

**GARMIN**<sup>®</sup>

**VIRB<sup>®</sup> ULTRA 30**



Owner's Manual

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# Introduction

## ⚠ WARNING

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

It is your responsibility to use the device in a safe manner. Garmin® will not be responsible for any property damage, injuries or deaths resulting from any use of this device in any activities.

## Camera Overview



①	◀ POWER	Hold to turn the device on or off. From the viewfinder, select to open the main menu. Select to scroll through sensor status screens, data screens, and menu items.
②	▶ WI-FI	Hold to turn the Wi-Fi® radio on or off. From the viewfinder, select to open the main menu. Select to scroll through sensor status screens, data screens, and menu items.
③	Photo and action key	From the viewfinder, select to take a photo. From the viewfinder, hold take a series of photos in burst mode. From the menus, select to choose a menu item.
④	Recording switch	Move the switch to start or stop recording video ( <a href="#">Recording a Video, page 4</a> ).
⑤	Touchscreen	Touch to select on-screen items. <b>TIP:</b> You can use the touchscreen even while the camera is installed in the included camera case, but the touchscreen sensitivity may be reduced.
⑥	Speaker	Plays audio during on-device playback.
⑦	Microphones	For the best audio quality, do not touch or cover the microphone area, except with an approved case.
⑧	Status LEDs	Indicate status information about the camera and features ( <a href="#">Status LEDs, page 1</a> ).

## Status LEDs

The LEDs on the front of the camera indicate the camera status.

LED Color	LED Action	Status
Green	Flashing	The camera is turned on, but not recording.
Green	Solid	The camera is connected to a computer in USB mass storage mode.
Off	Off (while not connected to external power)	The camera is turned off.

LED Color	LED Action	Status
Off	Off (while connected to external power)	The camera is turned off, and the battery is fully charged.
Red	Solid (top LED only)	The battery is charging.
Red	Flashing	The camera is recording video.
Red	One or more short flashes, and then solid for up to several seconds	The camera has captured one or more photos. The LEDs remain solid red until the camera has saved all photos to the memory card.
Green or red	Flashing rapidly	The battery is below a 10% charge level, or the memory card has less than 10 minutes of recording time remaining.
Blue	Flashing intermittently	The Wi-Fi radio is turned on, or the remote wake-up feature is enabled.

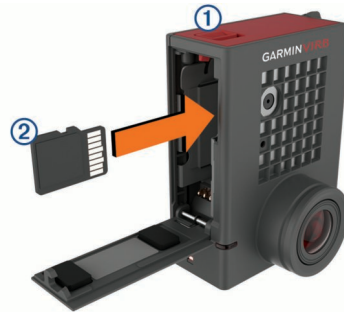
## Installing the Memory Card and Battery

### ⚠ WARNING

This product contains a lithium-ion battery. To prevent the possibility of personal injury or product damage caused by battery exposure to extreme heat, store the device out of direct sunlight.

You must install a compatible microSD™ memory card to use your device. For more information about compatible memory cards, go to [garmin.com/VIRBcards](http://garmin.com/VIRBcards).

- Slide the latch ① to open the battery compartment door.



- Insert the memory card ② into the slot, and press it in until it clicks.

**TIP:** The memory card label must face the inside of the compartment.

- Insert the battery ③ into the compartment.



- Close the battery compartment door and press it until it clicks.

## Charging the Battery

The status LEDs flash rapidly when the battery charge level is low. You can charge the battery using a standard wall outlet or a USB port on your computer. The camera is powered by a removable lithium-ion battery.

You can also charge the battery using a battery charger accessory. Go to [www.garmin.com/VIRB](http://www.garmin.com/VIRB) to purchase accessories.

**NOTE:** The battery will not charge when outside the approved charging temperature range ([Specifications, page 14](#)).

- 1 Turn off the camera.  
Most power sources do not provide enough power to charge the camera while it is on.
- 2 Plug the small end of the USB cable into the USB port ① on the camera.



- 3 Plug the large end of the USB cable into an AC adapter or a computer USB port.  
When you connect the device to a power source, the top status LED turns solid red.  
**NOTE:** The battery may charge slowly when using a computer USB port. Some portable computers may not provide enough power to charge the battery.
- 4 Charge the camera completely.  
When the camera is fully charged, the status LED turns off.

## Turning On the Camera

Hold **POWER**.

The status LEDs flash green when the camera is on.

## Turning Off the Camera

### NOTICE

To prevent loss of data, always turn off the camera before removing the battery.

**NOTE:** You cannot turn off the camera while recording video.

- 1 If necessary, move the recording switch backward to stop recording video.
- 2 Hold **POWER**.

The camera saves your data and turns off.

If you need to remove the battery, wait until the screen and status LEDs turn off before removing the battery.

## Turning the Camera On and Off Using the Recording Switch

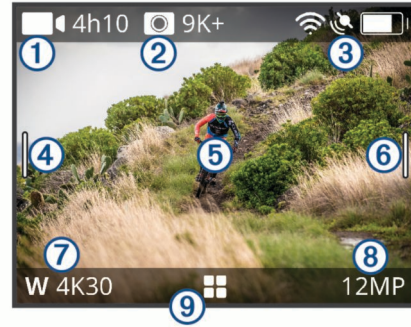
You can use the recording switch to turn the camera on and immediately start recording video. If you turn the camera on using the recording switch, it turns off automatically when you stop the recording using the recording switch. This feature allows you to start and stop recording quickly, while automatically turning off the camera to conserve battery power when you are not recording.

**NOTE:** The camera does not turn off using the recording switch unless you use the recording switch to turn it on.

- 1 With the device turned off, move the recording switch forward.  
The device turns on and starts recording video.
- 2 When you are finished recording, move the recording switch backward.  
The device stops recording and turns off.

## Viewfinder Overview

The viewfinder provides at-a-glance details about the remaining memory card space and current settings of your device.



①	Displays the remaining memory card space for video recording.
②	Displays the remaining memory card space for photos.
③	Displays the status for sensors, GPS, Wi-Fi, Bluetooth®, and battery capacity. Swipe down to pair sensors and enable or disable wireless features.
④	Swipe right to change the photo and video modes.
⑤	While using the preview viewfinder mode, touch the background to zoom. While using a G-Metrix™ viewfinder mode, touch the background to change the viewfinder settings.
⑥	Swipe left to change the pro settings ( <a href="#">Pro Settings, page 5</a> ). <b>NOTE:</b> This menu is available only when pro settings are enabled.
⑦	Displays the active video mode.
⑧	Displays the active photo mode.
⑨	Select to open the main menu.

## Status Bar Icons

Status icons appear at the top of the viewfinder. A flashing icon means the device is searching for a signal. A solid icon means the signal was found or the sensor is connected.

	GPS status
	Wi-Fi technology status
	Bluetooth technology status
	ANT+® sensor status
	Battery level

## Opening the Camera Case

### NOTICE

The camera is not water resistant when it is not installed in a water resistant case. Not all VIRB ULTRA cases or case doors provide water resistance. Do not immerse or expose the camera or battery to water or other liquids.

You must open the camera case to remove the camera or install the anti-fog desiccant pack.

- 1 Press the latch release ①.



- 2 While pressing the release latch, pull open the front of the latch ②.



3 Unhook the back of the latch ③.



4 Open the camera case door ④.

### Camera Case

#### NOTICE

You must perform proper care and maintenance for the camera case ([Caring for the Removable Camera Case, page 14](#)). Failure to perform proper care and maintenance may cause damage to the removable camera case or gasket and allow water to leak into the case during use. Exposing the camera to water will cause permanent damage to the camera and battery, which may present a risk of fire, chemical burn, electrolyte leak, and/or injury.

The included camera case provides rugged protection for your camera, and it provides water protection when used with the watersports camera case door.

Two camera case doors are included in the package.



The watersports door ① is installed on your camera case by default. The altimeter door ② is included in the box. You can quickly change the camera case door based on your activity.

While the watersports door is installed, the case is water-resistant up to 40 m and is suitable for many water activities, including swimming, snorkeling, and high-speed watersports. The altimeter sensor does not function while the watersports door is installed.

