

SAMSUNG

SM-R260

User Manual

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Basics

About the 360 Round

The 360 Round camera records high quality 360-degree videos and broadcasts videos in real time. You can record high-quality 360-degree 2D or 3D 4K videos with 17 cameras, and 3D sound with 6 internal microphones.

Save high-quality 4K videos after stitching, or broadcast high-quality 4K videos in real time. Enjoy virtual reality on VR devices recorded on the 360 Round.



Read me first

Please read this manual before using the 360 Round to ensure safe and proper use.

- Images may differ in appearance from the actual product. Content is subject to change without prior notice.
- Before using the 360 Round make sure they are compatible with your 360 Round.
- This product includes certain free/open source software. To see the instructions for viewing the open source licence, go to the Samsung website opensource.samsung.com.

Maintaining water and dust resistance

Your 360 Round supports water- and dust-resistance. Follow these tips carefully to maintain the water- and dust-resistance of your 360 Round. Failure to do so may result in damage to your 360 Round.

- To use the waterproof feature, attach the power adapter and LAN cable to the waterproof adapter. Close the cover of the external microphone jack, memory card slot, and multipurpose jack, and then lock the cover switches.
- If the 360 Round is not dried thoroughly, the sound may not record correctly. Dry the 360 round thoroughly before recording video.
- When you attach an external microphone, the waterproof feature may not be supported.
- If you are using the 360 Round while it is connected to an SSD and external battery, the waterproof feature is not available.
- Do not expose the 360 Round to a jet of water, rainwater, etc for more than 3 minutes.
- Do not expose the 360 Round to **water moving with force**, such as running water from taps, ocean waves, or waterfalls.
- Do not immerse the 360 Round in fresh water deeper than 5 ft or keep it submerged for more than 30 minutes. If you immerse the 360 Round in any liquid other than fresh water, such as salt water, ionized water, or alcoholic beverage, liquid will enter the 360 Round faster.
- When the 360 Round or your hands are wet, dry them thoroughly before using the 360 Round.

- If the 360 Round is exposed to fresh water, dry it thoroughly with a clean, soft cloth. If the 360 Round is exposed to other liquids, such as salt water, swimming pool water, soapy water, oil, perfume, sunscreen, hand cleaner, or chemical products such as cosmetics, rinse it with fresh water and dry it thoroughly with a clean, soft cloth. If you do not follow these instructions, the 360 Round's performance and appearance may be affected.
- **If the 360 Round is dropped or impacted**, the water- and dust-resistant features of the 360 Round may be damaged.
- The power adapter has no waterproof feature. Although, the barrel connector interface can be protected by the waterproof adapter, the power adapter included in the box has no waterproof characteristics.
- **Your 360 Round has been tested in a controlled environment and certified to be water- and dust-resistant in specific situations (meets requirements of classification IP65 as described by the international standard IEC 60529-Degrees of Protection provided by Enclosures [IP Code]; test conditions: Water jet nozzle, flow rate (12 L/min), at least 3 minutes). Despite this classification, it is still possible for your 360 Round to be damaged in certain situations.**

Instructional icons



Warning: situations that could cause injury to yourself or others



Caution: situations that could cause damage to your 360 Round or other equipment



Notice: notes, usage tips, or additional information

Package contents

Check the products inside the hard case.

- 360 Round
- Power adapter
- Waterproof adapter (2 included)
- Quick start guide



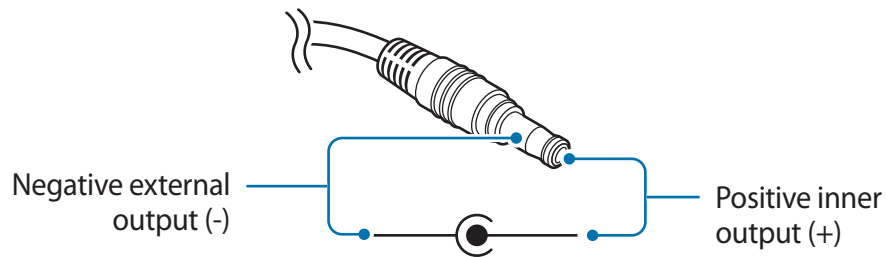
- The items supplied with the 360 Round and any available accessories may vary depending on the region or service provider.
- The supplied items are designed only for this 360 Round and may not be compatible with other devices.
- Appearances and specifications are subject to change without prior notice.
- You can purchase additional accessories from the Samsung website. Make sure they are compatible with the 360 Round before purchase.
- Use only Samsung-approved accessories. Using unapproved accessories may cause the performance problems and malfunctions that are not covered by the warranty.
- Availability of all accessories is subject to change depending entirely on manufacturing companies. For more information about available accessories, refer to the Samsung website.
- Always keep the 360 Round inside the hard case when it is not in use. If the cameras are scratched or damaged, the video's quality may be reduced.

Required specification

Preparation material	Required specification
Memory card	<ul style="list-style-type: none"> • UHS II U3 Read 150 MB/s • Write speed 80 MB/s or more • Maximum supported: Up to 512 GB
Tripod	<ul style="list-style-type: none"> • Connected screw: 0.4 inch • Bearing weight: 2 lb • Minimum height: 5 ft
LAN cable	<ul style="list-style-type: none"> • Cat 6a, 0.2 inch in diameter and under 328 ft long
Computer (for stitching)	<ul style="list-style-type: none"> • Operating system: Windows 10 Professional or above, 64 bit • CPU: Intel Core i7-6700 K or above • Graphic card: NVIDIA: GTX 1080 1 each or more or GTX 1060 6 GB Memory 1 each or more • RAM: 16 GB DDR4 RAM 1 each or more • Power: 850 W
Computer (for preview and Live stream)	<ul style="list-style-type: none"> • Operating system: Windows 10 Professional or above, 64 bit • CPU: Intel Core i7-6950 X or above • Graphic card: NVIDIA: GTX 1080 Ti 2 each or more • RAM: 32 GB DDR4 RAM 2 each or above • Power: 1,200 W
Computer (when using the laptop for recording and previewing videos in Source view mode)	<ul style="list-style-type: none"> • CPU: i7 4700HQ 2.4 GHz or above • Graphic card: NVIDIA GeForce feature SET D above (GT 750 : 2 fps, GeForce 820 M 2 fps, GeForce GTX 1060 30 fps)
Power adapter	<ul style="list-style-type: none"> • Input: 100-240 VAC, 50-60 Hz • Output: 19 VDC, 2.1 A

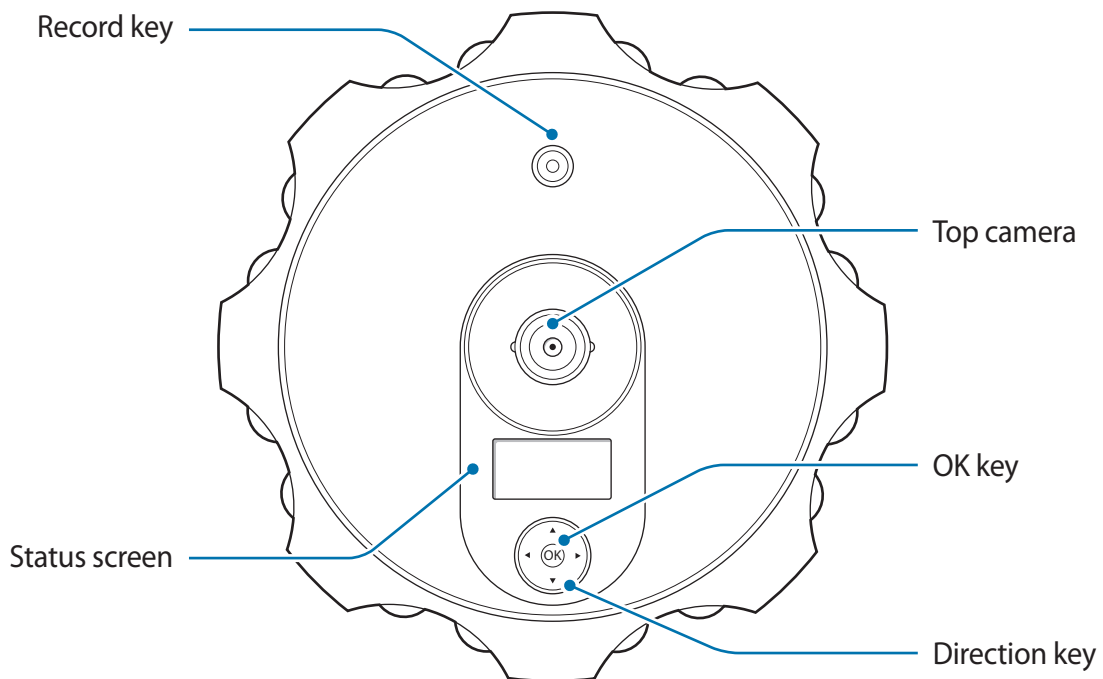


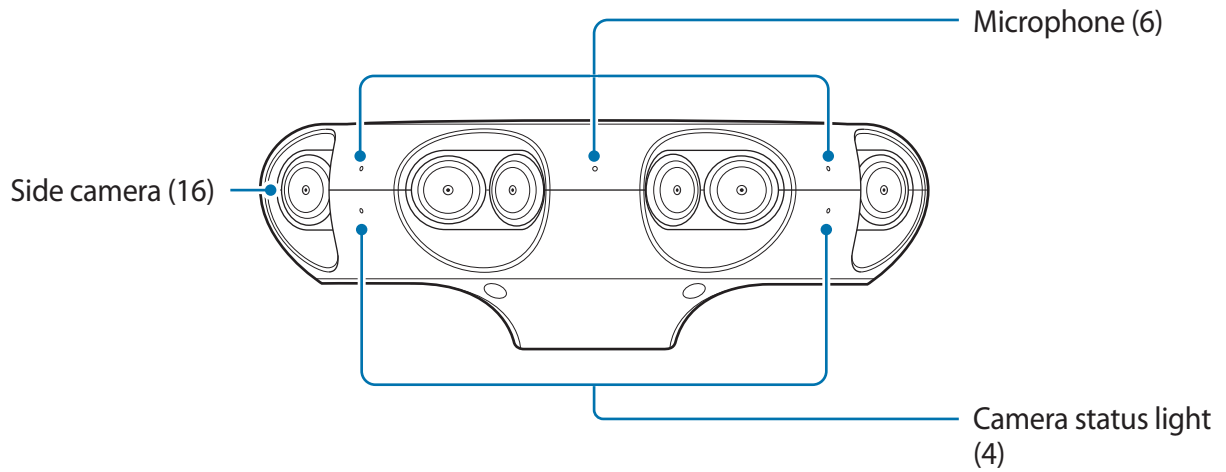
- Requirement except the power adapter are sold separately. Only use power adapters which have a power connector with a positive inner output and a negative external output. If the reverse is used, the 360 Round may be damaged.



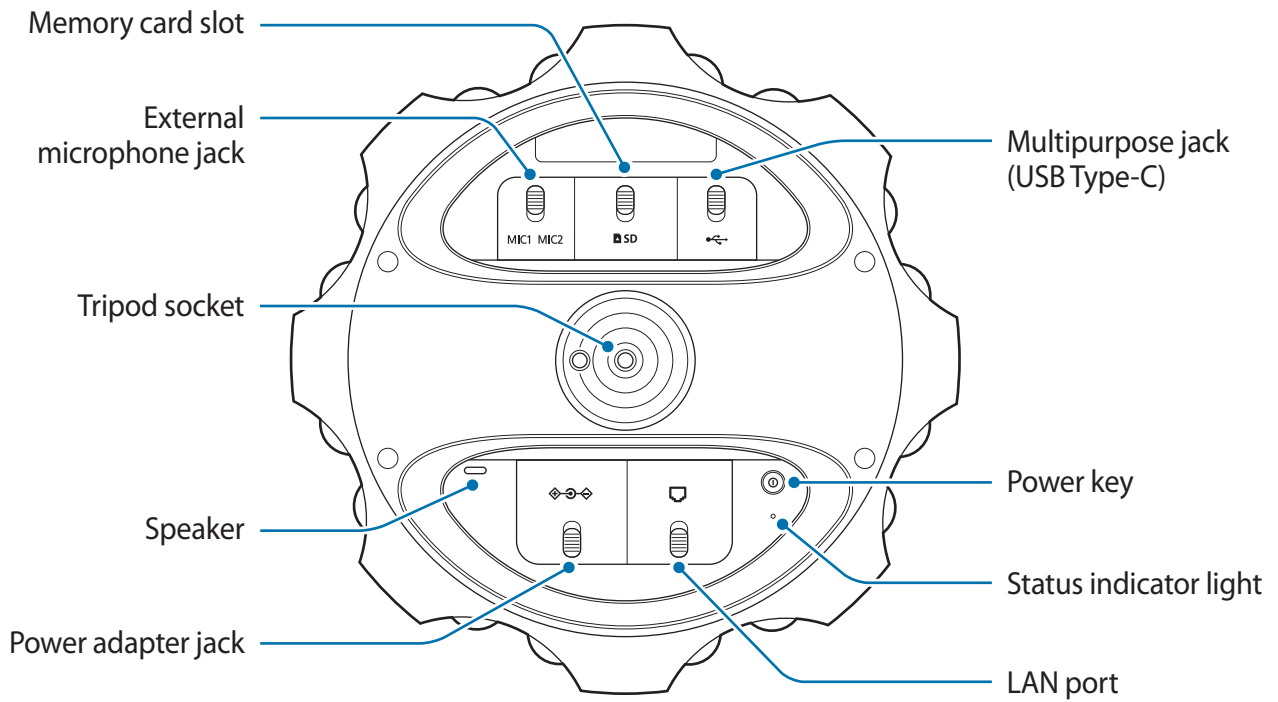
- The above requirements are the minimum required for using the 360 Round. If your computer does not meet the minimum specifications, some features may be restricted.

Device layout









When you use the 360 Round and record the video for a long time, wipe the lens periodically.



Keys

Key	Function	
 Power	<ul style="list-style-type: none"> • Press and hold to turn the 360 Round on or off. 	
 Record	<ul style="list-style-type: none"> • Start or stop recording a video. 	
	Up	<ul style="list-style-type: none"> • Move to the above option.
	Down	<ul style="list-style-type: none"> • Move to the below option. • Press and hold to lock or unlock the keys.
	Left	<ul style="list-style-type: none"> • Move to the previous step.
	Right	<ul style="list-style-type: none"> • Access the settings menu or move to the next step.
 OK	<ul style="list-style-type: none"> • Select an option. 	



Lock the keys by pressing and holding the Down key to prevent changing the settings by accident.

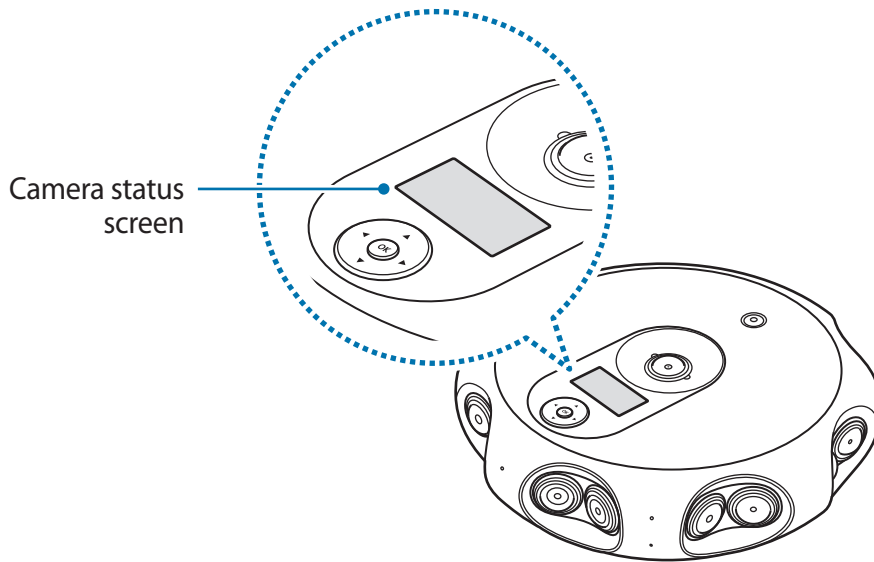
Status indicator light and camera status light

You can check the recording status of the 360 Round through the camera status light, and check the current status through the status indicator light.

Color	Status
Status indicator light flashes blue three times	<ul style="list-style-type: none">• Power on• Successfully formatting a memory card or resetting the 360 Round
Status indicator light flashes blue	<ul style="list-style-type: none">• Transferring data• Updating software• Formatting a memory card
Status indicator light flashes red three times	<ul style="list-style-type: none">• Power off
Status indicator light flashes red	<ul style="list-style-type: none">• Error occurred• Overheating
Camera status light flashes red	<ul style="list-style-type: none">• Recording videos

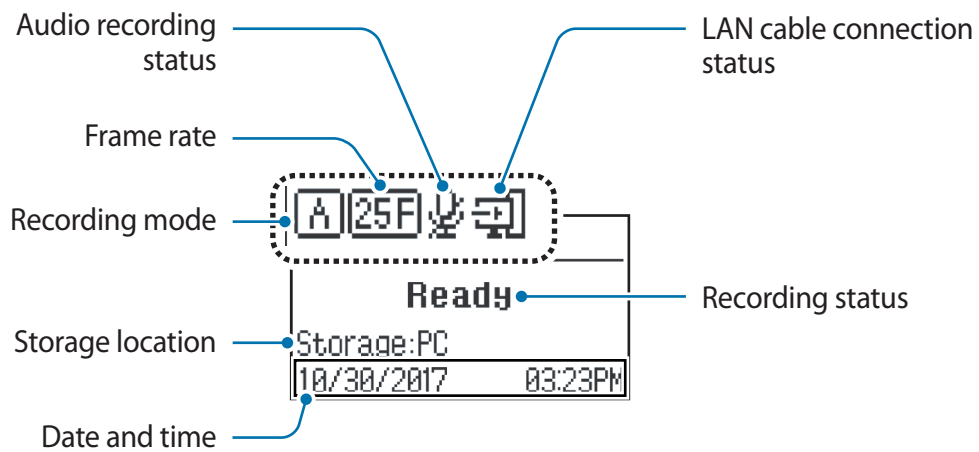
Camera status screen















Access menus, such as camera modes and connection modes, and view the 360 Round's status via messages and indicator icons on the camera status screen.



Indicator icons

Indicator icons appear on the camera status screen. You can check the 360 Round's status on the camera status screen.



Icon	Meaning
	Video saved to memory card
	Video saved to SSD
	Set to automatic recording mode (Aperture priority mode)
	Set to manual recording mode (Manual mode)
	Frame rate
	Can not record audio
	Timer set
	Memory card full
	No memory card
	Memory card recognition error
	LAN cable connected
	Temperature abnormality
	Moisture detected on multipurpose jack
	Connected to a computer

Memory card

Installing a memory card

A memory card must be inserted to record videos. Depending on the memory card manufacturer and type, some memory cards may not be compatible with your 360 Round.

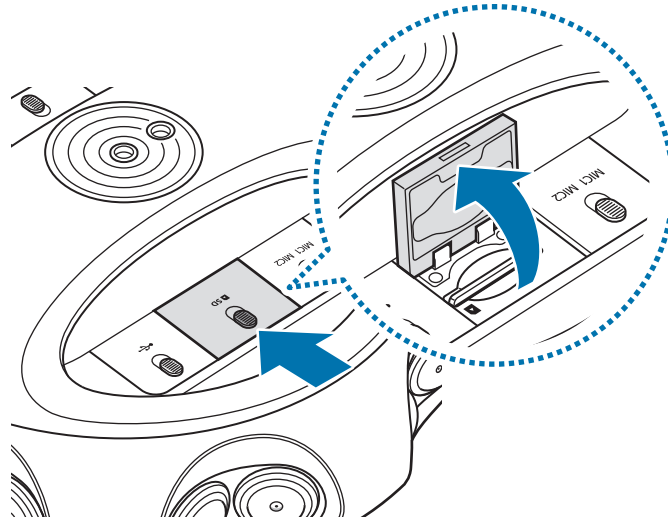


- Some memory cards may not be fully compatible with the 360 Round. Using an incompatible card may damage the 360 Round or the memory card, or corrupt the data stored in it.
- If you use a slow writing memory card, the recording of your video can be interrupted because the card cannot process data at the rate the video is being shot. Replace the card with a faster memory card.
- Use caution to insert the memory card right-side up.



