Flash settings

Set the flash mode, exposure value, flash brightness, or multi flash when you attach an external flash to the camera. You can also set wireless sync to control internal or external flash. The flash settings are supported only when you attach a compatible, optional external flash (SEF-580A).

Setting external flash

| To set external flash, | In Shooting mode, press [MENU] → 🖭 → **External Flash Settings** → an option. |

Option	Description
Flash Mode	• **A-TTL**: In the A-TTL (Advanced Through The Lens) mode, the camera measures the light reflected by the subject through the lens. Then, it calculates the optimum exposure based on the exposure value and shutter speed. • **Manual Flash**: The flash emits the full amount of light or the flash intensity can be adjusted manually. • **Multi Flash**: When you press [**Shutter**], the flash fires multiple times based on the number you have set.
Flash EV	Set the exposure of the flash when the flash mode is **A-TTL**.
Flash Output	Set the brightness of the flash when the flash mode is **Manual Flash**.
Multi Flash Settings	Set the count, brightness, or frequency of the flash when the flash mode is **Multi Flash**.

> If data can be exchanged between the camera and the flash, the settings for the external flash can be adjusted on the camera or the flash. Your previous options will be applied.

111

Setting wireless sync for internal or external flash

Set wireless sync to control internal and external flash units remotely via wireless signals. The remote system consists of a master flash that is mounted on the camera and one or more slave flash units. A slave flash is assigned to one of three groups: A, B, or C.

To set wireless sync,	In Shooting mode, press [MENU] → ⬡ → **Internal Wireless Flash** or **External Wireless Flash** → an option.

* Default

Option	Description
Use Wireless Flash	Set to use wireless sync. (**Off***, **On**)
Channel	Select channels for wireless sync. There are four remote channels available to allow multiple remote systems to operate at the same time. Master and slave flash units, in the same remote system, must be set to the same channel. (**Ch. 1**, **Ch. 2**, **Ch. 3**, **Ch. 4**)
Group Flash Mode	Set the flash mode for group A, B, or C. Changes to the flash mode must be made on the master flash. The changes are then applied to slave group A, B, or C, and the slave groups operate as a remote system of the flash mode (TTL or manual) according to the settings for the master flash. • **A-TTL**: Set the exposure of the flash when the flash mode is **A-TTL**. • **Manual Flash**: Set the brightness of the flash when the flash mode is **Manual Flash**. • **Off**: Do not fire the flash.

> • You cannot select **External Flash Settings** when you use the External Wireless Flash function.
> • For information about using the wireless sync feature with an external flash, refer to the optional external flash's (SEF-580A) user manual.

Locking the flash intensity

When the flash mode is set to A-TTL, the camera automatically calculates the optimum exposure through pre-flash. If the exposure is not calculated correctly, use the FEL function. The pre-flash fires on the area that you set and the flash intensity is locked.

To lock the flash intensity,	Set the function of [**AEL**] to **FEL** → focus on the exposure area → press [**AEL**].

Metering

The metering mode refers to the way in which a camera measures the quantity of light.

The camera measures the amount of light in a scene, and in many of its modes, uses the measurement to adjust various settings. For example, if a subject looks darker than its actual color, the camera captures an overexposed photo of it. If a subject looks lighter than its actual color, the camera captures an underexposed photo of it.

The brightness and overall mood of the photo can also be affected by how the camera measures the amount of light. Select an appropriate setting for a shooting condition.

To set a metering option,	In Shooting mode, press [ ] → an option.

Multi

The Multi mode calculates the amount of light in multiple areas. When light is sufficient or insufficient, the camera adjusts the exposure by averaging the overall brightness of the scene. This mode is suitable for general photos.

Center-weighted

The Center-weighted mode calculates a broader area than the Spot mode does. It sums up the amount of light in the center portion of the shot (60–80 %) and that of the rest of the shot (20–40 %). It is recommended for situations where there is a slight difference in brightness between a subject and a background or an area of the subject is large compared to the overall composition of the photo.

Spot

The Spot mode calculates the amount of light in the center. When you capture a photo in conditions where there is a strong backlight behind a subject, the camera adjusts the exposure so as to shoot a subject correctly. For example, when you select the Multi mode in a strong backlight condition, the camera calculates that the overall amount of light is abundant, which results in a darker photo. The Spot mode can prevent this situation as it calculates the amount of light in a designated area.
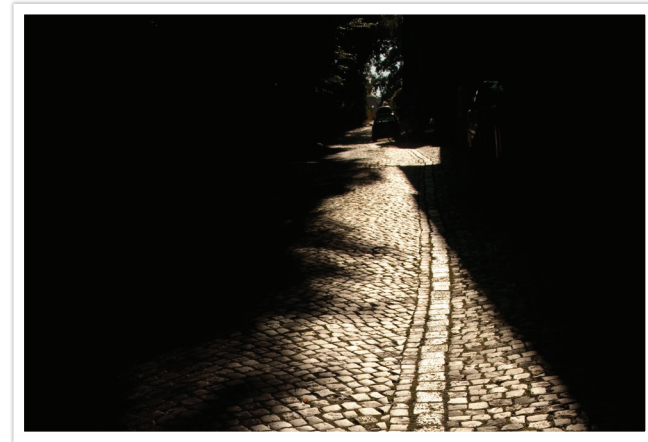
The subject is in bright color while the background is dark. The Spot mode is recommended for a situation like this where a huge difference in the exposure exists between a subject and a background.

Measuring the exposure value of the focus area

When this function is turned on, the camera automatically sets an optimal exposure by calculating the brightness of the focus area. This function is only available when you select **Spot** metering or **Multi** metering, and **Selection AF**.

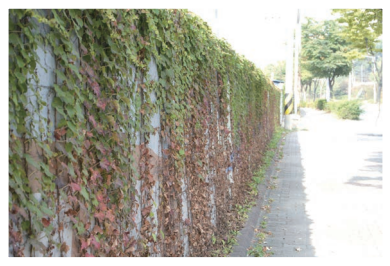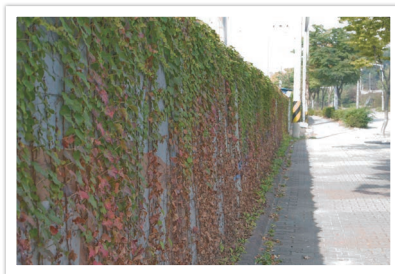| To set this function,	In Shooting mode, press [MENU] → ◎ → **Link AE to AF Point** → an option.

Dynamic Range

This function automatically corrects the loss of bright detail that can occur due to shading differences in the photo.

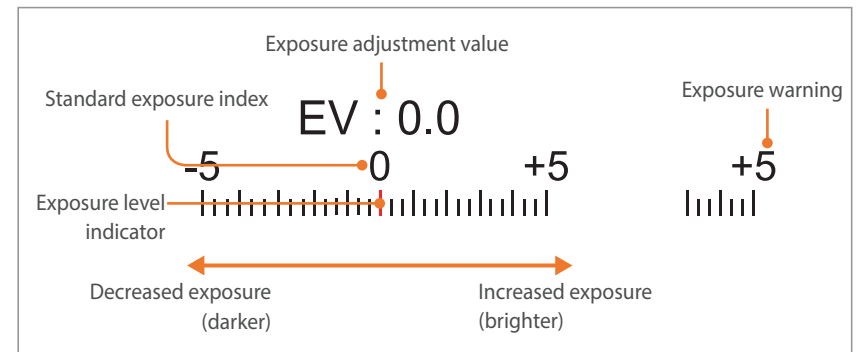| To set Dynamic Range options,	In Shooting mode, press [MENU] → ⃞ → **Dynamic Range** → an option.

Without Dynamic Range effect

With Dynamic Range effect

* Default

Icon	Description
⃞	**Off***: Do not use Dynamic Range.
⃞	**Smart Range+**: Correct the loss of bright detail. ✎ You cannot set ISO 100.
⃞	**HDR**: Capture several photos with different exposures, and then combine them to automatically create a single image. ✎ • To set the exposure adjustment value press [➡](right), and then select **Low**, **Medium**, or **High**. • You cannot set an ISO option higher than ISO 3200. • Dynamic Range options cannot be set with Picture Wizard options at the same time.

117

Exposure compensation

The camera automatically sets the exposure by measuring the levels of light from the photo's composition and the position of a subject. If the exposure set by the camera is higher or lower than you expected, you can adjust the exposure value manually. The exposure value is adjustable in ±5 increments. The camera displays the exposure warning in red for each step beyond ±5 range.

To adjust the exposure value, while holding down [⊞], scroll command dial 1 or 2. You can also adjust the exposure value by pressing [Fn], and then selecting **EV**.

Exposure adjustment value

Standard exposure index

EV : 0.0

Exposure warning

Exposure level indicator

-5   0   +5   +5

Decreased exposure (darker)

Increased exposure (brighter)

-2

Original

+2

118

Using Framing Mode

When you adjust the aperture value or shutter speed, the exposure changes according to the settings, so the display may darken. With this function on, the brightness of the display is constant regardless of the settings, so you can better frame your shot.

