



- Wait until the product is completely booted up after turning it on, and then begin operating the vehicle. The video recording does not begin until the product is completely turned on (booted up).
- When incident continuous recording starts, a double "beep" sounds as a notification.
- To enable recording, you must insert a memory card into the product.

3.4 Recording manually

You can record a scene you want to capture while driving and store it as a separate file.

To start manual recording, press the manual REC button. Then, the voice guide will indicate that manual recording has started.

During manual recording, the product operates as follows.

Mode	Operation description	REC LED
Manual recording	When you press the manual recording (REC) button, a video will be recorded for 1 minute (from 10 seconds before to 50 seconds after pressing the button) and stored in the " manual_rec " folder.	 (flickers)

3.5 Using the SOS recording feature

You can record a scene when an accident occurs while driving and store it as a separate file.

To start SOS recording, press the REC button for 3 seconds. During SOS recording, the product operates as follows.

Mode	Operation description	Connection LED/ REC LED
SOS recording	If you press the REC button for 3 seconds when an accident occurs, a video will be recorded for 10 seconds (from 5 seconds before the accident to 5 seconds after pressing the button) and stored in the " SOS_rec " folder.	 (flickers quickly)



- To use this feature, you must sign in to the **THINKWARE CONNECTED** application.
- The video will be uploaded to the **THINKWARE CONNECTED** application with the location where the accident occurred.

3.6 Using parking mode

When the product is connected to the vehicle via the hardwiring cable, the operating mode is switched to parking mode after the engine or electrical accessories are turned off and the voice guide will indicate that the parking mode has started.



- Parking mode operates only when the hardwiring cable is connected. The hardwiring cable must be professionally installed to the vehicle by a trained mechanic.
- To use all recording modes, you must insert a memory card into the product.
- Depending on the battery charging status of the vehicle, the duration of parking mode may differ. If you want to use parking mode for an extended period, check the battery level to prevent battery depletion.

If you do not want to use parking mode or you want to change the mode settings, from the mobile viewer, tap **Dash Cam Settings > Record Settings**.

Refer to the following table to set the **Parking Mode** options.

Option		Operation description	REC LED
Motion Detection	No motion or impact detected	Monitors movement in the area or impacts to the vehicle. Video will be recorded only when motion or an impact is detected.	 (flickers)
	Motion detected	When a moving object is detected while parking, a video is recorded for 20 seconds (from 10 seconds before detection to 10 seconds after detection) and stored in the " motion_timelapse_rec " folder.	 (flickers)
	Impact detected	When an impact is detected while parking, a video is recorded for 20 seconds (from the moment 10 seconds before detection to 10 seconds after detection) and stored in the " parking_rec " folder.	 (flickers)
Time Lapse	No impact detected	A video is recorded at a rate of 2 fps for 10 minutes, compressed into a 2-minute long file, and stored in the " motion_timelapse_rec " folder. Since the video file recorded with this option is small, you can record a long video.	 (light on)
	Impact detected	When an impact is detected while parking, a video is recorded for 100 seconds at a rate of 2 fps (from the moment 50 seconds before detection to 50 seconds after detection) and stored in the " parking_rec " folder after being compressed into a 20-second long file. (The buzzer will sound.)	 (flickers)

Option		Operation description	REC LED
Energy Saving	No impact detected	Monitors impacts to the vehicle. Video will be recorded only when an impact is detected.	OFF
	Impact detected	When an impact is detected while parking, a video is recorded for 20 seconds (from within 1 second after detection) and stored in the "parking_rec" folder.  • When the RADAR module (optional) detects an object in the radar area, Energy Saving is switched off and the impact detection is set for 30 seconds. (If there is no impact detected, the product does not store the recording and switches back to Energy Saving.) • If an object and impact are detected in the radar area, a video is recorded for 20 seconds and stored in the "parking_rec" folder. (The buzzer will sound.) When the recording ends, the product switches back to Energy Saving.	 (flickers)
OFF		The product is powered off when electric accessories and the engine are turned off.	OFF



If parking mode settings are changed, the videos recorded with the previous settings will be deleted. To prevent data loss, back up all parking mode videos before changing parking mode settings.