- The 360 Round only supports memory cards using the exFAT file structure. Refer to [Required specification](#) for required memory card specifications.
- Memory cards are sold separately. Before purchasing a memory card, be sure to check the specifications of the memory card and purchase a memory card that supports the required specifications or above.
- If you insert or remove a memory card while the 360 Round is turned on, the power may automatically turn off. To use the 360 Round, turn it on again.
- Frequent writing and erasing of data shortens the lifespan of memory cards.
- When a memory card is not inserted, **No media** is displayed on the camera status screen.

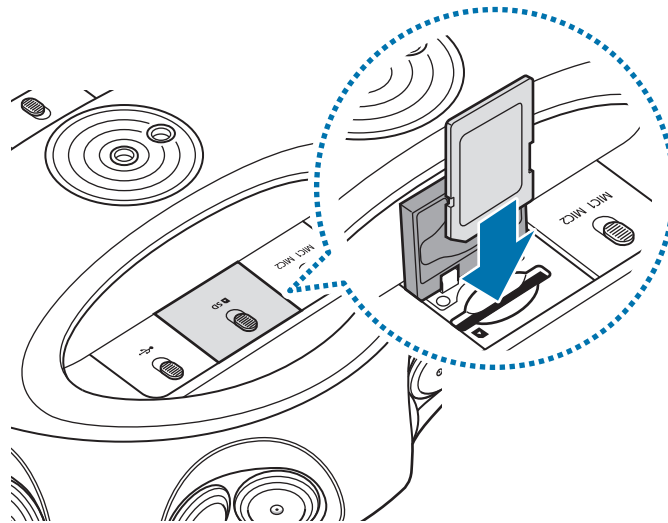
- 1 Unlock the memory card slot switch to open the memory card slot cover.



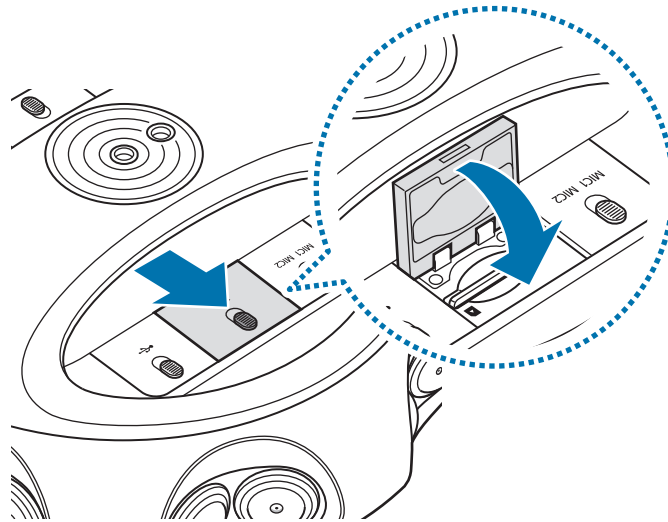
- 2 Insert the memory card into the memory card slot until it clicks into the place.



Be careful not to damage your fingernails when you insert the memory card.



- 3 Close the memory card slot cover and lock the slot cover switch.



Removing the memory card

- 1 Unlock the memory card slot switch to open the memory card slot cover.
- 2 Gently push the memory card in and pull out the removed memory card completely.
- 3 Close the memory card slot cover and lock the slot cover switch.

Formatting the memory card

You can format the memory card on the 360 Round or computer.



Before formatting the memory card, remember to make backup copies of all important data stored in the memory card. The manufacturer's warranty does not cover loss of data resulting from user actions.

On the 360 Round program



Connect the 360 Round and your computer with a LAN cable before formatting the memory card on your computer.

- 1 Launch the **360 Round** program on your computer.
- 2 Click **Device** tab → **Manage files** → **Format** → **OK** on the control panel.
The memory card will be formatted.

On the 360 Round

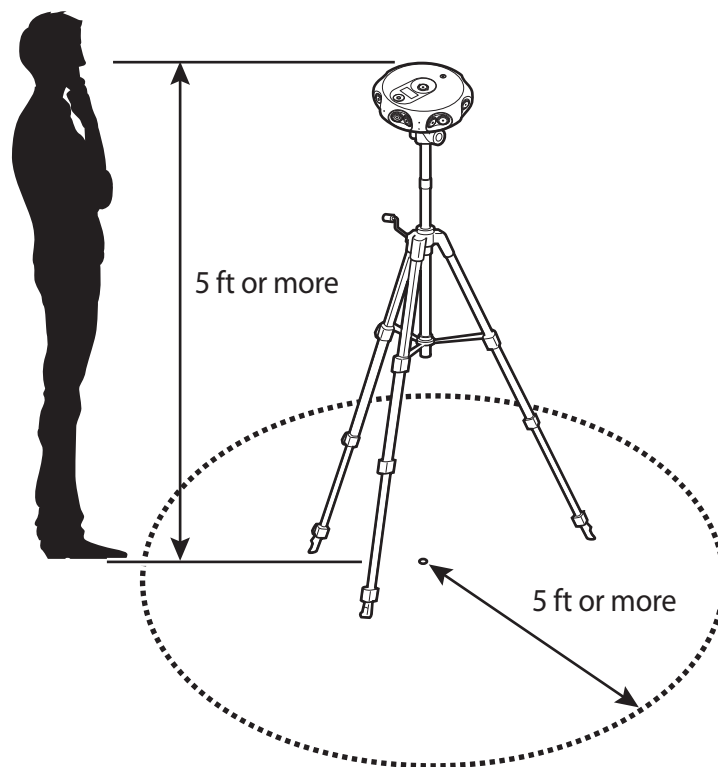
- 1 Press the Right key on the 360 Round to access the settings menu.
-
- If the 360 Round is connected to the computer with a LAN cable, you can not enter the settings menu. Remove the LAN cable before formatting the memory card on the 360 Round.
- 2 Press the Down key until **Manage files** appears on the camera status screen and press the OK key.
 - 3 Select **Format storage** → **OK** and press the OK key.
When formatting is complete, the completion message appears on the camera status screen.

Installing the 360 Round

Attach a tripod on the 360 Round and place it on a flat area. Connect the 360 Round to your computer via a LAN cable to control the 360 Round from your computer.

Installation tips

- Set up the 360 Round and tripod securely on a flat area so that they do not topple over.
- Keep a minimum distance of at least 5 ft between the 360 Round and the subject, otherwise the recorded video may appear to be unnatural.
- Install the 360 Round a minimum distance of at least 5 ft above ground, and at least 5 ft under a ceiling.



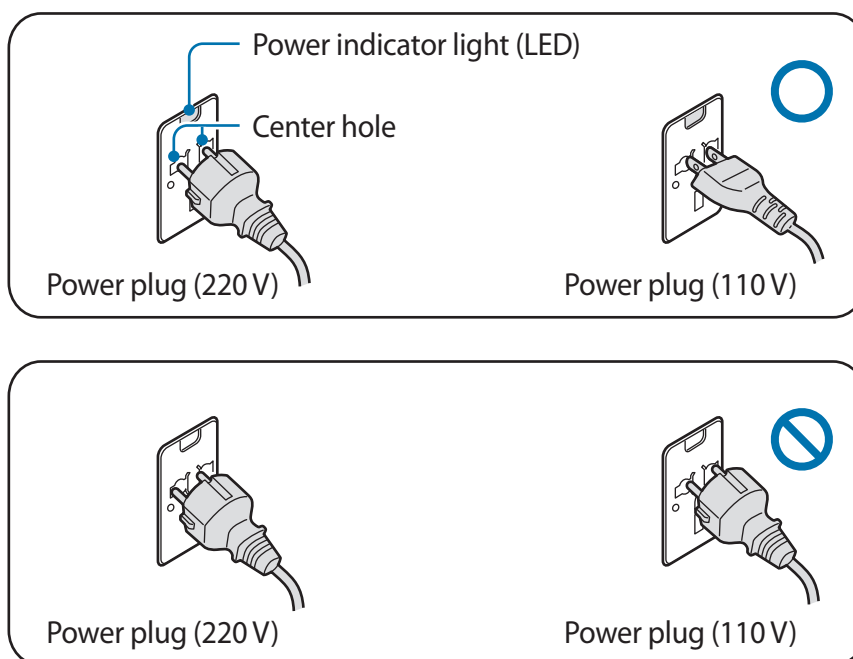
- If the 360 Round is tilted vertically or rotated while recording, the recorded video may appear to be unnatural.
- If you use the 360 Round in a dark location, the recommended ambient brightness should be at least 100 lx.

- Move any objects you do not want in the shot, such as the computer and other recording equipment, out of the 360 Round's view.
- If you install the 360 Round outdoors, be sure to place the power adapter in a waterproof power box as it is not waterproof.

Caution when using an AC power terminal

Connect the power plug pin vertically into the center hole of the power terminal.

- **If you do not connect the plug pin directly into the center hole**, it will not be correctly connected. Reconnect the plug pin until it fits correctly into the center hole.



- **Connect the power plug to the power terminal when the power indicator light (LED) flashes green.** The power indicator light (LED) flashes green when it is correctly connected. If the power plug is connected incorrectly, the power indicator light (LED) will turn off. Disconnect the plug and check the power indicator light (LED) is on, and then reconnect.

Using as a stationary 360 Round

- 1 Insert the tripod into the 360 Round's tripod socket.
- 2 Connect the LAN cable to the 360 Round's LAN port and to the computer's LAN port.
- 3 Plug the power adapter into the 360 Round's power adapter jack, and into an electric socket.
- 4 Set up the tripod upright.



- The LAN cable and tripod are sold separately. Set up the tripod so it is not included in the frame when you are shooting a video.
- If the length of the LAN cable that connects the 360 Round and the computer is more than 328 ft, using an optic LAN converter is recommended.
- Avoid high-voltage electronics when installing the LAN cable.

Setting the IP address

After connecting the 360 Round with your computer, you have to set the IP address to make the 360 Round work with your computer properly.

- 1 On your computer, launch the **Control Panel**.
- 2 Click **Network and Internet** → **Network and Sharing Center** → **Change adapter settings**.
- 3 Right-click the network adapter connected to your 360 Round with the mouse's right button and click **Properties**.
- 4 Select **Internet Protocol Version 4 (TCP/IPv4)** → **Properties**.

5 Select **Use the following IP address** and set the IP address to what is shown below, and then click **OK**.

- **IP address:** 192.168.0.2 - 192.168.0.255



- The 360 Round's default IP address has 100 as the last three numbers.
- Do not enter the same IP address as the second network's IP address which is automatically assigned.

- **Subnet mask:** 255.255.255.0

- **Gateway:** 192.168.0.1

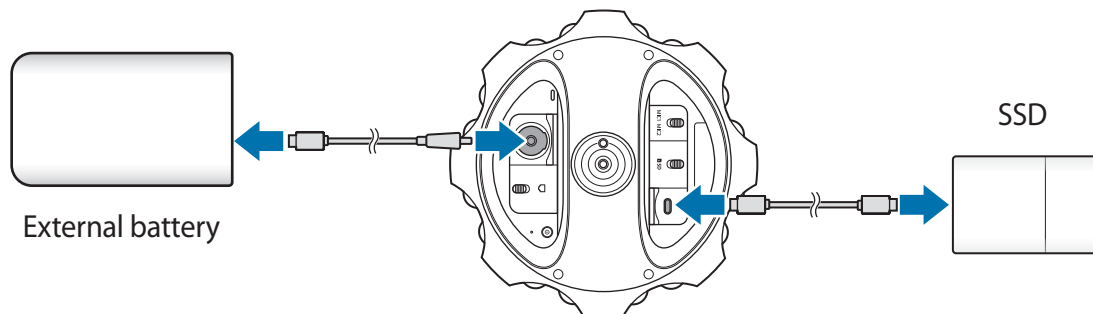


If the 360 Round's IP address has changed in the 360 Round program, set your computer's IP address to connect to the 360 Round's IP address.

Using as a portable 360 Round

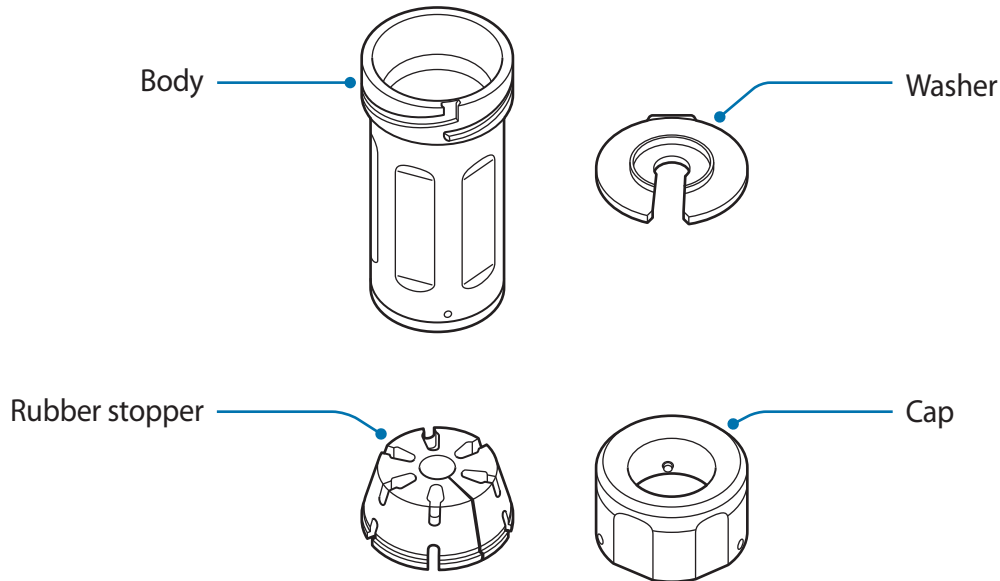
Insert a UHS II SD card or connect an SSD, and connect the external battery to use the 360 Round without connecting it to your computer and power adapter.

Connect the SSD to the multipurpose jack and connect the external battery to the power adapter jack. You can control the 360 Round using the 360 Round's keys.



Use either a 12 V, 16 V or 19 V standard external battery of 2 A or more. The 360 Round may not work correctly if you use a non-standard external battery.

Waterproof adapter



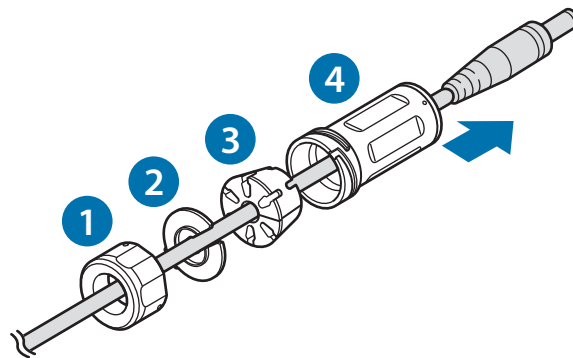
Two rubber stoppers are provided with the 360 Round, the rubber stopper with the small hole is fitted to the power adapter jack, and the rubber with the large hole is fitted to the LAN cable. Use the appropriate rubber stopper. If you cannot distinguish the sizes, check the imprint under each rubber stopper.



Using the waterproof adapter

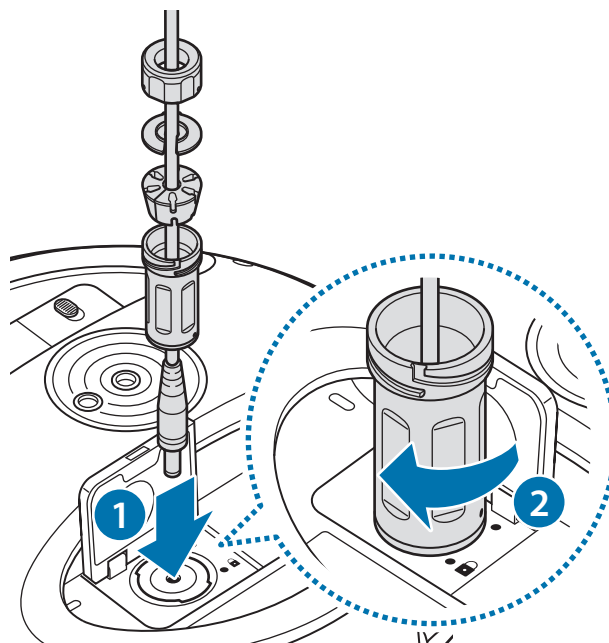
To use the waterproof feature, each waterproof adapter must be attached to the supplied power adapter and to the LAN cable (Cat 6a, 0.2 inch in diameter and under 100 m long, sold separately).

- 1 Twist the cap of the waterproof adapter to remove the cap, washer and rubber stopper.

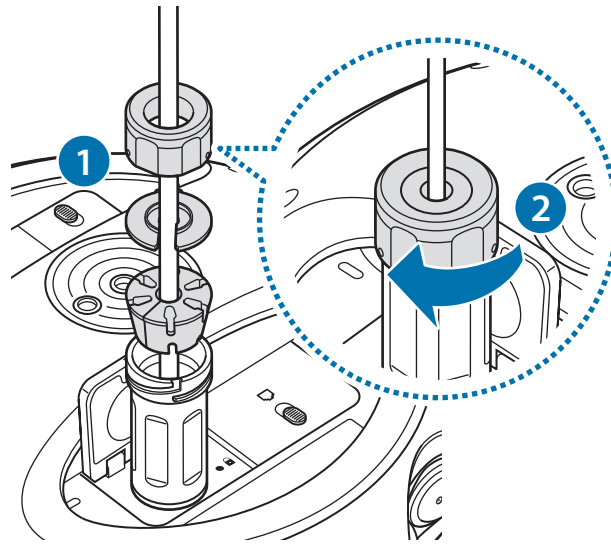
- 2 Attach the cap, washer, rubber stopper and body respectively to the connecting cable.



- 3 Connect the cable to the 360 Round and align the white dot located on the bottom of the waterproof adapter's body with the  in the port compartment on the 360 Round. Turn the waterproof adapter in the direction of the  to securely lock it to the 360 Round until it clicks.



- 4 Insert the rubber stopper and washer in order into the body and turn the cap to lock until it clicks.



- Make sure that the waterproof adapter has been locked in the right order and in the correct direction. If there is a space between the rubber stoppers, the power adapter cable, and the LAN cable, the waterproof adapter may not work correctly.
- If the power adapter and the LAN cable are very thin or thick, or if you use non-standard cables, the waterproof adapter may not work. Samsung recommends using a power adapter cable 0.1 inch in diameter and a LAN cable 0.2 inch in diameter.
- Be careful to not allow the power adapter, which is not water resistant, to come into contact with water.
- Do not touch the 360 Round, power cable, plug and socket with the wet hands or other body parts. The 360 Round may be damaged or you may be affected by electricity.

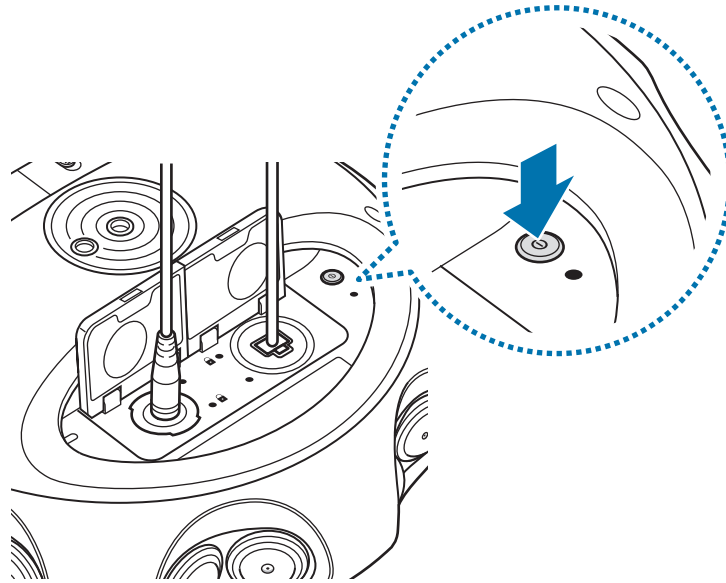
Turning the 360 Round on and off

Press and hold the Power key to turn on the 360 Round.

