

THINKWARETM DASH CAM

F770

User Manual



This Dashboard Camera (dash cam) is a specialized onboard device that continuously records video while the vehicle is in use.

Some features may not be available depending on installation, driving conditions, and vehicle type. The video quality might vary for each device as a result of installed firmware.

The device DOES NOT guarantee video recording of all accidents as built-in impact sensor may not be activated due to combination of user settings and the level of impact during the collision.

Contents

	Before Using THINKWARE DASH CAM™ F770	2
	FCC Statement	3
	Information to user : RSS-247	3
	Caution	4
01	Getting Started	
	1-1. In the Package	5
	1-2. Optional Accessories	5
	1-3. Product Overview	6
	1-4. Inserting a Memory Card	7
	1-5. Vehicle Installation	8
02	Basic Operations	
	2-1. Turning the Device Power On/Off	10
	2-2. Road Safety Warning System	11
	2-3. Auto Calibration	11
	2-4. Lane Departure Warning System (LDWS)	12
	2-5. Forward Collision Warning System (FCWS)	12
	2-6. Recorded Files	13
	2-7. Recording Videos While Driving	14
	2-8. Recording Videos While Parked (Optional Accessory)	16
	2-9. Manual Recording	17
	2-10. Audio Recording	18
	2-11. Formatting MicroSD Card	18
	2-12. Initializing Device Settings	19
	2-13. Upgrading Firmware	19
03	Mobile Viewer Application	
	3-1. Thinkware Dash Cam Mobile Viewer	20
	3-2. Thinkware Dash Cam Mobile Viewer Main Menu	22
04	PC Viewer Software	
	4-1. Thinkware Dash Cam PC Viewer	29
05	Device Information	
	5-1. Specifications	34

Before Using THINKWARE DASH CAM™ F770

- ▶ Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of THINKWARE.
- ▶ Every effort has been made to ensure this Guide's accuracy. However, we cannot guarantee the accuracy of the contents in this document as there may be technical errors, omissions, and/or future changes.
- ▶ THINKWARE reserves the right to change or modify the product and the content of this manual at any time without prior notice for product improvements.
- ▶ Images contained in this user guide are illustrations for instructional purposes only and may differ from the actual product.
- ▶ Users do not reserve the right to use the product for purposes other than as specified in this user guide. According to the Personal Information Protection Act and other related regulations, the user/owner may be held liable if the video and/or conversation recorded by the device are distributed without their consent. Thus, special attention should be paid in using this product.

- The MicroSD memory card should be tested for errors on a regular basis and as the memory card is a consumable item, it will need to be replaced periodically.
- THINKWARE is NOT responsible for any problems and/or damages that may occur from the use of disingenuous, modified, or unauthorized parts and accessories.
- The device and the recorded videos are intended for personal use and the recorded videos should be used for reference only.
- The device does NOT guarantee video recording of all accidents as built-in impact sensor may not be activated due to combination of user settings and the level of impact during the collision.

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ▶ Reorient or relocate the receiving antenna.
- ▶ Increase the separation between the equipment and receiver.
- ▶ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ▶ Consult the dealer or an experienced radio/TV technician for help.
- ▶ This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.
- ▶ A minimum separation distance of 20cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

FCC CAUTION: Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC ID: 2ADTG-F770

Information to user : RSS-247

This device complies with Industry Canada's licence-exempt RSSs.

Please be cautioned the changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice: Operation is subject to the following two conditions : (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003.

IC: 12594A-F770

Caution

- ◆ Depending on the make and model of your car, the power maybe constantly supplied to the dash cam even with the ignition turned off. Installation of the device to a continuously powered 12V outlet could result in vehicle battery drainage.
- ◆ This device is designed to record video while the vehicle is in operation. The quality of the video might be affected by weather conditions and the road environment such as day or night, presence of street lighting, entering/exiting tunnels, and the surrounding temperature.
- ◆ THINKWARE is NOT responsible for the loss of any recorded video during operation.
- ◆ Although designed to withstand high impact of car collision, THINKWARE does NOT guarantee recording of accidents where the impact may cause the device to be damaged.
- ◆ Keep the windshield and camera lens clean for optimal video quality. Particles and substances on the camera lens or windshield may reduce the quality of the recorded videos.
- ◆ The specified operating temperature of this product is 14°F to 140°F (-10°C to 60°C) and storage temperature is -4°F to 158°F (-20°C to 70°C). Ensure that the device is kept within these temperature ranges; otherwise, the device may not function as designed and at extreme temperatures, permanent physical damage can result which is not covered by warranty.
- ◆ Avoid placing the device under direct sunlight.
- ◆ Avoid using the device in extreme conditions where the Product is exposed to high temperature and/or humidity.
- ◆ Only use genuine accessories and peripherals from THINKWARE or authorized THINKWARE dealer. THINKWARE does not warrant the safety and compatibility from use of peripherals from other manufacturers. Use genuine parts supplied by THINKWARE.
- ◆ Do not apply excessive force when pushing the buttons on the device.
- ◆ Do not clean the Product using chemical cleaner or solvents as it may damage plastic components. Use soft, clean, dry fabric to gently wipe the Product.
- ◆ Do not place or store the device where it can be accessible by children and pets.
- ◆ Do not disassemble the Product as it will void product warranty and may also damage the product.
- ◆ Handle with care. Drop, shock, and mishandling the Product may result in malfunction and/or damage to the device.
- ◆ Do not operate this device while driving.
- ◆ Install this device in a location where it has unobstructed view of the road but does not interfere with the driver's view. Check with your State and Municipal laws before mounting to the windshield.
- ◆ The device and/or installation parts have moving parts and may shift in extreme road conditions such as unpaved road. Check frequently to ensure the device is positioned as instructed in this guide.
- ◆ Do not operate or handle power cable with wet hands.
- ◆ Do not use a damaged power cable.
- ◆ Keep the power cable away from heaters or other hot objects.
- ◆ Check that power cable with correct connector is used and the connections are secure and firmly in place.
- ◆ Do not pull, insert, or bend the power cable using excessive force.
- ◆ Do not place heavy objects on the device and the power cable.
- ◆ Do not modify or cut the power cable.
- ◆ THINKWARE does not guarantee that devices or peripherals not authorized by THINKWARE will be compatible with its Product.
- ◆ Do not attempt to insert foreign objects into the device or power cable.
- ◆ Do not spill or spray liquid into the device as it may cause malfunction, fire, or electric shock.
- ◆ This device is intended to be used inside the vehicle only.
- ◆ RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

1. Getting Started

This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

1-1. In the Package



Main Dash Cam Unit



Mount with 3M tape
(1ea)



Car Charger



Adhesive Cable Holder
(5ea)



MicroSD memory card with adapter
(consumable)



USB MicroSD card reader



Quick Start Guide / Warranty /
CS information / User Manual
(stored in the MicroSD card)

