from excessive moisture and extreme temperatures.
- Avoid exposing your device to direct sunlight or strong ultraviolet light for extended periods of time.
- Do not place anything on top of your device or drop objects on your device.
- Do not drop your device or subject it to severe shock.
- Do not subject your device to sudden and severe temperature changes. This could cause moisture condensation inside the unit, which could damage your device. In the event of moisture condensation, allow the device to dry out completely before use.
- The screen surface can easily be scratched. Avoid touching it with sharp objects. Nonadhesive generic screen protectors designed specifically for use on portable devices with LCD panels may be used to help protect the screen from minor scratches.
- Never clean your device with it powered on. Use a soft, lint-free cloth to wipe the screen and the exterior of your device.
- Do not use paper towels to clean the screen.
- Never attempt to disassemble, repair or make any modifications to your device. Disassembly, modification or any attempt at repair could cause damage to your device and even bodily injury or property damage and will void any warranty.
- Do not store or carry flammable liquids, gases or explosive materials in the same compartment as your device, its parts or accessories.
- To discourage theft, do not leave the device and accessories in plain view in an unattended vehicle.
- Overheating may damage the device.

Cleaning the Device

When the device is dirty, wipe it with a dry silicone cloth or other soft cloth. If the device is very dirty, remove the dirt with a cloth with neutral cleaner on it and then wipe off the cleaner. Wiping the device with a hard cloth or using using a volatile substance such as thinner or alcohol may cause scratches, deformation, deterioration, or other damage.

When the lens is dirty, gently wipe it with a soft cloth dampened with water. Rubbing the lens strongly with a dry cloth may cause scratches.

Precautions for Installation

- Install the device in a position where it will not block the front view of the driver (position where hidden by the rear-view mirror).
- Install the device so that it is within the wiping range of the wiper.
- Install the device in a position where it will not interfere with the movement of the rear-view mirror.
- Take care not to install the device over the vehicle inspection sticker or other sticker.
- Take care not to install the device where it will interfere with driving or airbag operation.
- When installing the device in a vehicle equipped with a driving support system, check the instruction manual of the vehicle and then select an installation location that will not interfere with the driving support system.
- If the device is installed incorrectly, event recording or parking recording may not work correctly. Refer to "How to Install" for the loosening of fixing knob, installation orientation, installation angle, and other information and then install the device correctly.
- Do not install the device near a digital terrestrial television antenna or an electrical component. Doing so may reduce television receiver sensitivity or cause flickering and noise.
- Use a commercially available cleaning cloth or the like to wipe off all dirt and grease on the mounting surface and then fix the mount base in place. If the device is re-affixed or mounted using, for example, general-purpose double-sided tape, the adhesion strength may weaken and cause the device to fall.
- After mounting the device, leave it for 24 hours before use to enable the mounting strength of the mount bracket to improve. Failing to do so may result in the adhesion of the mount bracket becoming weak and the device falling.
- Fix the cord in place with tape or the like so that it does not interfere with driving.

Precautions for Use

Do not block the camera lens, get dirt on it, or place a reflective object near it.

When LED traffic lights are recorded, video in which they appear to be flickering or flashing may be recorded. JVC KENWOOD assumes no responsibility with regard to the distinguishing or recording of traffic lights.

If coating is used on the windshield of the vehicle, recording quality may be affected.

There is no guarantee that the device can record video in all conditions.

CE

Declaration of Conformity with regard to the RE Directive 2014/53/EU
Declaration of Conformity with regard to the RoHS Directive 2011/65/EU
Manufacturer:MITAC Digital Technology Corporation
No. 200, Wen Hwa 2nd Rd., Kuei Shan Dist. 33383 Taoyuan City,
TAIWAN

Hereby, we declare that the radio equipment DRV-330 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

URL: http://www.kenwood.com/cs/ce/eudoc/

Information on Disposal of Old Electrical and Electronic Equipment and Batteries (applicable for countries that have adopted separate waste collection systems)

Products and batteries with the symbol (crossed-out wheeled bin) cannot be disposed of as household waste.

Old electrical and electronic equipment and batteries should be recycled at a facility capable of handling these items and their waste by products.