You cannot use Motion Detection, Time Lapse, or Energy Saving at the same time.

3.7 Using the Ultra night vision feature

With the Ultra Night Vision feature, you can record videos that are much brighter than videos recorded without this feature. This feature is enabled by real-time image signal processing (ISP) to improve the brightness of videos recorded while parking at night.



〈When Ultra Night Vision is deactivated〉



〈When Ultra Night Vision is activated〉

- 1 From the mobile viewer, tap **Dash Cam Settings > Record Settings**.
- 2 From **Ultra Night Vision**, select the desired recording mode to use the Ultra Night Vision feature. The new setting is applied automatically.

3.8 Using the road safety features

The road safety features include a safety camera alert system, a lane departure warning system (LDWS), a forward-collision warning system (FCWS), a low speed Forward collision warning system (low-speed FCWS), and a front vehicle departure warning (FVDW).

Safety feature	Description
LDWS (Lane Departure Warning)	Detects the lane departure via the real-time video and warns the driver.
FCWS (Forward Collision Warning)	Detects forward collision threats via the real-time video and warns the driver when the vehicle is moving at 40 km/h or above.
Low Speed FCWS	Detects forward collision threats via real-time video and warns the driver when the vehicle is moving at 10-30 km/h.
FVDW (Front Vehicle Departure Warning)	Detects the departure of another vehicle that was previously stationary in front of the vehicle and notifies the driver after four seconds.



Road safety features are performed differently depending on the set speed and sensitivity of the features.

4. Using the mobile viewer

You can view and manage recorded videos and configure various product features on your smartphone.



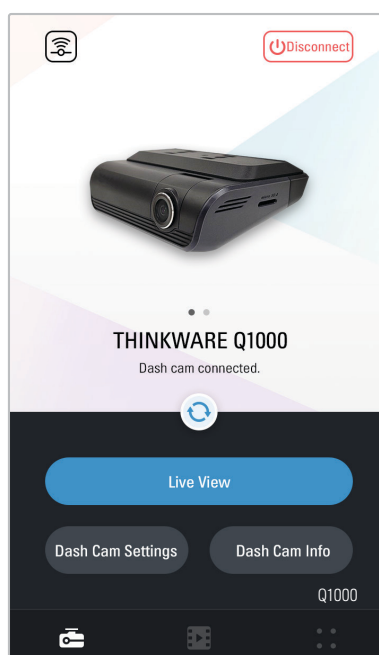
- One of the following environments is required to use the **THINKWARE DASH CAM LINK** application:
 - Android 7.0 (Nougat) or higher
 - iOS 11.4 or higher
- The Wi-Fi password is required when you connect the product to a smartphone for the first time. Enter “123456789” in the password input field.

4.1 Connect the product to a smartphone

- 1 On your smartphone, open the Google Play Store or Apple App Store and download and install **THINKWARE DASH CAM LINK**.
- 2 Run **THINKWARE DASH CAM LINK**.
- 3 Tap **Dash cam connection is required.** at the bottom of the screen and follow the on-screen instructions to connect the product to a smartphone.

4.2 Viewing the mobile viewer screen layout

The following provides brief information about the mobile viewer's screen layout.



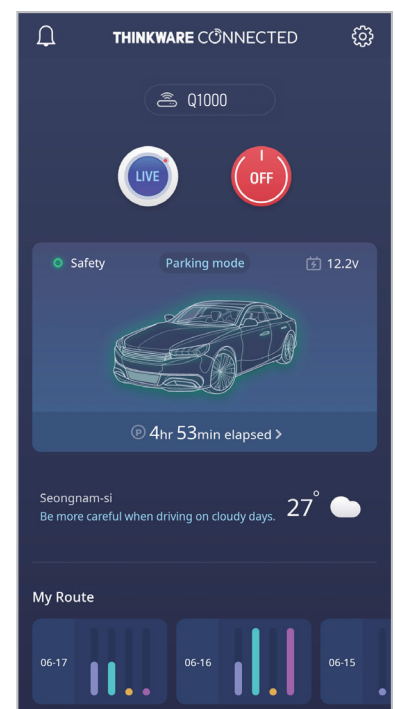
5. Using THINKWARE CONNECTED

You can view and manage recorded videos and configure various product features on your smartphone.