To use Framing Mode,	In Shooting mode, press [MENU] → ◎ → **Framing Mode** → an option.

Viewing the overexposure guide

View overexposed areas on a photo in Shooting mode before capturing a photo. Setting this feature will allow the overexposed areas of a photo to blink.

To view the overexposure guide,	In Shooting mode, press [MENU] → ◎ → **Overexposure Guide** → an option.

Using the brightness adjustment guide

Adjust the brightness using the selected area as a reference.

|	
To adjust the brightness,	In Shooting mode, press [MENU] → ◎ → **Brightness Adjust Guide** → **On** → select the reference area → adjust the brightness.

- This feature is available only in Program, Aperture priority, or Shutter priority mode.
- This feature cannot be set with the overexposure guide at the same time.
- This feature cannot be set with the Dynamic Range HDR option at the same time.
- This feature cannot be set with flash options at the same time.

119

Exposure/Focus lock

When you cannot achieve an appropriate exposure because of a strong brightness contrast or you want to capture a photo on which the subject is out of the auto focus area, lock the focus or exposure and then capture a photo.

For example, to take a photo with the focus locked, set the focus frame to where you want to and press the [**Shutter**] halfway to focus. Then, press [**AEL**] to lock the focus.
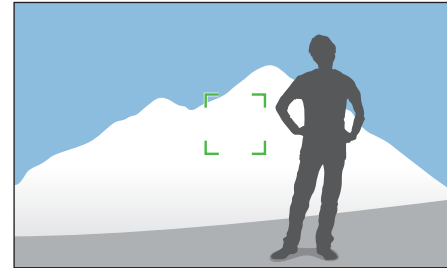
After locking the focus and changing to a desired composition, measure the exposure by pressing [**Shutter**] halfway, and then press [**Shutter**] to take a photo.

To take a photo with the exposure locked, set the focus frame to where you want to and press the [**Shutter**] halfway to measure the exposure. After locking the exposure by pressing [**AEL**] and changing to a desired composition, press the [**Shutter**] halfway to focus.
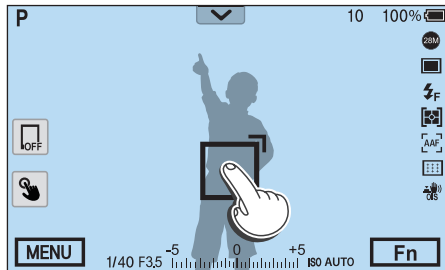
> You can change the function assigned to the button to focus lock, exposure lock, or both of them. (p. 174)

Exposure/Focus separation

Separate the exposure area and the focus area or merge them again. This feature is available only when Touch AF is set to **Touch AF**.
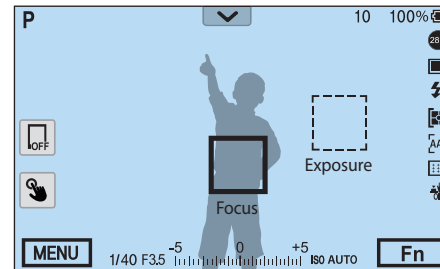
1 On the screen, touch an area to focus on it.

- The exposure separation icon ⌐ will appear on the focus frame.

2 Drag ⌐ to the exposure area.

- The focus area and the exposure area will be separated.
- Touch and hold each area to lock the focus or exposure setting.
- Drag the areas together to merge the focus area and the exposure area.

3 Press [**Shutter**] to capture the photo.

- The focus area and the exposure area will return to their pre-shooting position.

> If you press [AEL] while its function is set to **AEL Hold**, the exposure/focus will not be separated.

121

Video functions

The functions available for video are explained below.

Movie size

Set the movie size.

| To set movie size options, | In Shooting mode, press [MENU] → 🎬 → **Movie Size** → an option. |

* Default

Icon	Size	Recommended for
DC 24P	4096X2160 (24 fps) (1.9:1)	View on a 4K UHDTV.
UHD 30P	3840X2160 (30 fps) (16:9)	View on a 4K UHDTV.
FHD 60P *	1920X1080 (60 fps) (16:9)	View on a Full HDTV. (Videos recorded with this option may not play on some HDTVs or smart phones that do not support 60 fps.)
FHD 30P	1920X1080 (30 fps) (16:9)	View on a Full HDTV.
FHD 24P	1920X1080 (24 fps) (16:9)	View on a Full HDTV.
FHD 15P	1920X1080 (15 fps) (16:9)	View on a Full HDTV. (Available only with some Smart Filter options.)
HD 60P	1280X720 (60 fps) (16:9)	View on an HDTV.
HD 30P	1280X720 (30 fps) (16:9)	View on an HDTV.
VGA 60P	640X480 (60 fps) (4:3)	View on a TV.
VGA 30P	640X480 (30 fps) (4:3)	View on a TV.

Movie quality

Set the Movie quality.

To set movie quality options,	In Shooting mode, press [MENU] → ▭ → **Movie Quality** → an option.

* Default

Icon	Extension	Description
	HEVC	**Normal**: Record videos in normal quality.
	HEVC	**HQ***: Record videos in high quality.

Multi Motion

Set the playing speed of a video.

To set playing speed options,	In Shooting mode, press [MENU] → ▭ → **Multi Motion** → an option.

* Default

Icon	Description
	x0.25: Record a video to view it at 1/4 normal speed during playback. Available only with 1920X1080 (30 fps), 1280X720 (30 fps), 640X480 (30 fps).
	x0.5: Record a video to view it at 1/2 normal speed during playback. Available only with 1920X1080 (60 fps), 1920X1080 (30 fps), 1280X720 (60 fps), 1280X720 (30 fps), 640X480 (60 fps), 640X480 (30 fps).
	x1*: Record a video to view it at normal speed during playback.
	x5: Record a video to view it at 5X normal speed during playback.
	x10: Record a video to view it at 10X normal speed during playback.
	x20: Record a video to view it at 20X normal speed during playback.

- If you select an option other than **x1**, the sound recording function and the Distortion Correct function will not be supported.
- The available options may differ depending on shooting conditions.

DIS (Anti-Shake)

Set the Digital Image Stabilization function.

To set the DIS function,	In Shooting mode, press [MENU] → 🎥 → **DIS (Anti-Shake)** → an option.

* Default

Option	Description
Off*	Do not use the DIS function.
On	Use the DIS function.

> • If you record a video with the DIS function, the video will be recorded at a narrower angle than the lens' angle.
> • The DIS function is not supported when you attach a fish-eye lens.

Fader

You can fade in or fade out a scene using the fader function on the camera without having to do it on a PC. Set the fade in option to gradually fade in at the start of the scene. Set the fade out option to gradually fade out the scene. Use the function appropriately and add dramatic effects on your videos.

To set fader options,	In Shooting mode, press [MENU] → 🎥 → **Fader** → an option.

* Default

Icon	Description
OFF	**Off***: Fader function not used.
	In: Scene gradually fades in.
	Out: Scene gradually fades out.
	In-Out: The fader function is applied at the start and end of the scene.

> When you use the fader function, it may take longer to save a file.

Voice

Sometimes, a muted video is more appealing than the one with sound. Turn the voice off to record a muted video.

To set voice options,	In Shooting mode, press [MENU] → ▢◁ → **Voice** → an option.

Wind Cut

When you record videos in noisy environments, unintended sounds can be recorded in videos. In particular, severe wind noise recorded in videos distracts you from enjoying your videos. Use the Wind Cut function to remove some surrounding noise in addition to wind noise.

To reduce wind sound,	In Shooting mode, press [MENU] → ▢◁ → **Wind Cut** → an option.

Mic Level

Set the mic level for the shooting conditions.

To set the mic level,	In Shooting mode, press [MENU] → ▢◁ → **Mic Level** → rotate the navigation button or press [➖/➖] to adjust the mic level → touch **Set**.

Smart Range

Correct the loss of bright detail.

To set Smart Range options,	In Shooting mode, press [MENU] → ▢◁ → **Smart Range** → an option.

Chapter **3**

Playback/Editing

Learn about how to play back and edit photos and videos.

Searching and managing files

Learn how to view photo and video thumbnails and how to protect or delete files.

> ✎ If you perform no operations for a while, information and icons on the screen disappear. When you press a button or touch the screen, they will reappear.

Viewing photos

1 Press [▶].

• The most recent file you captured will be displayed.
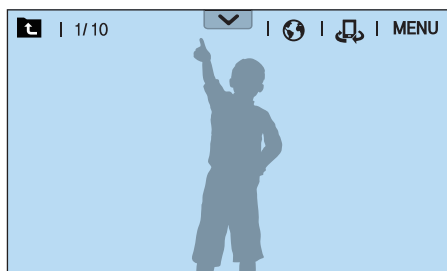
2 Scroll the command dial 2 or rotate the navigation button or press [◉/◉] to scroll through files.

• You can also drag the image left or right to move to another file.

> ✎ You may not be able to edit or play back files that were captured with other cameras, due to unsupported sizes or codecs. Use a computer or another device to edit or play back these files.