While the altimeter door is installed, your device records more accurate elevation and grade data, and additional G-Matrix data, including jump height and vertical speed. The altimeter door provides an IEC 60529 IPX7 water rating suitable for rain and light splashes. The altimeter door is not suitable for watersports, immersion, or other exposure to water or other liquids.

Go to [garmin.com/waterrating](http://garmin.com/waterrating) for more information about water ratings and suitable water activities.

### Changing the Camera Case Door

1 Open the camera case door ① completely.



2 Pull the camera case door away from the camera. The door releases from the quick-release hinge ②.

3 Align the other camera case door with the quick-release hinge, and press it toward the camera until it snaps into place.

4 Verify the gasket ③ is fully seated in the groove.

5 Close and latch the camera case door.

### Installing an Anti-Fog Desiccant Pack

#### ⚠ WARNING

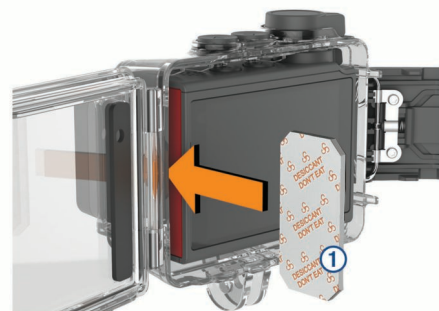
Do not eat desiccant packs. Desiccant packs contain silica, which may cause irritation in your digestive system. Desiccant packs are harmful if swallowed by an infant or pet and pose a choking hazard.

For the best clarity and image quality, you should install an anti-fog desiccant pack to reduce fogging inside the camera case or on the camera lens. A desiccant pack kit is included in the product box. Go to [www.garmin.com/VIRB](http://www.garmin.com/VIRB) to purchase additional desiccant packs.

**NOTE:** When using the camera case in water or in humid environments, it is normal for some fog to form inside the case, especially after the camera has been in use for an extended time. In very cold or humid environments, some fog may appear even while the desiccant pack is installed.

1 Open the camera case.

2 Insert the desiccant pack ① between the camera and the case.



3 Close and latch the camera case.

### Anti-fog Desiccant Pack Storage and Maintenance

- To preserve the effectiveness of the desiccant packs, you should seal them in the included foil bag when they are not in use. You should store the included humidity indicator card in the bag with the desiccant packs.
- If the dots on the humidity indicator card turn green while stored with the desiccant packs, the desiccant packs are saturated. When saturated, the desiccant packs lose their effectiveness, and you should dry them before using them again.
- If the desiccant packs become saturated, you can heat them at 85°C (185°F) for 60 minutes to dry them for reuse.

## Attaching the Device to the Mount

### NOTICE

To prevent product loss or damage, do not use the adhesive mounting base when the temperature is below -15°C (5°F).

The permanent mounting adhesive is extremely difficult to remove after it is installed.

Before you can install the adhesive mounting base onto a surface, the ambient temperature must be from 21° to 38°C (from 70° to 100°F).

Your device includes an assortment of mounting bases and arms, which can be used in many configurations. These instructions provide an example of one possible configuration. You can also purchase additional mounts for your device, such as wearable mounts, vehicle mounts, or a tripod mount. Go to [www.garmin.com/VIRB](http://www.garmin.com/VIRB) for more information.

- 1 Thoroughly clean and dry the mounting surface using water or alcohol.

The mounting surface must be free of dirt, debris, wax, or coatings.

- 2 Remove the film from the adhesive mounting base ①, and press the base firmly onto the mounting surface.

You can use either the flat base or the curved base, depending on the contour of the mounting surface.



- 3 Allow the base to bond to the mounting surface for at least 24 hours.

**TIP:** For the best results, you can place a large book or other heavy object on the mounting base during the 24-hour bonding period. This applies pressure to the adhesive and can help improve the strength of the bond.

- 4 Insert the adapter ② into the base.  
The lever ③ must be in the open position.
- 5 Snap the lever to the closed position to lock the adapter into the base.  
The lever must be flush with the base.
- 6 Insert the camera mount ④ into the top of the adapter.  
The device should be horizontal for the proper aspect ratio when recording video.
- 7 Insert a thumbscrew ⑤ into the larger opening of the joint, and tighten the thumbscrew to lock the angle of the joint.  
**NOTE:** The metal fitting indicates the smaller opening of the joint.
- 8 If necessary, insert the included hex wrench into the end of the thumbscrew to adjust the tightness of the joint.

## Voice Control

The voice control feature allows you to control your camera by saying words and commands in English.

**NOTE:** The voice control feature is available only in English. You can use this feature while the interface is set to a different language, but you must speak the commands in English.

### Turning Voice Control On or Off

From the main menu, select > **Voice Control**.

### Controlling the Camera Using Voice Commands

- 1 Say **OK, Garmin** to activate the voice control feature.  
The camera plays a tone and starts listening for a command.
- 2 Say a command:
  - To take a photo, say **Take a Photo** or **Take a Picture**.
  - To start recording video, say **Start Recording**.
  - To stop recording video, say **Stop Recording**.**NOTE:** You can stop recording using a voice command only if you started recording using a voice command.
- To place a bookmark in the video while you are recording, say **Remember That**.

This option allows you to mark key moments in the video as they occur so that you can find them easily while editing the video.

The camera plays a tone when it recognizes your command.

### Voice Control Tips

- Speak in a normal voice directed at the device.
- Reduce background noise to increase the accuracy of the voice recognition.
- Before each command, say **OK, Garmin**.
- Listen for a tone to confirm that the camera successfully recognized a command.
- Watch the status LEDs to confirm the camera recognized the command.

The LEDs flash green twice to indicate the camera recognized the command. The LEDs flash red twice to indicate the command was not recognized.

## Video

### Recording a Video

**NOTE:** If the battery power becomes very low while recording video, the device automatically stops recording, saves the video, and safely turns off. The status LEDs flash rapidly when the battery charge level is low.

- 1 Move the recording switch forward to start recording video.  
**NOTE:** For the best audio quality, do not touch or cover the microphone area, except with an approved case.  
If the device is off, it turns on automatically. The device starts recording video immediately, and the red light turns on.
- 2 Move the recording switch backward to stop recording video.  
The video is saved on the memory card as an .mp4 file. The G-Matrix sensor data is saved on the memory card as a .fit file.

### Video Settings

From the main menu, select **Video**.

**NOTE:** Not all settings are available for all video modes.



**Mode:** The active video mode appears at the top of the Video menu. You can touch it to change the video mode ([Video Modes, page 5](#)). Additional settings vary based on the active video mode.

**Resolution:** Sets the width and height of the video, in pixels.

**Interval:** Sets the time interval for time-lapse mode.

**FPS:** Sets the frame rate in frames per second (fps).

**Field of View:** Sets the zoom level ([Field of View Settings, page 5](#)).

**Playback Speed:** Sets the speed for slow-motion playback.

**Lens Correction:** Corrects wide-angle barrel distortion and reduces the field of view.

**Low Light Boost:** Enables automatic adjustment for low light.

**Stabilizer:** Turns on image stabilization to reduce shaky video.

**Loop:** Enables loop recording and sets the number of minutes of video to store when recording a video loop ([Recording a Video Loop, page 6](#)).

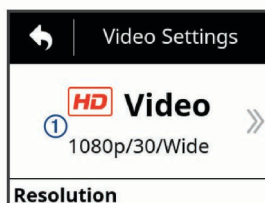
**Auto Pause:** Sets the camera to record video only while it is moving ([Pausing Video Recording Automatically, page 6](#)).

**Pro Settings:** Enables advanced video settings ([Pro Settings, page 5](#)).

## Video Modes

You can change the video mode to change the resolution, aspect ratio, frame rate, and speed of recorded video. The resolution is the width and height of the video, in pixels. The aspect ratio is the ratio of the video width to the video height. Standard widescreen televisions use a 16:9 aspect ratio, and standard full-screen televisions use a 4:3 aspect ratio. The frame rate is expressed in frames per second (fps). The playback speed indicates the speed of action in the video compared to real time.

From the main menu, select Video, and select the active video mode ①.