- One of the following environments is required to use the THINKWARE CONNECTED application:
 - Android 7.0 (Nougat) or higher
 - iOS 11.4 or higher
- The services and features provided by **THINKWARE CONNECTED** application may be changed according to the service policy. Refer to the THINKWARE website (<https://www.thinkware.com>) for more information.

- Status of the vehicle while driving/parking
- Vehicle battery voltage status
- Dash cam power off
- Driving history
- SOS notification, recorded video backup, and SMS transmission
- Driving impact notification, video backup, and SMS transmission
- Parking impact notification and recorded video backup
- Download and share the event location and recorded video
- The captured image of the front camera during the most recent parking
- Real-time vehicle location
- Remote live view



5.1 Connecting the product to THINKWARE CONNECTED

- 1 On your smartphone, open the Google Play Store or Apple App Store and download and install **THINKWARE CONNECTED**.



- 2 Run **THINKWARE CONNECTED** and tap **Sign In** on your smartphone.



You need a THINKWARE ID to use **THINKWARE CONNECTED**. If you don't have an ID, tap **Sign Up** and sign up for a THINKWARE membership.

- 3 After you sign in, follow the app's instructions. Tap **Register a Device**, and enter a barcode number to register a product.

6. Using the PC viewer

You can view and manage the recorded videos and configure various product features on your PC.

6.1 System requirements

The following are the system requirements for running the PC viewer.

- Processor: Intel Core i5, or higher
- Memory: 4 GB or more
- Operating system: Windows 7 or later (64-bit is recommended), Mac OS X 10.10 or later
- Other: DirectX 9.0 or higher / Microsoft Explorer version 7.0 or higher



The PC viewer will not operate properly on PC systems running an operating system other than those listed in the system requirements.

6.2 Learning about the PC viewer

6.2.1 Installing the PC viewer



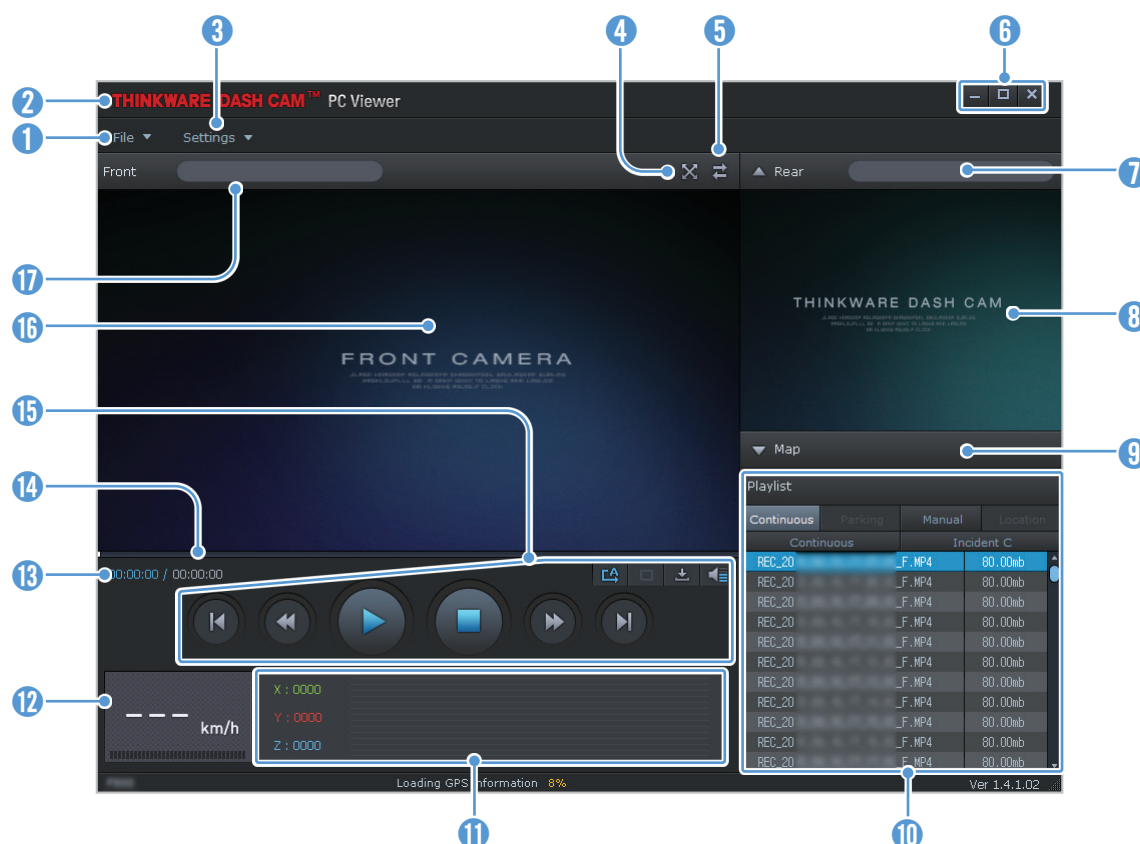
You can download the latest PC viewer software from the THINKWARE website (<https://www.thinkware.com/Support/Download>).