Viewing image thumbnails

In order to search for photos and videos you want, convert to the thumbnail view. The thumbnail view displays multiple images at a time so that you can easily look through items you wish to find. You can also classify and display files by category, such as date or file type.
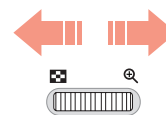

 Scroll the command dial 1 to the left to select the thumbnail view mode.
(Scroll the command dial 1 to the right to return to the previous mode.)

Viewing files by category

1 In the thumbnail view, press [MENU] → ▶ → **Filter** → a category.

- You can also touch the current category name to open the option list.

* Default

Option	Description
All*	View files normally.
Date	View files by the date they were saved.
Type	View files by the file type.

2 Select a list to open it.

3 Select a file to view it.

4 Touch 🔙 to return to the previous view.

Viewing files as a folder

Continuous shots appear as a folder. Selecting a folder will play back all photos automatically. Deleting a folder will delete all photos in the folder.

1 In Playback mode, scroll the command dial 2 or rotate the navigation button or press [◖/◗] to move to a desired folder.

- You can also drag the image left or right to move to a desired folder.
- The camera will automatically play back photos in the folder.
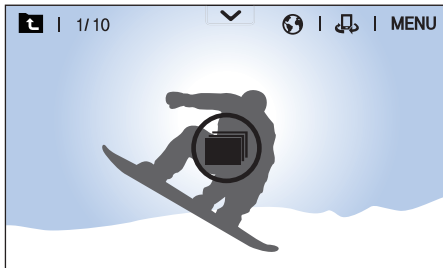
2 Scroll the command dial 1 to the right to open the folder.

- You can also touch the folder on the screen or press [▣] to open the folder.

3 Scroll the command dial 2 or rotate the navigation button or press [◖/◗] to move to another file.

- You can also drag the image left or right to move to another file.

4 Scroll the command dial 1 to the left or press [▣] to return to Playback mode.

- You can also touch ⤴ to return to Playback mode.

Protecting files

Protect your files from accidental deletion.

1 In Playback mode, press [MENU] → ▶ → **Protect** → **Multiple Protect**.

2 Scroll the command dial 2 or rotate the navigation button or press [◖/◗] to move to a file, and then select the file by pressing [⊙].

3 Press 🔒.

> • You cannot delete or rotate a protected file.
> • You can directly protect a file in Playback mode by selecting a file, and then pressing [🔒]. To unprotect the file, press [🔒] again.
> • For photos that are saved as a folder, press [🔒] while the folder is selected to protect all files.

Lock/Unlock all files

Lock or unlock all files.

1 In Playback mode, press [MENU] → ▶ → **Protect** → **Protect All**.

2 Select an option.

Option	Description
Cancel	Return to the previous menu.
Unlock	Unlock all files.
Lock	Lock all files.

Deleting files

Delete files in Playback mode and secure more space on your memory card. Protected files are not deleted.

Deleting a single file

You can select a single file and delete it.

1 In Playback mode, select a file, and then press [🗑].

2 When the pop-up message appears, select **Yes**.

Deleting multiple files

You can select multiple files and delete them.

1 In Playback mode, press [MENU] → ▶ → **Delete** → **Multiple Delete**.

• In thumbnails view, press [MENU] → ▶ → **Select Item**.

• Alternatively, in thumbnails view, press [🗑], and then select files to delete.

2 Scroll the command dial 2 or rotate the navigation button or press [➖/➖] to move to a file, and then select the file by pressing [OK].

• Press [OK] again to cancel your selection.

3 Press [🗑].

4 When the pop-up message appears, select **Yes**.

Deleting all files

You can delete all files on the memory card at once.

1 In Playback mode, press [MENU].

2 Select ▶ → **Delete** → **Delete All**.

3 When the pop-up message appears, select **Yes**.

131

Viewing photos

Enlarging a photo

You can enlarge photos when viewing them in Playback mode. You can also use the Trim function to extract the portion of the image displayed on the screen and save it as a new file.

1/10 | OK Full Image | Fn Crop

X 2.1

Magnification (The maximum magnification may differ by resolution.)
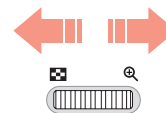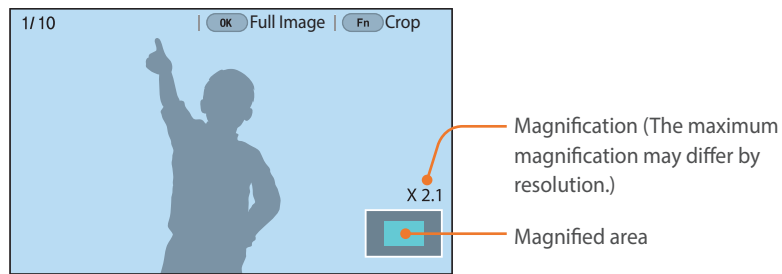
Magnified area

Scroll the command dial 1 to the right to enlarge a photo. (Scroll the command dial 1 to the left to reduce a photo.)

To	Do this
Move magnified area	Press [DISP/◣/➖/➖].
Crop the enlarged image	Press [Fn]. (saved as a new file)
Return to the original image	Press [OK].

- You can also pinch your fingers together or spread them apart on the screen to reduce or enlarge a photo. You can also double-tap an area to enlarge it quickly.
- You can scroll through files by rotating the navigation button, even when a photo is enlarged.

Viewing a slide show

You can view photos in a slide show and apply various effects.

1 In Playback mode, press [MENU].

2 Select ▶ → **Slide Show Options**.

3 Select a slide show effect option.

- Skip to step 4 to start a slide show with no effects.

* Default

Option	Description
Play Mode	Set whether or not to repeat the slide show. (**One Play***, **Repeat**)
Interval	Set the interval between photos. (**1 sec***, **3 sec**, **5 sec**, **10 sec**)
Effect	• Set a scene change effect between photos. • Select **Off** to cancel effects.

4 Press [MENU].

5 Select **Start Slide Show**.

6 View the slide show.

- Press [ꂮ] to pause.
- Press [ꂮ] again to resume.
- Press [MENU] to stop the slide show and return to Playback mode.

Viewing the overexposure guide

Set the overexposed areas of a photo to blink.

To view the overexposure guide,	In Playback mode, press [MENU] → ▶ → **Overexposure Guide** → an option.

Viewing interval shots

View photos that are captured with the Interval Capture function.

To view interval shots,	In Playback mode, press [MENU] → ▶ → **Play Interval Shots**.

Auto rotating

With Auto Rotate on, the camera automatically rotates photos you have captured vertically so they fit the screen horizontally.

To set auto rotate options,	In Playback mode, press [MENU] → ▶ → **Auto Rotate** → an option.

Converting to JPEG

Convert RAW files to JPG files.

To convert files,	In Playback mode, press [MENU] → ▶ → **Convert to JPG**.

Playing videos

In Playback mode, you can play a video, capture an image from a video, or crop a video to save as another file.
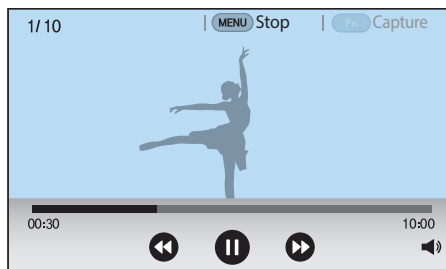
Icon	Description
◀◀ ◀	View previous file/Scan backward. (Each time you touch the icon while playing the video, you change the scan speed in this order: 2X, 4X, 8X.)
❚❚ ▶	Pause or resume playback.
▶▶ ▶▶	View next file/Scan forward. (Each time you touch the icon while playing the video, you change the scan speed in this order: 2X, 4X, 8X.)
◀))	Adjust the volume or mute the sound.

Scanning backward or forward

To scan backwards or forwards through a video file while it is playing, use one of the following methods.

• Touch ◀ ▶▶. Each time you touch the icon, you change the scan speed in this order: 2X, 4X, 8X.

• Press [◖/◗]. Each time you press the button, you change the scan speed in this order: 2X, 4X, 8X.

• Scroll the command dial 1 to the left or right. Each time you scroll the command dial 1, you change the scan speed in this order: 2X, 4X, 8X.

• Drag the handles that appear on the progress bar to the left or right. You can change the playback position in the video.

Adjusting the brightness of a video

Adjust the brightness of a video while playing it.

To adjust the brightness of a video,	Touch the left half of the display → drag upward or downward.
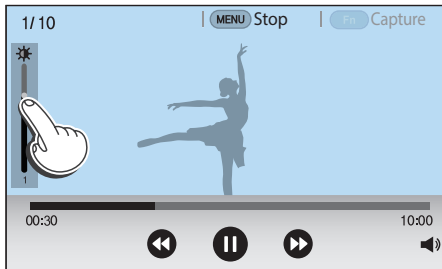
Adjusting the volume of a video

Adjust the volume of a video while playing it.