**Expansive:** Enables you to capture an expanded viewing area, similar to the effect of using a wide-angle lens. This is useful for close-up action shots and when using a chest mount.

**Video:** Enables you to capture high-speed action shots. 1080p works well as a default setting when you need high-resolution shots. 4K allows you to capture the maximum amount of detail.

**Slow-Mo:** Enables you to capture slow-motion playback with up to 300 frames per second in standard definition or 120 frames per second in 1080p resolution.

**Time-lapse:** This high-resolution mode enables you to capture slow-moving or long-term action that is ready for playback or sharing immediately ([Recording a Time-Lapse Video, page 8](#)).

### Expansive Mode

In expansive mode, the camera captures an expanded viewing area, similar to the effect of using a wide-angle lens. Compared to standard video mode, a video shot in expansive mode appears to be zoomed out further. The effect of lens distortion may be more noticeable in expansive mode, especially at the edges of the video frame.

You can capture two types of viewing areas using expansive mode.

From the main menu, select **Video > Mode > Expansive > Type**.

**Tall:** In tall expansive mode, the camera uses the full camera sensor to capture additional vertical area in a 4:3 aspect ratio. For example, a 2.7K video in tall expansive mode records 2028 pixels vertically instead of the standard 1524 pixels. This mode is useful when wearing a chest mount or recording activities where it is essential to capture vertical movement, such as snowboarding, skateboarding, or climbing.

**Wide:** In wide expansive mode, the camera captures the same expanded vertical area as tall expansive mode and a slightly expanded horizontal area. The camera dynamically stretches the video image fill a 16:9 aspect ratio. The image is stretched only at the edges, and the center of the image is not modified. This mode can be useful for capturing close-up action shots or sweeping panoramic shots.

### Field of View Settings

You can change the field of view to capture more or less of your surroundings. This feature is not available for all video modes.

From the main menu, select **Video > Field of View**.

**Wide:** Captures a wide view of your surroundings. Use this option for open areas, close-range video, and to capture as much of your viewing area as possible.

**TIP:** To capture an extra-wide field of view, you can use the expansive video mode.

**Zoom (1.5x):** Captures a tighter view. Use this option for medium-range video.

**Ultra-Zoom (2x):** Captures a very focused view. Use this option for long-range video and closed or covered surroundings.

### Setting the Video Format

You can set the video standard for your region. The video standard affects the available video frame rate options (FPS).

- 1 From the main menu, select **System > Language and Region > Format**.
- 2 Select **NTSC** or **PAL**.

### Pro Settings

From the video or photo settings, select **Pro Settings**, and select the toggle switch to enable pro settings.

**TIP:** While pro settings are enabled, you can swipe left from the viewfinder to quickly view or change the current pro settings.

**Exposure Bias:** Sets the exposure bias. Exposure bias affects the level of brightness.

**ISO ISO Limit:** Sets the maximum level of sensitivity and image noise. The camera automatically uses the best ISO level for the lighting conditions, up to this maximum. Higher ISO values have more visible noise or grain. Higher ISO values are best for use in low light environments or indoors. Lower ISO values are best for use in sunlight. You can use the 6400 option for brighter video in low light, the 1600 option for moderate brightness in low light, or the 400 option for darker video in low light.

**Color Palette:** Sets the color palette. You can use the Vivid option for a more vibrant color palette, or the Flat option for a more neutral color palette.

**Sharpness:** Sets the level of sharpness. You can use the High option for a sharper look, the Medium option for moderate sharpness, or the Low option for a softer look.

**High Bitrate:** Records video at a higher bitrate for some video modes. This feature may improve the quality and smoothness of the video, especially when recording fast motion or high contrast scenes. Enabling high bitrate mode may decrease the amount of recording time available on your memory card.

☀ **White Balance:** Adjusts the color tone based on your surroundings. The device can automatically adjust the white balance, or you can manually adjust the white balance. You can use the 2800K option for incandescent light, the 4000K option for fluorescent light, the 5000K option for daylight, the 6500K option for sunny conditions, or the 7500K option for cloudy conditions.

☐ **Spot Metering:** Enables spot metering mode instead of the default average metering mode. This feature sets the exposure level based on the center of the frame instead of

the whole frame. This is especially useful for scenes with high contrast or a large variation in lighting conditions. When using spot metering, the most important content or subject should be centered in the frame.

🔒 **Exposure Lock:** Enables or disables exposure lock for videos. You can enable exposure lock to ensure consistent light sensitivity in your video capture. When recording a time-lapse video, this helps eliminate stray frames with slightly brighter or darker images.

## Video Mode Specifications

Mode	Resolution (pixels)	Aspect Ratio	NTSC Frame Rate (fps)	PAL Frame Rate (fps)	Field of View (fov)	Speed
Video	4K (3840 × 2160)	16:9	30, 24	25	Wide	1x
	2.7K (2704 × 1524)	16:9	60, 48, 30, 24	50, 25	Wide, Zoom (1.5x)	1x
	1080p (1920 × 1080)	16:9	96, 90, 72, 60, 48, 30, 24	100, 75, 50, 25	Wide, Zoom (1.5x), Ultra-Zoom (2x)	1x
	720p (1280 × 720)	16:9	60, 30	50, 25	Wide, Zoom (1.5x), Ultra-Zoom (2x)	1x
Slow-Mo	1080p (1920 × 1080)	16:9	120	100	Wide, Ultra-Zoom (2x)	1x, 1/2x, 1/4x
	720p (1280 × 720)	16:9	240, 120	240, 120	Wide	1x, 1/2x, 1/4x, 1/8x
	480p (848 × 480)	16:9	300	300	Wide	1x, 1/5x, 1/10x
Time-lapse, Travelapse	4K (3840 × 2160)	16:9	30	25	Wide	Varies
	4K Expansive (3840 × 2160)	16:9	30	25	Wide	Varies
	2.7K (2704 × 1524)	16:9	30	25	Wide, Zoom (1.5x)	Varies
	2.7K Expansive (2704 × 1524)	16:9	30	25	Wide	Varies
	2.7K Tall (2704 × 2028)	4:3	30	25	Wide	Varies
	1440p (1920 × 1440)	4:3	30	25	Wide	Varies
	1080p (1920 × 1080)	16:9	30	25	Wide, Zoom (1.5x), Ultra-Zoom (2x)	Varies
	1080p Expansive (1920 × 1080)	16:9	30	25	Wide	Varies
Expansive (Tall)	2.7K (2704 × 2028)	4:3	30, 24	25	Wide	1x
	1440p (1920 × 1440)	4:3	80, 72, 60, 48, 30, 24	75, 50, 25	Wide	1x
	960p (1280 × 960)	4:3	200, 120	200, 120	Wide	1x
Expansive (Wide)	4K (3840 × 2160)	16:9	24	24	Wide	1x
	2.7K (2704 × 1524)	16:9	30, 24	25	Wide	1x
	1080p (1920 × 1080)	16:9	80, 72, 60, 48, 30, 24	75, 50, 25	Wide	1x
	720p (1280 × 720)	16:9	200, 120, 60, 30	200, 120, 50, 25	Wide	1x

## Pausing Video Recording Automatically

You can set the camera to record video while it is moving and pause recording automatically while it is still. This feature allows you to conserve space on your memory card by recording only the important parts of your activity. This feature is not available for all video modes.

- 1 From the main menu, select **Video > Auto Pause**.
- 2 Move the recording switch forward.

The camera records video only while you are moving.

This feature automatically enables GPS in the system settings.

## Recording a Video Loop

Loop recording allows you to record video continuously but save only the most recent video footage. You can select the number of minutes of video to save. This enables you to save storage space when you want to capture key moments but do not want to save all footage of an activity. This feature is useful when

using the device as a driving recorder or when you want to save only the highlights of an event.

The saved video loop is split into multiple files of equal length. This allows you to delete unwanted portions of the video easily.

- 1 From the main menu, select **Video > Loop**.
- 2 Select the number of minutes of video to save.
- 3 Start recording video.
- 4 When finished, stop recording.

The most recent footage is saved on the memory card, up to the number of minutes selected in step 2.