The PC viewer installation file (setup.exe) is stored in the root folder of the memory card that is provided with the product. Follow the instructions to install the PC viewer on your PC.

- 1 Insert the memory card into a memory card reader connected to your PC.
- 2 Move the installation file to the desktop, run it, and complete the installation according to the instructions given in the installation wizard.
After the installation is complete, there will be a shortcut icon to Thinkware Dashcam Viewer.

6.2.2 PC viewer screen layout (for Windows)

The following provides brief information about the PC viewer's screen layout.



Number	Description
1	Open a file, or save a video with a different name.
2	Visit the THINKWARE website.
3	View or configure the dashcam settings, and set the language for the PC viewer.
4	Display the current video in full screen. Tap the Back () button to return to the previous screen.
5	Switch between the front and rear videos.
6	Minimize, expand, or close the software.
7	Displays the rear camera video file name.
8	Displays the recorded rear camera video.
9	Display the map screen.
10	Displays the playlist.
11	Indicates the G sensor value at the time of recording.
12	Indicates the vehicle's driving speed at the time of recording.
13	Displays the current and total running time of the current video.
14	Displays the progress of video playback.
15	Play or control a video.
16	Displays the recorded front camera video.
17	Displays the front camera video file name.

6.2.3 Playing recorded videos on the PC viewer (for Windows)

Follow the instructions to play recorded videos.

- 1 Turn off the product and remove the memory card.
- 2 Insert the memory card into a memory card reader connected to your PC.
- 3 Double-click the shortcut to the PC viewer () to open the program. The video files in the memory card will be automatically added to the playlist in the bottom-right corner of the PC viewer screen. The playlist section layout is as follows.

Playlist

Continuous

Parking

Manual

Location

Continuous

Incident C

REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb
REC_20	_F.MP4	80.00mb

Select a folder.