1-2. Optional Accessories

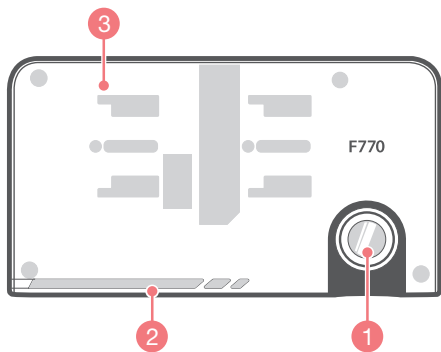


Hardwiring Cable

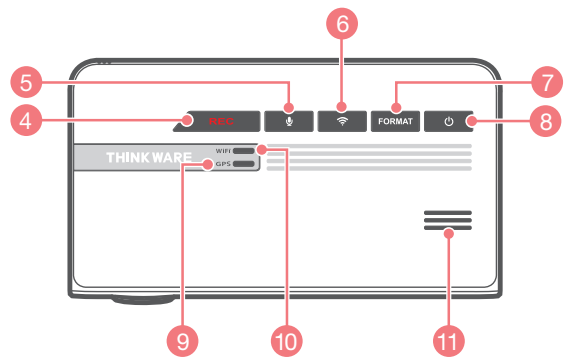


Rear View Camera

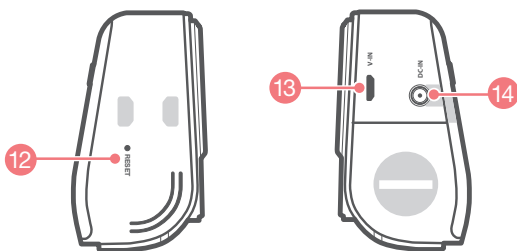
1-3. Product Overview



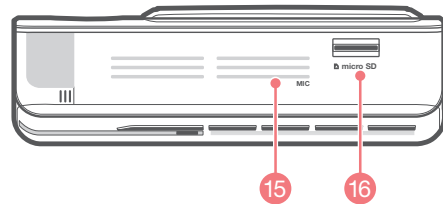
Front view






Bottom view



Left / Right view



Rear view

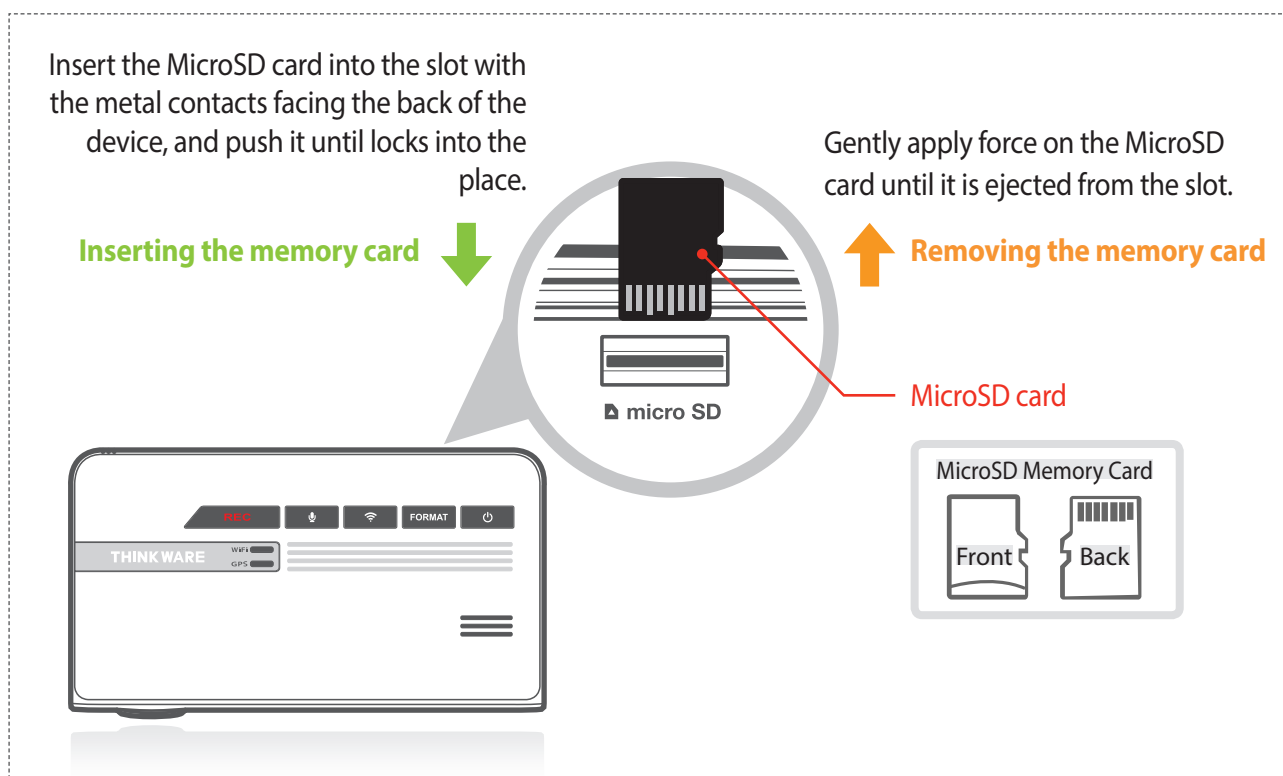
No.	Name	Description
1	Camera Lens	Front facing camera for video recording
2	Security LED	LED light that is used to visually indicate that the vehicle is equipped with dash cam which is in operation
3	Mount Connector	Connects to the windshield mount
4	REC Button	Initiates manual recording
5	Voice Recording  Button	Activates/deactivates audio recording
6	Wi-Fi () Connection Button	Press briefly : Connecting with Wi-Fi password Press and Hold (5 seconds or longer) : Connecting with WPS (Wi-Fi Protected Setup)
7	Format Button	Press and hold for 3 seconds to initiate memory card format
8	Power  Button	Press and hold for 3 seconds to turn the device on/off
9	GPS Receiver LED	Indicates connection status of built-in GPS antenna
10	Wi-Fi LED	Indicates connection status of Wi-Fi device (blue when connected)
11	Speaker	For voice guidance and alert/notification sounds
12	Reset	Press to force the device to reboot
13	V-IN Socket	Connects to rear view camera. (Optional rear view camera is not included and requires separate purchase)
14	DC-IN	Connects to power cable
15	Microphone	Records audio along with video
16	Memory Card Slot	Location for the memory card

1-4. Inserting a Memory Card

1-4-1. About Memory Cards

- ▶ UHS MicroSD card must be used with a storage capacity of 16GB, 32GB, or 64GB. It is strongly recommended that minimum 16GB memory card is used for full HD recording.
- ▶ The MicroSD card should be formatted every 2 weeks to maximize the lifetime of the memory card.

1-4-2. Installing a MicroSD Card



Do not apply excessive force on the MicroSD card or attempt to insert it in the wrong direction as it may cause damage to the MicroSD card and the card slot.

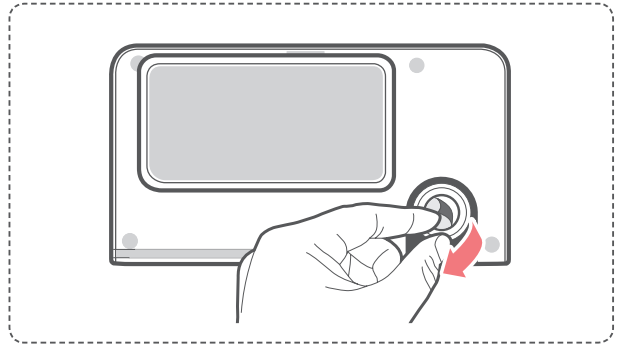
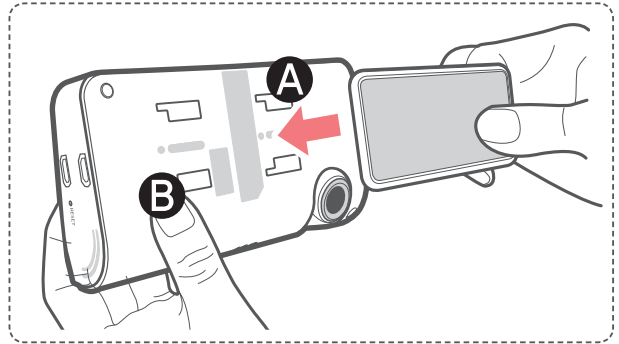
Cautions

- The MicroSD card should be tested for errors on a regular basis and as the memory card is a consumable item, it should be replaced periodically.
- THINKWARE shall NOT be responsible for any problems and/or damages that may occur from not using genuine or authorized parts and accessories. It is strongly recommended that THINKWARE memory cards are used to minimize memory card error.
- Ensure that the device is completely off before removing the MicroSD card to avoid damages to the memory card.
- To prevent loss of important data, frequently copy recorded videos from MicroSD card to another storage device such as personal computer for back up.

1-5. Vehicle Installation

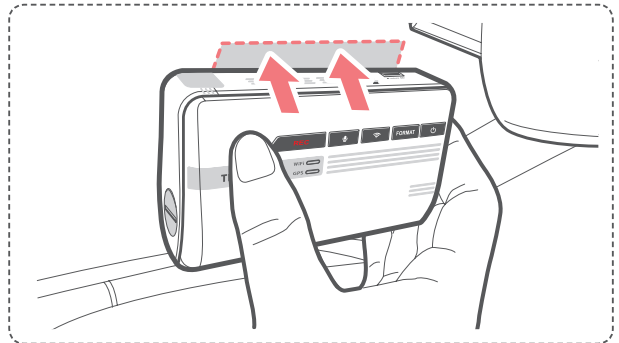
1-5-1. Connecting the Device and the Mount

- ① Align the mount with the connector (A), and slide it towards (B) until it clicks into place.
- ② Remove the protective film from the camera lens.



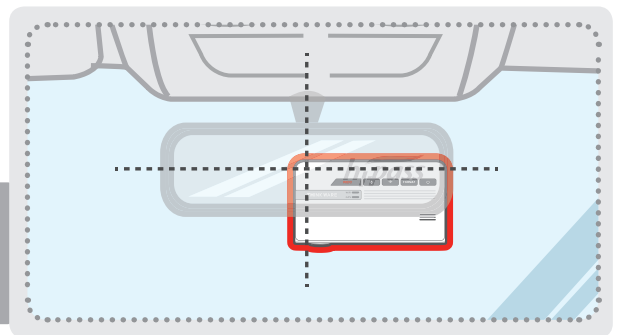
1-5-2. Installing the Device

- ① Clean the area on the windshield where the dash cam will be installed.
- ② With dash cam main unit still attached to the mount, remove the protective tape from the back of the mount.
- ③ Attach the adhesive side of the mount on the windshield where it has unobstructed view of the road but does not interfere with the driver's view.



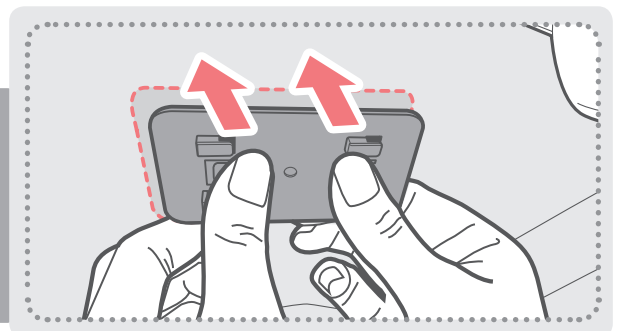
TIP

The camera is located on the left side of the main unit so install the dash cam on the right side of the center behind the rearview mirror.



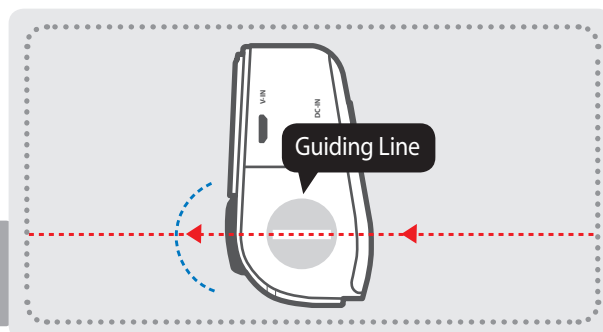
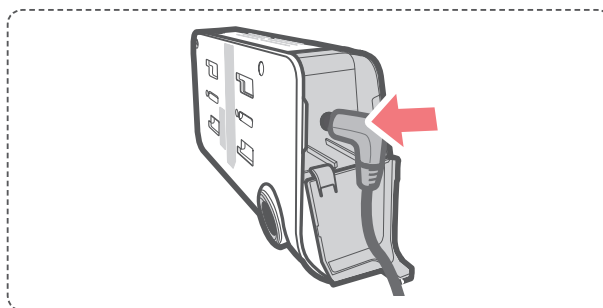
TIP

To ensure that the mount is safely secured, it is recommended that you separate the device from the mount after installation and press the mount towards windshield for 5 minutes to maintain pressure. Allow 24 hours until the adhesive on the mount has set before connecting the dash cam.



1-5-3. Connecting to power

- ① Connect the Micro USB end of the power cable to DC-IN socket of the device.
- ② Plug the car charger adapter end of the power cable into a 12V DC vehicle power socket.
- ③ Arrange the wire by using the adhesive cable holders as shown below.
- ④ The dash cam should be facing forwarding and is level with the vehicle and the road. Adjust the camera using the level guiding line marked on the side of the device.