## Connecting a Cabled External Microphone or Audio Source

Before you can connect an external microphone or audio source, you must purchase the VIRB microphone cable accessory or the VIRB A/V cable accessory.

When you connect an external microphone or line-in audio source, the device records audio from the external source instead of the built-in microphone.

- 1 From the main menu, select **Microphone**.
- 2 Select an option:
  - To switch automatically between the internal and external microphones when you connect or disconnect the microphone, select **Auto**.  
**TIP:** The device detects most microphones automatically. The **Auto** option may not detect line-in audio sources and some microphones when using the VIRB A/V cable accessory.
  - To enable only the external microphone or line-in audio source, select **External**.  
**TIP:** You should select this option when using a microphone that is not detected automatically, or when using a line-in audio source.
  - To enable only the built-in microphone, select **Internal**.
- 3 Connect the accessory cable to the mini-USB port on the camera.
- 4 Connect the microphone or line-in audio source to the accessory cable.

## Photos

### Taking a Photo

Your device provides several methods for taking a photo.

- Aim the camera using the viewfinder, and select the camera key to take a photo.
- While recording a video, select the camera key.

Photos taken while recording a video always use single photo capture. Photo time-lapse or burst settings are ignored while recording video. You cannot capture a photo while recording video at a resolution higher than 1080p.

### Photo Settings

From the main menu, select **Photo**.

**Mode:** The active photo mode appears at the top of the Photo menu. You can touch it to change the shooting mode for photos ([Photo Modes, page 7](#)).

**NOTE:** Additional settings vary based on the selected mode.

**Type:** Sets the exposure type for single photos ([Photo Exposure Types, page 7](#)), and the exposure and interval types for time-lapse photos ([Time-Lapse Photos and Video, page 7](#)).

**Exposure Time:** Sets the exposure time when taking photos at night ([Photo Exposure Types, page 7](#)) or time-lapse photos at night ([Taking Time-Lapse Photos at Night, page 8](#)).

**ISO Limit:** Sets the maximum level of sensitivity and image noise. The camera automatically uses the best ISO level for the lighting conditions, up to this maximum. Higher ISO values have more visible noise or grain. Higher ISO values are best for use in low light environments or indoors. Lower ISO values are best for use in sunlight. You can use the 6400 option for brighter video in low light, the 1600 option for moderate brightness in low light, or the 400 option for darker video in low light.

**Bracket EV Step:** Sets the amount of variation above and below the standard exposure value for bracketed photos. A larger value creates more variation in the brightness of bracketed photos.

**Photo Count:** Sets the number of frames taken in burst mode.

**Interval:** Sets the time interval between photos for time-lapse mode, or the distance interval between photos in Travelapse™ mode. For standard time-lapse mode, you can select a preset interval or enter a custom interval.

**Duration:** Sets the duration for burst and time-lapse modes. For extended time-lapse mode, you can shoot continuously, or set a custom duration.

**Start Time:** Sets the start time for extended time-lapse mode. You can start shooting now, or set a custom start time.

**Aspect Ratio:** Sets the ratio of the photo width to the photo height. Standard film uses an aspect ratio similar to 4:3. Digital displays use an aspect ratio similar to 16:9.

**Self Timer:** Sets the timer to delay taking a photo.

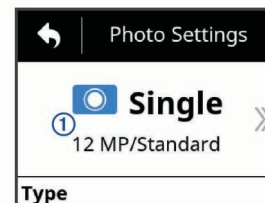
**Lens Correction:** Corrects wide-angle barrel distortion and reduces the field of view.

**Time Stamp:** Adds a time stamp to your photo.

**Pro Settings:** Enables advanced photo settings ([Pro Settings, page 5](#)).

### Photo Modes

From the main menu, select **Photo**, and select the active photo mode ①.



**Single:** Enables you to take a single photo using automatic exposure.

**Burst:** Enables you to rapidly take multiple images over a set number of seconds. This mode is ideal for capturing photos of people or objects in motion.

**Time-lapse:** Enables you to capture a series of photos at set time or distance intervals.

### Photo Exposure Types

You can use several photo exposure types to take single photos.

**Standard:** Takes a single photo at standard exposure. This option is useful for most daytime photos.

**Night:** Takes a single, extended-exposure photo. This option is useful for capturing photos in low light conditions.

**Bracket:** Takes three consecutive photos automatically, using three different exposure values (exposure bracketing). This option is useful for composing high dynamic range (HDR) photos.

### Taking a Delayed Photo

You can delay taking a photo using the self timer. This allows you to join or adjust a shot before the photo is taken.

1 From the main menu, select **Photo > Self Timer**.

2 Select a delay time.

3 From the home screen, select the camera key.

The countdown timer displays the remaining time until the photo is taken, in seconds.

## Time-Lapse Photos and Video

You can use several time-lapse modes to take a series of photos or video frames at a set interval.

**Standard:** Standard time-lapse mode takes a series of photos or video frames at a set time interval. This mode is useful for

most daytime time-lapse photos or videos, and for when you want to start and stop time-lapse recording manually.

**Extended:** Extended time-lapse mode takes series of photos at a longer time interval, with an optional automatic start time and duration. While using extended time-lapse mode, the camera goes into low power mode between shots to extend the battery life. This mode is useful when you want to capture time-lapse photos over an extended time period, or when you cannot attend the camera to start and stop time-lapse recording manually.

**NOTE:** This mode is available for photos only.

**Night:** Night time-lapse mode takes a series of extended-exposure photos at a set time interval. This mode is useful for capturing time-lapse photos in low light conditions, or for capturing a series of extended-exposure photos at a fixed location.

**NOTE:** This mode is available for photos only.

**Travelapse:** Travelapse mode takes a series of photos or video frames at a set distance interval, in kilometers or miles. This mode is useful for capturing a series of photos during a long road trip.

## Recording a Time-Lapse Video

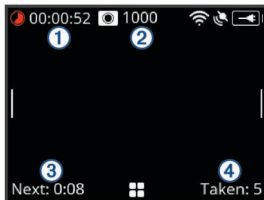
Time-lapse mode captures individual video frames at longer intervals and creates a video that plays much faster than real time. You can use time-lapse mode to record movements, changes, or events that take place over a long period of time.

Time-lapse videos play at 30 frames per second. The length of the video depends on the amount of time between video frames. For example, if frames are recorded at a one-second interval, each second of video covers 30 seconds of real time. If frames are recorded at a 60-second interval, each second of video covers 30 minutes of real time.

- 1 From the main menu, select **Video > Mode > Time-lapse**.
- 2 Select **Interval**, and select a time interval between video frames.
- 3 For the best results, mount the device so it does not move while recording.
- 4 Record a video.

## Taking Time-Lapse Photos

- 1 From the main menu, select **Photo > Mode > Time-lapse**.
- 2 Select **Type > Standard**.
- 3 Select **Interval**, and select a time interval between photos.
- 4 From the viewfinder, select the photo key.



The camera takes a series of photos at the selected interval. The screen displays the elapsed time ①, the remaining number of photos the camera can take ②, the time in seconds until the next photo is taken ③, and the number of photos the camera has taken in this time-lapse session ④.

- 5 Select the photo key to stop taking photos.

## Taking Extended Time-Lapse Photos

- 1 From the main menu, select **Photo > Mode > Time-lapse**.
- 2 Select **Type > Extended**.

- 3 Select **Start Time**, and select the time of day when the camera should start taking time-lapse photos.

If you select **Now**, the camera starts taking pictures immediately after you select the photo key.

- 4 Select **Interval**, and select a time interval between photos.
- 5 Select **Duration**, and select the amount of time for which the camera should continue taking photos.

If you select **Continuous**, the camera continues taking photos until you stop it manually.

- 6 Aim the camera at the subject of the time-lapse photos.

- 7 From the viewfinder, select the photo key.

At the start time, the device takes a series of photos at the selected interval. The camera stops taking photos automatically after the selected duration has elapsed.

**NOTE:** The camera appears to be off while taking extended time-lapse photos. The screen, LED, and other features are disabled to save power, but the camera continues to take photos.

- 8 To manually stop taking photos, hold **POWER** to turn on the camera, and select the photo key.