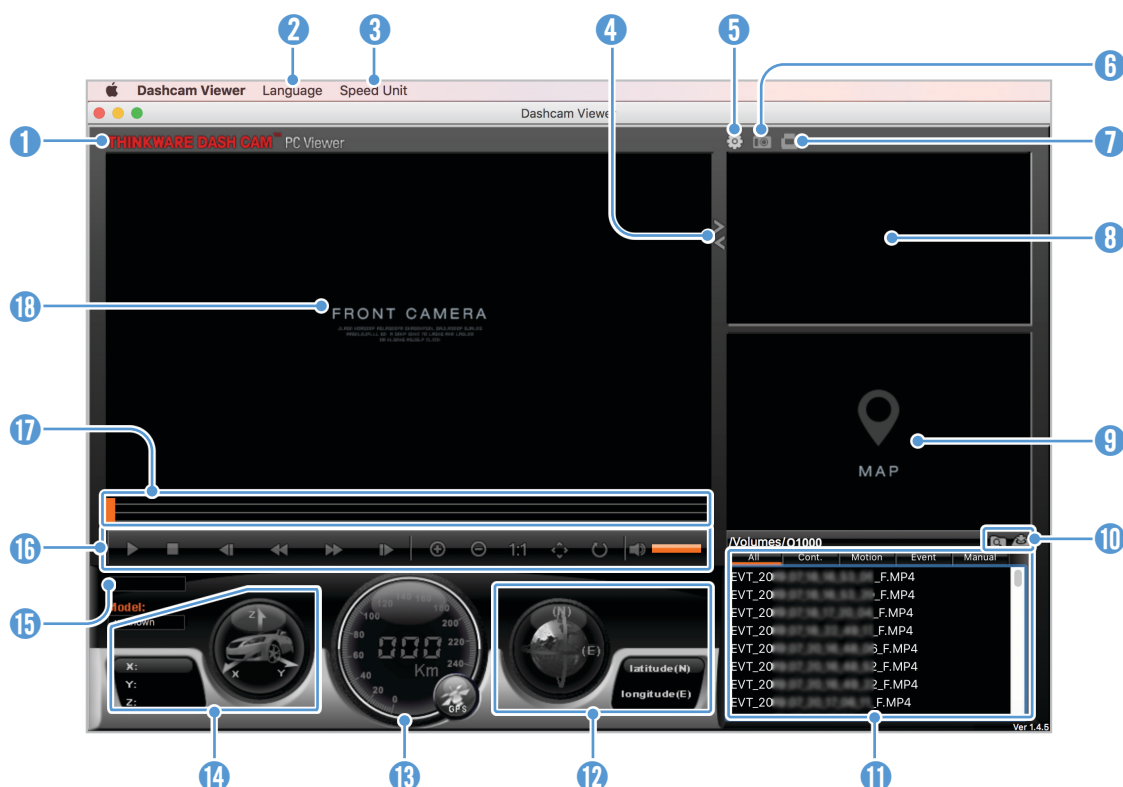
Displays a list of videos in the selected folder.

- 4 Double-click a video file after selecting a video folder, or click the Play (▶) button after selecting a video file. The selected video file will be played.

 If the video files on the memory card are not automatically added to the playlist when you run the PC viewer, click **File ▼ > Open**, select the removable storage device for the memory card, and click **Confirm**.

6.2.4 PC viewer screen layout (for Mac)

The following provides brief information about the PC viewer's screen layout.



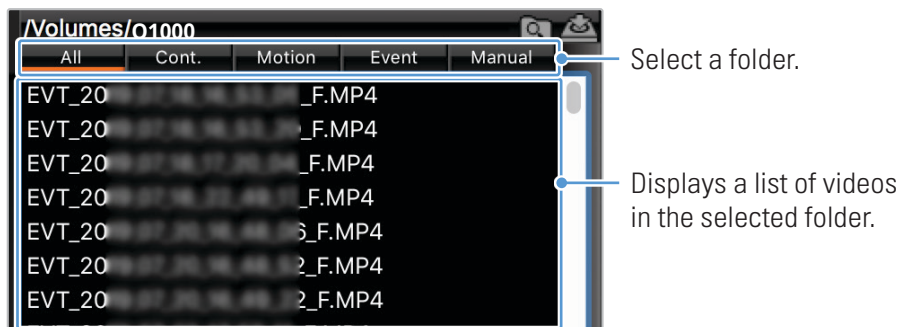
Number	Description
1	Visit the THINKWARE website.
2	Set the language for the PC viewer.
3	Set the speed unit.
4	Switch between the front and rear videos.
5	View or configure the dashcam settings.
6	Save the current scene.
7	Print the current scene.
8	Displays the recorded rear camera video.
9	Displays the map screen.
10	Open a file, or save a video with a different name.
11	Displays the playlist.
12	Displays the GPS information at the time of recording.
13	Indicates the vehicle's driving speed at the time of recording.
14	Indicates the G sensor value at the time of recording.
15	Displays the current and total running time of the current video.
16	Play or control a video.
17	Displays the progress of video playback.
18	Displays the recorded front camera video. Right-click this pane to display the current video in full screen.