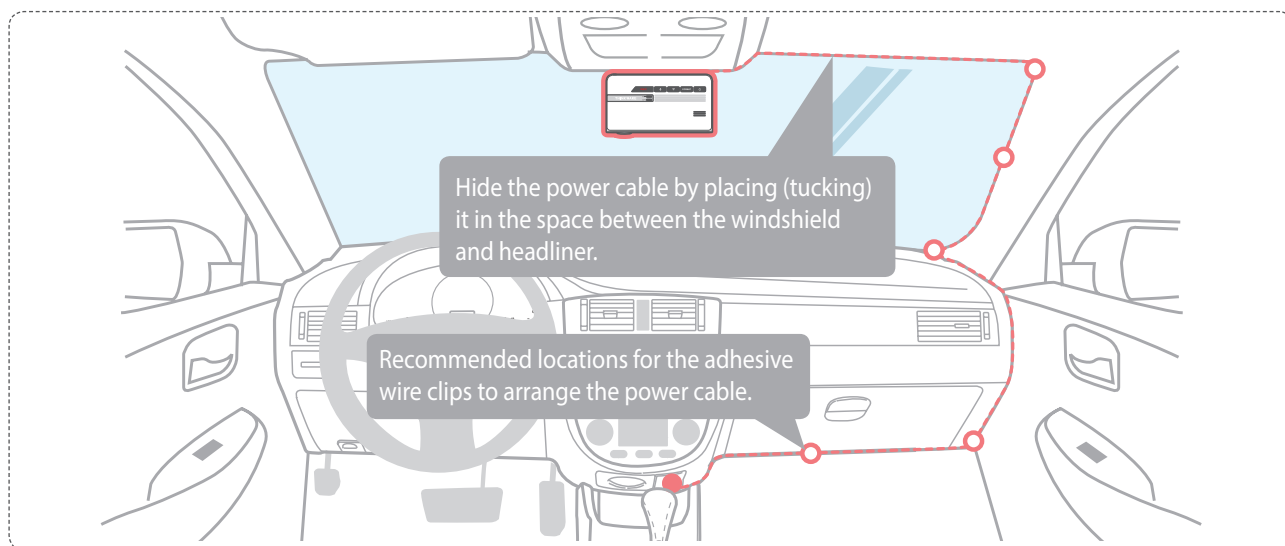
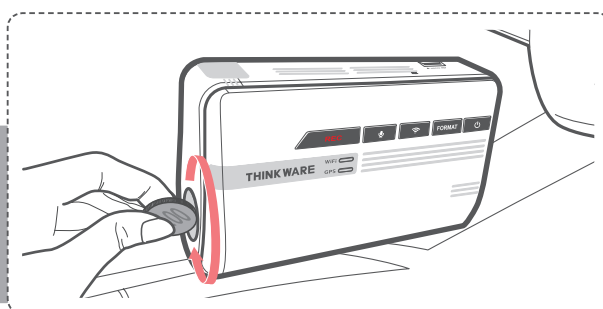


TIP

Adjust the camera to have the horizontal indicator on the dash cam to be level with the vehicle and the road.

TIP

After installation, run the dash cam to record videos and check the videos using Thinkware Dash Cam Viewer (Mobile or PC) to verify camera position. Adjust the camera angle if necessary.



For more information on the power cable routing instruction, please visit Thinkware homepage (<http://www.thinkware.com>)

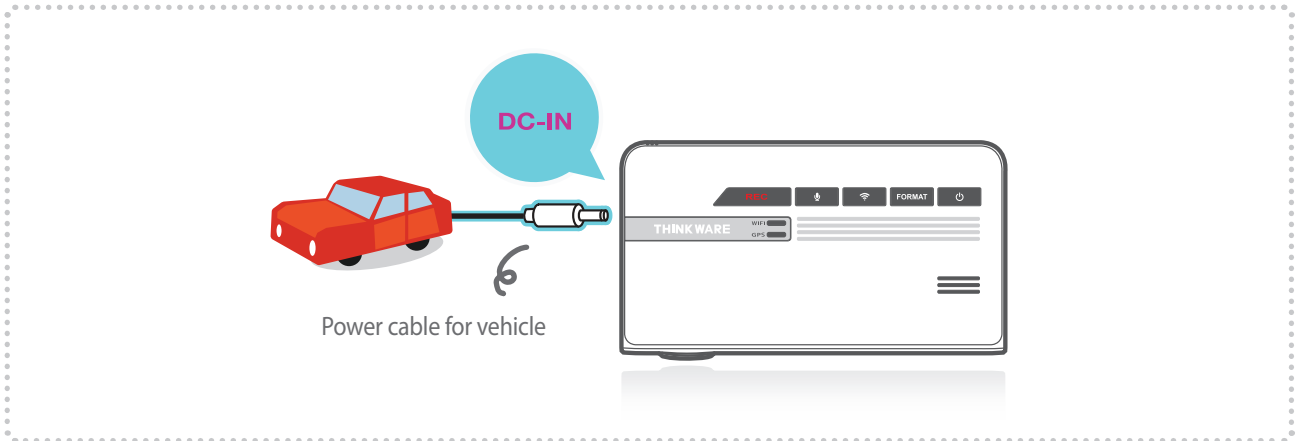
Preventing Vehicle Battery Discharge

- Depending on the make and model of your car, the power may be supplied to the dash cam even with the ignition turned off. This may result in vehicle battery discharge.
- Some vehicles with multiple power sockets might be equipped with at least 1 outlet that does not shut off the power with the ignition. Test each power outlet to ensure you connect to an outlet that shuts off with vehicle engine.

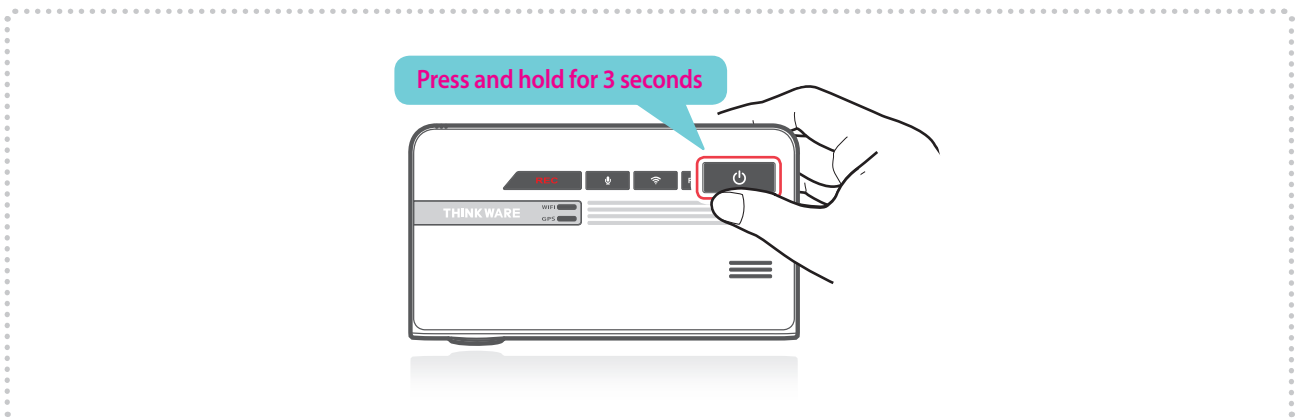
2. Basic Operations

2-1. Turning the Device Power On/Off

- ▶ Once connected to the vehicle, the device will automatically turn on and off with vehicle ignition.



- ▶ To manually turn the device on/off, press and hold the Power button (⏻) for 3 seconds.

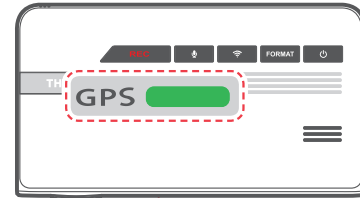
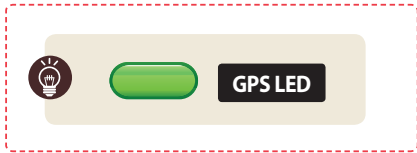


2-2. Road Safety Warning System

Using embedded GPS and road data, related road safety information will be notified to the driver.

► Initializing GPS

- ↳ Built-in Internal GPS can be reset by selecting "Information > GPS Info > Reset GPS" on the Thinkware Dash Cam Mobile Viewer.



Cautions

- This feature may not be available in some countries.
- GPS may be affected by weather conditions, satellite signal, and/or surrounding geographical features.
- Coated windshields can interfere with GPS signal which may result in poor or blocked GPS reception.
- Other electronic devices and/or equipment may interfere with GPS signal if placed too close to the dash cam.

2-3. Auto Calibration

1. Before using LDWS and FCWS, settings must be calibrated using the ADAS setup guide screen in the Thinkware Dash Cam Mobile Viewer App.
2. Auto Calibration will initiate when driving on a straight road at a speed greater than 30km/h (18mph) for more than 1 minute.



Cautions

- ADAS setup guide screen in Live View is displayed only when LDWS and FCWS features are enabled through Thinkware Dash Cam Mobile Viewer App.

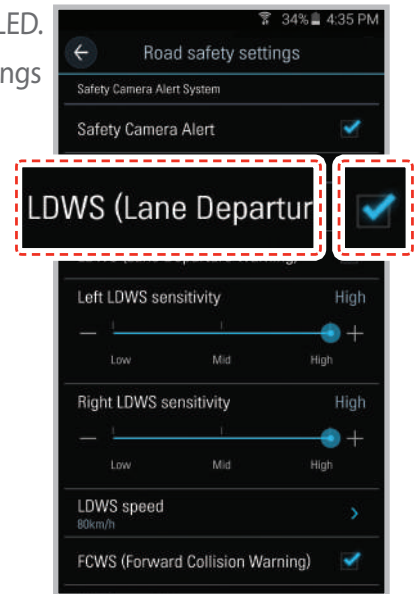
2-4. Lane Departure Warning System (LDWS)

Audible warning notifies the driver in real time when the vehicle is leaving its lane. This warning is only enabled when the vehicle is traveling above 50km/h (approx 30mph)

* Default setting : 80km/h (approx 50mph)

► LDWS Setting

1. Verify that the GPS is connected by checking for the green light on GPS LED.
2. Enable LDWS feature by selecting "Dashcam Settings > Road safety settings > LDWS" on the Thinkware Dash Cam Mobile Viewer.

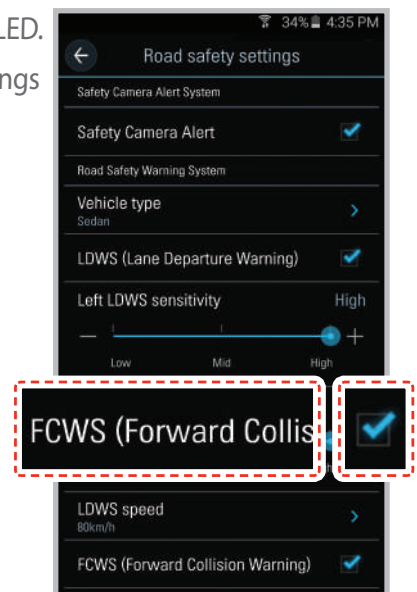


2-5. Forward Collision Warning System (FCWS)

Audible warning notifies the driver in real time to avoid possible rear-end collision when the vehicle is ahead is slowing or stopped. The warning is only enabled when the vehicle is traveling above 30km/h (approx 20 mph)

► FCWS Setting

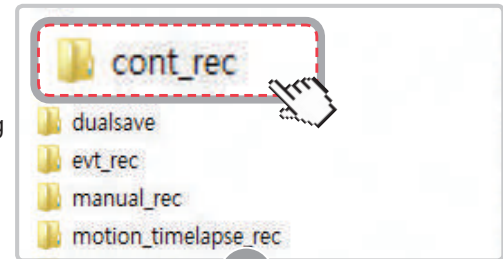
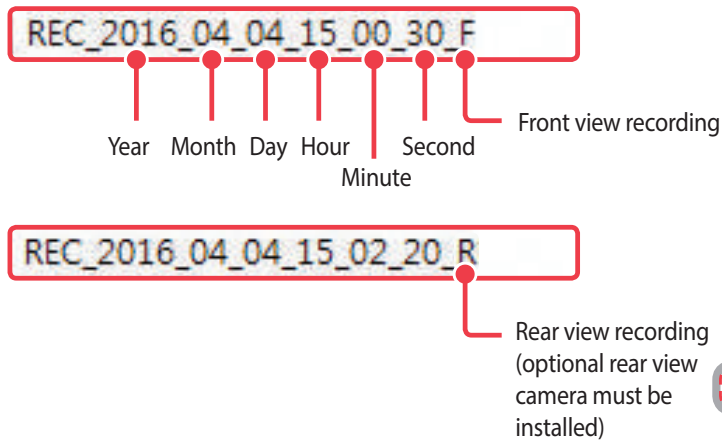
1. Verify that the GPS is connected by checking for the green light on GPS LED.
2. Enable FCWS feature by selecting "Dashcam Settings > Road safety settings > FCWS" on the Thinkware Dash Cam Mobile Viewer.