Indicator light flashes blue three times.

To turn off the 360 Round, press and hold the Power key again.

Indicator light flashes red three times.



- When the 360 Round is connected to your computer, you can turn the 360 Round on and off via the 360 Round program.
- You can set the power to turn off automatically when the 360 Round is not used for a certain period of time. The power off time can be selected from the **Auto power off** setting menu. Refer to [System settings](#) for more information.
- Follow all posted warnings and directions from authorized personnel in areas where the use of wireless devices is restricted, such as airplanes and hospitals.

Restarting the 360 Round

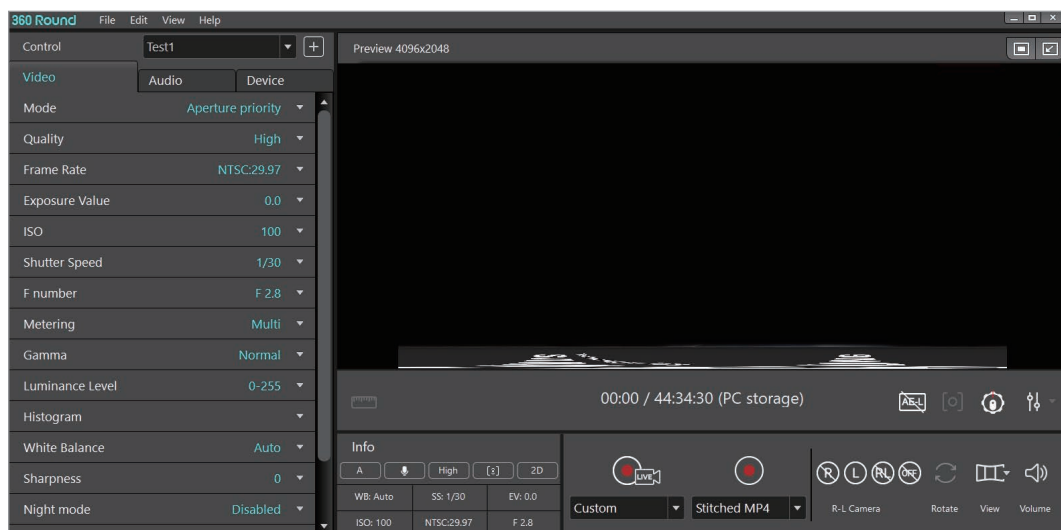
If your 360 Round is frozen and unresponsive, disconnect the power cable and reconnect it. Press and hold the Power key to restart it.

Using the 360 Round program

Learning more about 360 Round program

By using the 360 Round program, you can record videos or stream a live broadcast on your computer.

After configuring the 360 Round's settings, record videos or start to broadcast videos in real time.



The 360 Round program screen recording 360-degree video

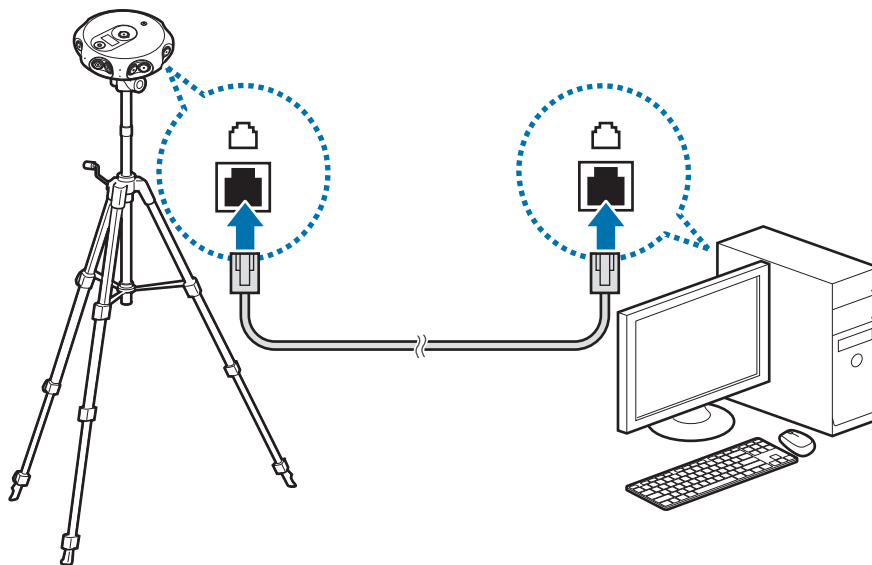
Installing and launching the 360 Round program

1 Download the 360 Round program from www.samsung.com/us/business.



When the pop-up window that prompts you to restart the computer while downloading the program appears, turn off the computer and turn it on again. If not, the program may not be installed properly.

2 Connect the 360 Round to the computer with the LAN cable while the power adapter is connected.

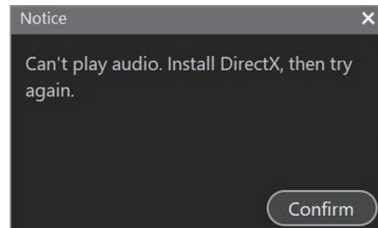


3 Press and hold the Power key to turn on the 360 Round.

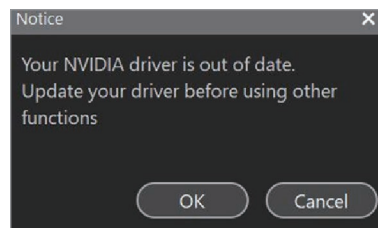
4 Launch the **360 Round** program on your computer.



- When the pop-up window that install the DirectX program appears, install the DirectX program to play the 5.1 ch audio.



- Allow the programs to launch through the Windows Firewall. On your computer, launch the **Control Panel**, click **System and Security** → **Windows Firewall** → **Allow an app or feature through Windows Firewall** → **Change settings**, and then select both **Private** and **Public**. Then, select **360 round** → **OK**.
- When the pop-up window about slow network speed appears, refer to [Error message](#) to solve the problem.
- When the pop-up window notifies you to update your graphic card driver, install the latest graphic card driver on your computer.



Recording videos

Introduction

You can record a 360-degree video in 2D or 3D format with 17 cameras. You can also record videos using the 360 Round solely, or connect it to a computer and record using various functions.

Camera etiquette

- Do not record videos of other people without their permission.
- Do not record videos where legally prohibited.
- Do not record videos in places where you may violate other people's privacy.

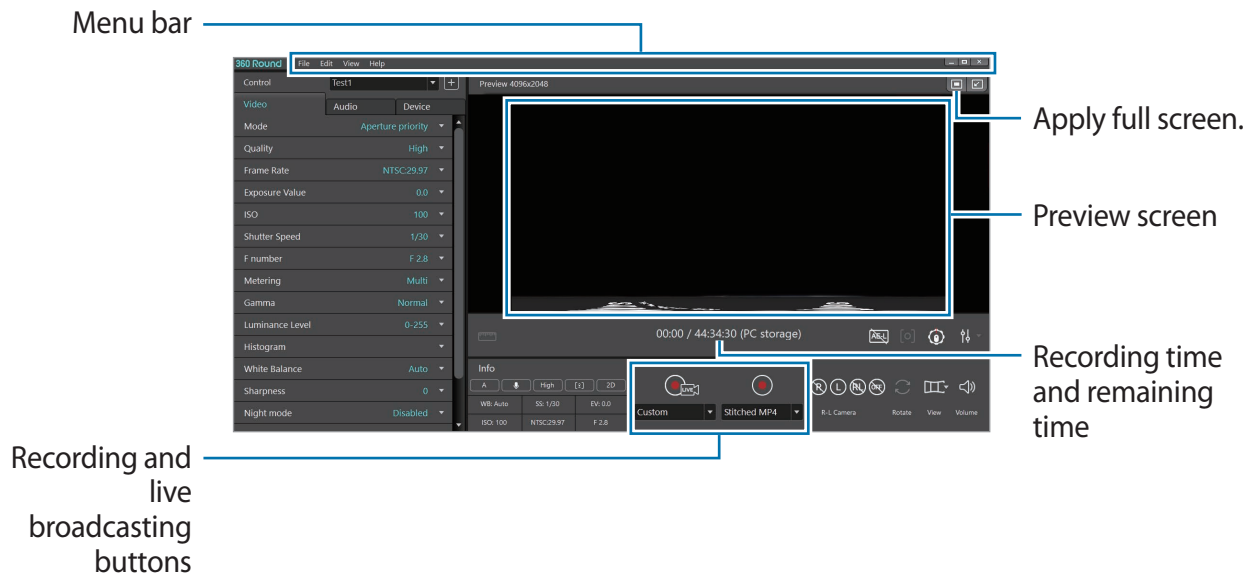
Tips for getting the best shots

- Make sure that the cameras are clean before recording video and avoid touching the lenses while capturing videos.
- Installing the 360 Round on a tripod is recommended to prevent the 360 Round shaking.
- Do not disconnect the 360 Round from the LAN cable while transferring files. The 360 Round and data may be damaged.
- The 360 Round stops recording video or turns off automatically if the temperature rises above a certain level when it has been used for extended periods. In this case, turn it off and wait until it has sufficiently cooled.

Recording videos using a computer

Use your computer as a viewfinder to record videos. You can check and change video settings during a recording.


- 1 Launch the **360 Round** program on your computer.



- 2 Click **Device** tab → **Storage** on the control panel and select a location to save videos to. You can select **PC** and save videos to your computer or select **Camera** and save videos to the 360 Round's memory card.



A memory card must be inserted into the 360 Round storage if **Camera** is selected as the storage location.

- 3 Configure camera settings on the control panel of the program.
- 4 Click ▼ under  and select the recording format.
 - **Stitched MP4**: You can record 2D or 3D videos in **Panoramic view** mode.
 - **RAW SLS**: You can record 3D videos in **Source view** mode and also record original videos that are not stitched.
 - **MP4 + SLS**: You can record 2D or 3D videos and the videos will be saved both as a stitched MP4 and a RAW SLS file.

5 Click ▼ under  and select **Settings**.

6 Configure the video settings if needed on the settings window.

- **Program settings**

- **General:** Configure the basic settings, such as the storage folder, stitching options, and SDI output options.




Select the **Stabilizer** option to correct the video if the video recording was tilted due to your 360 Round not being set on a flat surface. Also, you can reduce shaky video resulting from the 360 Round shaking during recording with this feature.

- **Stitched recording:** Configure the settings for the recorded video, such as the file format or the video or audio codec.
- **Live broadcasting:** Configure the settings when you start the live broadcasting.
- **GPU selection:** Select which GPU to use for various actions.
- **Preference:** Specify preferences for using the 360 Round, such as storage and view mode.

- **Device settings**

- **Camera Device:** Configure the 360 Round settings.
- **IP address/Subnet mask/Gateway:** Enter the information to change the IP address settings.
- **Connected Camera:** View the 360 Round list connected to your computer. You can select the camera you want to use when two or more 360 Rounds are connected to your computer at once.

7 Click **Stitched recording**, enter information, and then select **OK**.

8 Click  to record a video.

The preview screen will appear on the computer. At the same time, **Recording** will appear on the status screen of your 360 Round and the camera indicator light will blink red.

To zoom in or out while recording video, click **View** → **Zoom** → **Zoom in** or **Zoom out** on the menu bar.

9 Click  to finish recording video.

The camera status light will turn off and the recorded video will be saved to the location that you selected automatically. If you select **PC** as the storage location, you can check where the video will be saved by clicking **View** → **Open storage folder** on the menu bar.



- The 360 Round stops recording video or turns off automatically if the temperature rises above a certain level when it has been used for extended periods. In this case, turn the 360 Round off and wait until it has cooled.
- The 360 Round has been developed for content production and can not be used for security such as CCTV. Do not use it outdoors for more than 12 hours continuously. Doing so may affect the life and performance of the 360 Round and may cause errors when recording videos.



- When connecting to a computer, the keys on the 360 Round will not work.
- To change the storage location, click **Device** tab → **Storage** → **PC** or **Camera** on the control panel. When **Camera** is selected as the storage location, it changes to **Source view** mode.
- A slight difference in time may occur between the actual subject movement and the subject movement on the preview screen.

Recording videos using a laptop

If you do not have a computer for stitching, you can use a laptop to preview the recording video and control the camera with a laptop.



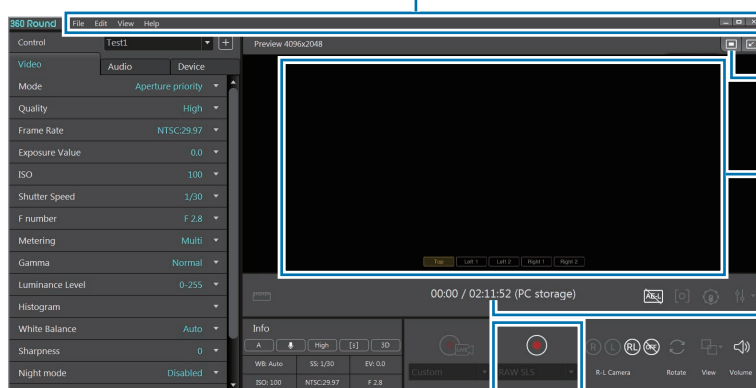
- Refer to [Required specification](#) for laptop specifications.
- Some features may be disabled when using the laptop.
- A memory card must be inserted into the 360 Round to record videos.

1 Launch the **360 Round** program on your computer.



If you use a laptop, you can only use **Source view** mode.

Menu bar



Apply full screen.

Preview screen

Recording time and remaining time

Recording button

2 Click **Device** tab → **Storage** on the control panel and select a location to save videos to.

You can select **PC** and save videos to your computer or select **Camera** and save videos to the 360 Round's memory card.



A memory card must be inserted into the 360 Round if **Camera** is selected as the storage location.

3 Configure camera settings on the control panel of the program.


4 Click **Edit** → **Settings** to configure the video settings if needed.

- **Program settings**

- **General:** Configure the basic settings, such as the storage folder, stitching resolution, and calibration interval.
- **GPU selection:** Select which GPU to use for various actions.
- **Preference:** Specify preferences for using the 360 Round, such as storage and view mode.

- **Device settings**

- **Camera Device:** Configure the 360 Round settings.
- **IP address/Subnet mask/Gateway:** Enter the information to change the IP address settings.
- **Connected Camera:** View the 360 Round list connected to your computer. You can select the camera you want to use when two or more 360 Rounds are connected to your computer at once.

5 Click  to record a video.

The preview screen will appear on the computer and **Recording** will appear on the status screen of your camera. The camera indicator light will blink red.

To zoom in or out while recording video, click **View** → **Zoom** → **Zoom in** or **Zoom out** on the menu bar.



If you select **Camera** as the storage location, the preview screen and zoom menu will not be available.

6 Click  to finish recording video.

The camera status light will turn off and the recorded video will be saved to the location that you selected automatically. If you select **PC** as the storage location, you can check where the video will be saved by clicking **View** → **Open storage folder** on the menu bar.



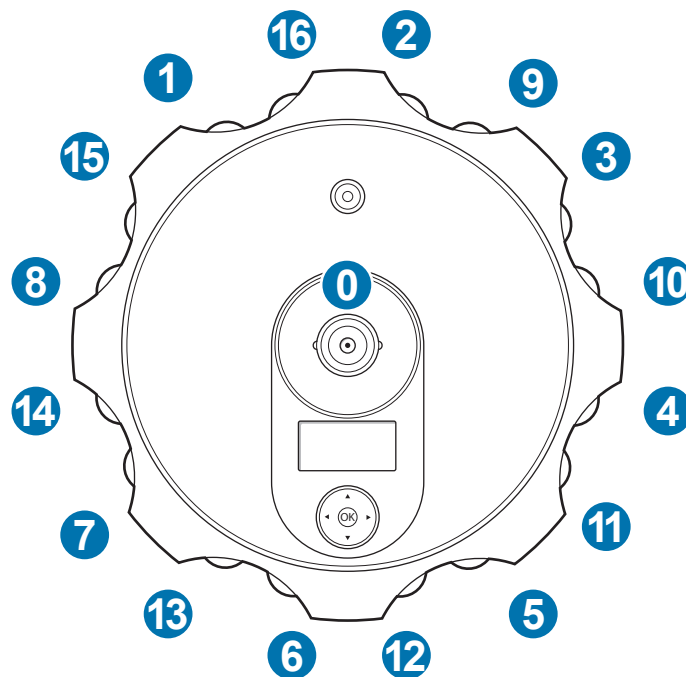
- The 360 Round stops recording video or turns off automatically if the temperature rises above a certain level when it has been used for extended periods. In this case, turn the 360 Round off and wait until it has cooled.
- The 360 Round has been developed for content production and can not be used for security such as CCTV. Do not use it outdoors for more than 12 hours continuously. Doing so may affect the life and performance of the 360 Round and may cause errors when recording videos.



- When connecting to a computer, the keys on the 360 Round will not work.
- To change the storage location, click **Device** tab → **Storage** → **PC** or **Camera** on the control panel.
- A slight difference in time may occur between the actual subject movement and the subject movement on the preview screen.

Checking the location of each camera

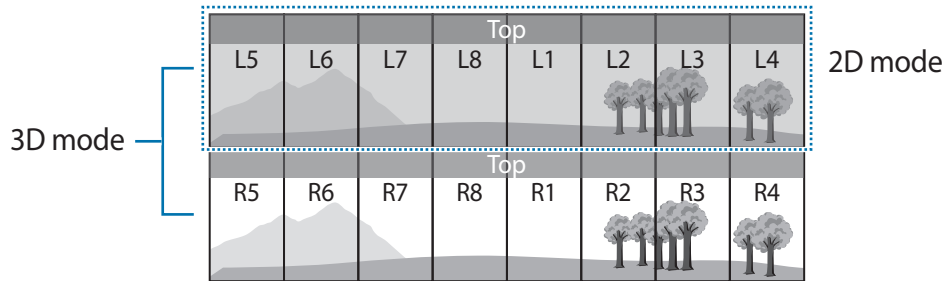
Before recording a video, check the location of the cameras. One is located on the top of the 360 Round and the other 16 cameras are located on the sides of the 360 Round.



- Top camera: The camera number 0.
- Left camera: The cameras number 1 to 8.
- Right camera: The cameras number 9 to 16.

Checking the location of each camera on the recording video screen

Check the location of the 17 cameras in the video you are recording on the 360 Round screen. The following screen shot was taken in **Panoramic view** mode using all 17 cameras.



You can check the each camera's label when recording a video. Click **View** → **Show camera label** on the menu bar. If you use the zoom in/out feature or change the view mode into **Source view**, you cannot use this feature.

Using main buttons

You can use the various main buttons on the preview screen while recording videos to easily apply various settings.

Launch the **360 Round** program on your computer.



Main buttons for the 360 Round program







Setting 2D or 3D mode

You can select which camera to use when you are recording video.

Click the **R-L Camera** buttons to select the camera to be used for recording. Refer to [Checking the location of each camera](#) for the detailed location of cameras on the right or left side of the 360 Round.




If you use a laptop, you can only use **Source view** mode.

- On **Panoramic view, Stretched view, 360° view or Round view** mode:
 - : You can record 2D video using the 8 cameras on the right side, and the camera on the top of the 360 Round.
 - : You can record 2D video using the 8 cameras on the left side, and the camera on the top of the 360 Round.
 - : You can record 3D video with all of the 17 cameras on the 360 Round.
 - : All cameras are turned off and the preview screen is disabled.
- On **Source view** mode:
 - : You can record 3D video with all of the 17 cameras on the 360 Round.
 - : All cameras are turned off and the preview screen is disabled.