6.2.5 Playing recorded videos on the PC viewer (for Mac)

Follow the instructions to play recorded videos.

- 1 Turn off the product and remove the memory card.
- 2 Insert the memory card into your Mac using a SD card reader or SD card adapter provided.
- 3 Open the PC viewer.
- 4 Click  and locate the memory card.

The video files in the memory card will be automatically added to the playlist in the bottom-right corner of the PC viewer screen. The playlist section layout is as follows.



- 5 Double-click a video file after selecting a video folder, or click the Play (▶) button after selecting a video file. The selected video file will be played.

7. Settings

You can set the product features according to your needs and preferences using the mobile viewer or the PC viewer. The following procedures are based on the mobile viewer.



The product will stop recording while configuring settings on the mobile viewer.

7.1 Managing the memory card

From the mobile viewer, tap **Dash Cam settings > Memory Card Settings** to manage the memory card settings.

Options	Description
Memory Partition	Select from Continuous Priority/Incident Priority/Parking Priority/Manual Priority/Driving Recording Only for the memory partition type.
Formatting Memory Card	In Formatting Memory Card , tap Format > OK to proceed with formatting the memory card.
Overwrite Videos	Select the desired modes to allow video overwriting.

7.2 Setting the Camera

From the mobile viewer, tap **Dash Cam settings > Camera Settings** to adjust the camera settings.

Options	Description
Resolution-front/rear	Select from Enable/Disabled for the desired front/rear resolution.
Brightness-front	Select from Dark/Mid/Bright for the brightness of the front camera.
Brightness-rear	Select from Dark/Mid/Bright for the brightness of the rear camera.
Rotate Rear Camera	Select from Enabled/Disabled to flip the rear view image upside down.

7.3 Setting recording features

From the mobile viewer, tap **Dash Cam settings > Record Settings** to manage the recording features settings.

Options	Description
Continuous Mode Incident Recording Sensitivity	Select from Disabled/Lowest/Low/Mid/High for the sensitivity.
Ultra Night Vision	Select from Disabled/Continuous Mode/Parking Mode/Continuous+Parking for the Ultra Night Vision feature.
HDR	Select from Enabled/Disabled for the HDR feature.
Set Privacy Recording	You can set the privacy recording feature to delete your recorded files after a set amount of time to protect the privacy of others. Select from OFF/1min (max. 2min)/3min (max. 4min)/G-Shock only for the privacy recording setting. If it is set to G-Shock only mode, then it is not consistently recorded.
Parking Mode	Select from Disabled/Motion Detection/Time Lapse/Energy Saving for the parking mode.
Impact Sensitivity in Parking Mode	Select one of the five parking mode sensitivity levels.
Motion Detection Sensitivity	Select one of the five motion detection sensitivity levels.
Use External Battery	Select from Enable/Disabled .
Record Timer	Select the desired record time. To turn off the record timer, select Disabled .
Battery Protection	Select from Enabled/Disabled for the battery protection.
Battery cutoff voltage	Select from 12V (11.6-12.3)/24V (23.2-24.6) for the battery cutoff voltage.
Wintertime Battery Protection	Select the month(s) to apply the battery protection feature.
RADAR	Select from Enabled/Disabled .



- To use parking mode, you must install the hardwiring cable. If continuous power is not supplied to the product, the product will stop recording when the vehicle engine is turned off.
- The vehicle battery will not be charged while the vehicle is parked. If you record in parking mode for an extended period, the vehicle's battery may be depleted and you may not be able to start the vehicle.