2-6. Recorded Files

▶ Recorded video files are saved in the folder by date and hour in the MicroSD card.

└ Files are created based on the time when the videos are recorded.



A screenshot of a file explorer showing a list of recorded files. The files are listed in a table with columns for '이름' (Name), '수정된 날짜' (Modified Date), and '유형' (Type). The file `REC_2016_04_04_15_02_20_F` is highlighted with a red dashed box and a hand cursor.

이름	수정된 날짜	유형
REC_2016_04_04_15_02_20_F		MP4
REC_2016_04_04_15_02_20_R	2016-04-04 오후...	MP4
REC_2016_04_04_15_03_33_F	2016-04-04 오후...	MP4
REC_2016_04_04_15_04_30_F	2016-04-04 오후...	MP4
REC_2016_04_04_15_05_30_F	2016-04-04 오후...	MP4

└ As a loop-recording surveillance product, the dash cam will automatically overwrite oldest file in the memory card once the memory is full. However, event recording and manual recording videos are stored in separate locations and will be protected from file overwriting.



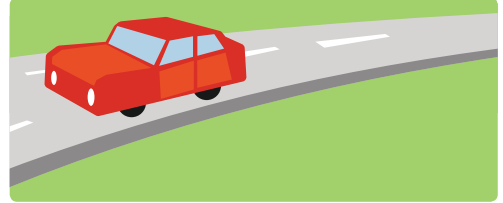
Cautions

- Do not use the MicroSD card as an external storage device.
- Do not tamper with the system files in the MicroSD card. This may result in unexpected behavior during operation.

2-7. Recording Videos While Driving

2-7-1. Continuous Recording Mode

- ▶ Videos are recorded in 1 minute segments and saved as files in the MicroSD card under the folder named "cont_rec".



2-7-2. Incident Recording During Continuous Recording Mode

- ▶ When the dash cam detects impact, it will immediately store the 10 seconds prior and 10 seconds after impact.
- ▶ The 20-second impact recording is saved on the MicroSD card under the "evt_rec" folder. Please note that the dash cam will only detect impact as an incident if the level of impact is greater than the sensitivity level of the G-Sensor. You can change these levels in the user configuration.

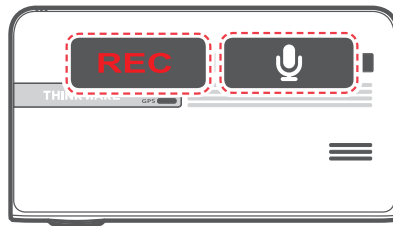


Cautions

- Driving over speed bumps, manholes, or uneven roads at high speeds can also be detected as an impact and may trigger incident recording.
- The device can record up to 1 minute of incident recordings in the case of continuous impacts or multiple accidents.
- The duration of incident footage recorded may vary according to the device settings.

2-7-3. Dual Save™ (Internal Memory Backup)

- ▶ Dual Save is a Thinkware proprietary technology that utilizes built-in memory as secure backup in addition to MicroSD memory card. Dual Save technology guarantees incident video recording using internal memory in case of an accident that causes damage to the MicroSD memory card.
 - ↳ Press and hold REC button and Voice Recording () button at the same time for 3 seconds to copy incident recording from internal Dual Save memory to MicroSD memory card.
 - ↳ When Dual Save is activated, it will immediately store the previous 4 seconds prior to impact and start recording video for next 2 seconds for total of 6 second video clip.



Cautions

- Dual Save technology saves duplicate copy of recorded video for secure backup to the internal memory so the internal memory life span may be affected by G-sensor user setting, road conditions, and driving behavior which directly impact frequency of incident recordings.
- Driving over speed bumps, manholes, or uneven roads at high speeds can also be detected as an impact and may trigger incident recording.
- Professional product service is required when replacing the internal memory.

2-8. Recording Videos While Parked (Optional Accessory)

This feature is available only when the dash cam has been hardwired direct to the vehicle battery. Separate purchase is required for the hardwiring cable accessory and installation is required.

2-8-1. Incident Recording

- ▶ When the dash cam detects impact while parked, it will immediately store the 10 seconds prior and after the impact.

The 20-second impact recording is saved on the MicroSD card under the "evt_rec" folder.



2-8-2. Motion Detection Recording

The dash cam and the optional rear view camera are both equipped with motion detectors which are used to detect motion that initiates video recording while the vehicle is parked.

- ▶ When the dash cam detects motion while parked, it will immediately store the previous 10 seconds prior to the activation of motion detection start recording video for the next 10 seconds.
 - The 20-second motion detection recording is then saved on the MicroSD card under the folder named "motion_rec".

2-8-3. Time Lapse Recording

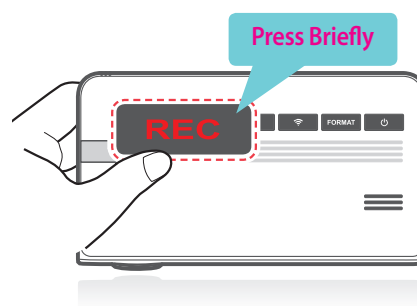
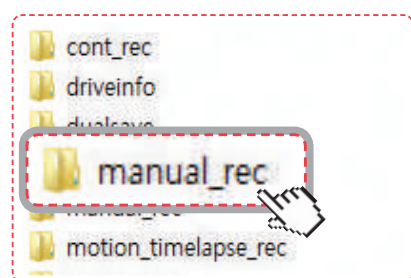
Time Lapse Recording captures at one frame per second during parking. This allows the dash cam to reduce video file size to allow more footage to be stored on the MicroSD card.

- ▶ Impact Detection is enabled for Time Lapse Recording. When the dash cam detects impact while parked, it will store the 3 minutes and after a parking incident for a total of 6 minutes.
 - The recording is then saved on the MicroSD card under the folder named "motion_timelapse_rec".
- ▶ Motion Detection Recording and Time Lapse Recording cannot be used at the same time.
 - ↳ To enable Time Lapse, go to "Thinkware Dash Cam Mobile Viewer > Settings > Dash Cam Settings > Record Settings > Parking Mode > Time Lapse" (For more information on the Time Lapse, refer to Using Thinkware Mobile Viewer on page 20)
- ▶ If Motion Detection Recording is enabled, all existing Time Lapse Recordings on the MicroSD card will be erased.

2-9. Manual Recording

In addition to recording accidents, the dash cam allows the user to initiate manual recording mode to capture scenery and/or places while driving. This feature can also be used to save video as witness where the installed vehicle is not directly involved in an accident. Video files saved during manual recording mode are stored in a separate location on the memory card and will be protected from video overwriting in continuous recording mode.


- ▶ **Briefly press the REC button** to start recording. The device will record video for 1 minute (10 seconds before and 50 seconds after) as of the time when the button is pressed. The recorded video will be saved under the “manual_rec” folder.
- ▶ Note that when manual recording is initiated, the previous 10 seconds prior to pressing the button will be saved so even if you just missed a scene, you can still capture and safely store the video by initiating manual record within 10 seconds of the event.

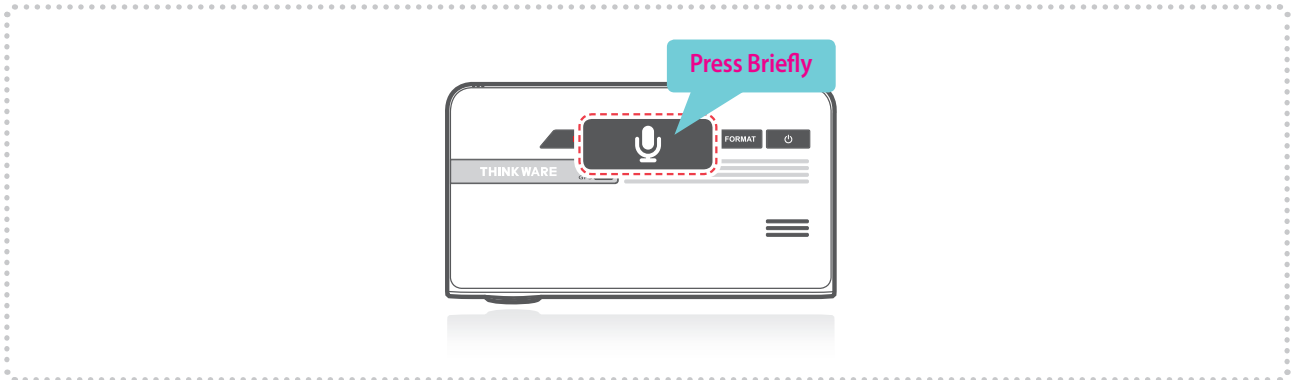


Cautions

- When the allocated storage for manual recording videos is full, oldest video file will be replaced by the new recorded video.

2-10. Audio Recording

- ▶ Briefly press the Voice Recording () button to turn the audio recording on or off.