To adjust the volume of a video,	Touch the right half of the display → drag upward or downward.
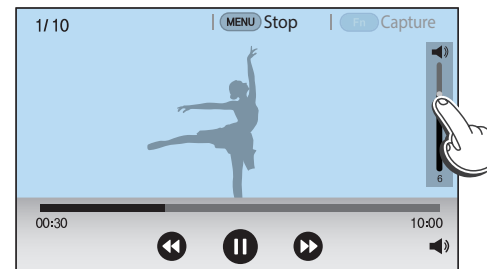
You can also touch 🔊 and drag the slider on the volume control bar upward or downward.

Trimming a video during playback

1 In Playback mode, scroll to a video, and then press [MENU].

2 Select **Trim Movie**.

3 Press [🖧] or touch ▶ to start playing the video.

4 Press [🖧] or touch ⏸ at the point where you want the trimming to begin.

5 Press [Fn] or touch **Start Point**.

6 Press [🖧] or touch ▶ to resume playing the video.

7 Press [🖧] or touch ⏸ at the point where you want the trimming to end.

8 Press [Fn] or touch **End Point**.

9 Press [Fn] or touch **Trim** to trim a video.

• You can adjust the scene to be cropped by dragging the handles that appear on the progress bar.

10 When the pop-up message appears, select **Yes**.

> • You cannot trim a video recorded in 3D mode.
> • The original video should be at least 10 seconds long.
> • The camera will save the edited video as a new file and leave the original video intact.

Capturing an image during playback

1 While viewing a video, press [🖧] or touch ⏸ at the point where you want to capture an image.

2 Press [Fn] or touch **Capture**.

> • You cannot capture an image from a video recorded in 3D mode.
> • The resolution of the captured image will be the same as the original video.
> • The captured image is saved as a new file.

137

Editing photos

Perform photo editing tasks, such as resizing or rotating. Edited photos are saved as new files under different file names. Photos captured in some modes cannot be edited with the Image Edit function.

To edit images,	In Playback mode, scroll to a photo, and then press [Fn] → an option.

> • You can also edit images in Playback mode by selecting a photo, and then pressing [MENU] → ▶ → **Edit Image**.
> • Some images may not be edited with the Edit Image function. In this case, use the supplied image editing software.
> • The camera will save edited photos as new files.
> • When you edit photos, the camera will automatically convert them to a lower resolution. Photos that you rotate or resize manually are not automatically converted to a lower resolution.
> • You cannot edit photos while viewing files as a folder. Open the folder and select a photo to edit each photo.

Cropping a photo

1 Touch 🖊 → ✂.

2 Drag the sides of the box to adjust the size of the area.

3 Drag the box to move the location of the area.

4 Press [OK] or touch **Done**.

5 Touch 💾 to save.

138

Rotating a photo

1 Touch → .

2 Touch an option.
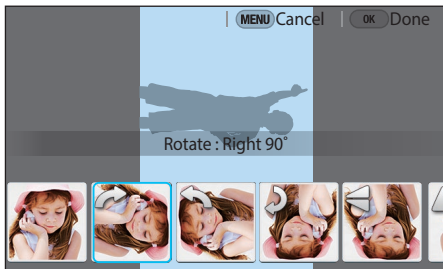
3 Press [ ] or touch **Done**.

4 Touch to save.

> • You can also rotate a photo in Playback mode by pressing [MENU], and then selecting → **Rotate** → a desired option.
> • The camera will overwrite the original file.

Resizing photos

Change the size of a photo and save it as a new file.

1 Touch → .

2 Touch an option.
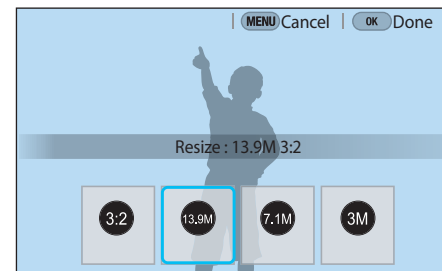
3 Press [ ] or touch **Done**.

4 Touch to save.

> Available resize options differ depending on the original size of the photo.

Adjusting your photos

You can correct captured photos by adjusting the brightness, contrast, or color.

1 Touch 🎨.

2 Touch an adjusting option.
  • If you selected 🌼 (Auto adjustment), skip to step 4.

Icon	Description
🌼	Original (Reset to the original image.)
🌼	Auto adjustment
🌼	Brightness
🌼	Contrast
🌼	Saturation
🌼	RGB adjustment
🌼	Color Temperature
🌼	Exposure
🌼	Hue

3 Scroll the command dial 1 or rotate the navigation button or press [◢/◣] to adjust the option.
  • You can also drag the slider or touch +/- to adjust the option.

4 Press [⏏] or touch **Done**.

5 Touch 💾 to save.

Retouching faces

1 Touch 🌑 → ✨.

2 Scroll the command dial 1 or rotate the navigation button or press [◢/◣] to adjust the option.
  • You can also drag the slider or touch +/- to adjust the option.
  • As the number increases, the skin tone becomes brighter and smoother.

3 Press [⏏] or touch **Done**.
  • To cancel correction, touch 🌑.

4 Touch 💾 to save.

140

Applying Smart Filter effects

Apply special effects to your photos.

1 Touch ![icon], and then touch an option.

|MENU Cancel | OK Done

Smart Filter : Vignetting
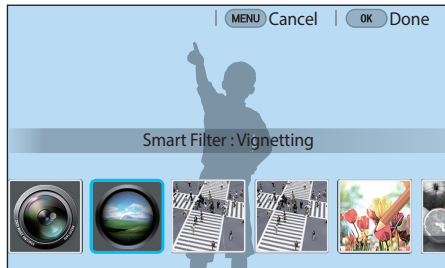
Option	Description
Original	No effect
Vignetting	Apply the retro-looking colors, high contrast, and strong vignette effect of Lomo cameras.
Miniature (H)	Apply a tilt-shift effect to make the subject appear in miniature. The top and bottom of the photo will be blurred.

Option	Description
Miniature (V)	Apply a tilt-shift effect to make the subject appear in miniature. The left and right of the photo will be blurred.
Watercolor	Apply a watercolor painting effect.
Red	Desaturate all colors but red.
Green	Desaturate all colors but green.
Blue	Desaturate all colors but blue.
Yellow	Desaturate all colors but yellow.

2 Press [⌨] or touch **Done**.

3 Touch ![icon] to save.

Chapter 4

Connecting & Transferring

Learn how to share photos or videos and use various features.

Connecting to a smart phone

Using the NFC Feature

Place a smart phone's NFC antenna near the camera's NFC tag to connect the camera to the smart phone. You can also transfer files to an NFC-enabled device in Playback mode.

> • This feature is supported by NFC-enabled smart phones running Android OS. It is recommended that you use the latest version. This feature is not available for iOS devices.
> • You should install Samsung Camera Manager on your phone or device before using this feature. You can download the application from GALAXY Apps or the Google Play Store. Samsung Camera Manager is compatible with Samsung camera NX1 or later and is supported by Android OS 4.1 or higher.
> • To read an NFC tag, place the NFC-enabled device near the camera's NFC tag for more than 2 seconds.
> • You can set the size for transferred photos by pressing [MENU], and then selecting ⓑ → **MobileLink/NFC Image Size** → an option.
> • Do not modify the NFC tag in any way.

Using NFC features in Shooting mode

Launch MobileLink, Remote Viewfinder or Quick Transfer by reading a tag from an NFC-enabled device to connect the camera and a smart phone, and then pressing [ ]. (p. 144, 146, 148)

Using NFC features in Playback mode (Photo Beam)

In Playback mode, the camera transfers the current files to the smart phone automatically by placing the two devices close to each other while they are connected via Bluetooth.

• To transfer multiple files, select files from the thumbnail view, and then read a tag from an NFC-enabled device.

Sending files to a smart phone

The camera connects to a smart phone that supports the MobileLink feature via Bluetooth or Wi-Fi. You can easily send photos or videos to your smart phone.

> • The MobileLink feature is supported by smart phones or tablets running Android OS or iOS. (Some features may not be supported by some models.) Before using this feature, update the device's firmware to the latest version. If the firmware version is not the most recent, this function may not perform properly.
> • You should install Samsung Camera Manager on your phone or device before using this feature. You can download the application from GALAXY Apps or the Google Play Store. Samsung Camera Manager is compatible with Samsung camera NX1 or later and is supported by Android OS 4.1 or higher.
> • When there are no files in the camera memory, you cannot use this feature.
> • You can view up to 1,000 recent files and send up to 1,000 files at a time.
> • When you send Full HD or UHD videos using the MobileLink feature, you may not be able to play back files on some devices that are not supported by HEVC codecs.
> • When using this feature on an iOS device, the device may lose its Wi-Fi connection.
> • You cannot send RAW files.
> • You can set the size for transferred photos by pressing [MENU], and then selecting 🔧 → **MobileLink/NFC Image Size** → an option.
> • You can only connect to Android OS devices that support the Bluetooth feature. You cannot connect to Bluetooth speakers, headsets, or other accessories.
> • The screen turns off if you perform no operations on the camera for 30 seconds.

1 In Shooting mode, press [🔊].

- • You can also press and hold [🔊] to launch the MobileLink feature directly.