## Taking Time-Lapse Photos at Night

When taking time-lapse photos at night, you should attach the camera to a stable mount and allow time to test your photo settings.

- 1 From the main menu, select **Photo > Mode > Time-lapse**.
- 2 Select **Type > Night**.
- 3 Select **Interval**, and select a time interval between photos.
- 4 Select **Exposure Time**, and select an exposure time for each photo.

You should select a longer exposure time for darker lighting conditions, or if you want to capture motion blur in your image.

- 5 Select **ISO Limit**, and select an option appropriate for the lighting conditions.
- 6 Attach the camera to a stable mount, or set the camera on a stable surface.

Preventing the camera from moving helps to reduce blurring in photos with longer exposure times.

- 7 From the home screen, select the photo key.  
The device takes a series of photos at the selected interval and exposure time.
- 8 Check the first several photos to verify the photo settings are correct for the lighting conditions (optional).
- 9 Select the photo key to stop taking photos.

## Capturing a Road Trip Using the Travelapse Feature

The Travelapse feature takes photos or video frames at a set distance interval. For example, you can capture one photo or video frame for every kilometer or mile you travel on a road trip. This allows you to share a short video or photo series of the places you traveled.

- 1 Use an appropriate mount accessory, such as the VIRB Auto Dash Mount or the VIRB Handlebar Mount, to mount the camera in your vehicle.

Go to [www.garmin.com/VIRB](http://www.garmin.com/VIRB) to purchase mount accessories.

- 2 From the main menu, select **Photo** or **Video**.
- 3 Select **Mode > Time-lapse**.
- 4 Select **Type > Travelapse**.

- 5 Select **Interval**, and select a distance interval between photos or video frames.
- 6 Select an option:
  - To take Travelapse photos, from the viewfinder, select the photo key.
  - To record a Travelapse video, move the recording switch forward.

The camera takes a series of photos or video frames at the selected distance interval.
- 7 To stop recording, select the camera key, or move the recording switch backward.



## Presets

You can save your current camera settings as a preset. Saved presets include all camera settings except for the Wi-Fi and Bluetooth settings.

This feature allows you to save and quickly apply settings for a specific scenario, such as an activity, location, or shooting style. You can also copy presets to multiple compatible VIRB cameras.

### Saving a Preset

You can save your current camera settings as a preset.

- 1 From the main menu, select **Presets** > .
- 2 Select an option:
  - To save your current settings as a new preset, select **Create New**, enter a name, and select .
  - To replace the settings in an existing preset with your current settings, select **Overwrite**, and select the preset to overwrite.

**NOTE:** Overwritten presets cannot be restored.

### Applying a Preset

You can apply a preset to load all the settings values from the preset to your camera.


**NOTE:** Applying a preset overwrites all settings values on the camera. If you want to save your current camera settings, you should save them as a new preset before applying the saved preset.

- 1 From the main menu, select **Presets**.
- 2 Select a preset.
- 3 Select **Apply**.

### Copying Presets to Another Camera

Using the same preset on multiple VIRB ULTRA cameras can help you record consistent videos and photos on all your VIRB ULTRA cameras.

You can export presets to your memory card, and import them from the memory card to another VIRB ULTRA camera.

- 1 From the main menu, select **Presets**.
- 2 Select a preset to copy.
- 3 Select **Export Preset to SD**.  
The preset is exported to the Garmin/Presets folder on your memory card.
- 4 Repeat steps 2 and 3 for all the presets you want to copy.
- 5 Turn off the camera, and remove the memory card.
- 6 Install the memory card in a second VIRB ULTRA camera.
- 7 Turn on the second camera.
- 8 On the second camera, from the main menu, select **Presets**.  
The copied presets appear in the list. Presets stored on the SD card are indicated by .

- 9 Select a preset stored on the SD card, and select **Import Preset to Device**.  
The preset is copied to the camera's internal storage.
- 10 Repeat steps 8 and 9 for each of the presets you want to import.

## Managing Presets

- 1 From the main menu, select **Presets**.
- 2 Select a preset.
- 3 Select an option:
  - To rename the preset, select **Rename**.
  - To delete the preset, select **Delete**.
  - To move the preset up or down in the list, select **Move Up** or **Move Down**.








## Playback

### Viewing Videos and Photos


You can view your photos and recorded videos on the device screen or on a connected external display.

- 1 From the main menu, select **Playback**.
- 2 Select a video or photo to play.
- 3 Select an option:
 

**TIP:** You can drag the control bar left or right to view additional controls.






  - To view the previous or next item, select  or .
  - To play or pause a video, select  or .
  - To mark the item as a favorite, select .
  - To view the video on an external wireless display, select .
  - To delete the photo or video, select .

### Filtering Videos and Photos

- 1 From the **Playback** screen, select  > **Show**.
- 2 Select **All**, **Favorites**, **Videos**, or **Photo**.  
The list of photos and videos is filtered to show only the selected category.

### Marking Favorite Photos and Videos



You can mark your favorite photos and videos to find them again easily.

- While viewing the photo or video, select  or .  
The item is marked as a favorite when  is filled.
- From the **Playback** screen, select  > **Favorite**, select multiple items to add or remove from your favorites, and select .

### Deleting Videos or Photos


#### NOTICE

Deleted items cannot be recovered.

- 1 From the **Playback** screen, select  > **Delete**.
- 2 Select an option:
  - To delete specific photos and videos, select **Select**, select the items to delete, and select .
  - To delete all photos and videos on your memory card, select **All**.
  - To save your favorite items and delete all other items, select **All But Favorites**.

## Wirelessly Playing Video on Another Device

You can view video wirelessly on a compatible display or device, such as a smart TV, media player, or streaming media stick. Depending on your device, this feature may be called "casting," "wireless display," "Wi-Fi CERTIFIED MiraCast™", or another name.

- 1 Turn on the display or device, and enable the wireless display option, if necessary.  
For more information, see the owner's manual for your device.
- 2 On your camera, open a video, and select .  
A list of nearby compatible devices appears.  
**TIP:** If your device does not appear, you should move closer to the device and verify the wireless display option is enabled on the device.
- 3 Select your device.
- 4 If necessary, enter the PIN.

The video plays on your display or device. You can control video playback using the controls on the camera screen.

## External Displays

You can display the contents of the camera screen on an external display. This allows you to view videos and photos on the external display or use the external display as a viewfinder.

### Connecting to an HDMI® Display

To connect to an HDMI display, you must have a micro HDMI to HDMI cable.

- 1 Connect the micro HDMI end of the cable to the **HDMI** port on the camera.
- 2 Connect the large end of the cable to an available port on your external display.

### Connecting to a Composite Video Display

Before you can connect to a composite video display, you must purchase the VIRB A/V cable accessory. You must also have an RCA composite video cable.

- 1 Connect the accessory cable to the mini-USB port on the camera.
- 2 Connect an RCA composite video cable to the **VID OUT** connector of the accessory cable and to an available port on your external display.

## G-Metrix

Using the built-in GPS receiver and sensors, your camera can detect G-force, altitude, speed, orientation, and many other performance metrics. This data is saved automatically as G-Metrix data. You can capture even more G-Metrix data by wirelessly connecting external ANT+ sensors, other Garmin devices, and compatible Bluetooth sensors, such as OBD-II sensors.

You can use the Garmin VIRB mobile app or the VIRB Edit desktop application to overlay G-Metrix data onto your video using gauges, graphs, and more. You can play and share your edited videos to show your speed, acceleration, heart rate, and other sensor data in real time.

### G-Metrix Data

Your camera can record these types of G-Metrix data using the built-in sensors.

Speed	Rotations
G-force	RPM
Pace	Altitude
Distance	Bearing

Lap times	Orientation
Lap count	Elevation
Jump height	Grade
Hang time	Pitch
Jump distance	Roll
GPS location	Vertical speed
Track shape and position	Vertical distance

Your camera can record these types of G-Metrix data using optional external sensors.