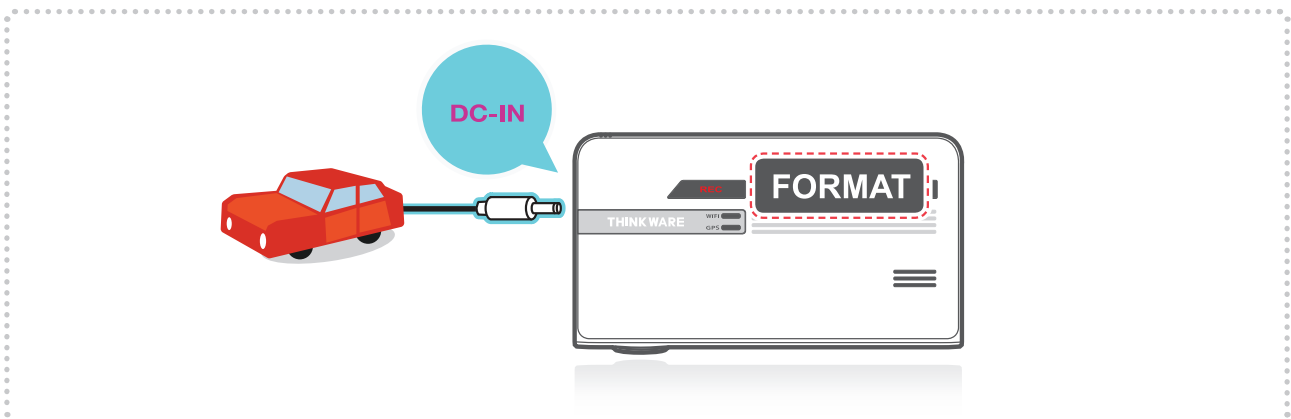


Cautions

- Users do not reserve the right to use the product for purposes other than as specified in this user guide. According to the Personal Information Protection Act and other related regulations, the user/owner may be held liable if the video and/or conversation recorded by the device are distributed without their consent. Thus, special attention should be paid in using this product.

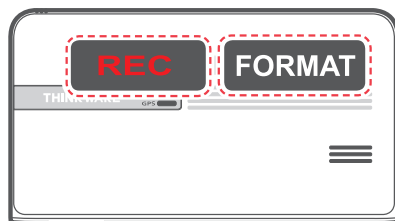
2-11. Formatting MicroSD Card

- ▶ Press and hold the **FORMAT** button for 3 seconds to initiate memory card format.



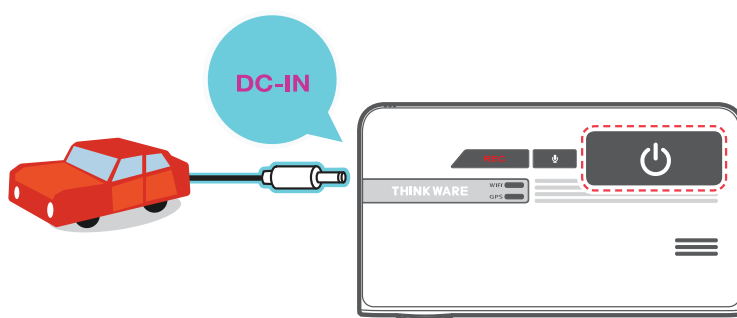
2-12. Initializing Device Settings

- ▶ Press and hold REC and FORMAT buttons simultaneously to reset the device settings to default factory settings.



2-13. Upgrading Firmware

- ▶ The system will automatically be updated if the MicroSD card contains the firmware upgrade file.
 - └ The device restarts automatically after the upgrade has been completed.
- ▶ Make sure your device is always up to date with latest firmware.
Please check back frequently at THINKWARE website (www.thinkware.com) for the latest firmware updates.
- ▶ Do NOT disconnect your device from power while it is being updated. This will result in damage to the dash cam.



3. Mobile Viewer Application

3-1. Thinkware Dash Cam Mobile Viewer

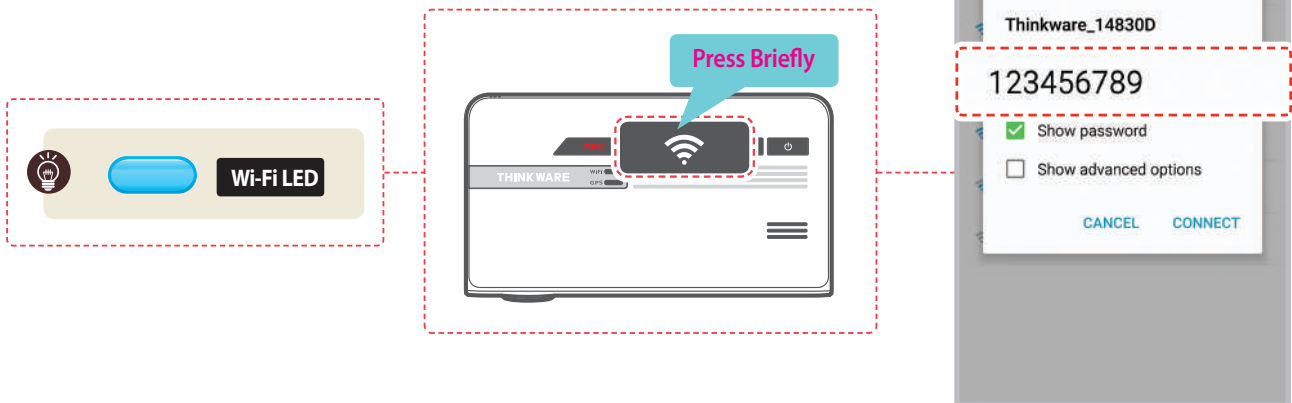
Thinkware Dash Cam Mobile Viewer App is available through Google Play and the App Store from iTunes.

- Mobile App device OS version requirements: Android 4.0 (Ice Cream Sandwich) or higher, iOS 7.0 or higher.
- You may disable Cellular data (Data networks) for using apps in some of devices operating Lollipop.
- For iOS devices, Wi-Fi settings can only be accessed using the smartphone or tablet settings.

3-1-1. Connect Wi-Fi with Password

- ① Download and install Thinkware Dash Cam Mobile Viewer application
- ② Press briefly the Wi-Fi button on the dash cam to enter Wi-Fi connection mode
- ③ (Make sure to turn on the Wi-Fi in the device setting for iOS devices) In the Thinkware Dash Cam Mobile Viewer application, turn on the Wi-Fi option, select “thinkware” from SSID list, and enter password as “123456789”

└ Password is only required during first time you try to connect.
The device will auto-connect in subsequent connections.




※ Dash cam will automatically turn off the Wi-Fi connection mode if not connected within 2 minute.

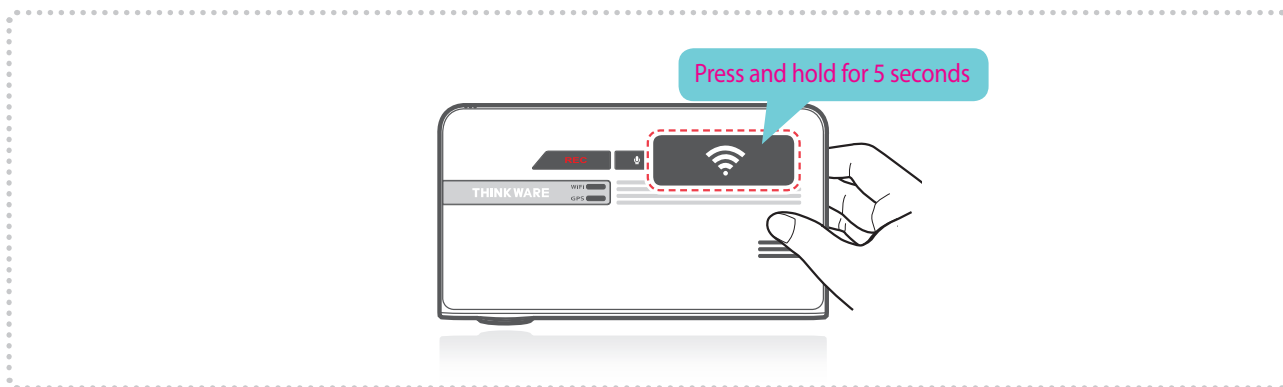
Cautions

- The distance range between the dash cam and connecting smart device is approximately 10 meters (33ft) in an open field environment.
- Use of ADAS features (road safety warning system) are restricted while being accessed using Thinkware Dash Cam Mobile Viewer.
- When device and mobile phone are connected over Wi-Fi, all control buttons of device will not be working, except power button.

► Connecting with WPS (Only Android OS)

- ① Download and install Thinkware Dash Cam Mobile Viewer application.
- ② Press and hold Wi-Fi () button for more than 5 seconds on the dash cam to enter WPS connection mode.
- ③ Select "WPS" button on the Thinkware Dash Cam Mobile Viewer application to automatically connect to the Thinkware dash cam using Wi-Fi. (takes approximately 20~30 seconds)

↳  : Retry Wi-Fi search.

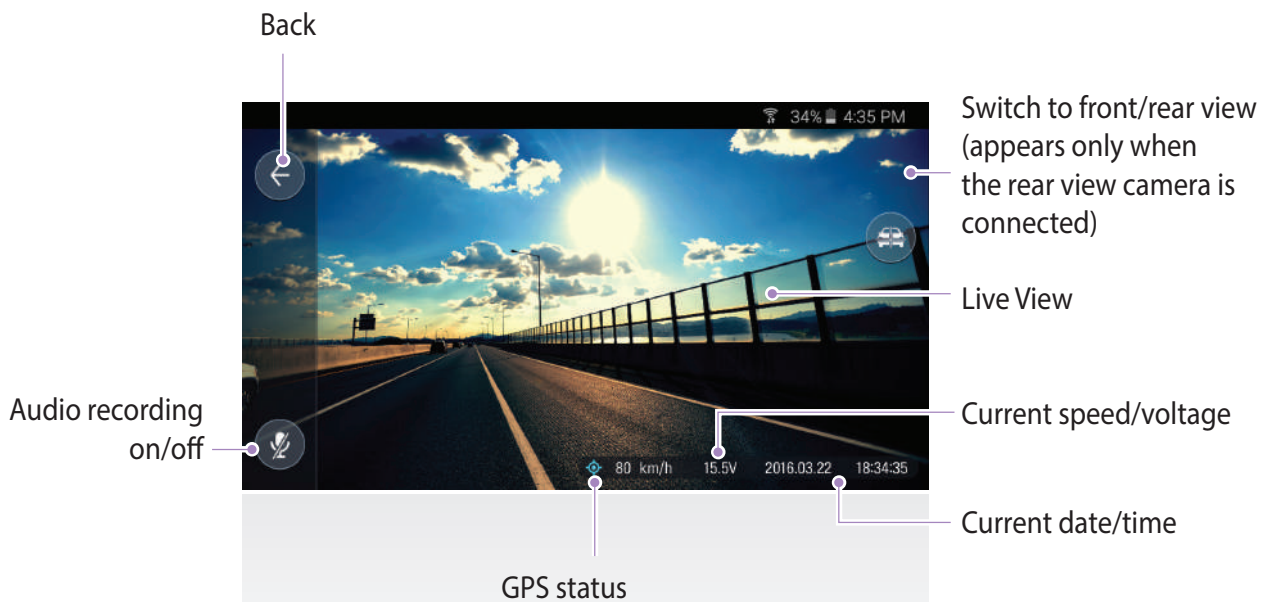


3-2. Thinkware Dash Cam Mobile Viewer Main Menu

Following section describing the Thinkware Dash Cam Mobile Viewer menu is based on Android devices. Layouts and screen captures might be slightly different for iOS devices.