- For more information about parking mode, refer to "3.6 Using parking mode" on page 21.
- The battery cutoff voltage can be set only when the **Battery Protection** setting is set to **Enabled**.
- If the off voltage value is too low, the product may consume the battery completely depending on the conditions like the vehicle type or temperature.

7.4 Setting road safety features

From the mobile viewer, tap **Dash Cam settings > Road Safety Settings** to manage the road safety features settings.

Options	Description
Safety Cameras	Select from Enabled/Disabled for the safety cameras.
Mobile Zone Alert	Select from Enabled/Disabled for the mobile zone alert.
Vehicle Type	Select the vehicle type from Sedan/SUV/Truck (Bus) .
Initialize ADAS	In Initialize ADAS , tap Initialize > OK to proceed with initializing.
LDWS (Lane Departure Warning)	Select from Disabled/Low/Mid/High for the LDWS sensitivity.
LDWS Speed	Select from 50km/h / 60km/h / 80km/h / 100km/h for the LDWS detection speed.
FCWS (Forward Collision Warning)	Select from Disabled/Low/Mid/High for the sensitivity.
Low Speed FCWS	Select from Disabled/Low/Mid/High for the sensitivity.
FVDW (Front Vehicle Departure Warning)	Select from Enabled/Disabled for the FVDW feature.

7.5 Configuring the system settings

From the mobile viewer, tap **Dash Cam Settings > System Settings** to configure the hardware system settings.

Options	Description
Language	Select the desired language.
Volume	Select the desired volume level for each feature (Safety Cameras/ADAS/System).
Security LED	Select from Enabled/Disabled for the security LED.
Rear Camera LED	Select from Enabled/Disabled for rear camera LED.
Date/ Time	Select the date and time.
Daylight Saving	Select from Enabled/Disabled for the daylight saving.
Speed Unit	Select from km/h/mph for the speed unit.
Speed Stamp	Select from Enabled/Disabled for the speed stamp.
Wi-Fi Frequency Band	Select from 2.4GHz/5GHz for the Wi-Fi frequency.
Voice Recording	Select from Enabled/Disabled for the voice recording.



If you select **0** for the volume level, the voice guidance will be disabled.

8. Accessing the product information

New users may benefit from the basic product information that can be accessed from the Menu screen.

8.1 Viewing the product information

From the mobile viewer, tap **Dash Cam Info** to view product information. The following product information will be displayed on the screen.

- Model Name
- Firmware Ver.
- Safety Camera Ver.
- Memory Size
- LOCAL ID
- GPS Info

8.2 Accessing and configuring the GPS

A GPS module is used to include the location data in the recorded videos. From the mobile viewer, tap **Dash Cam Info > GPS Info** to view the GPS features. The connection status, signal strength, time (UTC), vehicle speed, current altitude, and Horizontal Dilution of Precision (HDOP) are displayed on the screen.

Tap  to initialize the GPS, and allow it to locate the current position.



Horizontal Dilution of Precision (HDOP)

HDOP is a value that refers to GPS deviation due to satellite positioning.

9. Upgrading the firmware

A firmware upgrade is provided to enhance the product's features, operation or to increase stability. For optimal operation of the product, ensure that you keep the firmware up to date.

Follow the instructions to upgrade the firmware.

- 1 On your PC, open a web browser and go to <https://www.thinkware.com/Support/Download>.
- 2 Select the product and download the latest firmware upgrade file.
- 3 Unzip the downloaded file.
- 4 Disconnect power to the product and remove the memory card.
- 5 Open the memory card on a PC and copy the firmware upgrade file to the root folder of the memory card.
- 6 While the power is disconnected from the product, insert the memory card into the memory card slot on the product.
- 7 Connect the power cable to the product, and then turn on the power (ACC ON) or start the engine to turn on the product. The firmware upgrade starts automatically, and the system will restart once the firmware update is completed.



Do not disconnect the power or remove the memory card from the product during the upgrade. Doing so may cause serious damage to the product, or to the data stored in the memory card.



You can also update the firmware from the mobile viewer and the PC viewer.