G-Metrix Data	Required Sensor
Heart rate	Compatible ANT+ heart rate monitor
Cadence	Compatible ANT+ bicycle cadence sensor
Power output in watts	Compatible ANT+ power meter
Temperature	Compatible ANT+ temperature sensor
Automotive data	Compatible Bluetooth OBD-II sensor

## Remote Operation and Garmin VIRB Mobile App

You can use several methods to operate your VIRB camera remotely. Each method provides different features.

Features	VIRB Remote	Garmin Device (ANT+)	Garmin Device (Wi-Fi)	Garmin VIRB App
Wireless technology	ANT+	ANT+	Wi-Fi	Wi-Fi
Start or stop recording	Yes	Yes	Yes	Yes
Take a photo	Yes	Yes	Yes	Yes
Change camera settings	No	Some devices	Yes	Yes
Real-time remote viewfinder	No	No	Yes	Yes
View photos	No	No	Yes	Yes
Play recorded videos	No	No	Yes	Yes
View battery and sensor status	No	No	Yes	Yes
Edit videos	No	No	No	Yes
Add G-Metrix overlays	No	No	No	Yes
Share videos on social networks	No	No	No	Yes

## Operating the Camera Using the Garmin VIRB App

The free Garmin VIRB app allows you to control most functions of one or more VIRB cameras using a compatible mobile device. You can control video and photo recording, change video and photo settings, view a real-time remote viewfinder, and view battery and sensor status information. You can also view recorded videos and photos, edit videos, add G-Metrix overlays, and share video clips on social media. To download the Garmin VIRB app or for more information, go to [garmin.com/VIRBapp](http://garmin.com/VIRBapp).

- 1 From the application store on your mobile device, install the Garmin VIRB app.
- 2 Select an option:
  - Create a Wi-Fi access point using your camera ([Setting Up a Wi-Fi Access Point, page 11](#)).
  - Connect your camera and your mobile device to the same Wi-Fi network ([Connecting to a Wi-Fi Network, page 11](#)).

**NOTE:** To control the camera using an existing Wi-Fi network, the network must be set up to allow connected devices to see and communicate with each other.

- 3 Connect additional cameras to the Wi-Fi access point or network (optional).
- 4 On your mobile device, start the Garmin VIRB app. The app searches for cameras and connects automatically.
- 5 From the Garmin VIRB app, select an option:
  - Use the on-screen controls to control recording or change settings.
  - Use the drop-down list to switch to another camera.

**NOTE:** This option is available only when multiple cameras are connected.

  - Use the tabs to switch between recording and playback mode.

## Wi-Fi Networks and Devices

The Garmin VIRB app and some Garmin devices, such as a compatible chartplotter, can control the camera using a Wi-Fi connection. These devices can control recording, change camera modes and settings, and play or edit recorded videos and photos.

You can establish a Wi-Fi connection by enabling your camera to broadcast a Wi-Fi access point. You can also connect your cameras and devices to an existing network.

For more information about controlling your camera using a compatible Garmin device, see the owner's manual for the device.

### Setting Up a Wi-Fi Access Point

Your camera can broadcast a Wi-Fi access point to create a network for your devices. You can connect your mobile device, Garmin device, or other VIRB cameras to the access point. This is useful for most recording situations, when you do not have access to an established wireless network.

**NOTE:** Creating an access point allows you to control one or more cameras using Wi-Fi technology, but it does not provide other networking services or access to the Internet.

- 1 From the main menu, select **Wireless > Wi-Fi > Status** to turn on Wi-Fi wireless technology.
- 2 Select **Mode > Create**.  
Your camera broadcasts a Wi-Fi network. The network SSID name and password appear on the camera screen.
- 3 Connect your mobile device, cameras, or other devices to the new Wi-Fi network.

#### Wi-Fi Access Point Settings

You can change the wireless access point settings for your device.

From the main menu, select **Wireless > Wi-Fi > Status** to turn on Wi-Fi wireless technology, and select **Mode > Create**.

**Name:** Sets the SSID, which identifies your wireless network on other devices.

**Password:** Sets the password used to connect to your wireless network.

### Connecting to a Wi-Fi Network

#### NOTICE

Connecting to a public or unsecured network may expose your video and sensor data to others. Use caution when connecting to an unsecured network.

To control the camera using an existing Wi-Fi network, the network must be set up to allow connected devices to see and communicate with each other.

You can connect your camera to an existing 2.4 GHz Wi-Fi network. This could be a home network, a business network, or a NMEA 2000® marine network.

- 1 From the main menu, select **Wireless > Wi-Fi > Status** to turn on Wi-Fi wireless technology.
- 2 Select **Mode > Connect**.
- 3 Select **Add New**.  
The camera searches for nearby Wi-Fi networks.
- 4 Select a Wi-Fi network.
- 5 If necessary, enter the network password.  
The camera connects to the wireless network.
- 6 If necessary, connect your mobile device or Garmin device to the same network to control the camera.

The camera remembers the network information and connects automatically when you return to this location.

#### Managing Wi-Fi Networks

- 1 From the main menu, select **Wireless > Wi-Fi > Status** to turn on Wi-Fi wireless technology.
- 2 Select **Mode > Connect**.
- 3 Select a saved network.
- 4 Select an option:
  - To delete the network, select **Forget**.  
The network information is deleted. To connect to this network again, you must manually connect to it and enter the network password.
  - To change the password stored for the network, select **Change Password**.

## ANT+ Devices and VIRB Remote

You can start recording, stop recording, and take pictures on your VIRB camera using another compatible Garmin device with ANT+ wireless technology, such as watches, activity trackers, navigation devices, or the VIRB Remote accessory. For more information about VIRB camera compatibility, see the owner's manual for your Garmin device.

The VIRB Remote accessory is a portable, mountable remote that can control your VIRB camera using ANT+ wireless technology. It has tactile buttons that allow you to start recording, stop recording, or take a photo without looking at the remote. Go to [www.garmin.com/VIRB](http://www.garmin.com/VIRB) to purchase a VIRB Remote accessory.

### Controlling a VIRB Camera Using ANT+ Wireless Technology

These instructions allow you to enable the remote control feature for one camera or for your main camera. If you have multiple cameras, you should follow the instructions for controlling multiple cameras remotely ([Controlling Multiple VIRB Cameras Using ANT+ Wireless Technology, page 12](#)).

- 1 On your camera, from the main menu, select **Wireless > Remote > Status** to turn on remote operation.
- 2 Select **No**.  
The remote control settings appear, with the camera set as the main VIRB camera.
- 3 Select an option:
  - On the ANT+ device, launch the VIRB app or feature. See the owner's manual for the device for more information.
  - On the VIRB remote, follow the pairing instructions in the accessory manual.

### Enabling the Remote Wake Up Feature

The Remote Wake Up feature enables your camera to remain in a low-power state instead of turning off. This allows your remote

control device to wake the camera to start recording or take a photo.

**NOTE:** This feature consumes some battery power when the camera is off. To avoid draining the battery, you should disable this feature when you are not using the camera, or when you store the camera overnight or for a longer time period.

Select **Wireless > Remote > Remote Wake Up**.

When you turn off the camera, it enters remote wake-up mode. The status LED flashes blue intermittently while the camera is in remote wake-up mode.

## Controlling Multiple VIRB Cameras Using ANT+ Wireless Technology

You can control multiple VIRB cameras using one main VIRB or an ANT+ device.

When controlling multiple cameras, you must choose a main VIRB camera. This camera controls all of your other cameras, which are called extended VIRB cameras. When you start recording or take a photo on the main camera, the extended cameras start recording or take a photo at the same time.

When you use an ANT+ device to control multiple cameras, the ANT+ device controls only the main camera. The main camera passes commands received from the ANT+ device to the extended cameras.

- 1 Bring all of your VIRB cameras within 3 m (10 ft.) of each other.
- 2 On your main camera, from the main menu, select **Wireless > Remote > Status** to turn on remote operation.  
A prompt appears, asking whether you have additional VIRB cameras.
- 3 Select **Yes**, and wait while until the search screen times out. After 30 to 60 seconds, the search screen times out and the remote settings page appears, with the VIRB Type setting set to Main VIRB.
- 4 On each of your other cameras, select **Wireless > Remote > Status > Yes**.