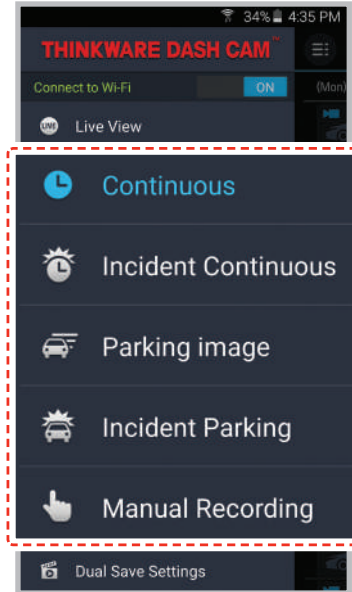
3-2-1. Live View

► **Live View** : When using Live View, the continuous recording will be disabled.



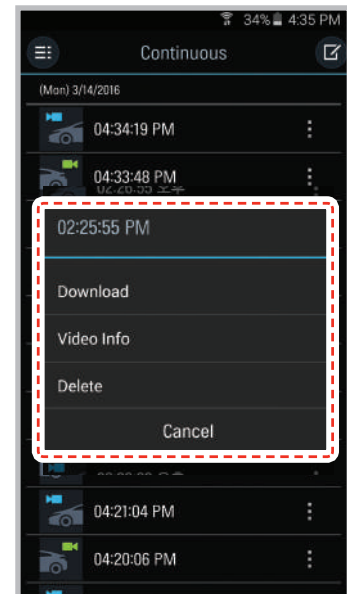
3-2-2. Video List

- ▶ **Continuous Recording** : Lists loop recording videos during continuous mode (in 1 minute segments)
- ▶ **Incident in Continuous Mode** : Lists incident recording videos during continuous mode
- ▶ **Parking image** : Lists motion detection recording videos during parking surveillance mode
- ▶ **Incident in Parking Mode** : Lists incident recording videos during parking surveillance mode
- ▶ **Manual Recording** : Lists manual recording videos initiated by selecting manual recording button

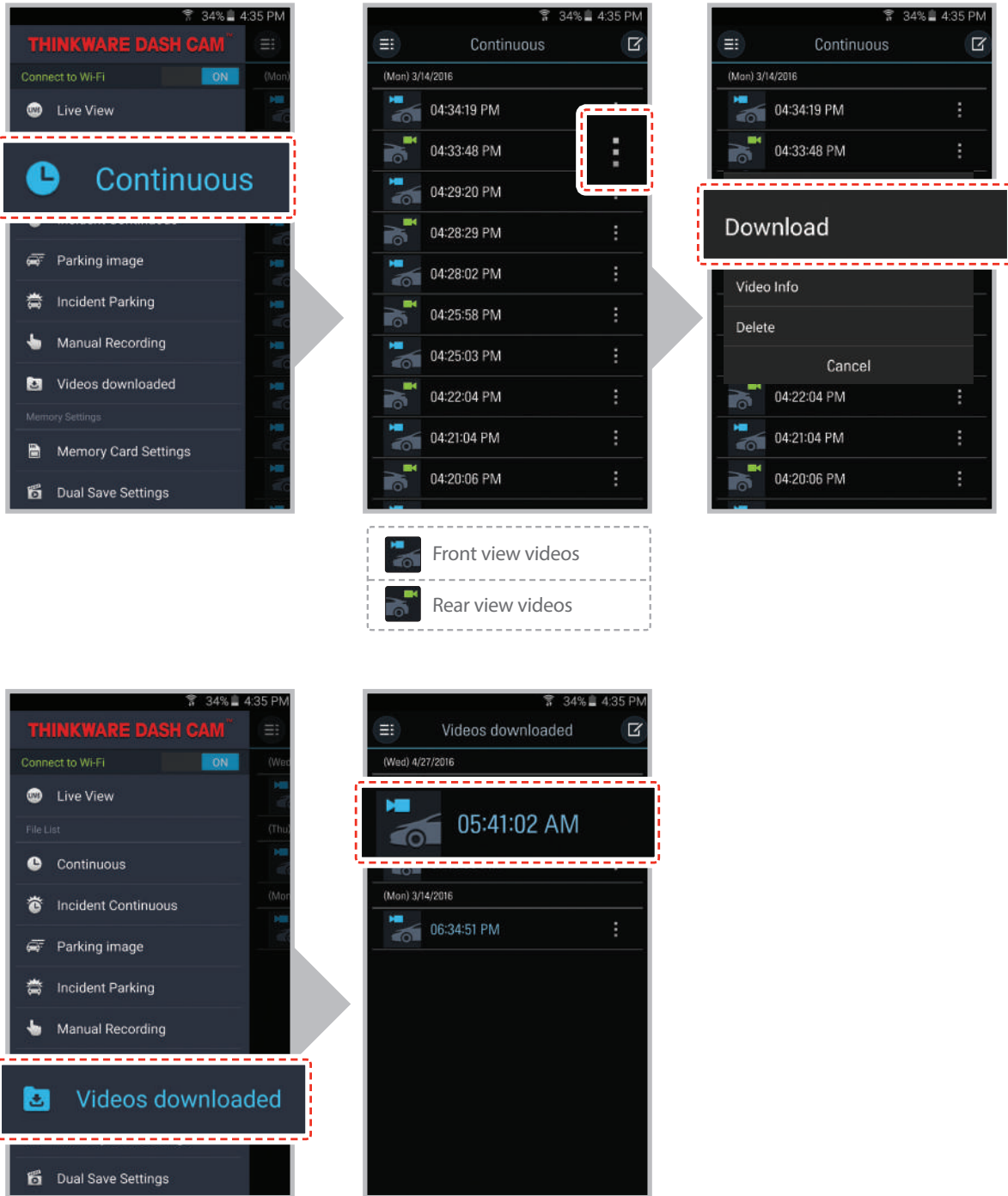


▶ Recording List Menu

- └ **Download** : Copies selected video file to the device from the dash cam MicroSD card (Wi-Fi must be connected)
- └ **Video Info** : Displays date/time, file name, recording type, size, duration, video quality for the selected video file
- └ **Delete** : Removes the selected video file



► Video download



Cautions

- For Android OS devices, it may take a while until downloaded videos are displayed in the list.

3-2-3. Memory Settings

► Memory Card Settings

└ Memory Partition Setting :

Sets how storage space on the memory card will be allotted for each recording mode (Entire memory card will be formatted when the memory partition setting is changed)

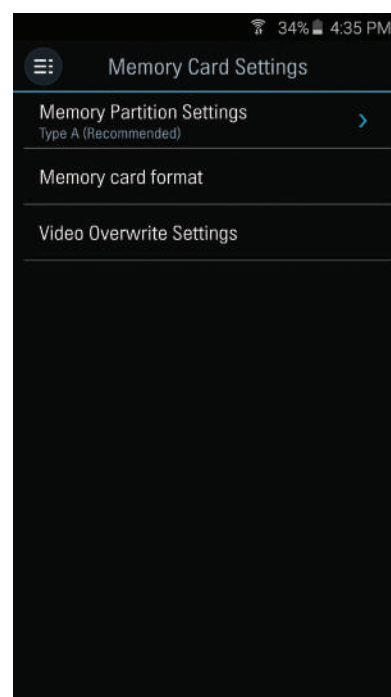
└ Memory card format :

Formats the MicroSD card. Formatting will completely erase all video files stored in the memory card

- ※ It is recommended that you back up data before formatting the memory card. Once you format the memory card, all data will be deleted and cannot be restored. The method for formatting a MicroSD card might vary depending on the computer operating system.

└ Video Overwrite Setting :

Sets the overwriting option which will allow new video files to overwrite oldest video in storage reserved for each mode

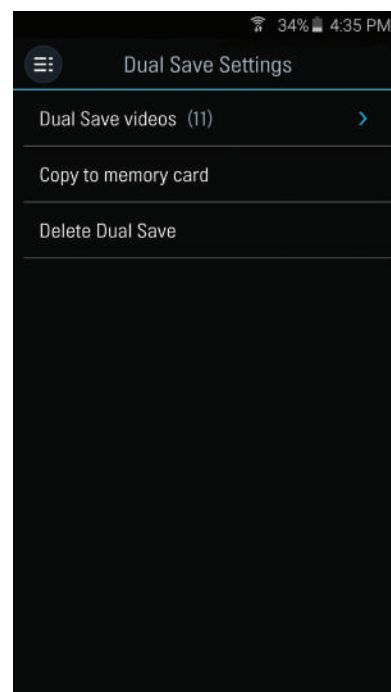


► Dual Save Settings

└ Dual Save Video : Lists Dual Save videos

└ Copy to memory card : Copy all Dual Save videos saved on the internal memory to the MicroSD card

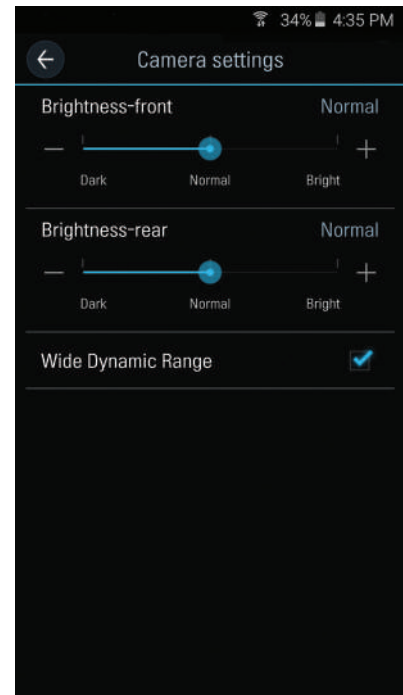
└ Delete Dual Save : Delete all Dual Save videos saved on the internal memory



3-2-4. Settings > Dashcam Setting

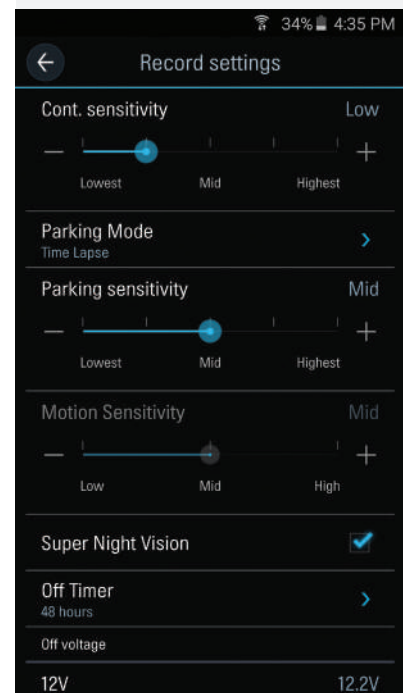
► Camera Settings

- └ **Brightness-F/R :**
Sets the video recording brightness for front/rear camera
- └ **Wide Dynamic Range :**
Sets the WDR mode to record clear video even in extreme contrast/back-lit environment.