Rotating the preview screen






You can record and view videos by rotating the preview screen up and down in 180 degrees.

Click  to rotate the preview screen.

Changing the preview screen view mode

You can change the preview screen view mode to record 2D or 3D videos. When recording in **Source view** mode, you can record original videos that are not stitched. In **Panoramic view** mode, you can record 2D and 3D videos.


Click ▼ on the **View** option to change the preview screen view mode. Alternatively, click **View** → **View mode** or click the **View** option icon repeatedly to change the view mode.

-  **Panoramic view**: View the preview screen as a horizontally stretched screen.
-  **Stretched view**: View the preview screen as a big enlarged scene.
-  **360° view**: View the preview screen in spherical form.
-  **Round view**: View the preview screen as a rounded scene.
-  **Source view**: View the preview screen through the cameras of each section. Select **Top**, **Left 1**, **Left 2**, **Right 1** or **Right 2** on the preview screen to check the recording videos from each section. Refer to [Checking the location of each camera](#) for detailed location of cameras on the right or left.
 - **Top**: Use the camera on the top numbered 0.
 - **Left 1**: Use the cameras on the left numbered 5 to 8.
 - **Left 2**: Use the cameras on the left numbered 1 to 4.
 - **Right 1**: Use the cameras on the right numbered 13 to 16.
 - **Right 2**: Use the cameras on the right numbered 9 to 12.

Adjusting the volume of recording video

You can adjust the volume of the recording video.

Click  and drag ● on the adjustment bar to adjust the volume.

To mute the video, click  →  and click  →  to unmute the video.

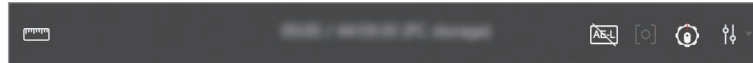


If you set the volume excessively high when recording video in a high surrounding environment, the audio may be distorted. Launch the **360 Round** program and click the **Audio** tab and set **Mic. Level - Internal** to **Auto** or **Manual** to turn down the volume.

Using the tool bar

Various tools are located on the tool bar as buttons. Use the tools to record a video more effectively with the simple press of a button. The available tools may be changed depending on the current recording mode and settings.

Launch the **360 Round** program on your computer.




Tool bar for the 360 Round program




Hover the mouse pointer over each tool bar button to check their descriptions before using them.

Calibrating video

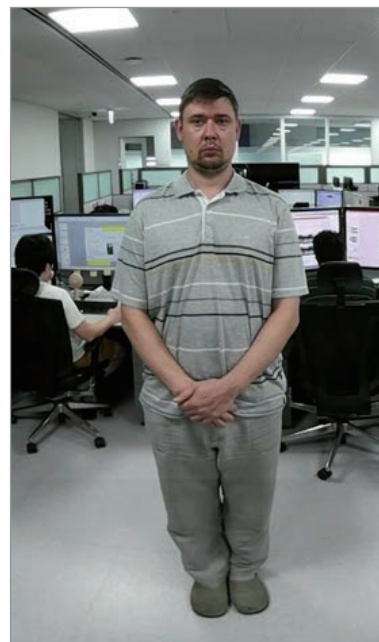
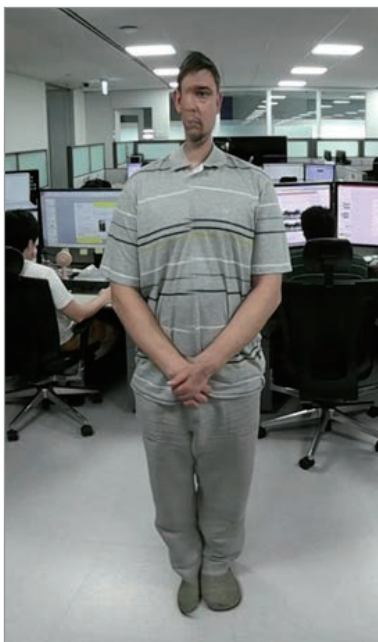
You can get better stitching results through video calibration. Calibration performs depth map estimation of the scene and also performs local warping of the seam line area.

Select  on the tool bar under the preview screen.

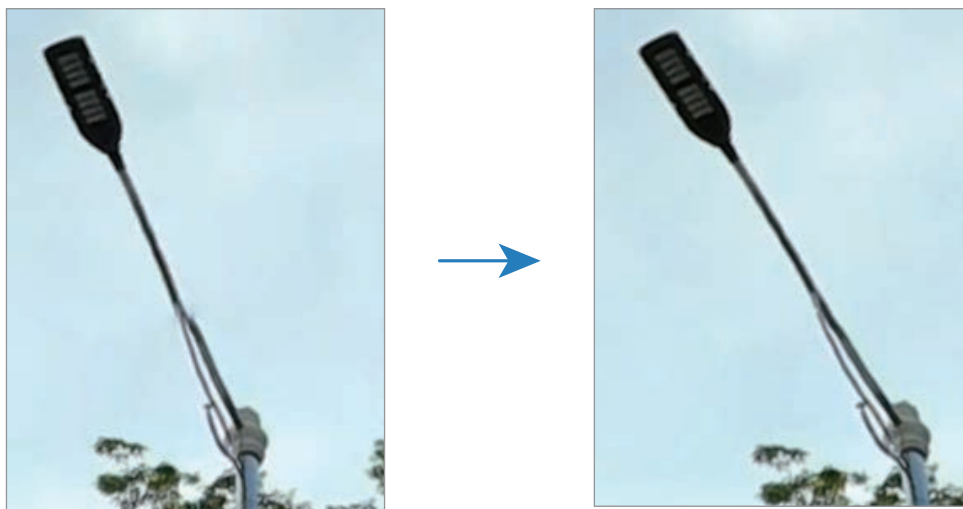
Calibration will be performed from where  is clicked and the depth map of the image is updated.



The calibration values are maintained until another calibration is performed.

Short distance cut object correction



Thin object depth error correction




 To automatically trigger video calibration by sensing the scene transition, click ▼ under , select **Settings** → **General**, and then set the **Calibration interval** to **Auto**.

Locking the automatic exposure


Select  on the tool bar under the preview screen.

When you turn on the AE-L feature on the aperture priority mode:

- You can change the exposure value manually.
- You cannot adjust the value for the frame rate, ISO, or F number.
- You cannot use the metering feature and the metering button () on the tool bar is disabled.

When you turn on the AE-L feature on the manual mode:

- You can turn on the AE-L feature only when **ISO** is set to **Auto** on the control panel.
- You cannot adjust the value for the frame rate, ISO (except setting it to **Auto**), F number, or shutter speed.


-  • You can change the recording mode in **Manual** on the control panel.
- The AE-L feature will not be changed even if the network connection is lost or disconnected.
 - When the 360 Round is turned off, the AE-L feature will turn off.

Using spot metering

Spot metering focuses the light in a specific camera to calculate the exposure of the recording video.

- 1 Select [o] on the tool bar under the preview screen.
If you cannot find [o] on the tool bar, click **Metering** and select **Spot** on the control panel.
- 2 Select a camera to apply the spot metering mode to and click the its preview screen.
The cursor is changed to the metering VI cursor and appears on the selected camera preview screen.

Changing the center camera


- 1 Select  on the tool bar under the preview screen.
- 2 Click the preview screen of the camera that you want to set as the center.

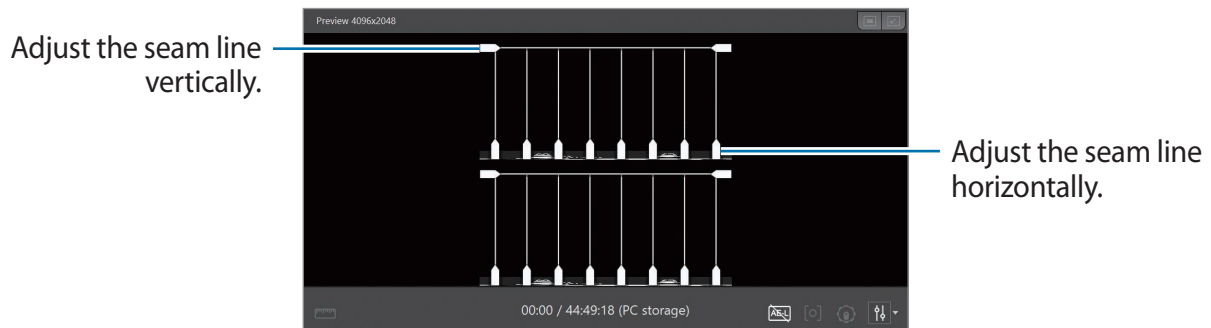
Changing the seam line of the preview screen

The seam line is the borderline along which each camera's footage is joined when the video is stitched. You can change the seam line to get better quality videos after stitching.



This feature may be disabled while recording a video.

- 1 Select  on the tool bar under the preview screen.
The seam lines will appear on the preview screen.



The preview screen of the 360 Round program with the seam line feature activated

- 2 Click the seam line handle and drag it horizontally or vertically in the direction you want.
- 3 Check the preview screen while adjusting the seam line.



Before adjusting the seam line



After adjusting the seam line

Move the seam line lay on the object to outside it.

Click ▼ next to  and select **Reset seam line** to restore the seam line to its original position.

Editing a recording video

Changing a base logo on the recording screen

You can apply or remove a base logo on the recording video and change the default base logo into your own new one.



The preview screen of the 360 Round program with the base logo applied

- 1 Launch the **360 Round** program on your computer.
- 2 Click **File** → **Place** → **Change Base logo** on the menu bar.
- 3 Select an image file for the base logo.



The image should be a 4096 X less than 2048 in the PNG file format.

To delete the base logo, on the menu bar, click **File** → **Place** → **Delete base logo**.

Live broadcast


Invite your family and friends to watch videos you record with the 360 Round in real time.

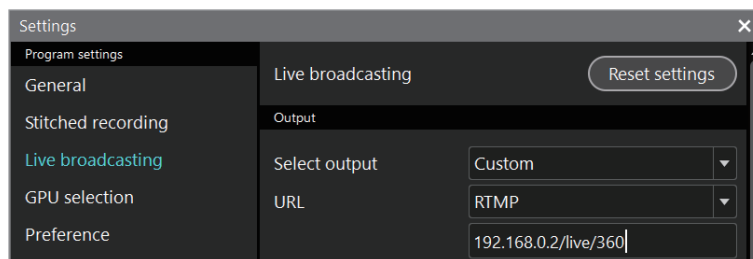


- To use this feature, you must be connected to the network and sign in to your service account.
- Some features may vary depending on the service provider.
- You can specify your own broadcasting URL address with the following protocols: rtmp, rtsp, and http.

When you select Custom

When you select **Custom**, you can experience and enjoy live streaming in a customized live streaming environment.

- 1 Launch the **360 Round** program on your computer.
- 2 Click ▼ under  and select **Custom**.
- 3 Click **Live broadcasting** when the settings window appears, enter information (ingest protocol, URL, bitrate, etc.), and click **OK**.



The settings screen for live broadcasting

- 4 Click .

The broadcast will begin.

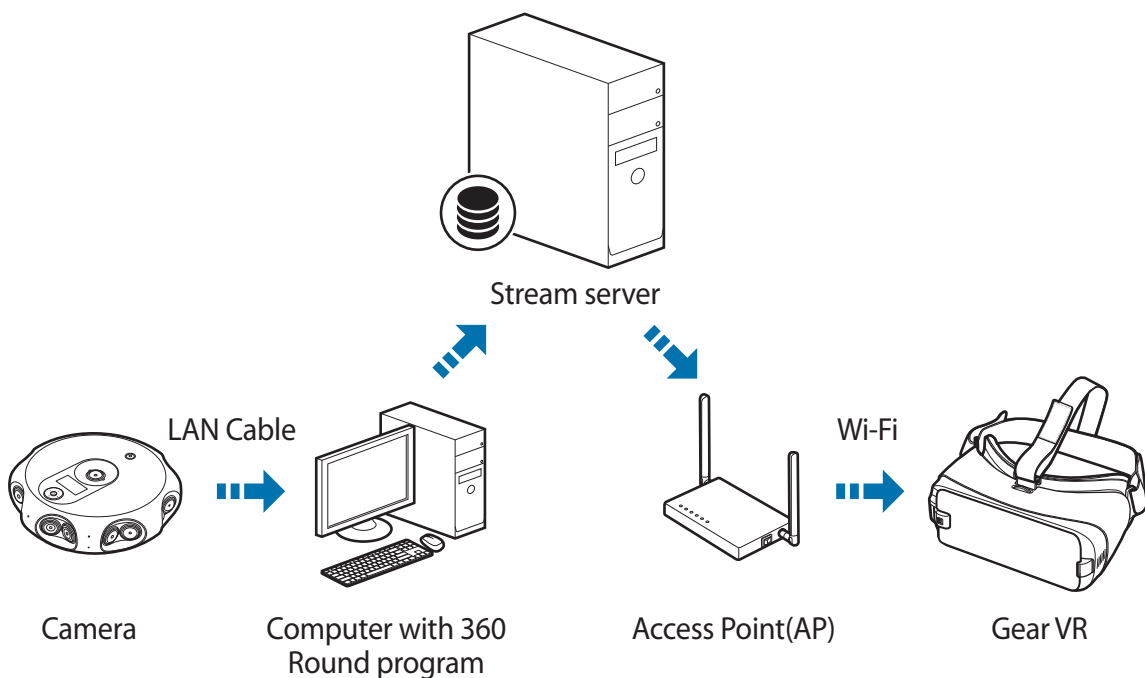
5 If you want to save the video while broadcasting, click .

The broadcasted video will be also saved on your computer.





- Only some parts of the video may be saved to your computer depending on the amount of available storage space.
- The broadcasted video will be created as a TS file which is close to the original video and the video will be split into an M3U8 file. Open the settings window and click **Live broadcasting** → **Internal storage**.

6 Click  to finish the broadcast and click  to stop recording.



You have to set up a streaming server which supports RTMP or RTSP as the ingest protocol.

When you select Samsung VR, YouTube, or Facebook

- 1 Launch the **360 Round** program on your computer.
- 2 Click ▼ under  → **Samsung VR, Youtube, or Facebook**.
- 3 Click .
- 4 Sign in to your Samsung VR account or Samsung account. Alternatively, sign in to your Google account or Facebook if you will be broadcasting to YouTube or Facebook.



When the login webpage does not appear, open the settings window, select **Live broadcasting**, and then check the options on the **Sign in browser**.

- Select **Web browser** on the **Sign in browser** and sign in again.
 - When the Samsung VR login webpage does not appear even if **Web browser** is selected on the **Sign in browser**, launch **Windows Settings** on your computer, select **Apps** → **Default apps**, select **Internet Explorer** as the default app of **Web browser**, and then sign in again.
- 5 Enter the title and details of the broadcast, and then set your broadcast to be public or private.
 - **Title:** Enter the title of the broadcast. The maximum title length is 25 characters. For Facebook, the maximum length is 100 characters. If you go over the maximum length, '...' will replace any extra text.
 - **Description:** Enter a description of your broadcast.
 - **Privacy:** Change the settings for your broadcast.
 - **Public:** Anyone can find and watch your broadcast.
 - **Unlisted:** Only people with the direct link can watch your broadcast.
 - **Private/Only Me:** Nobody can find or watch your broadcast except you.
 - **Friends** (only when using Facebook): Only people who are registered as friends on the Facebook can watch your broadcast.

6 Click **Start broadcasting**.

The broadcast will begin.



If the network or a streaming server has a problem, check network's condition or reduce **Bitrate** and then try again.

7 Click to finish the broadcast.



Broadcasts on Facebook are limited to four hours. After four hours, the broadcasting will stop automatically.

Setting the SDI output

The 360 Round program is compatible with Blackmagic Design's DeckLink series which supports DeckLink SDI output. You can send out high-quality 4K video with 4K compatible DeckLink SDI cards.

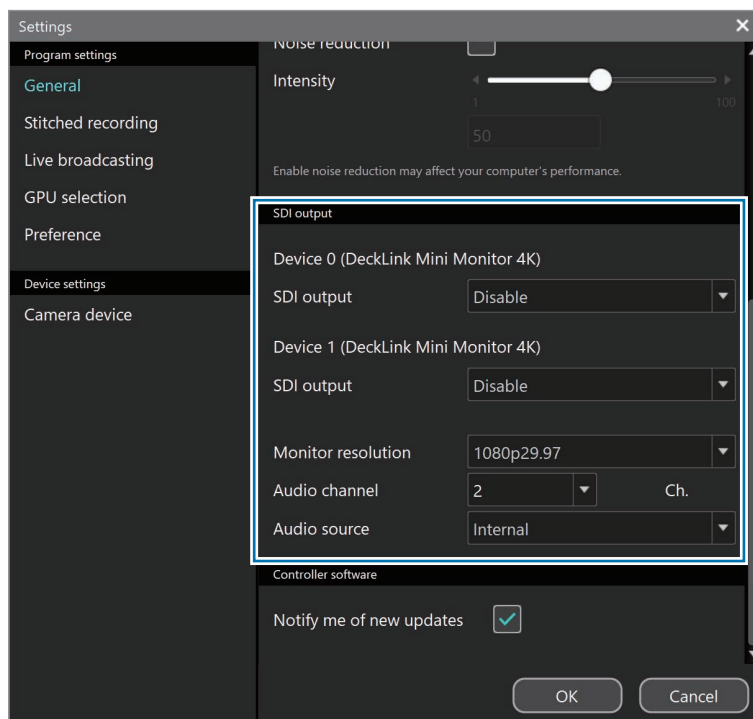


The SDI card for 4K video is sold separately.

1 Install a DeckLink PCI Express card, such as the DeckLink Mini Monitor 4K and DeckLink 4K Extreme 12 G, on your computer from <https://www.blackmagicdesign.com/products/decklink>.

2 Open the settings window.

3 Click **General** and enter the settings in the **SDI output** menu.



The settings screen for SDI output in the 360 Round program

- **Device 0 (DeckLink Mini Monitor 4K)**
 - **SDI output:** Select an option to output the video on SDI Device 0.
- **Device 1 (DeckLink Mini Monitor 4K)**
 - **SDI output:** Select an option to output the video on SDI Device 1.



- The **Separate: Left / Right** option will be displayed only if you use an SDI card (DeckLink 4K Extreme 12 G, DeckLink 8K Pro) that supports the 3D output.
- To enable 4K output for both the left and right cameras and get high-quality 4K X 4K video, insert two SDI cards for both the left and right cameras.

- **Monitor resolution:** Select **2160p29.97** for 4K video.



- The supported resolutions may differ depending on the DeckLink SDI card you use. The frame rate has to be the same as the one you set in **Frame rate** on the control panel.
- If you use an SDI card (DeckLink 4K Extreme 12 G) that supports the 3D output and select the **Separate: Left / Right** option for SDI output, the supported monitor resolution will be limited to 2K video.

- **Audio channel:** Select an audio channel.
- **Audio source:** Select either the 360 Rounds integrated microphone or a connected external microphone.