2 Touch 🔘.

- • If the pop-up message that prompts you to download the application appears, select **Next**.
- • To require PIN verification when connecting the smart phone to the camera, select **Security Settings**. (p. 180)
- • If the pop-up message that prompts you to set the auto time setting appears, select **Yes** to sync the camera's date and time to the smart phone's. (p. 180)

3 On the smart phone, turn on Samsung Camera Manager.

- • Ensure that Bluetooth and Wi-Fi are enabled on the camera and the smart phone before turning on the application.
- • To start the application automatically on an NFC-enabled smart phone, turn on the function and place the smart phone near the NFC tag (p. 34) on the camera. Verify that the smart phone is connected to your camera, and then skip to step 7.

4 Select the camera from the smart phone and connect.

- The smart phone can connect to only one camera at a time.
- If the Wi-Fi Privacy lock is enabled and Wi-Fi is connected, enter the PIN displayed on the camera to the smart phone.

5 On the camera, allow the smart phone to connect to your camera or confirm the registration request.

- If the smart phone has been connected to your camera before, it is connected automatically.

6 Select files to transfer.

7 On the smart phone, touch the copy button.

- The camera will send the files to the smart phone.

145

Using a smart phone as a remote shutter release

The camera connects to a smart phone that supports the Remote Viewfinder feature via Bluetooth or Wi-Fi. Use the smart phone as a remote shutter release with the Remote Viewfinder feature.

> • The Remote Viewfinder feature is supported by smart phones or tablets running Android OS or iOS. (Some features may not be supported by some models.) Before using this feature, update the device's firmware to the latest version. If the firmware version is not the most recent, this function may not perform properly.
> • You should install Samsung Camera Manager on your phone or device before using this feature. You can download the application from GALAXY Apps or the Google Play Store. Samsung Camera Manager is compatible with Samsung camera NX1 or later and is supported by Android OS 4.1 or higher.
> • This function is not available when you attach a 3D lens in 3D mode.
> • You can only connect to Android OS devices that support the Bluetooth feature. You cannot connect to Bluetooth speakers, headsets, or other accessories.

1 In Shooting mode, press [🔗].

- • If the pop-up message that prompts you to select the device to connect appears, select the type of your smart phone.

2 Touch 📱 .

- • If the pop-up message that prompts you to download the application appears, select **Next**.
- • To require PIN verification when connecting the smart phone to the camera, select **Security Settings**. (p. 180)
- • If the pop-up message that prompts you to set the auto time setting appears, select **Yes** to sync the camera's date and time to the smart phone's. (p. 180)

3 On the smart phone, turn on Samsung Camera Manager.

- • Ensure that Bluetooth and Wi-Fi are enabled on the camera and the smart phone before turning on the application.
- • To start the application automatically on an NFC-enabled smart phone, turn on the function and place the smart phone near the NFC tag (p. 34) on the camera. Verify that the smart phone is connected to your camera, and then skip to step 6.

4 Select the camera from the smart phone and connect.

• The smart phone can connect to only one camera at a time.

• If the Wi-Fi Privacy lock is enabled and Wi-Fi is connected, enter the PIN displayed on the camera to the smart phone.

5 On the camera, allow the smart phone to connect to your camera or confirm the registration request.

• If the smart phone has been connected to your camera before, it is connected automatically.

6 On the smart phone, select ⚙ to open the smart panel.

7 On the smart phone, set the shooting options.

• While using this feature, some buttons are not available on your camera.

• The zoom button and the shutter button on your smart phone will not function when using this feature.

• Some shooting options are not supported.

• Shooting options that you have set will remain on the camera after the connection with the smart phone has ended.

8 Touch ⬅ to return to the shooting screen.

9 On the smart phone, touch and hold 📷 to focus, and then release it to capture the photo.

• Touch 🎥 to record a video and touch ⏹ to stop a video.

• Touch 🖼 to view the captured photo and send it to the smart phone.

• If the GPS feature is activated on the smart phone, the GPS information will be saved with the captured photo.

> ✒️ • When you use this feature, the ideal distance between the camera and the smart phone may vary, depending on your surroundings.
> • The smart phone must be within 7 m of the camera to use this feature.
> • It will take some time to capture the photo after you release 📷 on the smart phone.
> • The Remote Viewfinder function will deactivate when:
>   - you answer an incoming call on the iOS devices.
>   - there is an incoming call on the smart phone
>   - either the camera or the smart phone turns off
>   - device loses a Bluetooth or Wi-Fi connection
>   - Bluetooth or Wi-Fi connection is poor or unstable
>   - you perform no operations for approximately 3 minutes while connected

Saving files to a smart phone automatically

The camera connects to a smart phone that supports the Quick Transfer feature via Bluetooth. When you capture a photo with your camera, the photo is saved to a smart phone automatically.

> • The Quick Transfer feature is supported by smart phones or tablets running Android OS or iOS. (Some features may not be supported by some models.) Before using this feature, update the device's firmware to the latest version. If the firmware version is not the most recent, this function may not perform properly.
> • You should install Samsung Camera Manager on your phone or device before using this feature. You can download the application from GALAXY Apps or the Google Play Store. Samsung Camera Manager is compatible with Samsung camera NX1 or later and is supported by Android OS 4.1 or higher.
> • If you set this function, the setting is maintained even when you change the Shooting mode.
> • This feature may not be supported in some modes or may not be available with some shooting options.
> • You can only connect to Android OS devices that support the Bluetooth feature. You cannot connect to Bluetooth speakers, headsets, or other accessories.

1 In Shooting mode, touch 🔲.
- You can also press [🔊], and then select 🔲.
- If the pop-up message that prompts you to download the application appears, select **Next**.
- To require PIN verification when connecting the smart phone to the camera, select **Security Settings**. (p. 180)
- If the pop-up message that prompts you to set the auto time setting appears, select **Yes** to sync the camera's date and time to the smart phone's. (p. 180)

2 On the smart phone, turn on Samsung Camera Manager.
- Ensure that Bluetooth and Wi-Fi are enabled on the camera and the smart phone before turning on the application.
- To start the application automatically on an NFC-enabled smart phone, turn on the function and place the smart phone near the NFC tag (p. 34) on the camera. Verify that the smart phone is connected to your camera, and then skip to step 5.

3 Select the camera from the smart phone and connect.
- The smart phone can connect to only one camera at a time.
- If the Wi-Fi Privacy lock is enabled and Wi-Fi is connected, enter the PIN displayed on the camera to the smart phone.

4 On the camera, allow the smart phone to connect to your camera or confirm the registration request.

- If the smart phone has been connected to your camera before, it is connected automatically.

- The Quick Transfer icon on the camera's screen will be changed to an icon that shows the connection status (📱).

5 Capture a photo.

- The captured photo is saved in the original size to the camera, and then transferred in the size of 2M to the smart phone. If a memory card is not inserted or the memory is full, the captured photo is transferred to the smart phone without being saved to the camera.

- If you captured continuous photos, the first captured photo is transferred to the smart phone.

- If you recorded a video, the preview image of recording is transferred to the smart phone.

- The image file captured while recording a video is not saved on the smart phone.

- If the GPS feature is activated on the smart phone, the GPS information will be saved with the captured photo.

149

Sharing via SNS & email

Upload photos or videos to SNS or send them to other people via email.

Connecting to a WLAN

Learn to connect via an access point (AP) when you are in a range of a WLAN. You can also configure network settings.

1 In Shooting mode, touch 🌐.

2 Select a service from the list.

- The camera automatically searches for available AP devices.
- Available services will be displayed on your camera.
- If a pop-up message about data collection regulations appears, read and agree to it.

3 Select an AP.

‹ Wi-Fi Setting	MENU Back
Refresh	
Samsung1	📶 ⟩
Samsung2	⟨📱⟩ 📶 ⟩
Samsung3	WPS 🔒 📶 ⟩
Samsung4	📶 ⟩
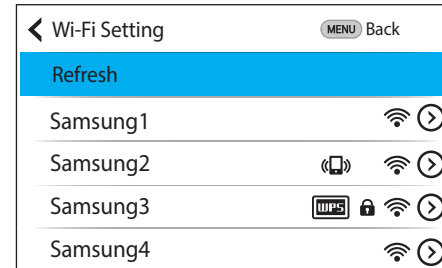
- Select **Refresh** to refresh the list of connectable APs.
- Select **Add wireless network** to add an AP manually. The AP name must be in English to add the AP manually.

Icon	Description
⟨📱⟩	Ad hoc AP
🔒	Secured AP
WPS	WPS AP
📶	Signal strength
⟩	Press [**AF**] or touch ⟩ to open network setting options.

- When you select a secured AP, a pop-up window appears. Enter the required passwords to connect to the WLAN. For information about entering text, refer to "Entering text". (p. 154)

• When a login page appears, refer to "Using the web browser".
(p. 152)

• When you select an unsecured AP, the camera will connect to the WLAN.

• If you select a WPS profile supported AP, select ◎ → **WPS PIN connection**, and then enter a PIN on the AP device. You can also connect to a WPS profile supported AP by selecting ◎ → **WPS button connection** on the camera, and then pushing the **WPS** button on the AP device.