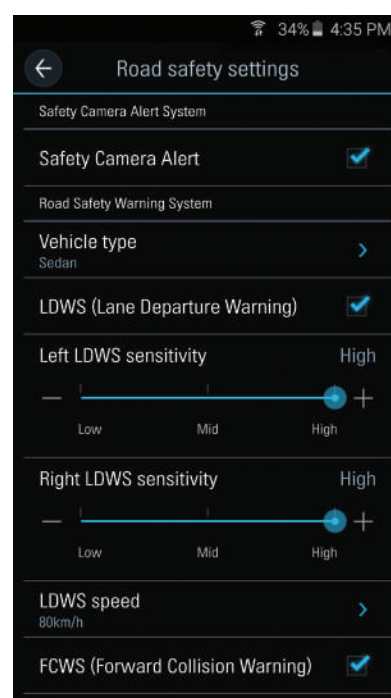
► Record Settings

- └ **Cont. sensitivity :**
Sets the impact sensitivity during continuous recording mode. It is recommended that you set the sensitivity according to vehicle type. High sensitivity setting is recommended for cars with softer ride such as luxury sedans; while low sensitivity setting is recommended for cars such as performance cars, trucks, or SUVs which tends to have stiffer suspension settings.
- └ **Parking Mode :**
Monitors vehicle ignition status to automatically convert to parking mode when the vehicle engine is turned off. The dash cam must be hardwired to the vehicle for the use of parking mode.
Parking sensitivity / Motion sensitivity :
Sets the motion detection sensitivity level during Parking mode.
Sets impact sensitivity when using Time Lapse function.
- └ **Super Night Vision :**
Enhance video exposure for low-light conditions during Parking Surveillance Mode.
- └ **Device auto-Off Timer :**
Sets the timer for the dash cam to automatically shut down in parking mode to prevent from draining the vehicle battery
- └ **Device auto-Off Voltage :**
Sets the voltage level for the dash cam to automatically shut down if the dash cam detects voltage level lower than configured value for more than 5 minutes in order to prevent from draining the vehicle battery



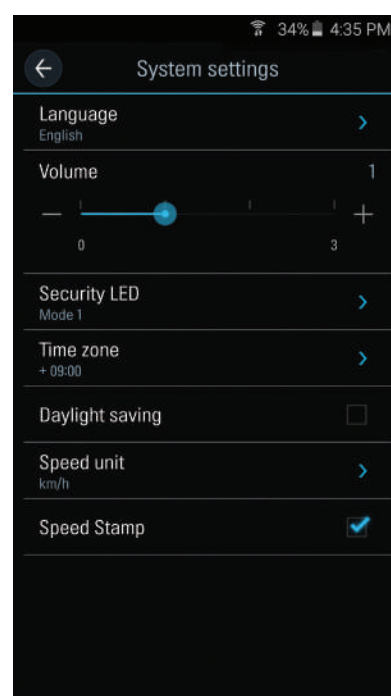
► Road Safety Warning System Settings

- └ **Safety Camera Alert :**
Sets the audible notifications for road safety warnings
- └ **Vehicle type :**
Sets the vehicle type to be used to optimize Advanced Driver Assistance System (ADAS) features such as Lane Departure Warning System (LDWS) and Forward Collision Warning System (FCWS).
- └ **LDWS (Lane Departure Warning) :**
Sets the LDWS driver assistance notification.
 - Left LDWS sensitivity / Right LDWS sensitivity :**
Sets the lane departure detection L/R sensitivity. (It is recommended that the sensitivity is set at high for wider vehicles)
- └ **LDWS speed :**
Sets the speed at which the LDWS notification is enabled. LDWS warning will only be notified to the driver when the vehicle veers off the lane travelling at the configured speed.
- └ **Forward Collision Warning System (FCWS) :**
Sets the FCWS driver assistance notification and Sets the forward collision detection sensitivity .



► System Settings

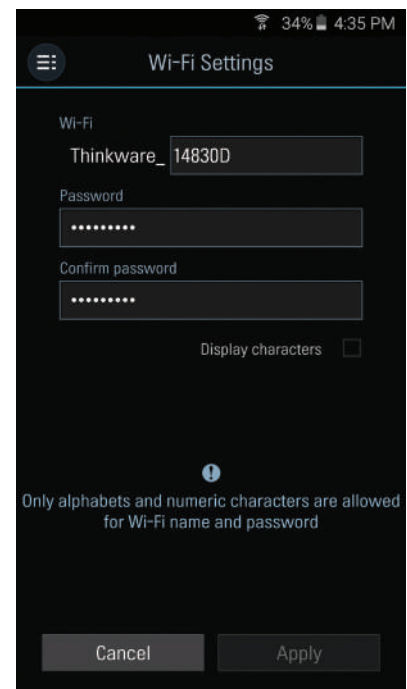
- └ **Language :** Sets dash cam system language
- └ **Volume :** Sets the volume level
- └ **Security LED :** Sets the pattern for security LED
- └ **Time zone :** Sets the time zone
- └ **Daylight saving :** Sets the daylight saving time
- └ **Speed unit :** Sets the unit for the vehicle speed
- └ **Speed Stamp :** Sets vehicle speed information (tracked by GPS) to be shown or hidden directly on video



3-2-5. Settings > Wi-Fi Settings

▶ Wi-Fi Settings

└ Sets the Wi-Fi name and/or password



3-2-6. Information

- ▶ **App Information** : Displays current version and latest available version
- ▶ **Dash cam information** : Displays dash cam information
- ▶ **GPS Information** : Displays GPS information and provides GPS reset option

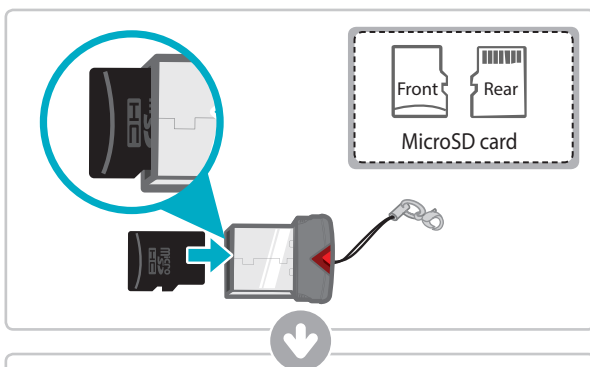
4. PC Viewer Software

4-1. Thinkware Dash Cam PC Viewer

Thinkware Dash Cam PC Viewer for Windows/MacOS is provided which can be used to watch videos recorded with the dash cam. The video files recorded by the dash cam are in one minute segments and the PC viewer allows the user to watch these segments in single continuous video.

The setup file for the Thinkware Dash Cam PC Viewer is included in the MicroSD card within the package. Please check THINKWARE homepage(www.thinkware.com) for the latest Dash Cam PC Viewer application.

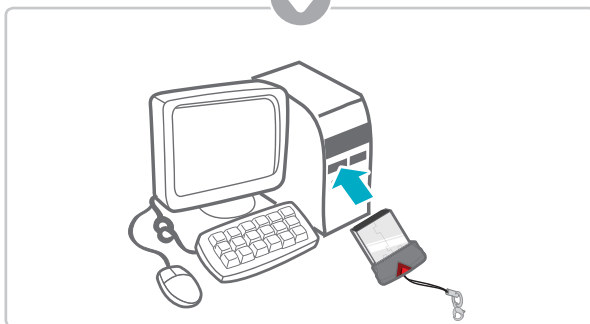
4-1-1. Thinkware Dash Cam PC Viewer Software



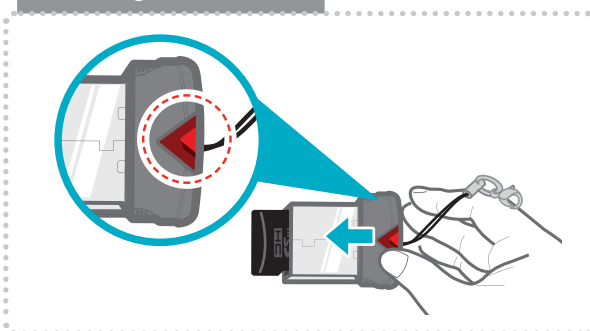
① Insert the MicroSD card into the USB MicroSD card reader (included in the package) with front side facing up as shown in the illustration.

② Connect the USB MicroSD card reader to the PC.

Ensure that the USB card reader is correctly oriented when inserting it into the USB drive



Removing MicroSD card



4-1-2. Installing Thinkware Dash Cam PC Viewer

Windows



① Double-click the Thinkware Dash Cam PC Viewer setup file saved in the MicroSD card to initiate program installation.

② Double-click the application icon once PC Viewer installation completes and the application main screen will then appear.

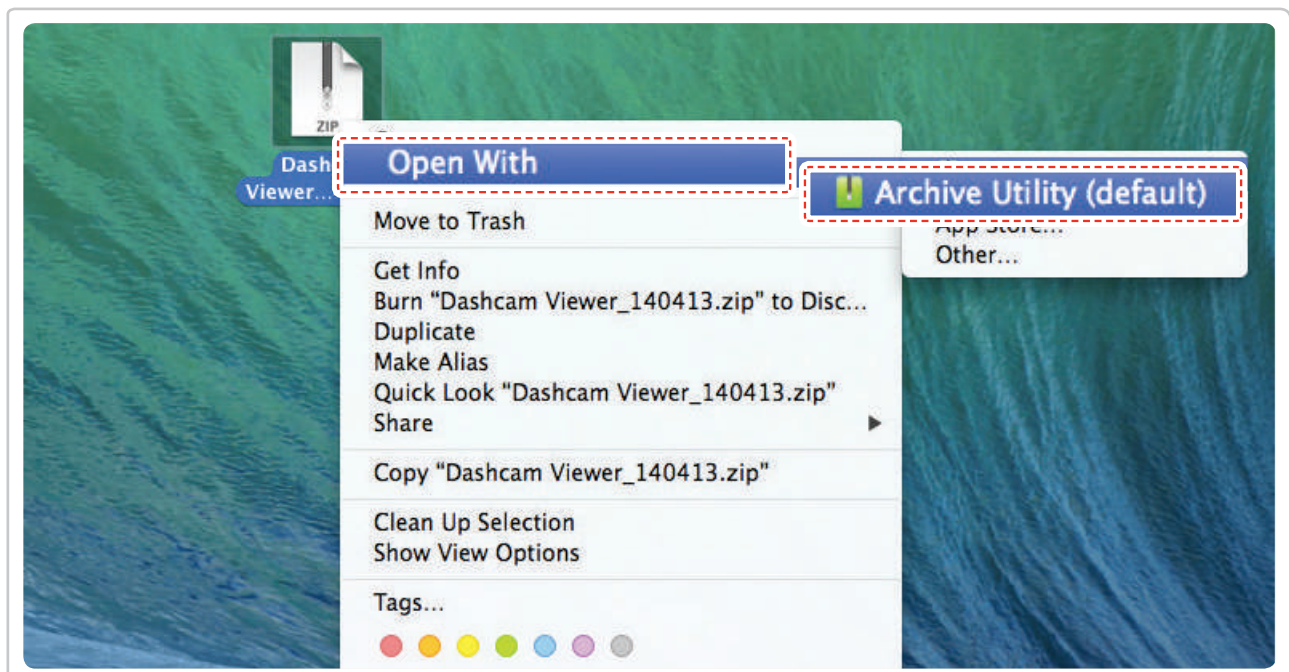
Cautions

- System requirements : Windows XP SP3 (32bit), Windows 7 (32/64bit), Windows 8.x (32/64bit)

MAC

① Move the file named "Dashcam Viewer.zip" stored in the MicroSD card to the desktop.