Setting the audio output to the DVS (Dante Virtual Soundcard)

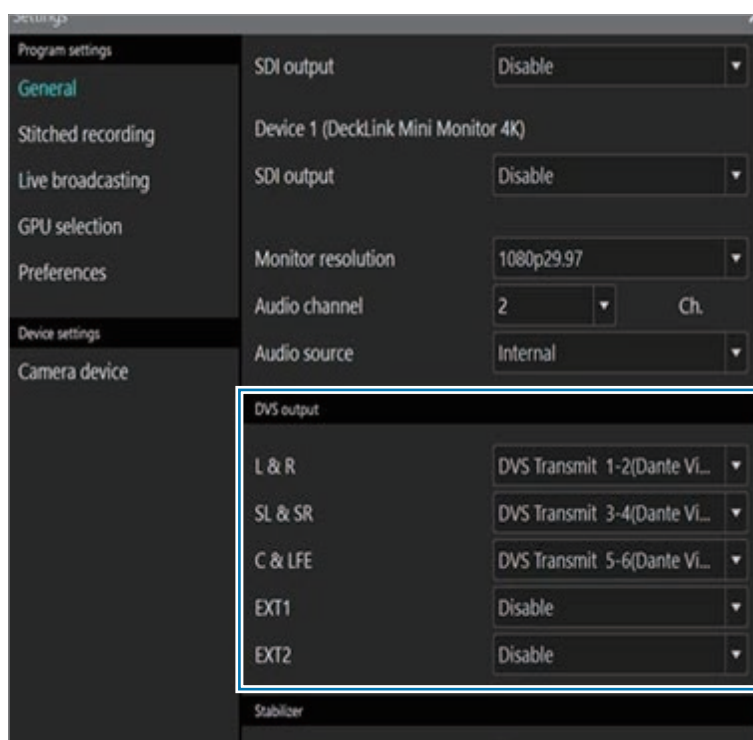
You can output audio through the DVS (Dante Virtual Soundcard) with the 360 Round program.



- The DVS and the Audinate product are sold separately.
- You can check how to configure the DVS network and how to use it on the Audinate website (www.audinate.com).

- 1 Install the DVS after purchasing it from www.audinate.com.
- 2 Open the settings window.
- 3 Click **General** and enter the settings in the **DVS output** menu.

Select the DVS output source for each audio source. Each audio source is composed of two channels.

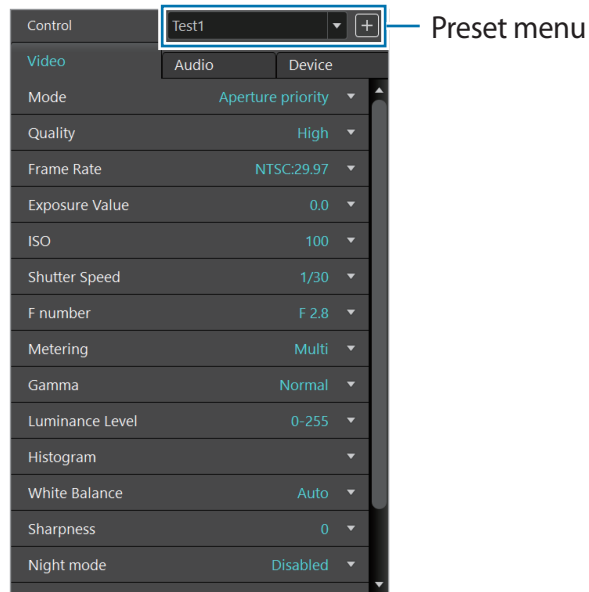


The settings screen for DVS output in the 360 Round program

Configuring camera settings

Configuring settings on the 360 Round program

You can configure various camera settings from the control panel on the 360 Round program. Launch the **360 Round** program on your computer.



Control panel

Video

- **Mode:** Set the recording mode.
 - **Aperture priority:** Set the shutter speed to be adjusted automatically according to the aperture value set by the user.
 - **Manual:** Set the shutter speed and aperture value to be set manually by the user.
- **Quality:** Set the quality of the video. The higher the quality, the higher the video's size will be.
- **Frame Rate:** Set the number of frames to be recorded.
 - **NTSC:29.97:** Set to record 30 frames per second.
 - **PAL:25.00:** Set to record 25 frames per second.

- **Exposure Value:** Adjust the exposure value. The exposure value is set automatically depending on the balance of brightness in the composition or the position of the main subject. Set the exposure value higher if the video is dark or set the exposure value lower if the video is bright.
- **ISO:** The ISO image sensor determines the sensitivity to light. The higher the ISO, the more sensitive the light is, so you can record bright videos in dark environments. However, as the ISO increases, the grain will be rougher and the noise will increase.
 - **Limit:** When **Auto** is selected in **ISO**, the maximum value of the ISO value is set and can not be adjusted beyond its maximum value.
- **Shutter Speed:** The shutter speed determines the exposure time that the camera (image sensor) accepts light.
- **F number:** Select an aperture size between **F 1.8** and **F 2.8**. The smaller the F value, the larger the diameter of the diaphragm and more light is allowed to pass through to change the brightness of the camera.
- **Metering:** Set the metering method. You can change the way light is measured on the recording screen.
 - **Multi:** Measure the light and apply the average value to the video using the camera on the top and the 8 cameras on the right side.
 - **Center:** Measure the light in front of and around the camera and apply it to your video.
 - **Spot:** Only the light from the camera you select will be measured and applied to the video.
- **Gamma:** Set the gamma value that controls the tone and color of the video.
 - **Normal:** Set the gamma value as default.
 - **Gamma C:** Set the contrast higher than the default value. The dark area will look darker and the bright area will look brighter.
 - **Gamma DR:** Set the dynamic value higher than the default value level to make the screen looks wider.
- **Luminance Level:** Set the brightness range of the video.
 - **0-255:** Set the brightness range of the video to the maximum range.
 - **16-235:** Set the brightness range of the video to conform to the TV standard.

- **Histogram:** View the currently recording video's RGB and brightness level in the histogram.
- **White Balance:** By selecting the white balance according to the recording environment, you can display the color of the subject, which depends on the original color temperature, same as a person's natural view.
 - **Auto:** The optimum light source is automatically set according to the light source conditions.
 - **Daylight:** This is the appropriate setting when recording on a clear day or outdoors, similar to what a person sees naturally.
 - **Cloudy:** This is the appropriate setting for cloudy days or shadows. It corrects the bluish color of a cloudy day.
 - **Fluorescent_W:** This is the appropriate setting when recording under a white fluorescent light.
 - **Fluorescent_N:** This is the appropriate setting when recording under a fluorescent light (significant white color).
 - **Fluorescent_D:** This is the appropriate setting when recording under daylight fluorescent light (slightly bluish color).
 - **Tungsten:** This is the appropriate setting when recording under a halogen lamp or incandescent lamp. Correct the incandescent yellow light.
 - **K(Manual):** You can also adjust the color temperature of the video.
- **Sharpness:** Set the clarity of the video.
- **Night Mode:** Block the infrared-absorbing filter and set the video to be recorded in black and white. You can record bright videos even in dark environments using infrared light.

- **Individual Camera tune:** Calibrate each camera separately. Select **Tune cameras** to start calibration.
 - **Selected Camera:** Select the camera to be calibrated on the preview screen.
 - **RGB:** You can adjust the **RED**, **GREEN**, and **BLUE** color value individually to raise or lower certain color tones on the preview screen.
 - **Noise reduction:** You can reduce the noise that can occur when recording with high sensitivity or when recording at high speed by increasing the ISO value.
 - **Contrast:** Calibrate the contrast of the video.
 - **Sharpness:** Set the clarity of the video.
 - **Reset:** You can select **Reset Current camera** to set the camera calibration values individually, or select **Reset All camera** to set them all as default.

Audio

- **Source:** Select a device that will record audio.
- **Microphone:** Turn on or off the audio to be recorded in the video.
- **Mic. Level - Internal:** Set the volume of the microphone in the 360 Round.
 - **Auto:** Set the audio to be recorded at the optimal sound with the Samsung sound solution.
 - **Manual:** Set the audio to be recorded at the original sound without the Samsung sound solution.
- **Sample rate:** Set the sampling frequency of the recorded audio. The larger the sampling, the closer you can record to the original sound, but the size of the video may increase.
- **Audio monitoring:** You can check and set the audio status of the internal or external microphone.


Device

- **Camera name:** You can check or change the name of the 360 Round.
- **Power:** You can turn the 360 Round on and off or reboot it.
 - **Device Mac:** Set the Mac address of the 360 Round. Connect the 360 Round to your computer to get a unique Mac address of your 360 Round before launching the 360 Round program.
- **Manage files:** Manage and delete recorded videos. You can also format the memory card.
- **Set Timer:** Select the length of the delay before the 360 Round starts to record video after pressing the Record key.
- **Storage:** Set the location to save the video to either the **PC** or **Camera**.

Using the presets



You can save the settings value as a preset and apply the configured settings by selecting the preset without adjusting the setting values again.

Launch the **360 Round** program on your computer.

- 1 Configure the settings.
- 2 Click , enter a name for the preset, and then click **Save**.
The setting values are saved as a preset.



You can save up to 100 presets on your computer.

- 3 To apply the preset, click  on the preset menu and select the preset you want to use. Alternatively, click  on the preset menu, click **Manage preset**, select the preset, and then click **Apply**.



You can add a new preset or apply the preset only when your 360 Round is connected to the computer.

Checking the presets

- 1 Click ▼ on the preset menu and click **Manage preset**.
- 2 Hover the mouse pointer on ⓘ next to the preset that you want to check.
All settings values you configured will appear.

Changing the name of presets

Click ▼ on the preset menu, click **Manage preset**, select the preset, and then click **Rename**.

Copying the presets to the 360 Round

Copy the preset to your 360 Round to use the same preset when you use the 360 Round by itself.

Click ▼ on the preset menu, click **Manage preset**, select the preset to copy, and then click **Copy to Camera**.



You can save up to 10 presets on your 360 Round.

Configuring settings on the 360 Round

You can change the recording environment or set the operating environment of the 360 Round from the setup menu.



If the 360 Round is connected to a computer via a LAN cable, you can not enter the settings menu. Remove the LAN cable before entering the settings menu on the 360 Round.

- 1 Press the Right key on the 360 Round to access the settings menu.
- 2 Press the Up key or Down key to access the settings menu you want.
- 3 Press the OK key or Right key and select the settings menu.
Press the Left key to cancel the settings or move to the previous step.

Video

- **Mode:** Set the recording mode.
 - **Aperture priority:** Set the shutter speed to be adjusted automatically according to the aperture value set by the user.
 - **Manual:** Set the shutter speed and aperture value to be set manually by the user.
- **Quality:** Set the quality of the video. The higher the quality, the higher the video's size will be.
- **Frame rate:** Set the number of frames to be recorded per second.
 - **NTSC:29.97:** Set to record 30 frames per second.
 - **PAL:25.00:** Set to record 25 frames per second.
- **EV:** Adjust the exposure value. The exposure value is set automatically depending on the balance of brightness in the composition or the position of the main subject. Set the exposure value higher if the video is dark or set the exposure value lower if the video is bright.
- **ISO:** The ISO image sensor determines the sensitivity to light. The higher the ISO, the more sensitive the light is, so you can record bright videos in dark environments. However, as the ISO increases, the grain will be rougher and the noise will increase.
 - **ISO Limit:** When **Auto** is selected in **ISO**, the maximum value of the ISO value is set and can not be adjusted beyond its maximum value.
- **Shutter speed:** The shutter speed determines the exposure time that the camera (image sensor) accepts light.
- **F number:** Select an aperture size between **F 1.8** and **F 2.8**. The smaller the F value, the larger the diameter of the diaphragm and more light is allowed to pass through to change the brightness of the camera.
- **Metering:** Set the metering method. You can change the way light is measured on the recording screen.
 - **Multi:** Measure the light and apply the average value to the video using the camera on the top and the 8 cameras on the right side.
 - **Center:** Measure the light in front of and around the camera and apply it to your video.
 - **Spot:** Only the light from the camera you select will be measured and applied to the video.

- **Gamma:** Set the gamma value that controls the tone and color of the video.
- **Luminance:** Set the brightness range of the video.
- **WB:** By selecting the white balance according to the recording environment, you can display the color of the subject, which depends on the original color temperature, same as a person's natural view.
 - **Auto:** The optimum light source is automatically set according to the light source conditions.
 - **Daylight:** This is the appropriate setting when recording on a clear day or outdoors, similar to what a person sees naturally.
 - **Cloudy:** This is the appropriate setting for cloudy days or shadows. It corrects the bluish color of a cloudy day.
 - **Fluorescent W:** This is the appropriate setting when recording under a white fluorescent light.
 - **Fluorescent N:** This is the appropriate setting when recording under a fluorescent light (significant white color).
 - **Fluorescent D:** This is the appropriate setting when recording under daylight fluorescent light (slightly bluish color).
 - **Tungsten:** This is the appropriate setting when recording under a halogen lamp or incandescent lamp. Correct the incandescent yellow light.
 - **Manual:** You can also adjust the color temperature of the video.
- **Sharpness:** Set the clarity of the video.
- **Night mode:** Block the infrared-absorbing filter and set the video to be recorded in black and white. You can record bright videos even in dark environments using infrared light.
- **AE-L:** Turn the auto exposure lock feature on or off.

Audio

- **Microphone:** Turn on or off the audio to be recorded in the video.
- **Source:** Select a device that will record audio.
- **Int. Mic level:** Set the volume of the microphone in the 360 Round.
- **Sample rate:** Set the sampling frequency of the recorded audio. The larger the sampling, the closer you can record to the original sound, but the size of the video may increase.

Manage files

- **Storage:** Select a storage location to save the video.
- **Delete files:** Delete recorded videos.
 - **Delete last file:** Delete the last recorded video.
 - **Delete all:** Delete all recorded videos.
- **Format storage:** All videos stored in the 360 Round or in the SSD or memory card will be deleted.

System settings

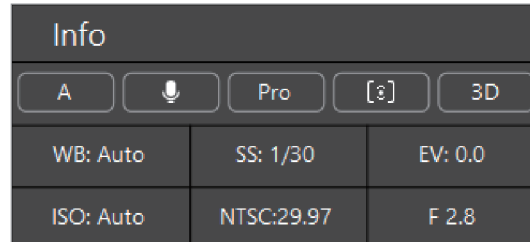
- **Screen timeout:** Set the time to turn off the screen automatically when the 360 Round is not in use.
- **Set timer:** Select the length of the delay before the 360 Round starts to record video after pressing the Record key.
- **Auto power off:** Set auto power off.
- **Beep Sound:** Adjust the volume of the effect sound of the 360 Round.
- **LED:** Turn the indicator light on and off.
- **Reset settings:** Initialize the settings of the 360 Round.
- **Date and time:** Manually set the time and date displayed on the camera status screen or change the displaying format.
- **Language:** Select the language you want to use.
- **About device:** Check information such as the 360 Round's name or firmware version, or update software.
- **IP settings:** Check the IP address of your 360 Round and reset it.
- **System check:** Check the current status of the 360 Round or the memory card inserted in the 360 Round.


Presets

Select a saved preset and copy it from your computer. You can choose the preset that works best for the shooting environment. Refer to [Using the presets](#) for more information.

Checking the camera settings

On the 360 Round program



Info		
A		Pro
WB: Auto	SS: 1/30	EV: 0.0
ISO: Auto	NTSC:29.97	F 2.8

Camera settings information panel in the 360 Round

You can check the camera settings set on the control panel of the **360 Round** program on the information panel. The setting values of the information panel are changed to what you set on the control panel.

On the 360 Round

You can check the camera settings set in the settings menu on the camera status screen. The indicator icons on the camera status screen are changed to what you set on the settings menu. Refer to [Camera status screen](#) for more information.

Deleting videos

On the 360 Round program

- 1 Launch the **360 Round** program on your computer.
- 2 Click **Device** tab → **Manage files** → **Browse Camera storage** on the control panel.
- 3 Select the video to delete and click **Delete**.
To delete all videos, click **Select all** → **Delete**.

On the 360 Round

- 1 Press the Right key on the 360 Round to access the settings menu.
- 2 Select **Manage files** → **Delete files**.
To delete last recorded video, select **Delete last files**.
To delete all videos, select **Delete all**.

Updating the software

The 360 Round and the 360 Round program can be updated to the latest software.



- You can update the software of 360 Round and 360 Round program only if the computer is connected to a wireless or wired network.
- If you have trouble with updating the software, contact a Samsung Service Center.

Updating the 360 Round

On the 360 Round program



Connect the 360 Round to your computer via a LAN cable before updating.

- 1 Connect the 360 Round to the computer with the LAN cable while the power adapter is connected.
- 2 Press and hold the Power key to turn on the 360 Round.
- 3 Launch the **360 Round** program on your computer.
- 4 Click **Help** → **Check for updates** → **Camera software** → **OK** on the menu bar.

On the 360 Round

You can update the firmware directly from the 360 Round.



Download the latest software from www.samsung.com/us/business and save it to the memory card first.

- 1 Insert the memory card that includes the latest software.
- 2 Press and hold the Power key to turn on the 360 Round.
- 3 Press the Right key on the 360 Round to access the settings menu.
- 4 Select **System settings** → **About device** → **Software Update** → **OK**.



Be careful not to turn off or disconnect the 360 Round from the power adapter cable during an update.

Updating the 360 Round program

- 1 Launch the **360 Round** program on your computer.
- 2 Click **Help** → **Check for updates** → **360 Round software** → **OK** on the menu bar.

Recording and checking the video without using the 360 Round

Recording videos with the 360 Round solely

You can record videos when the 360 Round is only connected to the power adapter without connecting it to your computer and power adapter. To record video with the 360 Round solely, you must connect a UHS II SD card or SSD and an external battery. Refer to [Using as a portable 360 Round](#) for more information.

- 1 Press and hold the Power key to turn on the 360 Round.
- 2 Press the Right key on the 360 Round and configure camera settings.
- 3 Press the Record key to start recording video.

Recording appears on the camera status screen and recording will be start.

- 4 To finish recording video, press and hold the Record key again.

The video will be saved in the UHS II SD card or SSD.



- The recorded videos are saved in the UHS II SD card or SSD. Even if the UHS II SD card is inserted, the SSD is recognized as the default storage location when the SSD is connected.
- When using an SSD, use an SSD that supports USB 3.1 Super Speed (5 Gbps).
- The 360 Round supports UHS II SD card or SSD using the exFAT file structure.
- If the SSD is connected to the 360 Round, you can not connect the 360 Round to the computer via a LAN cable. Remove the SSD from the 360 Round and then connect it to your computer via a LAN cable.

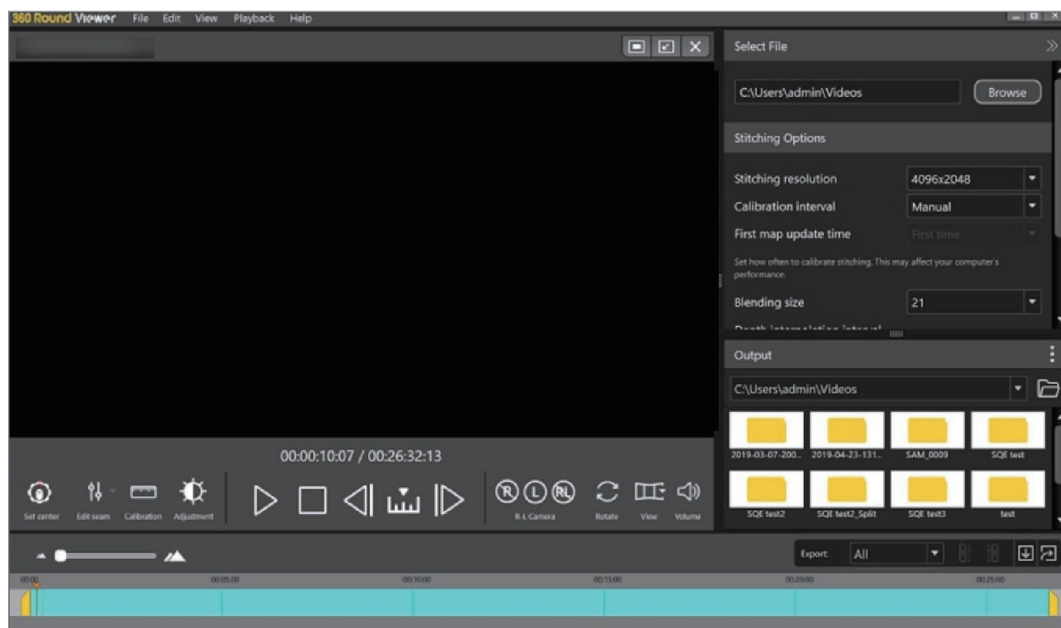
Viewing videos recorded solely by the 360 Round

The videos saved in the UHS II SD card or SSD can be checked on the 360 Round Viewer program. You can view not only all 17 videos recorded by each of the 17 cameras, but also a stitched video. Refer to [Viewing videos](#) for more information.