Contact your local authority for details in locating a recycle facility nearest to you.

Proper recycling and waste disposal will help conserve resources while preventing detrimental effects on our health and the environment.

Specifications

Screen size
2.0inches Full color TFT
Operating voltage (DRV-330)
DC 5.0V
Current Consumption
430mA (Max.1A)
GPS Receiver
Built-in
G-sensore
Built-in
Collision sensitivity
0.5G to 3G (0.5G step)
Image sensor
1/2.7 Color CMOS sensor
Number of Pixel
2M Pixels(1920x1080)
Angles of view
Horizontal : 100°
Vertical : 52°
Diagonal : 111°
Lens
F2.0
Minimum object illuminance
0.7lux
Operating temperature
–10 ℃ to +60 ℃
Recording resolution
1920 x 1080 Full HD(Max.2.0M)
Frame rate
27.5fps
Recording preservation timing
Continuous / Event / Parking
Recording Mode
1 / 3 / 5 min.
Video format
H.264(MP4)
Picture format
JPEG (Max.1920 x 1080)
Recording media
microSDHC card 4GB to 32GB Class 6 or higher
USB Port
mini USB-B type
Dimensions WxHxD (Main unit)
61mm x 54mm x 32mm
Weight (Main unit)
63g
Accessories
Car charger cord (3.5 m) x 1
Mounting bracket (double-sided tape) x 1

- The specifications and design are subject to change due to technological developments.
- The microSDHC logo is a trademark of SD-3C LLC.

==Konatu Description==
This is TrueTypeFont where BitmapFont is embedded. It was confirmed to use it with Windows XP, and Ubuntu 12.10

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===Author===
BYMASUDA mitiya
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Others

Guidelines for Recording Times (While the Battery is Full)
Standing by in parking mode: approx. 25 minutes
During continuous recording (time for always recording): approx. 15 minutes
Guideline for Charging Time
When using the provided car charger: approx. 3 hours
* The battery is not fully charged directly after purchase. As a result, operations may become unstable, and you may not be able to do parked recording. Start using the device after it is fully charged.

GPS

- GPS positioning begins when the power of the device turns on. Positioning may take about 5 minutes to complete depending on the GPS positioning conditions.
- GPS satellite signals cannot pass through solid materials (except glass). GPS positioning cannot be used in tunnels and buildings. Signal reception may be affected by conditions such as bad weather and dense overhead obstacles (e.g., trees, tunnels, viaducts, and tall buildings). Speed, position, and other information will not be displayed correctly when GPS satellite signals cannot be received.
- GPS positioning data is reference values.
- GPS is managed by the U.S. government, which assumes full responsibility for its performance. Changes to the GPS system may affect the accuracy of all GPS devices.

If You Notice a Problem with the Device

Reset the device. Turn off the power by pressing the reset button on the back of the device with the tip of a thin paperclip. Press the power button once again to turn the device on again.

SD Cards

Cards supported by this device

Standard	microSDHC
Capacity	4 GB to 32 GB
Speed class	Class 6 or higher
File system	FAT32

Up to the Class 10 speed class is supported.

Precautions for using SD cards

- When using a commercially available SD card, also check the instructions supplied with the SD card.
- Be sure to format (initialize) an SD card with the device before use.
- SD cards have a product lifespan, such as the number of times that writing can be performed. It is recommended to replace the SD card with a new one regularly depending on the usage conditions.
- When inserting and removing an SD card, confirm the orientation, do not bend it, and do not apply a strong force or impact to it.
- Do not directly touch the contact part with a hand or metal. The stored data may be damaged or lost due to static electricity.
- Be sure to back up (copy) the required files in the SD card to a PC or other device. The saved data may be lost due to the usage conditions of the SD card. Please note that JVC KENWOOD cannot compensate for any damages arising from the loss of saved files.
  - Format the memory card periodically.
  - Do not remove the memory card while recording or during playback because it may corrupt the data on the memory card.
  - The device may not operate normally if you use an SD card that was used by another device, such as a computer or digital camera. Format the memory card in the device.
  - Depending on the specifications of the memory card, the reading and writing speeds for the device's data may differ.

Autogoods "130"