• The same AP may be listed twice, with different frequencies, because your camera supports the dual band function.

Setting network options

1 In the Wi-Fi Setting screen, move to an AP, and then press [◄] or touch ◎.

2 Select each option, and then enter the required information.

Option	Description
Network Password	Enter the network password.
IP Setting	Set the IP address automatically or manually.

Manually setting the IP address

1 In the Wi-Fi Setting screen, move to an AP, and then press [◄] or touch ◎.

2 Select **IP Setting** → **Manual**.

3 Select each option, and then enter the required information.

Option	Description
IP	Enter the static IP address.
Subnet Mask	Enter the subnet mask.
Gateway	Enter the gateway.
DNS Server	Enter the DNS address.

151

Using the web browser

Log in to SNS or access websites using the web browser.

Icon	Description
❮	Move to Playback mode.
✕	Stop loading the page.
↻	Reload the page.
←	Move to the previous page.
→	Move to the next page.
⌂	Move to the home page.
Fn	• **Wi-Fi Setting**: View the Wi-Fi setting screen. • **Bookmarks**: Add or delete favorite web sites. • **Remember passwords**: Turn on or off the automatic save function of website passwords. • **Delete personal data**: Delete personal data such as cookies, site data, or password. • **Text scaling**: Adjust the text size of a web page. • **Text encoding**: Select an option of text encoding of a web page.

Icon	Description
Navigation button	Scroll a web page by rotating.
Command dial 1	Reduce or enlarge a web page.

> • You may not be able to select some items depending on the page you connected to. This does not indicate a malfunction.
> • It may take longer to load the login page due to the page size or network speed. If this occurs, wait until the login information input window appears.

Network connection tips

• You must insert a memory card to use the Wi-Fi features.

• The quality of the network connection will be determined by the AP.

• The further the distance between your camera and the AP, the longer it will take to connect to the network.

• If a nearby device is using the same radio frequency signal as your camera, it may interrupt your connection.

• If your AP name is not in English, the camera may not be able to locate the device or the name may appear incorrectly.

• For network settings or a password, contact your network administrator or network service provider.

• If a WLAN requires authentication from the service provider, you may not be able to connect to it. To connect to the WLAN, contact your network service provider.

• Depending on the encryption type, the number of digits in the password may differ.

• A WLAN connection may not be possible in all surroundings.

• The camera may display a WLAN enabled printer on the AP List. You cannot connect to a network via a printer.

• You cannot connect your camera to a network and a TV simultaneously.

• Connecting to a network may incur additional charges. Costs will vary based on the conditions of your contract.

• If you cannot connect to a WLAN, try another AP from the available AP list.

• A login page may appear when you select free WLANs provided by some network service providers. Enter your ID and password to connect to the WLAN. For information about registering or the service, contact the network service providers.

• Be cautious when you enter personal information for an AP connection. Do not enter any payment or credit card information on your camera. The manufacturer is not liable for any problem caused by entering such information.

• Available network connections may differ by country.

• The WLAN feature of your camera must comply with radio transmission laws in your region. To ensure compliance, use the WLAN feature only in the country where you purchased the camera.

• The process for adjusting network settings may differ, depending on network conditions.

• Do not access a network that you are not authorized to use.

• Before you connect to a network, ensure your battery is fully charged.

• You cannot upload or send files captured in some modes.

• Files that you transfer to another device may not be supported by the device. In this case, use a computer to play back the files.

Entering text

Learn how to enter text. The icons in the table let you move the cursor, change the case, etc. Touch a key to enter it.
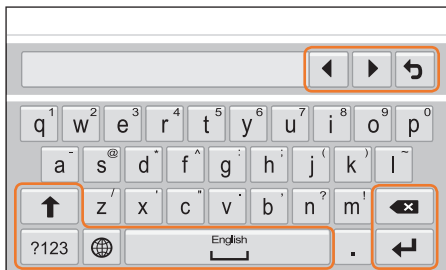
Icon	Description
◀ ▶	Move the cursor.
↰	Stop entering text and return to the previous page.
⬆	Change case.
?123	Switch between Symbol/Number mode and the normal mode.
🌐	Change the input language.
⎵	Enter a space.
↵	Save the displayed text.
⌫	Delete the last letter.

- You can use only the English alphabets in some modes, regardless of the display language.
- The number of characters you can enter varies depending on the situation.
- The screen may differ depending on the input mode.
- Touch and hold a key to enter the character at the upper right corner of the key.

Uploading photos or videos to SNS

Upload your photos or videos to SNS. Available SNS will be displayed on your camera. To upload files to some SNS, you must visit the website and register before connecting your camera.

1 In Playback mode, touch 🌐.

2 Select a service from the list.

 • If the pop-up message that prompts you to create an account appears, select **OK**.

3 Connect to a WLAN. (p. 150)

4 Enter your ID and password to log in.

 • For information about entering text, refer to "Entering text". (p. 154)

 • If you connected to some sharing services, refer to "Using the web browser". (p. 152)

 • To select an ID from the list, select ☑ → an ID.

 • If you have previously logged in to the SNS, you may be logged in automatically.

> You must have an existing account on the SNS to use this feature.

5 Select files and upload.

 • Depending on services, the total size or number of files may vary.

 • On some services, you can enter your comments by selecting the comment box. For information about entering text, refer to "Entering text". (p. 154)

- You cannot upload files if the file size exceeds the limit. The maximum resolution of photos you can upload is 2M. The maximum resolution of videos you can upload is XX. If the selected photo has a resolution higher than 2M, it will be automatically resized to a lower resolution. (On some SNS, the maximum photo resolution may vary.)
- The method of uploading photos or videos may differ depending on the selected SNS.
- If you cannot access a sharing service because of firewall or user authentication settings, contact your network administrator or network service provider.
- Uploaded photos or videos may be automatically titled with the date they were captured.
- The speed of your internet connection may affect how quickly photos upload or web pages open.
- When there are no files in the camera memory, you cannot use this feature.
- You cannot upload videos to some SNS.
- When you upload photos to SNS, the photo may be resized to 2M or 1M depending on their policy.

Sending photos via email

You can send photos stored on the camera via email. For information about entering text, refer to "Entering text". (p. 154)

1 In Playback mode, touch 🌐.

2 Select 📧.
- In thumbnails view, select 📧 → a file, and then press [Fn]. You can select up to 20 files. The total size must be 7 MB or less.

3 Connect to a WLAN. (p. 150)

4 Select the **Sender** box, enter your email address, and then touch ↵.
- If you have previously saved your information, it will be inserted automatically. (p. 158)
- To use an address from the list of previous senders, select ⌄ → an address.

156

5 Select the **Receiver** box, enter an email address, and then touch ↵.

- To use an address from the list of previous recipients, select ⌄ → an address.
- Select ＋ to add additional recipients. You can input up to 30 recipients.
- Select ⌧ to delete an address from the list.

6 Select **Next**.

7 Select the comment box, enter your comments, and then touch ↵.

8 Select **Send**.

- The camera will send the email.
- If an email fails to send, a message prompting you to send it again appears.

- Even if a photo appears to have transferred successfully, errors with the recipient's email account may cause the photo to be rejected or recognized as spam.
- You may not be able to send an email if no network connection is available or if your email account settings are incorrect.
- You cannot send an email if the combined file sizes exceed the 7 MB. The maximum resolution of photos you can send is 2M. If the selected photo has a resolution higher than 2M, it will be automatically resized to a lower resolution.
- If you cannot send an email because of firewall or user authentication settings, contact your network administrator or network service provider.
- When there are no files in the camera memory, you cannot use this feature.

157

Storing a sender's information

In the email menu, you can change settings for storing a sender's information. For information about entering text, refer to "Entering text". (p. 154)

1 In Playback mode, touch 🌐.
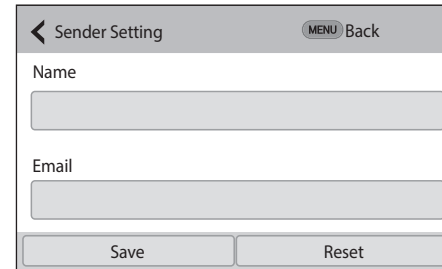
2 Select 📧.
- The camera will automatically attempt to connect to a WLAN via the most recently connected AP device.
- If the camera has not previously been connected to a WLAN, it will search for available AP devices. (p. 150)

3 Press [Fn].

4 Select **Sender Setting**.

5 Select the **Name** box, enter your name, and then touch ↵.

‹ Sender Setting	MENU Back
Name	
Email	
Save	Reset

6 Select the **Email** box, enter your email address, and then touch ↵.

7 Select **Save** to save your changes.
- To delete your information, select **Reset**.

Viewing photos or videos on a TV

Use the TV Link feature or USB cable to play back files from the camera on a TV.

Connecting wirelessly

1 In Playback mode, touch ![icon].

- You can also select a file, and then select ![icon] in thumbnails view.

2 Select ![icon].

- If the guide message appears, select **OK**.
- The camera will automatically attempt to connect to a WLAN via the most recently connected AP device.
- If the camera has not previously been connected to a WLAN, it will search for available AP devices. (p. 150)

3 Connect the TV Link-enabled TV to a network, and then turn on the TV Link feature.

- Refer to the TV's user manual for more information.