Using the 360 Round Viewer program

Learning more about 360 Round Viewer program

Use the 360 Round Viewer program to import the recorded video from the 360 Round program and view it. You can also export the video by stitching it to the 360-degree video by applying various settings.



The 360 Round Viewer program screen for editing a 360-degree video

Installing and launching the 360 Round Viewer program

- 1 Download the 360 Round Viewer program from www.samsung.com/us/business.



When the pop-up window that prompts you to restart the computer while downloading the program appears, turn off the computer and turn it on again. If not, the program may not be installed properly.

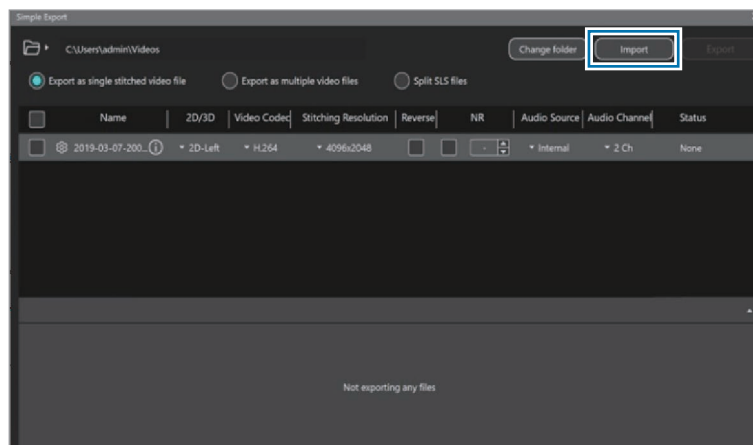
- 2 Launch the **360 Round Viewer** program on your computer.


Exporting videos

Stitching and exporting videos

You can make a 360-degree video by stitching recorded videos together.

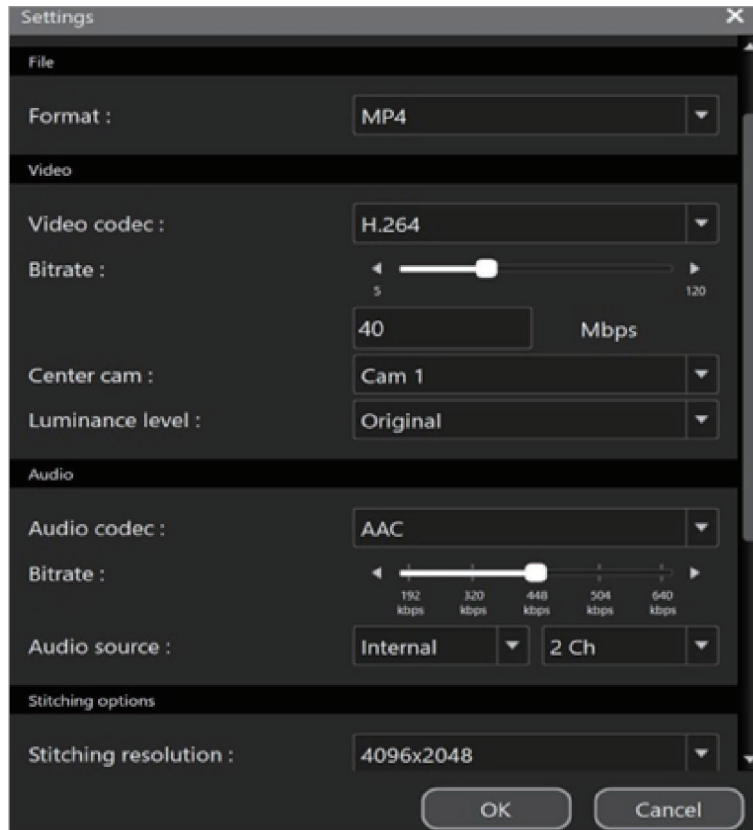
- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **Simple Export**.
- 3 Click **Import** on the Simple Export window to import an SLS file.



4 Click  on the imported file list to set the exporting options, such as the video, audio, and stitching options, for each SLS video file.



Select the **Stabilizer** option to correct the video if the video recording was tilted due to your 360 Round not being set on a flat surface. Also, you can reduce shaky video resulting from the 360 Round shaking during recording with this feature.

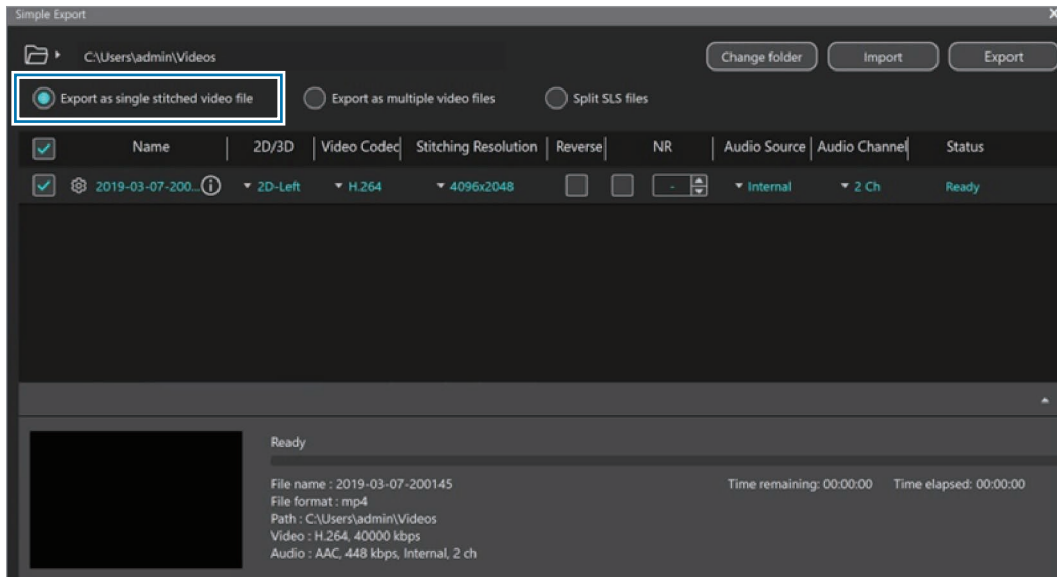


The settings screen for exporting video files

- 5 Select **Export as single stitched video file** and select a file to export from the file list.
To change the storage location of the file, click **Change folder** and select a folder to export videos.



Only SLS files can be exported.



The export window for a single stitched video file

- 6 Click **Export**.
The video will be stitched in the MP4 file format.

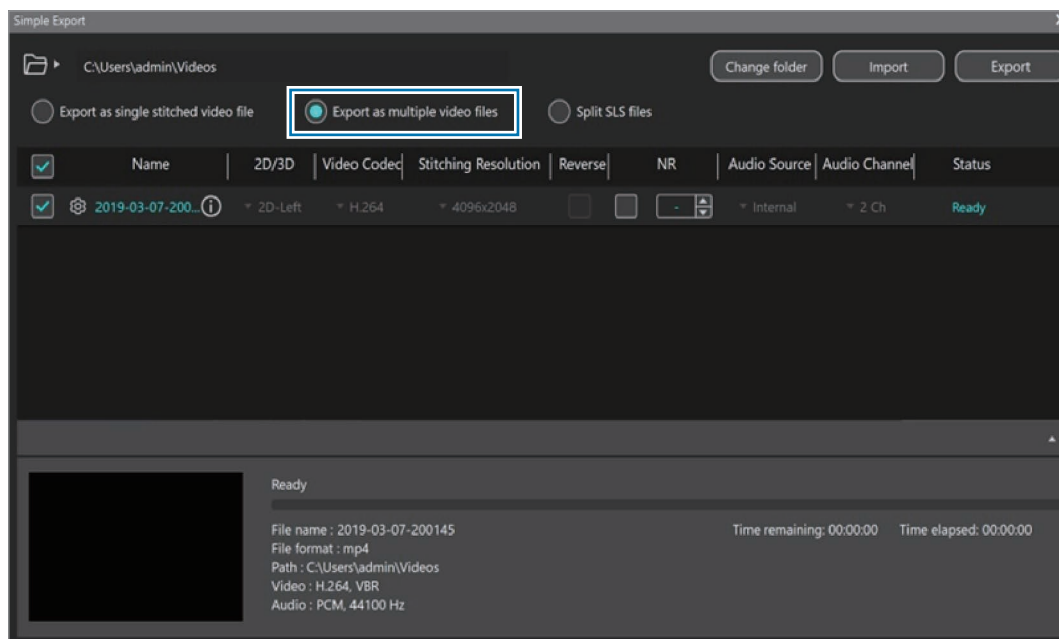
Exporting individual videos

You can export the videos to get all 17 videos recorded by each of the 17 cameras.

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **Simple Export**.
- 3 Click **Import** on the Simple Export window to import an SLS file.
- 4 Select **Export as multiple video files** and select a file to export from the file list.
To change the storage location of the file, click **Change folder** and select a folder to export videos.



Only SLS files can be exported.



The export window for exporting multiple video files

- 5 Click **Export**.

The 17 video files will be exported in the MP4 file format.

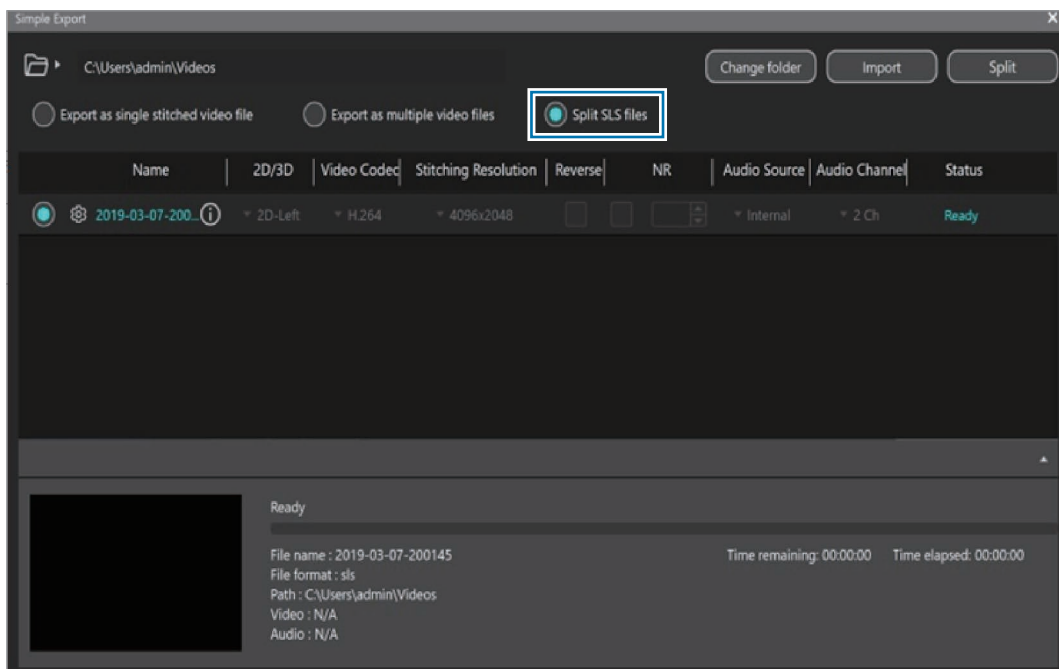


When exporting 17 individual videos, unnecessary parts can appear at the edge of the video. Those parts will be deleted after stitching so that they will not affect the finished video's quality.

Exporting SLS files after splitting

You can export the recorded SLS video files after splitting it into preset minutes.

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **Simple Export**.
- 3 Click **Import** on the Simple Export window to import an SLS file.
- 4 Select **Split SLS files** and select a file to export from the file list.

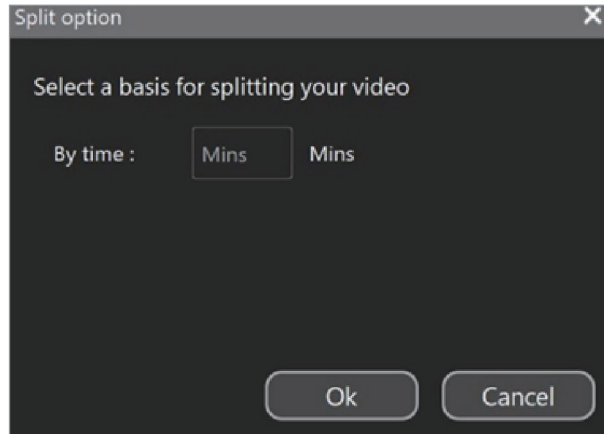


The export window for exporting SLS video files after splitting

5 Click **Split**, enter the split value you want in minutes on the Split option window, and then tap **Ok**.



- The split feature is not supported when the recorded video's duration is under a minute.
- Enter a number within the range of the recorded video's duration.



6 Select a folder to export videos to.

The recorded SLS video file will be saved after splitting it into the preset minutes.

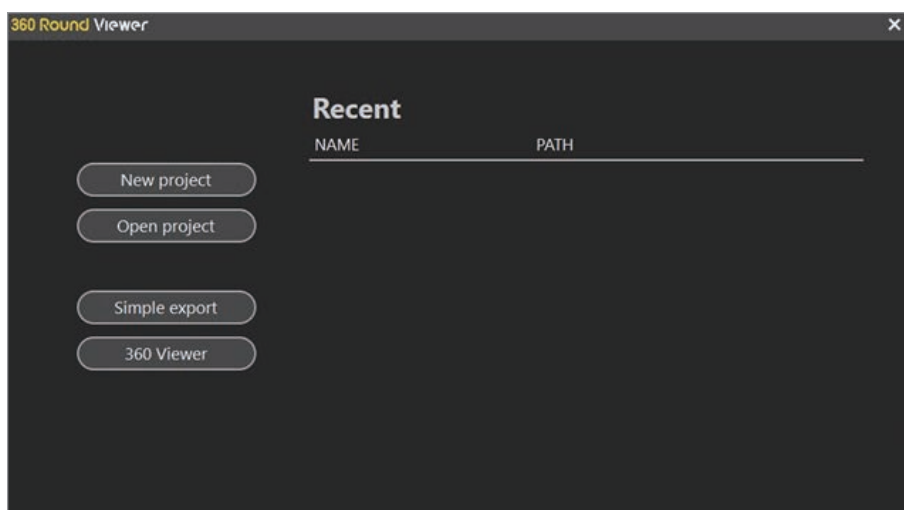
Editing a recorded video

Importing the recorded video to the edit screen

You can import the recorded video to the edit screen and edit it.

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **New project** to select the recorded original video (.sls) files or click **Open project** to select the project video (.prj) files that include the editing information. Alternatively, select the recently saved project video (.prj) files from the **Recent** list.

The video will appear on the edit screen.



- 3 Edit the video on the edit screen.

Changing a base logo on the recorded video

You can apply or remove a base logo on the recorded video and change the default base logo into your own new one.



The preview screen of the 360 Round Viewer program with the base logo applied

The base logo

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **New project** or **Open project** to select a video file to edit.
- 3 Click **File** → **Place** → **Change base logo** on the menu bar.
- 4 Select an image file for the base logo.



The image should be a 4096 x less than 2048 resolution in the PNG file format.

To reset the base logo to the default one, on the menu bar, click **File** → **Place** → **Use default logo**.

To delete the base logo, on the menu bar, click **File** → **Place** → **Delete Base logo**.

Trimming the recorded video section

You can edit the video by trimming the section and view the necessary parts.

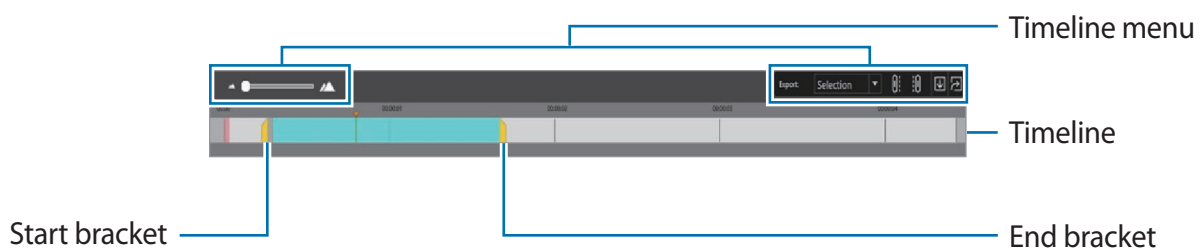
1 Launch the **360 Round Viewer** program on your computer.


2 Click **New project** or **Open project** to select a video file to edit.

3 Click ▼ on the timeline menu and select **Selection**.

 The timeline menu may be disabled in **Source view** mode. However, the zoom in/out feature can be used.


4 Drag the start bracket and the end bracket to the desired points to set the duration of the video to be played. Alternatively, drag ▼ to the start point on the timeline and click ⏸ to set the start point of the video, and drag ▼ to the end point on the timeline and click ⏸ to set the end point.



 If you want to adjust the trimmed section more precisely, use the zoom in/out feature. You can change the timeline unit by dragging ● to the right (▲). The more you drag ● to the right (▲), the more precise the unit of time will become.

5 Click ▼ on the timeline menu and select the option.

- **All:** The trimmed video from beginning to end will be exported.
- **Selection:** Select the range of the trimmed video by dragging the handle that appears on the timeline.

- 6 Click  to export the trimmed video. Alternatively, click **File** → **Export** on the menu bar. The trimmed video will be stitched and exported.

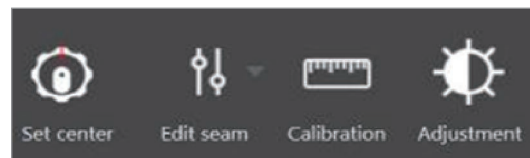


To save the trimmed video as an SLS file, click  on the timeline menu.

Using the tool bar

Various tools are located on the tool bar as buttons. Use the tools to edit a video more effectively with the simple press of a button. The available tools may be changed depending on the current view mode and settings.

Launch the **360 Round Viewer** program on your computer.




Tool bar for the 360 Round Viewer program




Hover the mouse pointer over each tool bar button to check their descriptions before using them.

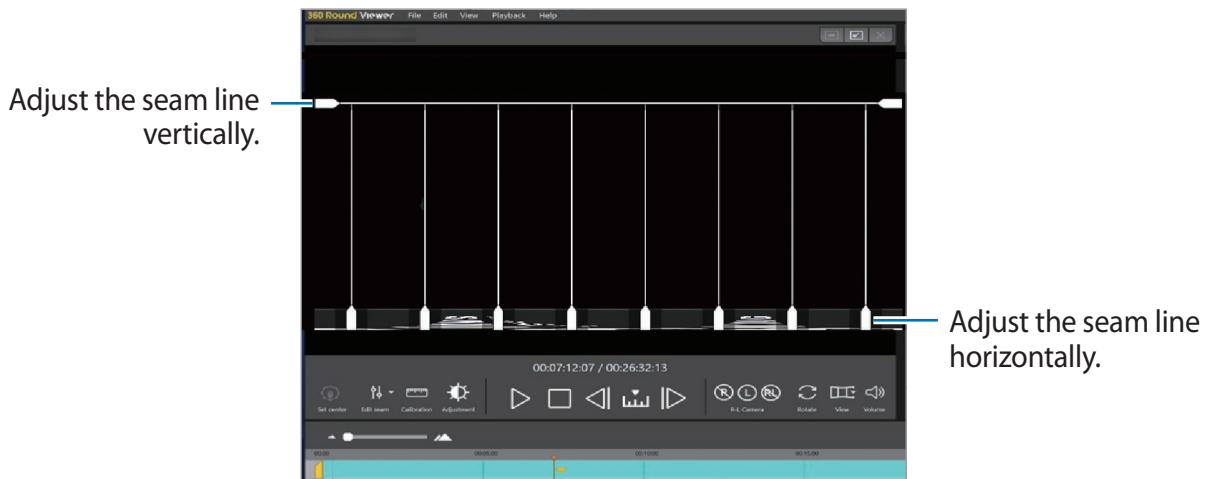
Changing the center camera

- 1 Select  on the tool bar under the preview screen.
- 2 Click the preview screen of the camera you want to set as the center.
- 3 Click **OK** on the pop-up window.