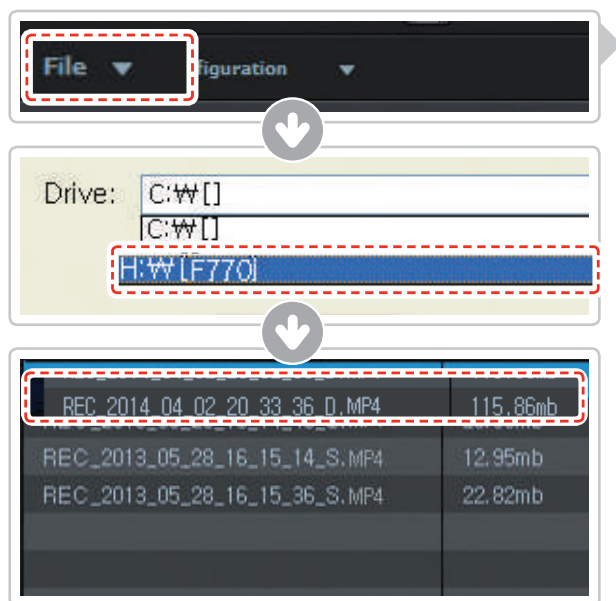
② Right click on the mouse and select "Open With" > "Archive Utility" to launch the Thinkware Dash cam PC viewer application.



Cautions

- System requirements : MAC OS X 10.8 Mountain Lion or later (OS X 10.9 Mavericks, OS X 10.10 Yosemite)

4-1-3. Select the Device Drive for F770



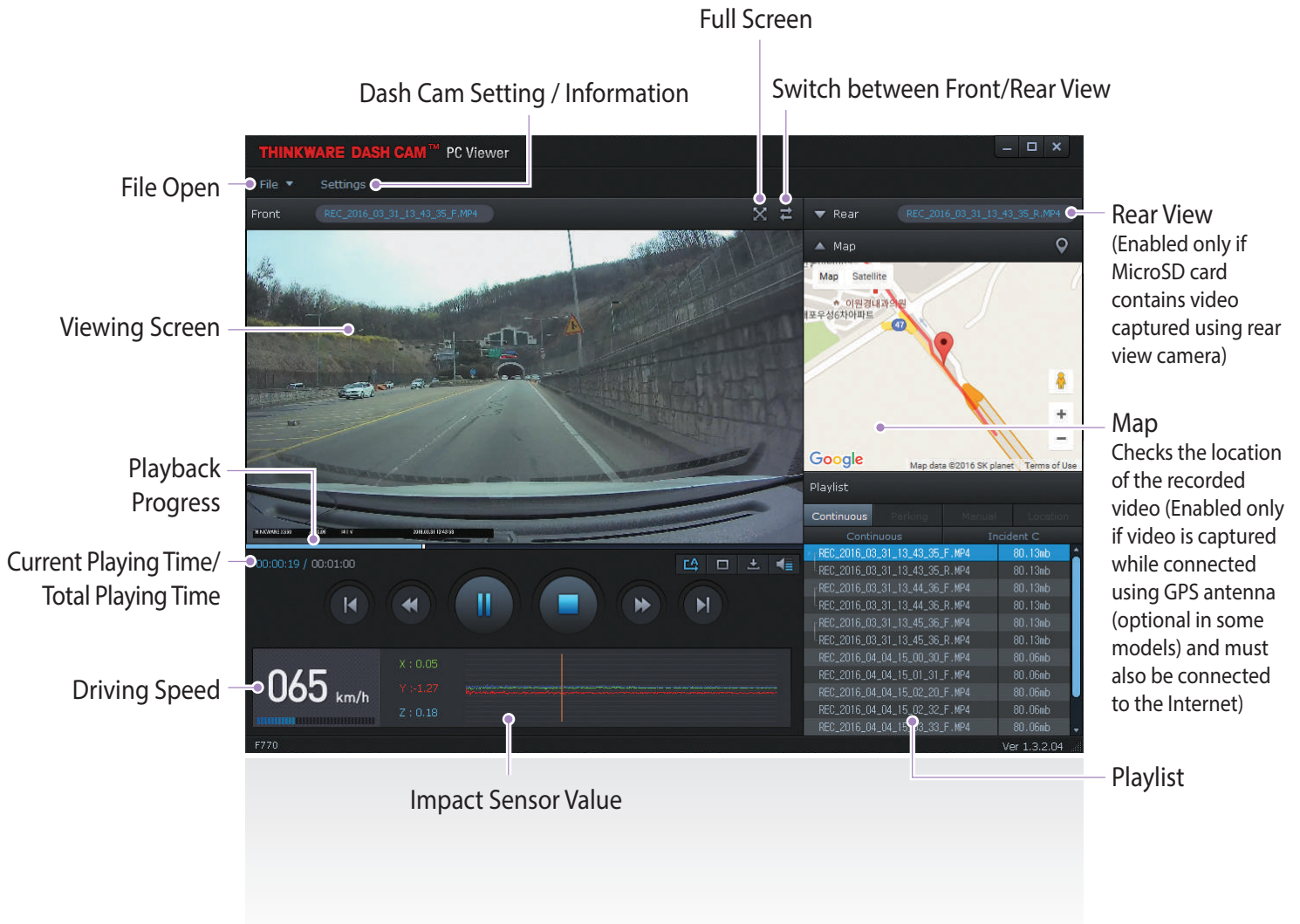
① Click **File** ▼ from menu and select the drive for the portable storage drive for the connected MicroSD card.

② Select any file from the list to load entire video playlist in the memory card.

Cautions

- The MicroSD card will not be recognized by the software until it has been initialized in the dash cam.
- It is recommended that the user record at least one video clip on the MicroSD card with the dash cam unit before accessing the Thinkware Dash Cam PC Viewer.

4-1-4. Thinkware Dash Cam PC Viewer Overview



No.	Name	Description
⏪	Play Previous	Plays the previous file before the current file
⏮	Rewind by 10 Sec	Rewinds the current file being played by 10 seconds (If selected, it continues to rewind by 10 seconds)
▶/⏸	Play/Pause	Plays the recorded file / temporarily pauses playback
■	Stop	Stops the file being played. The playback status resets to the starting point of the video.
⏭	Fast-forward by 10 Sec	Fast-forwards the current file being played by 10 seconds (If selected, it continues to fast-forward by 10 seconds)
⏩	Play Next	Plays the next file after the current file
🔄	Auto Play	Automatically loops the video back to beginning once the end has reached
📐	Zoom	Sets the video expansion ratio (0.5x / 1.0x / 1.5x / 2.0x)
⚙️	Screen Setting	Sets brightness/speed of the video
💾	Save	Saves the video in play
🔊	Volume	Sets the volume of the playback

4-1-5. View Video Playlist

- ▶ Select appropriate folder (Continuous Recording, Incident Recording, Manual Recording, Parking Motion, Parking Incident) to see the playlist for each recording mode.



Continuous	Parking	Manual	Location
Continuous		Incident C	
REC_2016_03_31_13_43_35_F.MP4		80.13mb	
REC_2016_03_31_13_43_35_R.MP4		80.13mb	
REC_2016_03_31_13_44_36_F.MP4		80.13mb	
REC_2016_03_31_13_44_36_R.MP4		80.13mb	
REC_2016_03_31_13_45_36_F.MP4		80.13mb	
REC_2016_03_31_13_45_36_R.MP4		80.13mb	
REC_2016_04_04_15_00_30_F.MP4		80.06mb	
REC_2016_04_04_15_01_31_F.MP4		80.06mb	
REC_2016_04_04_15_02_32_F.MP4		80.06mb	

Continuous Recording Playlist

Continuous	Parking	Manual	Location
		File name	File size
		MAN_2016_03_02_06_24_41_F.MP4	0.03mb
		MAN_2016_04_04_07_39_42_F.MP4	40.03mb
		MAN_2016_04_04_07_40_05_F.MP4	60.03mb

Manual Recording Playlist

5. Device Information

5-1. Specifications

The specifications of this product may change without prior notice for product improvements.

Item	Standard	Note
Model	F770	
Size/weight	110 x 60.41 x 31.75 mm / 131g 4.33 x 2.37 x 1.25 inches / 0.28lbs	
Capacity	MicroSD card (UHS-I)	16/32/64GB
Recording mode	Continuous Recording Mode	Records in 1 minute segment
	Incident Recording Mode	
	Manual Recording Mode	
	Parking Surveillance Mode	Optional hardwiring cable and installation are required for continuous supply of power when vehicle ignition is off.
	Audio Recording	Press Voice Recording Button to turn the audio recording on or off
Camera	2.19 Megapixel, 1/2.9" CMOS	Same for rear camera
Viewing angle	Approximately 140° (diagonally)	Same for rear camera
Video	Full HD (1920 x 1080/H.264/extension MP4)	Same for rear camera
Frame rate	1 channel (Front view) : up to 30 fps	Same for rear camera
Audio	PCM (Pulse code modulation)	
Acceleration sensor	3-axis acceleration sensor (3D, ±3G)	Adjustable impact sensitivity (5 levels)
Rear camera	Support V-IN port	Optional accessory that requires separate purchase.
GPS	Embedded GPS	Supports Road safety Warning System (ADAS)
Input power source	DC 12/24V	Rear view camera: 3.3V DC
Current consumption	2CH: 3.5W/1CH: 2.5W (mean)	Based on fully charged super capacitor
Auxiliary power unit	Super Capacitor	
Security LED	Panoramic white LED	
Notification LED	3-color LED	2 rear LEDs
Hardware status notification LED	Wi-Fi receiver, GPS receiver, operation status	2 rear LEDs
Warning sound	Embedded speaker	Voice (buzzer sound) guidance
Operation/ Storage Temperature	-10°C to 60°C/ -20°C to 70°C 14°F to 140°F/ -4°F to 158°F	
Connection Interface	1 x V-IN port	