4 Select a TV to connect to from the list.

- To refresh the list of the TV device, select **Refresh**.

5 Browse the shared photos or videos.

- Press [**Fn**] to connect to another TV.
- Press [**MENU**] to switch to the thumbnails view.
- For information about searching for the camera and browsing the photos or videos on the TV Link-enabled TV, refer to the TV's user manual.
- Videos may not play smoothly depending on the type of TV Link-enabled TV or the network condition. For smooth playback, use a 5 GHz dual-band AP device.

AP
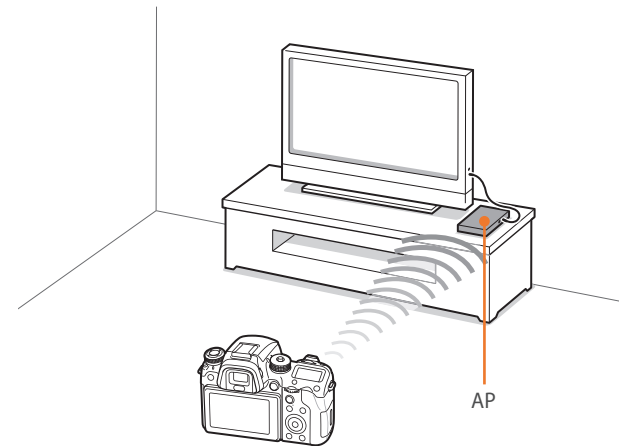
▲ The camera is connected to a TV that supports TV Link via WLAN.
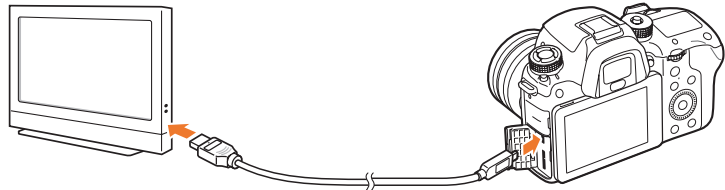
- You can share up to 1,000 recent files.
- On a TV Link-enabled TV, you can view only photos or videos captured with your camera.
- The range of the wireless connection between your camera and a TV Link-enabled TV may vary depending on the specifications of the AP.
- If the camera is connected to two TV Link-enabled TVs, playback may be slower.
- Photos or videos will be shared in their original sizes.
- You can use this feature only with TV Link-enabled TVs.
- Shared photos or videos will not be stored on the TV Link-enabled TV, but they can be stored in the camera to meet the TV's specifications.
- Transferring photos or videos to the TV Link-enabled TV may take some time depending on the network connection, the number of files to be shared, or the sizes of the files.
- If you power off the camera abnormally while viewing photos or videos on a TV Link-enabled TV (for example, by removing the battery), the TV considers the camera to still be connected.
- The order of photos or videos on the camera may be different than on the TV Link-enabled TV.
- Depending on the number of photos or videos you want to share, it may take some time to load your photos or videos and complete the initial set-up process.
- While viewing photos or videos on the TV Link-enabled TV, continuously using the TV's remote or performing additional operations on the TV may prevent this feature from working properly.

- If you reorder or sort files on the camera while viewing them on a TV Link-enabled TV, you must repeat the initial set-up process to update the list of files on the TV.
- When there are no files in the camera memory, you cannot use this feature.
- We recommend you use a network cable to connect your TV Link-enabled TV to your AP. This will minimize any video 'stuttering' you may experience when streaming content.
- To view files on a TV Link-enabled TV, enable multicast mode on your AP.
- 1920X1080 (60 fps) videos can be played only on full HDTVs capable of playback at 60 fps.
- You can view 3D files only on 3D-compatible TVs or monitors.

Connecting via cable

Play back photos or videos by connecting your camera to an HDTV (3D TV) using an optional HDMI cable.

Viewing files on an HDTV

1 In Shooting or Playback mode, press [MENU] → 🔅 → **HDMI Output** → an option. (p. 179)

2 Turn off your camera and HDTV.

3 Connect your camera to your HDTV with the optional HDMI cable.

4 Turn on your HDTV, and then select the HDMI video source.

5 Turn on the camera.

6 View photos or play videos using the camera buttons.

> - When using the HDMI cable, you can connect the camera to an HDTV using the Anynet+(CEC) method.
> - The Anynet+(CEC) functions allow you to control connected devices using the TV remote control.
> - If the HDTV supports Anynet+(CEC), the TV turns on automatically when used in conjunction with the camera. This feature may not be available on some HDTVs.
> - You can capture a photo or video when the camera is connected to an HDTV, but some functions are limited. Shooting functions are supported only when **HDMI Output** is set to **1080p** or **Auto** on the camera and the TV's HDMI output option is set to 1080p.
> - When connected to an HDTV, some of the camera's playback functions may not be available.
> - The length of time after which the camera and an HDTV are connected may vary depending on the memory card that you are using. As the main feature of a memory card is to increase the transfer speed, it is not necessarily true to say that a memory card with a faster transfer speed is also fast in using the HDMI function.
> - 1920X1080 (60 fps) videos can be played only on Full HDTVs capable of playback at 60 fps.
> - To view 3D photos on a TV that does not support the 3D function, press the ▼ button and switch to Anaglyph mode.
> - You can also play back or capture photos or videos when connected to an HDMI-enabled monitor. Connections may vary depending on the monitor. Refer to the monitor's manual for more details.

Viewing files on a 3D TV

You can view photos or videos captured in 3D mode on a 3D TV.

1 In Shooting or Playback mode, press [MENU] → ⚙ → **HDMI Output** → an option. (p. 179)

2 Turn off your camera and 3D TV.

3 Connect your camera to your 3D TV with the optional HDMI cable.

4 Turn on your 3D TV, and then select the HDMI video source.

5 Turn on your camera.
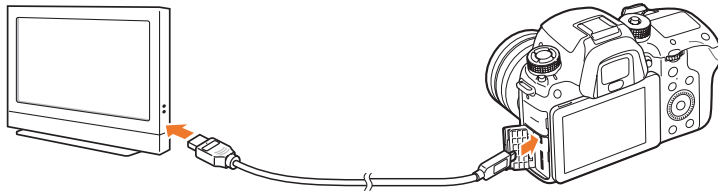
6 Move to a 3D file, and then press [❙] to switch to 3D mode.

- Press [❙] again to switch to 2D Mode.

7 Turn on your TV's 3D function.

- Refer to your TV's user manual for more details.

8 View 3D photos or play 3D videos using the camera buttons.

> - You cannot view an MPO file in 3D effect on TVs that do not support the file format.
> - Use proper 3D glasses when you view an MPO file or a 3D video file on a 3D TV.

> Do not view the 3D photos or videos captured by your camera on a 3D TV or 3D monitor for an extended period of time. It may cause unpleasant symptoms, such as eyestrain, fatigue, nausea, and more.

162

Connecting to a computer

Using Auto Backup for photos or videos

You can send photos or videos that you captured with the camera to a PC wirelessly.

Installing the program for Auto Backup on your PC

1 Connect the camera to the PC with the USB cable.

2 Turn on the i-Launcher program, and then select **PC Auto Backup**.

 • The Auto Backup program is installed on the PC. Follow the on-screen instructions to complete the installation.

3 Remove the USB cable.

> Before installing the program, ensure that the PC is connected to a network.

Using the Auto Backup feature

1 In Playback mode, select a file, and then touch ⏏ → **Auto Backup**.

 • In thumbnails view, you cannot use the Auto Backup feature.

 • If the pop-up message that prompts you to download the application appears, select **Next**.

 • The camera will automatically attempt to connect to a WLAN via the most recently connected AP device.

 • If the camera has not previously been connected to a WLAN, it will search for available AP devices. (p. 150)

2 Select a backup PC.

3 Select **OK**.

  • To cancel sending, select **Cancel**.

  • You cannot select individual files to backup. This function backs up only new files on the camera.

  • The backup's progress will be shown on the PC monitor.

  • When the transfer is completed, the camera will turn off automatically in approximately 30 seconds. Select **Cancel** to return to the previous screen and prevent the camera from turning off automatically.

  • To turn off your PC automatically after the transfer is complete, select **Shut down PC after backup**.

  • To change the backup PC, select **Change PC**.

  • When you connect the camera to the WLAN, select the AP that is connected to the PC.

  • The camera will search for available access points even if you are connecting to the same access point again.

  • If you turn off the camera or remove the battery while sending files, the file transfer will be interrupted.

  • While you are using this feature, the shutter control is disabled on your camera.

  • You can connect only one camera to the PC at a time for sending files.

  • The backup may be canceled due to network conditions.

  • When there are no files in the camera memory, you cannot use this feature.

  • You must turn off Windows Firewall and any other firewalls before using this feature.

  • You can send up to 1,000 recent files.

  • On the PC software, the server name must be entered in the Latin alphabet and can contain no more than 48 characters.