Changing the seam line of the preview screen

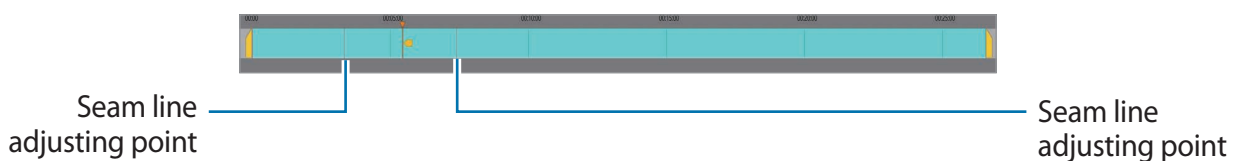
The seam line is the borderline along which each camera's footage is joined when the video is stitched. You can change the seam line to get better quality videos after stitching.

- 1 Select  on the tool bar under the preview screen.
The seam lines will appear on the preview screen.



The preview screen of the 360 Round Viewer program with the seam line feature activated

- 2 Click the seam line handle and drag it horizontally or vertically in the direction you want.
The orange marker and the orange direction icon () will appear on the timeline.
The adjusted seam lines are maintained until the next seam line adjustment.



3 Check the preview screen, adjusting the seam line.




Before adjusting the seam line



After adjusting the seam line

Move the seam line lay on the object to outside it.





If you click  to calibrate the video after adjusting the seam line, video calibration will be performed again with the newly adjusted seam lines.

Click ▼ next to  and select **Reset seam line** to restore the seam line to its original position.

Calibrating video

You can get better stitching results through video calibration. Calibration performs depth map estimation of the scene and also performs local warping of the seam line area.

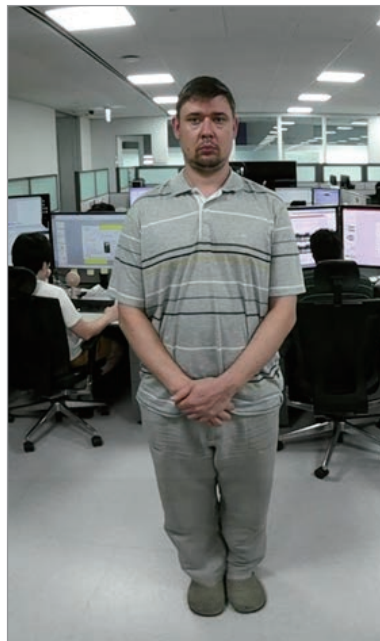
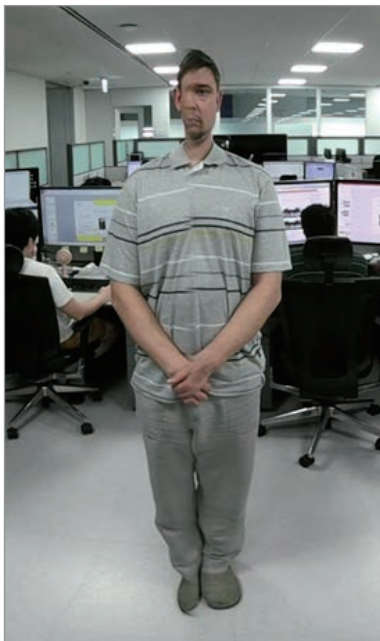
Drag  to the desired point and click  on the tool bar under the preview screen.

The orange marker and the blue direction icon () will appear on the timeline, calibration will be performed from where  is clicked, and then the depth map of the image is updated.

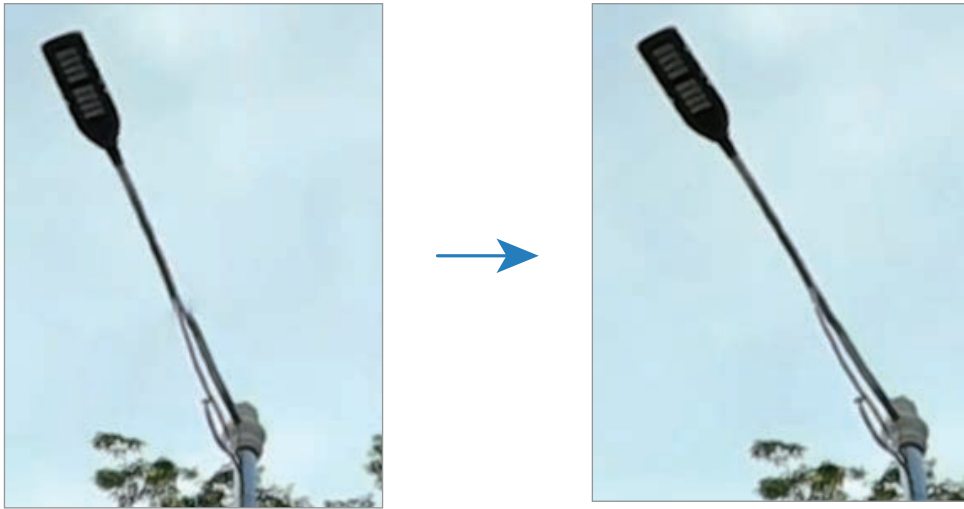
The calibration values are maintained until another calibration is performed.



Short distance cut object correction




Thin object depth error correction



- If you want to adjust the calibrated point more precisely, change the timeline unit by dragging ● to the right (▲). The more you drag ● to right, the more precise the unit of time will become.
- If you calibrate the scene frequently, the image may wobble while it is played. For more natural results, adjust the interval of the calibration properly.

Adjusting videos

Adjust the luminance level or reduce the noise of the video that is recorded for better video quality.

- 1 Select  on the tool bar under the preview screen.
- 2 Click **Luminance level** and select an option for adjusting the luminance.
Click **Noise Reduction**, adjust the noise level on the adjustment bar, and then click **OK**.

Checking the markers

The orange markers that tag the editing points will appear on the timeline. When clicking each marker the orange direction icon (▶) or the blue direction icon (◀) will be displayed and they can distinguish which settings are applied.

Click the marker on the timeline to jump to the point where the video was edited.


Saving and exporting the videos after editing

After editing the original video (.sls) files, the videos will be saved as project (.prj) files that include the editing information. Since the project file contains information about the edits that you performed before, you can get the same stitching result with it.

- 1 Edit your video and click **File** → **Save** or **Save as** to save the edited video over the original, unstitched file and also save it as a project (.prj) file.

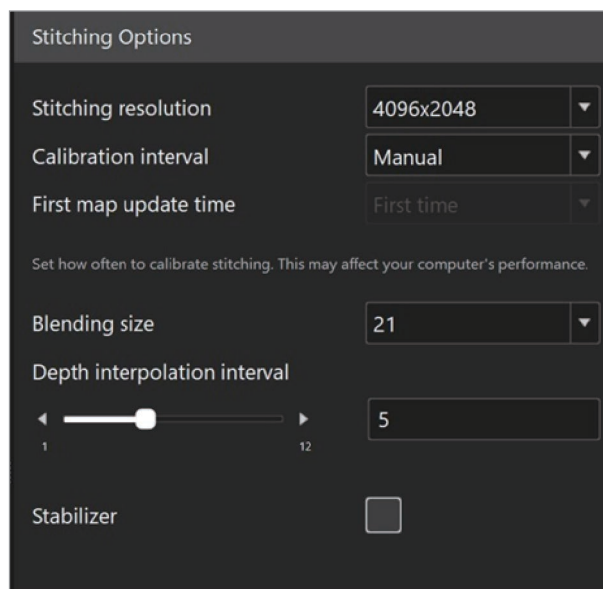


To open the saved project video (.prj) files, launch the **360 Round Viewer** program and click **Open project**, or click **File** → **Open file** on the edit screen.

- 2 Click  on the timeline menu on the edit screen to export and save the edited project video (.prj) file.

Configuring the stitching options

You can set the various options for determining the stitching quality when stitching the recorded original videos into one file. The changed stitching options can be directly checked on the edit screen also.



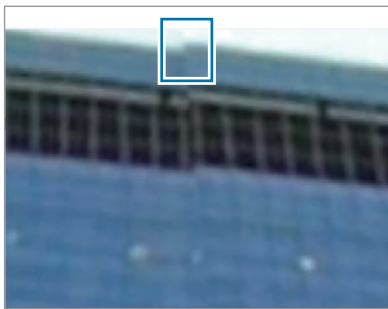
The stitching options setting window

- **Stitching resolution:** Set the stitched video's resolution.
- **Calibration interval**
 - **Once:** Set the video to calibrate only one time based on the value set on **First map update time**.
 - **Manual:** Set the video to calibrate manually.
 - **Auto:** Set the video to calibrate frames which have a different depth automatically after calibrating the first frame.
- **First map update time:** Set the first started time to calibrate the recorded video.

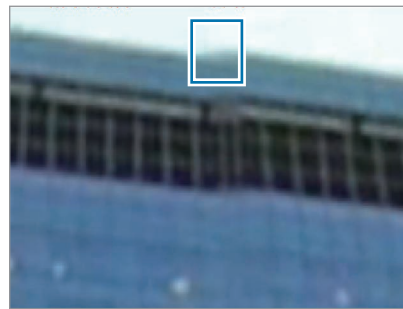


This option can be set only when the **Calibrate interval** is set as **Once**.

- **Blending size:** Set the degrees that make even the seam line after stitching it. A higher value can make the seam line softer, but it may be blurry.



When the blending size value is 1



When the blending size value is 21

- **Depth Interpolation interval:** Set to prevent changes between the videos before and after calibration, such as changes to the depth value, when calibrating the frame. If the value is '5', the video will be calibrated gradually from five frames before the point that starts the calibration.
- **Stabilizer:** Set the video to correct when the video recording was tilted due to your 360 Round not being set on a flat surface. Also, you can reduce shaky video resulting from the 360 Round shaking during recording.

Viewing videos




Viewing videos recorded

You can view your recorded videos on your computer.

1 Launch the **360 Round Viewer** program on your computer.

2 Click **New project** to select the original recorded video (.sls) files.

3 Click ▶ to play video.

Click , select the time unit, and then click  or  to forward or rewind the video. If you select **Second**, you can forward or rewind the video second by second, and if you select **Frame**, you can jump to the next frame or go back to the previous frame.

Using main buttons

You can use the various main buttons on the preview screen while editing the videos to easily apply various view options.

Launch the **360 Round Viewer** program on your computer and select a main button.







Main buttons of the 360 Round Viewer program

Setting 2D or 3D mode


Select a camera and view the video that it recorded.

Click the **R-L Camera** buttons button to select the camera to be used for viewing. Refer to [Checking the location of each camera](#) for the detailed location of cameras on the right or left side of the 360 Round.

- On **Panoramic view, Stretched view, 360° view, Round view** or **Three screen view** mode:
 -  : You can view 2D video recorded by the 8 cameras on the right side, and the camera on the top of the 360 Round.
 -  : You can view 2D video recorded by the 8 cameras on the left side, and the camera on the top of the 360 Round.
 -  : You can view 3D video recorded by all of the 17 cameras on the 360 Round.
- On **Source view** mode:
 -  : The camera icons are disabled and cannot be selected because only 3D video recorded by all of the 17 cameras is available.


Rotating the screen





You can view videos by rotating the screen up and down in 180 degrees.





Click  to rotate the screen.

Changing the preview screen view mode

You can change the preview screen view mode while playing a video.

Click  on the **View** option to change the preview screen view mode. Alternatively, click the **View** option icon repeatedly to change the view mode.





-  **Panoramic view**: View the recorded video as a horizontally stretched scene.
-  **Stretched view**: View the recorded video as an enlarged scene.
-  **360° view**: View the recorded video in spherical form.
-  **Round view**: View the recorded video as a rounded scene.

-  **Three screen view:** View the recorded video split up into a right, left, and top view.
-  **Source view:** View the recorded video through the cameras of each section. Select **Top, Left 1, Left 2, Right 1** or **Right 2** on the preview screen to check the recorded videos from each section. Refer to [Checking the location of each camera](#) for detailed location of cameras on the right or left.
 - **Top:** Check the video recorded by the number 0 camera on the top.
 - **Left 1:** Check the video recorded by the cameras on the left numbered 5 to 8.
 - **Left 2:** Check the video recorded by the cameras on the left numbered 1 to 4.
 - **Right 1:** Check the video recorded by the cameras on the right numbered 13 to 16.
 - **Right 2:** Check the video recorded by the cameras on the right numbered 9 to 12.
-  In **Stretched view, Round view, Three screen view, and 360° view** modes, you can view videos from different angles by dragging across the screen in any direction. To reset the angle to the default setting, click .
- Only **Panoramic view** mode is supported for videos recorded in 3D.

Adjusting the volume of the recorded video

You can adjust the volume of the recorded video.

Click  and drag  on the adjustment bar to adjust the volume.

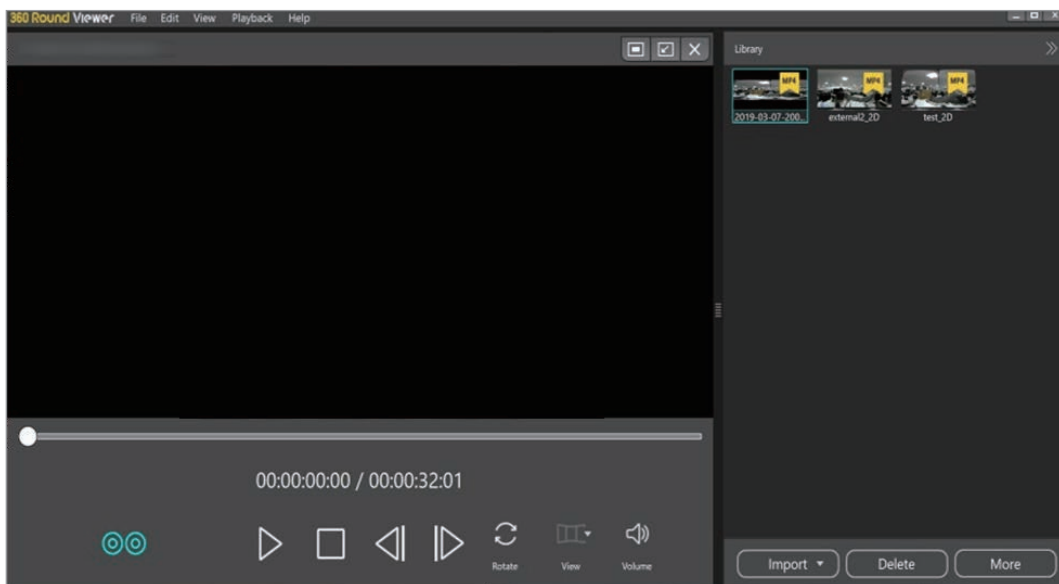
To mute the video, click  →  and click  →  to unmute the video. Alternatively, click **Play back** → **Mute/Mute off** on the menu bar.

Viewing the exported video

Viewing exported videos with the computer

You can view your exported videos (MP4) on your computer.

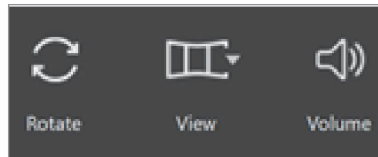
- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **360 Viewer**.
- 3 Click **Import** on the 360 Viewer window to import the exported video (MP4).
- 4 Select the desired file or drag the file to the preview screen on the **Library** panel.
The video will be played.
To move to next or previous frame, click **▶** or **◀**.



Using main buttons

You can use the various main buttons on the preview screen while viewing the videos to easily apply various settings.

Launch the **360 Round Viewer** program on your computer, click **360 Viewer**, and then select a main button.




Main buttons of the 360 Viewer screen

Viewing 2D or 3D video

Click  to view the 2D video that was recorded with each right or left camera or 3D video that was recorded with all of the cameras of the 360 Round.



-  will be activated only when viewing the 3D video.
- The preview screen view mode cannot be changed when viewing the 3D video. You can change it only when viewing the 2D video by clicking the **View** option icon.

Rotating the screen






You can view videos by rotating the screen up and down in 180 degrees.

Click  to rotate the screen.

Changing the preview screen view mode

You can change the preview screen view mode while playing a video.





Click ▼ on the **View** option to change the preview screen view mode. Alternatively, click the **View** option icon repeatedly to change the view mode.

-  **Panoramic view:** View the video as a horizontally stretched scene.
-  **Stretched view:** View the video as an enlarged scene.
-  **360° view:** View the video in spherical form.
-  **Round view:** View the video as a rounded scene.
-  **Three screen view:** View the video split up into a right, left, and top view.

Adjusting the volume of the video

You can adjust the volume of the video.

Click  and drag ● on the adjustment bar to adjust the volume.

To mute the video, click  →  and click  →  to unmute the video. Alternatively, click **Play back** → **Mute/Mute off** on the menu bar.

Setting the SDI output

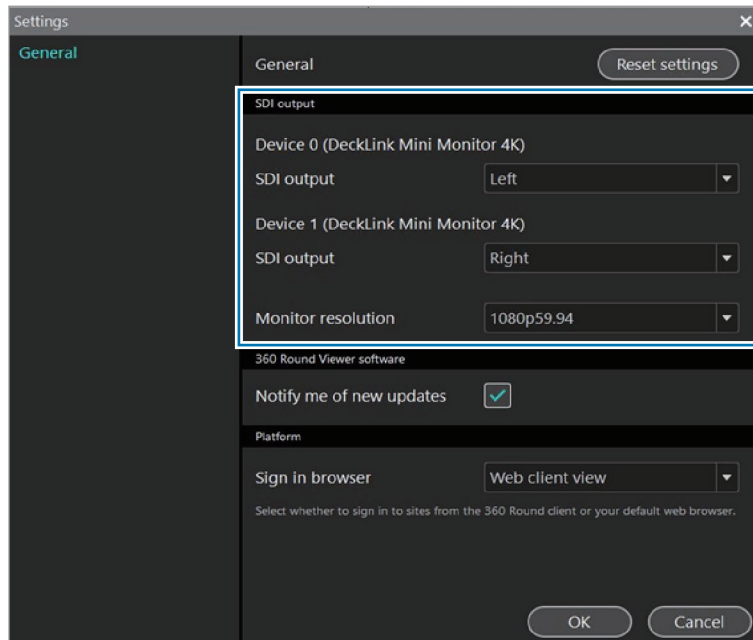
The 360 Round Viewer program is compatible with Blackmagic Design's DeckLink series which supports DeckLink SDI output. You can send out high-quality 4K video with 4K compatible DeckLink SDI cards.




- The SDI card for 4K video is sold separately.
- The SDI output only supports the video (ERP format) recorded in the **Panoramic view** mode.

- 1 Install a DeckLink PCI Express card, such as the DeckLink Mini Monitor 4K and DeckLink 4K Extreme 12 G, on your computer from <https://www.blackmagicdesign.com/products/decklink>.

- 2 Launch the **360 Round Viewer** program on your computer and click **360 Viewer**.
- 3 Click **Edit** → **Settings** → **General** on the 360 Viewer screen to open the settings window.
- 4 Configure the settings in the **SDI output** menu.



The settings screen for SDI output in the 360 Round Viewer program

- **Device 0 (DeckLink Mini Monitor 4K)**
 - **SDI output:** Select an option to output the video on SDI Device 0.
 - **Device 1 (DeckLink Mini Monitor 4K)**
 - **SDI output:** Select an option to output the video on SDI Device 1.
-  • The **Separate: Left / Right** option will be displayed only if you use an SDI card (DeckLink 4K Extreme 12 G, DeckLink 8K Pro) that supports the 3D output.
- To enable 4K output for both the left and right cameras and get high-quality 4K X 4K video, insert two SDI cards for both the left and right cameras.