10. Troubleshooting

The following table lists the problems users may encounter while using the product and measures to resolve them. If the problem persists after taking the measures provided in the table, contact the customer service center.

Problems	Solution
Cannot power on the product	• Make sure the power cable (the optional hardwiring cable or car charger) is connected to the vehicle and the product properly. • Check the vehicle's battery level.
The voice guide and/or buzzer do not sound.	Check if the volume is set to the minimum.
The video is unclear or hardly visible.	• Ensure that the protective film on the camera lens has been removed. The video may look unclear if the protective film is still on the camera lens. • Check the installation location of the front or rear camera, turn on the product, and then adjust the camera's viewing angle.
The memory card cannot be recognized.	• Ensure that the memory card has been inserted in the correct direction. Before inserting the memory card, ensure that the metal contacts on the memory card are facing toward the lens of the product. • Turn off the power, remove the memory card, and then check to ensure that the contacts in the memory card slot are not damaged. • Ensure that the memory card is an authentic product distributed by THINKWARE. THINKWARE does not guarantee compatibility and normal operation of third-party memory cards.
The recorded video cannot be played on a PC.	The recorded videos are stored as MP4 video files. Ensure that the video player installed on your PC supports the playback of MP4 video files.
GPS signal cannot be received.	The GPS signal may not be received in out-of-service areas, or if the product is located between tall buildings. Also, GPS signal reception may not be available during storms or heavy rain. Try again on a clear day at a location that is known to have a good GPS reception. It may take up to 5 minutes until GPS reception is established.

11. Specifications

To see the product specifications, refer to the following table.

Item	Specification	Remarks
Model name	Q1000	
Dimensions / Weight	92 x 53.3 x 29.7 mm / 77.6 g	Rear camera: 61 x 27 x 25 mm (optional)
Memory	microSD memory card	32 GB, 64 GB, 128 GB, 256 GB
Recording mode	Continuous Rec	Records videos in 1-minute segments (dual channels are supported for recording the front and rear view)
	Incident Rec	Records 10 seconds before and after the incident (total 20 seconds)
	Manual Rec	Records from 10 seconds before and 50 seconds after manually starting the recording (total 1 minute)
	Parking Rec (parking mode)	Motion Detection / Time Lapse / Energy Saving
Features	Ultra Night Vision, Format Free 2.0, Battery Protection, High temperature shutdown, Smart Parking recording, True HDR, Battery cutoff voltage	
Camera sensor	5.14 Megapixel, Type 1/2.8"	
Angle of view (Lens)	Approximately 156° (diagonally)	
Video	Default : QHD (2560 x 1440 @ 30fps) / H.265 /MP4 Option : FHD (1920 x 1080 @ 60fps) / H.265 /MP4	
Audio	HE-AAC	Press the voice recording button to turn the audio recording on or off.
Acceleration sensor	3-axis acceleration sensor (3D, ±3G)	5 levels for sensitivity adjustment available
GPS	Embedded GPS	Supports ADAS features (LDWS, FCWS, Low Speed FCWS, FVDW)
GNSS	GPS/GLONASS	
Wi-Fi	2.4G, 5G, 802.11 a/b/g/n/ac	
Bluetooth	Bluetooth V5.0, BLE	
Power input	DC 12 / 24 V supported	

Specifications

Item	Specification	Remarks
Power consumption	2ch: 5.4 W / 1ch: 3.8 W (mean)	Except for the fully charged supercapacitor / GPS Actual power consumption may vary depending on the usage conditions and environment.
Auxiliary power unit	Super capacitor	
LED indicator	Security LED, REC LED, GPS LED, Connection LED	
Alarm	Built-in speakers	Voice guide (buzzer sounds)
Operating temperature	14 – 140°F / -10 – 60°C	
Storage temperature	-4 – 158°F / -20 – 70°C	

Before contacting a service center

Please back up all important data stored in the memory card. The data in the memory card may be deleted during repair. Every product requested for repair is regarded as a device that has had its data backed up. The customer service center does not back up your data. THINKWARE is not responsible for any loss, such as data loss.

<https://www.thinkware.com>