Each camera searches and connects to the main camera. The remote settings page appears, with the VIRB Type setting set to Extended VIRB.

**TIP:** If one of your cameras is set to the incorrect VIRB type, you can select **VIRB Type** to switch between the Main VIRB and Extended VIRB options.

- 5 After all of the cameras are connected, select an option:
  - Use the recording switch on your main camera to start and stop recording on all of your cameras.
  - Select the photo key on your main camera to take a photo from all of your cameras.
  - Use an ANT+ device or VIRB remote control accessory to control all of your cameras.

## ANT+ Sensors

Your device can be used with wireless ANT+ sensors. For more information about compatibility and purchasing optional sensors, go to <http://buy.garmin.com>.

### Pairing ANT+ Sensors

When you pair a compatible ANT+ sensor with your device, the sensor data is recorded as G-Metrix data.

- 1 Put on the heart rate monitor or install the sensor.
- 2 Bring the device within 3 m (10 ft.) of the sensor.
- 3 From the main menu, select **Wireless > Sensors > Add New**.
- 4 Select an option:

- Select **Search All**.
- Select your sensor type.

- 5 Select the sensor to pair.

After the sensor is paired with your device, the sensor status changes to Connected.

After you pair the first time, your camera automatically recognizes and connects to the ANT+ accessory each time it is activated and within range.

### Removing Paired ANT+ Sensors

- 1 From the main menu, select **Wireless > Sensors**.
- 2 Select a sensor.
- 3 Select **Remove > Yes**.

## Bluetooth Devices

### Connecting a Wireless External Microphone

You can connect a Bluetooth hands-free device with your VIRB camera.

- 1 From the main menu, select **Wireless > Bluetooth > Status** to turn on Bluetooth wireless technology.

- 2 Select **Add New**.

- 3 Select the wireless device to pair.

After the wireless device is paired, the device status changes to Connected.

### Connecting an OBD-II Device

Your VIRB camera can pair with a compatible Bluetooth ELM327 on-board diagnostics (OBD-II) device to record automotive data from your OBD-II compliant vehicle.

**NOTE:** Different vehicles provide different data. Not all vehicles and OBD-II devices are compatible with the camera.

- 1 Install your ELM327 compatible OBD-II device in the OBD-II port of your vehicle.

**TIP:** See the owner's manual for your vehicle and your OBD-II device for information about locating the OBD-II port and installing the OBD-II device.

- 2 If necessary, enable pairing mode on your OBD-II device.

**TIP:** See the owner's manual for your OBD-II device to enable pairing mode.

- 3 From the VIRB camera main menu, select **Wireless > Bluetooth > Status** to turn on Bluetooth wireless technology.

- 4 Select **Add New**.

- 5 Select the OBD-II device to pair.

**TIP:** If your OBD-II device does not appear in the list, confirm that it is still in pairing mode and search again.

After the OBD-II device is paired, the device status changes to Connected.

### Removing Paired Bluetooth Devices

- 1 From the main menu, select **Wireless > Bluetooth**.
- 2 Select a wireless device.
- 3 Select **Forget > Yes**.

## VIRB Edit

The VIRB Edit application provides easy access to these tools and services for your device.

- Review and edit recorded videos
- Add G-Metrix gauges, graphs, and more
- Add titles and transitions




- Multi-camera support
- Update software and features

The VIRB Edit application is available for Windows® and Mac® computers. Go to [garmin.com/VIRBEdit](http://garmin.com/VIRBEdit) for more information.

## Device Information

### Camera Setup

#### NOTICE

From the main menu, select .

**Voice Control:** Allows you to use your camera by saying words and commands ([Voice Control, page 4](#)).

**Record Light:** Turns the recording light on or off.

**Tone Volume:** Adjusts the volume of camera tones.

**Playback Volume:** Adjusts the video playback volume.


**Orientation:** Sets the camera to capture correctly oriented video and photos with the screen facing up or down ([Inverting the Camera Orientation, page 13](#)).

**Microphone:** Enables the internal or external microphone.

**TIP:** If wind noise is an issue when recording video, you can select Off to record video without audio.

#### Inverting the Camera Orientation

You can change the camera orientation of your device to easily access the keys during an activity. Some mounting configurations require you to change the camera orientation. For example, if using a chest mount while cycling, you can mount the camera upside down and tilt it upward to compensate for forward lean.

- 1 From the main menu, select  > **Orientation**.
- 2 Select an option:
  - To automatically set the camera orientation, select **Auto**.  
**NOTE:** After recording starts, the camera orientation is set and cannot be automatically adjusted.
  - To manually set the camera orientation, select **Right Side Up** or **Upside Down**.

### System Settings

From the main menu, select  > **System**.

**Regulatory Info:** Displays regulatory and compliance information.

**GPS:** Enables the camera to receive GPS satellite signals.

**NOTE:** Your camera records GPS position data at all times when GPS is on. This data is not collected by Garmin.

**Language and Region:** Sets the on-screen text language, units of measure, and video standard ([Setting the Video Format, page 5](#)).

**Date and Time:** Sets the time and date formats ([Date and Time Settings, page 13](#)).

**Auto Off:** Turns off the camera automatically when it has not been used for five minutes.

**External Power:** Sets the camera to turn on when connected to external power, or enter charging mode automatically. In charging mode, the screen and all other features turn off ([Charging the Battery, page 1](#)).


**TIP:** You can use this setting to keep the camera turned off while connected to power, especially when used with Auto Off enabled.

**Reset:** Restores the default settings. You can use the Settings option to clear all user data, or the Factory Reset option to restore all settings to the factory default values.

**Format Card:** Erases all data from the installed memory card ([Erasing Your Memory Card, page 13](#)).

**About:** Displays important software information and your unit ID.

#### Date and Time Settings

From the main menu, select  > **System** > **Date and Time**.

**Time Format:** Sets the device to show time in a 12-hour or a 24-hour format.

**Date Format:** Sets the device to show dates in a MM/DD/YY or a DD/MM/YY format.

**Time:** Sets the time manually or automatically based on your GPS position.

**Time Zone:** Sets the time zone for the device. When you set the time automatically, the time zone is set based on your GPS position.

**Daylight Saving:** Indicates whether daylight saving time is observed in your region. The Automatic option sets daylight saving automatically based on your GPS position.

#### Erasing Your Memory Card

#### NOTICE

Erased data cannot be restored.

You can erase all photos, videos, and other data on the memory card installed in your device.

From the main menu, select  > **System** > **Format Card** > **Yes**.

#### Viewing Regulatory and Compliance Information

From the system settings, select **Regulatory Info**.

### Display Settings

From the main menu, select Display.

**Viewfinder:** Sets the viewfinder mode ([Viewfinder Modes, page 13](#)).

**Screen Timeout:** Sets the length of time before the screen turns off and enters standby mode.

**Lock Screen:** Locks the touchscreen to prevent inadvertent screen touches.

**Brightness:** Adjusts the screen brightness.

#### Viewfinder Modes

You can use the viewfinder to set up shots, view status information, or view data from the device sensors. Sensor information appears as a grouping of data fields, charts, or graphs, and provides real-time and historical views of the sensor data recorded on the device.

From the main menu, select **Display** > **Viewfinder** > **Mode**.

**Preview:** Displays the camera viewfinder and provides additional options.

**Grid:** Turns on grid lines to frame and balance your shot in preview mode.

**Overexposure:** Highlights overexposed areas of the shot in preview mode.

**Speed:** Displays the current speed, average speed, and maximum speed.

**NOTE:** All minimum, maximum, and average data resets after you turn off the device.

**Distance:** Displays the total distance traveled.

**Elevation:** Displays the current elevation, elevation graph, and time scale.

### Device Care

#### NOTICE

Avoid chemical cleaners, solvents, and insect repellents that can damage plastic components and finishes.

Do not store the device where prolonged exposure to extreme temperatures can occur, because it can cause permanent damage.

## Cleaning the Device

### NOTICE

Do not use chemicals, alcohol, solvents, or other cleaners to clean the camera.

- 1 Wipe the outer casing and lens with a clean, dry, non-scratch, lint-free cloth.
- 2 If the dry cloth does not fully clean the camera, remove the camera battery, and lightly dampen the cloth with a small amount of water.