- **Monitor resolution:** Select **2160p29.97** for 4K video.



- The supported resolutions may differ depending on the DeckLink SDI card you use. The frame rate has to be the same as the one you set in **Frame rate** on the control panel.
- If you use an SDI card (DeckLink 4K Extreme 12 G) that supports the 3D output and select the **Separate: Left / Right** option for SDI output, the supported monitor resolution will be limited to 2K video.

Uploading the video on Samsung VR

You can upload the exported video files (MP4) on Samsung VR.



To use this feature, you must be connected to the network and sign in to your service account.

- 1 Launch the **360 Round Viewer** program on your computer and click **360 Viewer**.
- 2 Click **File** → **Upload** → **Samsung VR** on the 360 Viewer window.
- 3 Sign into your Samsung VR or Samsung account.

The upload window will appear.

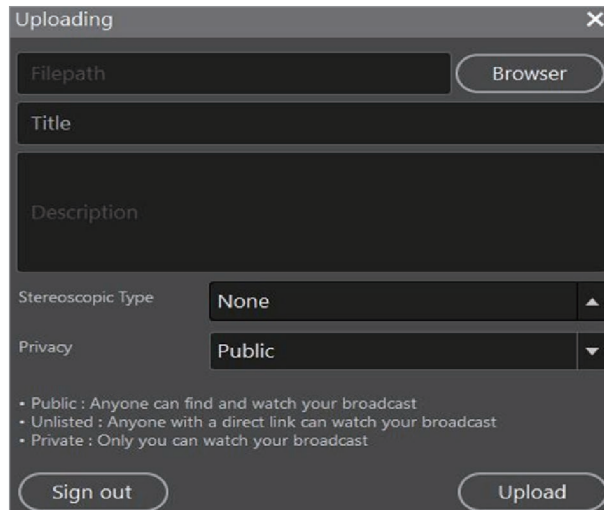


When the login webpage does not appear, open the settings window, select **Live broadcasting**, and then check the options on the **Sign in browser**.

- Select **Web browser** on **Sing in browser** and sign in again.
- When the Samsung VR login webpage does not appear even if **Web browser** is selected on the **Sign in browser**, launch **Windows Settings** on your computer, select **Apps** → **Default apps**, select **Internet Explorer** as the default app of **Web browser**, and then sign in again.

- 4 Select a file to upload, enter the title and details of the broadcast, and then set your broadcast to be public or private.

To upload a 3D video file, set the **Stereoscopic Type** as **top-bottom**.



- 5 Click **Upload**.

The video file will be uploaded to Samsung VR.

Updating the 360 Round Viewer program software

The 360 Round Viewer program can be updated to the latest software.



- You can update the software of 360 Round Viewer program only if the computer is connected to a wireless or wired network.
- If you have trouble with updating the software, contact a Samsung Service Center.

- 1 Launch the **360 Round Viewer** program on your computer.
- 2 Click **Help** → **Check for updates** → **OK** on the menu bar.

Appendix

Managing the 360 Round

Cleaning the camera

Use a brush to remove dust from the camera and status screen, and wipe with a soft cloth. For persistent dust, lightly wipe the lens with a little cleaning fluid on the lens cleaning paper and wipe the exterior with a soft cloth.

When using the 360 Round, fine dust may enter the camera and it may appear on the recorded videos depending on the recording environment. This is not a defect of the 360 Round, but rather caused by fine dust entering the lens. Use a blower to clean the dust.

Using and storing the 360 Round

Do not store or use the 360 Round in the following situations:

- Extremely high or low temperature
- Where it is stuffy, highly humid, or the humidity changes rapidly
- Where there is direct sunlight or airtightness (such as in a closed car in summer)
- Where there is a strong vibration or a strong magnetic field (by motor, transformer, magnet)
- Where there is a lot of sand or dust
- Where there is a fire or volatile material
- Where there are mothballs such as naphthalene

Using the 360 Round at the beach or near water

Please note the following when using the 360 Round near the beach or water.

- Be careful not to let water or sand get into the 360 Round. This may cause a malfunction.
- The 360 Round is not waterproof when the cover is open. Do not insert an adapter or memory card with wet hands.
- Do not touch the 360 Round, power cable, plug and socket with wet hands or another body part. The 360 Round may be damaged or you may be affected by electricity.

Dealing with dew

Moving from a cold place to a warm place in a short period of time may cause water droplets to appear inside of the 360 Round or on the lens. Turn off the power and wait for about one hour before using the 360 Round. If water droplets form on the memory card, remove the memory card and dry it completely before using it.

Managing and sending log files

You can create log files and check the history of your 360 Round. If you save your log files, you can check your 360 Round's status and report any problem's easily if there are any issues. Click **Help** → **Create log file** on the menu bar in the **360 Round** program to create log files for the 360 Round program and your 360 Round. Also, click **Help** → **Log dump** on the menu bar in the **360 Round Viewer** program to create log files for the 360 Round Viewer program.

You can also send the created log file to the 360 Round customer center when you have a problem using your 360 Round and cannot figure out what the problem is. Click **SEND** on the pop-up window after the log file is created.

Troubleshooting

Before contacting a Samsung Service Center, please attempt the following solutions. Some situations may not apply to your 360 Round.

Your 360 Round does not turn on

Make sure the power adapter cable is connected properly to your 360 Round. If you use the 360 Round as a portable, make sure that the external battery is connected properly.

The 360 Round does not connected to the computer properly or it is disconnected

- Make sure that the 360 Round and your computer are properly connected to the LAN cable.
- Check your 360 Round is turned on.
- Make sure the specifications of the computer meets the recommended specifications of computer.

The time on the 360 Round has been reset

The time will be reset when you update the 360 Round.

Your 360 Round is hot to the touch

When using the 360 Round for an extended period, the 360 Round and its battery may heat up. If the temperature rises above a certain level, the 360 Round will stop recording and turn off automatically to prevent damage. If the 360 Round is turned off due to overheating, wait for it to cool down before resuming use.

The memory card icon appears on the camera status screen

- Ensure that a memory card is inserted.
- Ensure that your memory card is not damaged.

Data stored in the 360 Round has been lost

Always make backup copies of all important data stored in the Gear 360. Otherwise, you cannot restore data if it is corrupted or lost. Samsung is not responsible for the loss of data stored in the Gear 360.

A small gap appears around the outside of the 360 Round case

- This gap is a necessary manufacturing feature and some minor rocking or vibration of parts may occur.
- Over time, friction between parts may cause this gap to expand slightly.

The lens is dirty

Wipe the lens in a circular motion with a clean, soft cloth.

System update screen appears continuously

Copy the new software to the memory card and restart the 360 Round. The software update will be performed automatically.

An error message that says your 360 Round has stopped working appears

Check the network speed. Click **Help** → **Test network speed** on the menu bar in the **360 Round** program. This will take several minutes. After running the network speed test, check the result and follow the instructions on the pop-up window.

Error message

Error messages may appear on the status screen of the 360 Round. Check the error messages and follow the instructions

Error message	Solution
<ul style="list-style-type: none"> • Moisture detected. Make sure port is dry. • Moisture detected. Unplug the charger. 	<p>Moisture is detected in the multipurpose jack and the power adapter jack. Disconnect the external USB device or power adapter from the multipurpose jack and power adapter jack and dry them thoroughly before reconnecting them.</p>
<ul style="list-style-type: none"> • SLAVE BOOT ERROR • LV START ERROR • Slave LENS MODULE START ERROR! DEVICE WILL OFF. 	<p>Check your 360 Round software version and update your 360 Round to the latest software. If you cannot solve this problem even after updating the 360 Round, contact a Samsung Service Center.</p>
<ul style="list-style-type: none"> • Camera too hot • Power off to cool down 	<p>The 360 Round's temperature is too high to be used. Turn off the 360 Round for more than an hour and restart the it.</p>
<ul style="list-style-type: none"> • CARD MOUNT ERROR • No media 	<p>The memory card is not detected in the 360 Round. Check whether the memory card is inserted properly in the memory card slot. If you cannot solve this problem and the memory card is inserted correctly, try to change the memory card to a new one.</p>
<ul style="list-style-type: none"> • SD CARD LOCKED!!! 	<p>Remove the memory card from the memory card slot and switch the lock button to the unlock position, and then reinsert it. If you cannot solve this problem by doing the above, you can format it on the 360 Round or computer. Refer to Formatting the memory card.</p>

Error message	Solution
<ul style="list-style-type: none"> • SD CARD Error • Slow SD card. REC stopped. 	<p>The inserted memory card may not be supported by the 360 Round. Change to a supported memory card. Refer to Required specification for memory card specifications.</p>
<ul style="list-style-type: none"> • Storage full 	<p>The memory card or SSD is full. Delete unnecessary files or use another memory card or SSD.</p>
<ul style="list-style-type: none"> • Storage error • Can't record 	<p>The connected SSD may not be supported by the 360 Round. Change to a supported SSD. Use an SSD that supports USB 3.1 Super Speed (5 Gbps) with exFAT file structure.</p>
<ul style="list-style-type: none"> • Connected device is not supported. 	<p>The computer connected with the 360 Round does not meet the minimum specifications. Refer to Required specification for computer specifications.</p>
<ul style="list-style-type: none"> • Slow SSD REC stopped. • SSD too slow. (USB 2.0) 	<p>The Recording is stopped because the connected SSD's writing speed may be slower than the required writing speed for recording with the 360 Round. Change to a supported SSD. Use an SSD that supports USB 3.1 Super Speed (5 Gbps).</p>
<ul style="list-style-type: none"> • MIC INIT FAILED. TURN OFF AUDIO. 	<p>Sound cannot be recorded due to a malfunction of the internal microphone. Update your 360 Round to the latest software. If you cannot solve this problem even after updating the 360 Round, contact a Samsung Service Center.</p>
<ul style="list-style-type: none"> • No update file in the SD card 	<p>There is no updated firmware to install on the 360 Round in the memory card. Save the latest firmware in the memory card first before updating the 360 Round.</p>
<ul style="list-style-type: none"> • Invalid file. Update canceled. 	<p>The software update is canceled because the firmware file is invalid. Save the correct firmware file in the memory card again.</p>

Error messages may appear on the computer as a pop-up window. Check the error messages and follow the instructions

Error message	Solution
<ul style="list-style-type: none"> • Can't show preview. Camera isn't responding. • Can't receive data from camera. Check if camera is turned on or if network cable is plugged in. • Can't show preview. 360 Round program isn't working properly. 	<p>Check the network condition by confirming whether the LAN cable is connected to the LAN port correctly. If the LAN port is connected correctly, check if the network speed is more than 1 Gbps. Click Help → Test network speed on the menu bar in the 360 Round program. You can also run the network connection test (PING test) after turning the 360 Round on.</p>
<ul style="list-style-type: none"> • Allocation output context error. • Allocation output format error. • Couldn't find codec. • Couldn't find encoder. • Couldn't open video codec. If you are using H/W for decoding, you can try to change to S/W for decoding. • Couldn't open audio codec. • Initialize resample error. • Initialize filter error. • Initialize decoder error. 	<p>The computer connected with the 360 Round does not meet the minimum specifications. Refer to Required specification for computer specifications.</p>
<ul style="list-style-type: none"> • Write header file error. 	<p>When you are broadcasting with your 360 Round, click Edit on the menu bar, click Settings → Live broadcasting, and then check the streaming settings in the 360 Round program. When you are recording a video with your 360 Round, check whether the output directory is read only or not.</p>

Error message	Solution
<ul style="list-style-type: none"> • Couldn't allocate stream. • Couldn't allocate video frame. • Couldn't allocate picture. • Couldn't allocate resample context. 	<p>When you are broadcasting with your 360 Round, click Edit on the menu bar, click Settings → Live broadcasting, and then check the streaming settings in the 360 Round program. When you are recording a video with your 360 Round, check whether the storage device is correctly inserted or whether the computer storage folder that you entered exists or not, and then check if there is enough memory available to save the recorded video.</p>
<ul style="list-style-type: none"> • Can't start live broadcasting. Check your streaming URL and try again. 	<p>Click Edit on the menu bar, click Settings → Live broadcasting, and then check the streaming settings, especially the URL settings in the 360 Round program.</p>
<ul style="list-style-type: none"> • Can't start recording. Check your save path and try again. • Recording stopped. Check if save path is correct. 	<p>Check whether the storage device is correctly inserted or whether the computer storage folder that you entered exists or not, and then check if there is enough memory available to save the recorded video.</p>
<ul style="list-style-type: none"> • Live broadcast stopped. Check your network or the streaming server. 	<p>Check the network condition by confirming whether the LAN cable is connected to the LAN port correctly. If the LAN port is connected correctly, check if the network speed is more than 1 Gps. Also, click Edit on the menu bar, click Settings → Live broadcasting, and then check the streaming settings in the 360 Round program.</p>

Error message	Solution
<ul style="list-style-type: none"> • Can't find GTX 1080 GPU. • Cuda initialization error. • Cuda Ctx create error. • cuCtxPopCurrent error. • cuvidCtxLockCreate error. • Error creating video parser. • cuStreamCreate error. • Error creating video decoder. • cuvidCtxLockDestroy error. • WARNING: cuCtxDestroy error. 	<p>Check the GPU (Graphics Processing Unit) in your computer's hardware. Check whether your graphic card is latest one or not and needs to be upgraded. If there is no problem with your GPU, close other programs that use the GPU, such as video player, and restart your computer.</p>
<ul style="list-style-type: none"> • Unusual memory usage detected. This may be caused by GPU load too high. Check if stitching resolution too high or latest graphic card driver version installed and try again. 	<p>Unusual memory usage detected. The GPU is overloaded so that the current task cannot be performed by your computer. Check whether the stitching resolution is too high for your current graphic card to do the task.</p>
<ul style="list-style-type: none"> • Unusual memory usage detected. This may be caused by the network or a streaming server problem. Check network's condition or reduce video bitrate and try again. 	<p>The network or a streaming server has a problem. Check the network condition. Alternatively, click Edit on the menu bar, click Settings → Live broadcasting, and then reduce the Bitrate in the 360 Round program.</p>
<ul style="list-style-type: none"> • Unusual memory usage detected. This may be caused by low storage speed. Check storage performance. 	<p>The connected SSD's writing speed may be slower than the required writing speed. Change a supported SSD. Use an SSD that supports USB 3.1 Super Speed (5 Gbps). When you use the memory card, the inserted memory card may not be supported by the 360 Round. Change to the available memory card. Refer to Required specification for memory card specifications.</p>

Error message	Solution
<ul style="list-style-type: none"> • No audio output. Check that DirectX is installed correctly. 	<p>Restart your computer and install the DirectX program to play the 5.1 ch audio.</p>
<ul style="list-style-type: none"> • Your camera temporarily stopped working. Wait a few seconds and try again. • Your camera temporarily stopped recording. Wait a few seconds and try again. • Your camera temporarily stopped broadcasting. Wait a few seconds and try again. • Your camera temporarily stopped recording and broadcasting. Wait a few seconds and try again. 	<p>Wait until the 360 Round is ready to start recording a video or broadcasting, then the preview screen will appear automatically.</p>
<ul style="list-style-type: none"> • Your camera's too hot. Wait for it to cool down, then try again. • Broadcasting stopped because the camera's too hot. Wait for it to cool down, then try again. • Recording stopped because the camera's too hot. Wait for it to cool down, then try again. 	<p>The 360 Round's temperature is too high to be used. Turn off the 360 Round for more than an hour and restart it.</p>
<ul style="list-style-type: none"> • Your camera's restarting to cool down. It will reconnect soon. 	<p>The 360 Round will be rebooted automatically to cool itself down. After it has rebooted, try to use it again.</p>

Error message	Solution
<ul style="list-style-type: none"> The SD card is locked. Remove the SD card, slide the lock switch to the unlock position, and then reinsert it into your camera. 	<p>The inserted memory card is locked. Remove the memory card from the memory card slot and switch the lock button to the unlock position, and then reinsert it. If you cannot solve this problem by doing the above, you can format it on the 360 Round or computer. Refer to Formatting the memory card.</p>
<ul style="list-style-type: none"> Couldn't read/write SD card. This may be caused by a damaged or incompatible SD card. 	<p>The inserted memory card may have a problem. Change to a supported memory card.</p>
<ul style="list-style-type: none"> There isn't enough space on your camera. Free up some space, then try again. 	<p>There is not enough memory on your memory card. Delete unnecessary files or change the memory card to a new one. Refer to Deleting videos for removing video files from your memory card.</p>
<ul style="list-style-type: none"> There's no enough space on your computer. Free up some space, then try again. 	<p>There is not enough memory in the storage folder. Delete unnecessary files in the folder or change the storage folder. Refer to Deleting videos for removing video files from your memory card.</p>
<ul style="list-style-type: none"> There's a GPU memory overflow error. Select another GPU and try again. 	<p>Change the GPU. Click Edit on the menu bar, click Settings → GPU selection, and then select another GPU for each action in the 360 Round program.</p>
<ul style="list-style-type: none"> There's no enough GPU memory. Close any other applications and try again. 	<p>Close other programs that use the GPU such as a video player and restart your computer.</p>
<ul style="list-style-type: none"> Error occur when SLS recording, failed to write file to disk. 	<p>The inserted memory card may not be supported by the 360 Round. Save the recorded video on your computer.</p>

Error message	Solution
<ul style="list-style-type: none"> • Internet connection is slow. Network speed need to be 1Gbps or faster. 	<p>Check the network condition by confirming whether the LAN cable is connected to the LAN port correctly. If the LAN port is connected correctly, check if the network speed is more than 1 Gps. Click Help → Test network speed on the menu bar in the 360 Round program, and follow the solutions below if the test result is not good.</p> <ul style="list-style-type: none"> • On your computer, launch the Control Panel, click Network and Internet → Network and Sharing Center → Change adapter settings, and then right click the network adapter connected to your 360 Round. Click Status and check whether the network speed next to Speed is more than 1 Gbps. • You can also disconnect the LAN cable from both your computer and 360 Round and reconnect them.
<ul style="list-style-type: none"> • Export as single stitched video file error 	<p>The recorded video (SLS file) is too short to export. Select Export as multiple video files when you export the video in the 360 Round Viewer program.</p>
<ul style="list-style-type: none"> • Output folder does not exist. 	<p>Select another storage folder. Click Edit on the menu bar, click Settings → General, and then click the path next to PC storage to specify another storage folder in the 360 Round program.</p>
<ul style="list-style-type: none"> • Not enough space available for exporting file 	<p>There is not enough capacity on your computer's hard disk. Delete unnecessary files and export the video again.</p>
<ul style="list-style-type: none"> • The file does not exist! 	<p>Check if the file still exists or already has been deleted and then try again.</p>

Safety information

Follow the warning information provided below to prevent incidents such as fire or explosion

- Do not expose the 360 Round to physical impact or damage.
- Use only manufacturer-approved accessories and supplies.
- Prevent the power adapter jack, LAN port, etc. from contacting conductive elements, such as metal or liquids.
- If any part of the 360 Round is cracked or broken, stop using the 360 Round immediately.

Follow the warnings below to prevent injury to people or damage to the 360 Round

- Do not allow children or animals to chew or suck the 360 Round.
- The 360 Round can be used in locations with an ambient temperature of 0 °C to 35 °C. You can store the 360 Round at an ambient temperature of -20 °C to 50 °C. Using or storing the 360 Round outside of the recommended temperature ranges may damage the 360 Round.
- Do not use your 360 Round in a hot environment or near fire.
- Use only the power adapter supplied with the 360 Round. Using an unapproved adapter may cause an electric shock.
- When connecting the 360 Round to the tripod or fixing it to a high position, make sure to tighten the connecting part.
- Do not use your 360 Round outdoor during a thunderstorm.

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