### NOTICE

The camera is not water resistant. Use only a very small amount of water. Verify the camera is off and the battery is removed before using a damp cloth to clean it. Avoid using a damp cloth near the ports and keys.

- 3 Allow the camera to dry fully before you replace the battery or turn it on.

## Caring for the Removable Camera Case

### NOTICE

Failure to perform proper care and maintenance may cause damage to the removable camera case or gasket and allow water to leak into the case during use. Exposing the camera to water will cause permanent damage to the camera and battery, which may present a risk of fire, chemical burn, electrolyte leak, and/or injury.

Do not expose the camera or battery to water or other liquids. These care instructions apply only to the removable camera case.

You must follow these steps after each use to help preserve the water protection, lens clarity, and mechanical functions of the removable camera case.

- 1 Remove the camera case from the camera.
- 2 Carefully remove the gasket from the camera case door.
- 3 Thoroughly rinse the camera case and gasket with fresh water.  
This is especially important when the camera case has been exposed to salt water, chlorine, or other chemicals. Extended exposure to chemicals may damage the case, including fogging of the case and lens, and corrosion of the hinge and latch materials.
- 4 Verify the gasket and gasket groove are free of debris.  
Even very small debris can prevent the gasket from sealing properly and compromise the waterproof seal.
- 5 Replace the gasket onto the camera case door, and verify the gasket is seated fully into the groove.
- 6 Allow the case to air dry.  
You should not dry the case or gasket with a cloth. Lint or debris from the cloth may compromise the waterproof seal.

## Support and Updates

Garmin Express™ ([garmin.com/express](http://garmin.com/express)) provides easy access to these services for Garmin devices.

- Product registration
- Product manuals
- Software updates
- Data uploads to Garmin Connect™

## Connecting the Device to Your Computer

Before you can connect the device to your computer, you may need to remove optional mount accessories.

- 1 Plug the small end of the USB cable into the USB port ① on the device.



- 2 Plug the large end of the USB cable into a computer USB port.
- 3 If the camera is off, hold **POWER** to turn on the camera.  
The camera enters USB mass storage mode. Your memory card appears as a removable drive in My Computer on Windows computers and as a mounted volume on Mac computers.

## File Types

The device supports or creates these file types.

File extension	Description
.jpeg	Photo file
.mp4	Full-resolution video file
.glv	Low-resolution video file (for on-device playback)
.thm	Video or photo thumbnail file
.fit	G-Metrix data file

## Specifications

Battery type	Rechargeable lithium-ion battery
Operating temperature range (battery power)	From -15° to 45°C (from 5° to 113°F)*
Operating temperature range (external power)	From -20° to 45°C (from -4° to 113°F)*
Charging temperature range	From 0° to 45°C (from 32° to 113°F)
Storage temperature range	From 0° to 25°C (from 32° to 77°F)
Input voltage	5 Vdc, 1 A
Radio frequency/protocol	2.4 GHz ANT+ wireless communications protocol Wi-Fi IEEE 802.11b/g/n at 2.4 GHz 2.4 GHz Bluetooth 4.0
Camera water rating	None**
Camera case water rating (with watersports door)	40 m**
Camera case water rating (with altimeter door)	IEC 60529 IPX7**

\*The operating temperature range is based on the default camera settings. Several factors may impact the operating temperature range, including the camera case, mount configuration, video settings, and Wi-Fi settings.

\*\*The camera does not withstand exposure to water or other liquids. When properly installed, the camera case with the watersports door withstands pressure equivalent to a depth of 40 m. When properly installed, the camera case with the altimeter door withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to [www.garmin.com/waterrating](http://www.garmin.com/waterrating).

## Troubleshooting

### My camera does not turn on

- If the camera is connected to external power and the top status LED is either off or solid red, hold **POWER** to turn on the camera.

The camera does not turn on automatically when connected to external power. When the top status LED is solid red, the camera is in charging mode. When the top status LED is off, the battery is fully charged, and the camera is off.

- Verify the battery is installed correctly (*Installing the Memory Card and Battery, page 1*).
- Fully charge the battery (*Charging the Battery, page 1*).

## My camera feels warm while it is operating

It is normal for the camera to feel warm during typical use, especially while it is recording high-resolution video or transmitting a Wi-Fi signal.

## There is fog, mist, or water inside the camera case

When using the camera case in water or in humid environments, it is normal for some fog to form inside the case, especially after the camera has been in use for an extended time. The presence of fog or mist on the inner surfaces of the camera case does not indicate the case has a water leak.

- To help reduce fogging inside the camera case or on the camera lens, install an anti-fog desiccant pack (*Installing an Anti-Fog Desiccant Pack, page 3*).
- If a larger amount of water is present in the case, stop using it immediately, and check the gasket for damage or debris (*Caring for the Removable Camera Case, page 14*).

## Some G-Metrix data is missing

Some G-Metrix data requires you to enable or pair sensors, or use specific accessories. Some G-Metrix data may not be available for all recording situations or when you are not recording video.

- Install the altimeter door on the camera case to record more accurate elevation and grade data, and additional G-Metrix data, including jump height and vertical speed (*Camera Case, page 3*).
- Enable GPS (*System Settings, page 13*), and go to an area with a clear view of the sky.  
Location, speed, distance, and altitude data require a GPS signal.
- Connect additional ANT+ sensors (*Pairing ANT+ Sensors, page 12*).

Some data is available only when a compatible ANT+ sensor is connected.

## My video recordings do not look smooth

- If video recordings appear shaky, from the main menu, select **Video > Stabilizer** to enable image stabilization.
- If video recordings stutter or skip frames, install a recommended, high-speed memory card.

For more information about recommended memory cards, go to [garmin.com/VIRBcards](http://garmin.com/VIRBcards).

- Verify your playback device or software is capable of playing the video smoothly.

For example, if your video has 4K resolution, verify the playback device or software is capable of playing 4K video.

- Transfer the video to your computer or playback device.

Some memory card readers do not read data quickly enough to play high-resolution video directly from the memory card.

- Use the VIRB Edit application to play and edit video.

Go to [garmin.com/VIRBEdit](http://garmin.com/VIRBEdit) to download the VIRB Edit application.

## My device turns off when I stop recording video

If you turn on the device by moving the recording switch forward, the device turns off when you move the recording switch backward. This allows you to maximize battery life by turning off the device when it is not recording (*Turning the Camera On and Off Using the Recording Switch, page 2*).

## Extending the Battery Life

- Disable Wi-Fi.
- Enable **Auto Off** in the system settings (*System Settings, page 13*).
- Turn the device on and off using the recording switch (*Turning the Camera On and Off Using the Recording Switch, page 2*).
- Use automatic recording (*Video Settings, page 4*).
- Disable ANT+ and Wi-Fi **Remote Wake Up** when not in use.
- Reduce the screen brightness (*Display Settings, page 13*).

# Appendix

## Software License Agreement


BY USING THE DEVICE, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY.

Garmin Ltd. and its subsidiaries (“Garmin”) grant you a limited license to use the software embedded in this device (the “Software”) in binary executable form in the normal operation of the product. Title, ownership rights, and intellectual property rights in and to the Software remain in Garmin and/or its third-party providers.

You acknowledge that the Software is the property of Garmin and/or its third-party providers and is protected under the United States of America copyright laws and international copyright treaties. You further acknowledge that the structure, organization, and code of the Software, for which source code is not provided, are valuable trade secrets of Garmin and/or its third-party providers and that the Software in source code form remains a valuable trade secret of Garmin and/or its third-party providers. You agree not to decompile, disassemble, modify, reverse assemble, reverse engineer, or reduce to human readable form the Software or any part thereof or create any derivative works based on the Software. You agree not to export or re-export the Software to any country in violation of the export control laws of the United States of America or the export control laws of any other applicable country.

## Symbol Definitions

These symbols may appear on the device or accessory labels.

	WEEE disposal and recycling symbol. The WEEE symbol is attached to the product in compliance with the EU directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE). It is intended to deter the improper disposal of this product and to promote reuse and recycling.
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