  • When multiple file types are created at once, only the image files (JPG) will be sent to the PC with this feature.

Connecting the camera as a removable disk

Transfer files on a memory card to your computer by connecting the camera to the PC.

Transferring files to your Windows OS computer

You can connect the camera to your computer as a removable disk. Open the removable disk and transfer files to your computer.

1 Turn off the camera.

2 Connect the camera to your computer with the USB cable.
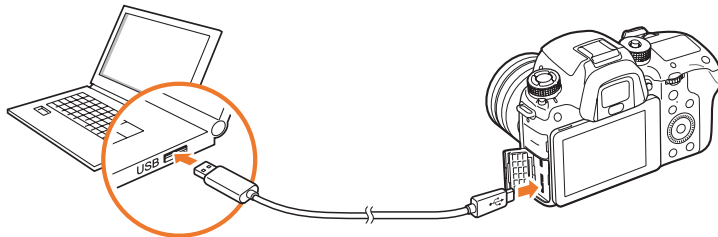
> ⚠️
> • You must plug the small end of the USB cable into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.
> • If you try to plug the USB cable into the HDMI port, the camera may not work properly.

3 Turn on the camera.
   • The computer recognizes the camera automatically.

4 On your computer, select **My Computer** → **Removable Disk** → **DCIM** → **100PHOTO** or **101_0101**.

5 Select the files you want, and then drag or save them to your computer.

> 🖉
> If the **Folder Type** is set to **Date**, the folder name appears as "XXX_MMDD". For example, if you capture a photo on January 1, the folder name will be "101_0101".

Disconnecting the camera (for Windows 7)

With Windows Vista and Windows 8, the methods for disconnecting the camera are similar.

1 Ensure that no data is being transferred between the camera and the computer.

   • If the status lamp on your camera is blinking, it means the data transfer is in progress. Please wait until the status lamp stops blinking.

2 Click [icon] on the tool bar at the bottom right of your computer screen.

[image of taskbar]

3 Click the pop-up message.

4 Click the message box indicating safely removed.

5 Remove the USB cable.

Transferring files to your Mac OS

> Mac OS 10.5 or later is supported.

1 Turn off the camera.

2 Connect your camera to a Macintosh computer with the USB cable.
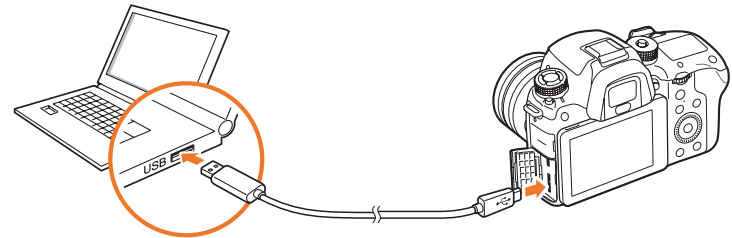
> ⚠ • You must plug the small end of the USB cable into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.
> • If you try to plug the USB cable into the HDMI port, the camera may not work properly.

166

3 Turn on the camera.

- The computer recognizes the camera automatically and displays a
  removable disk icon.

4 On your computer, open the removable disk.

5 Transfer photos or videos to the Mac OS computer.

Chapter **5**

Camera settings menu

Learn about the user settings and general settings menu.
You can adjust the settings to better suit your needs and preferences.

User settings

You can set the user environment with these settings.

To set user options,	In Shooting mode, press [MENU] → ⑧ → an option.

> ✎ Available items and the order of them may differ depending on shooting conditions.

Manage Custom Mode

Create your own shooting modes by adjusting options and saving them. Open saved custom modes or delete them.

ISO Customizing

ISO Step

You can set the size for the ISO sensitivity by either 1/3 or 1 step.

Auto ISO Range

You can set the maximum ISO value under which each EV step is chosen when you set the ISO to **Auto**.

* Default

Option	Value
1/3 Step	ISO 125, ISO 160, ISO 200, ISO 250, ISO 320, ISO 400, ISO 500, ISO 640, ISO 800, ISO 1000, ISO 1250, ISO 1600, ISO 2000, ISO 2500, ISO 3200*
1 Step	ISO 200, ISO 400, ISO 800, ISO 1600, ISO 3200*

ISO Expansion

You can select ISO 51200.

Noise Reduction

Use the Noise Reduction to reduce the visual noise in photos.

* Default

Option	Description
High ISO NR	This function reduces noise that may occur when you set a high ISO sensitivity. (**Off**, **High**, **Normal***, **Low**)
Long Term NR	This function reduces noise when you set the camera for a long exposure. (**Off**, **On***)

DMF (Direct Manual Focus)

You can adjust the focus manually by rotating the focus ring after achieving the focus by half-pressing [**Shutter**].

DMF Responsiveness

Set the focus ring response when you use the DMF function. If you select **High**, slight rotations of the focus ring are made to adjust the focus. If you select **Low**, longer rotations of the focus ring focus are made to adjust the focus. (**High**, **Medium***, **Low**)

170

Color Space

The color space option allows you to select methods for representing colors. Digital imaging devices such as digital cameras, monitors, and printers have their own methods for representing colors, which are called color spaces.

* Default

Option	Description
sRGB*	sRGB (Standard RGB) is an international specification to define the color space created by IEC (International Electrotechnical Commission). It is widely used for creating colors on PC monitors and is also the standard color space for Exif. sRGB is recommended for regular images and images you intend to publish on the Internet.
Adobe RGB	Adobe RGB is used for commercial printing and has a larger color range than sRGB. Its wider range of colors helps you to easily edit photos on a computer. Note that individual programs are generally compatible with a limited number of color spaces.

Adobe RGB

sRGB
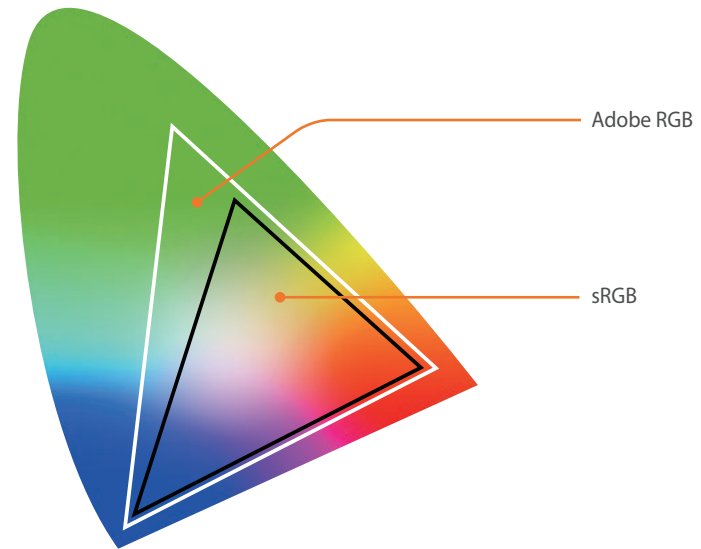
When the color space is set to Adobe RGB, photos will be saved as "_SAMXXXX.JPG".

Distortion Correct

You can correct lens distortion that might occur from lenses.

Touch Operation

Set to enable touch operation in Shooting mode.

* Default

Option	Description
Off	Do not use touch operations in Shooting mode. (You can use touch operations in other situations.)
On*	Use touch operations in Shooting mode.

iFn Setting

You can select options that can be adjusted when you press [**i-Function**] on an i-Function lens.

Option	Description
Aperture	Set to adjust the aperture value.
Shutter speed	Set to adjust the shutter speed.
EV	Set to adjust the exposure value.
ISO	Set to adjust ISO sensitivity.
White Balance	Set to adjust the White Balance.
intelli-Zoom	Set to adjust the zoom scale.

User Display

You can add or remove shooting information from the display.
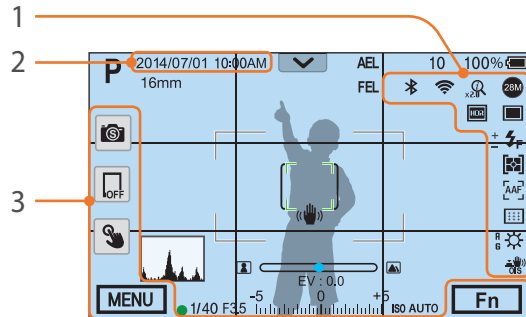
No.	Description
1	**Icons** Set to display icons on the right in Shooting mode.
2	**Date & Time** Set to display the date and time.
3	**Button** Set to display touch icons on the left and the bottom in Shooting mode.

Key Mapping

You can change the function assigned to the Preview button, the AEL button, the AF start button, the navigation button, or command dial 1/2.

* Default

Button	Function
Preview	Set the Preview button's function. • **Optical Preview***: Execute the Depth of Field Preview function for the current aperture value. (p. 25) • **One Touch WB** (White Balance): Execute the Custom White Balance function. • **One Touch RAW +**: Save a file in the RAW+JPEG format. To save a file in JPEG format, press the button again. • **One Touch HDR**: Enable or disable the HDR option of Dynamic Range.

173

* Default

Button	Function
AEL AF-ON	Set the functions for the AEL button or the AF start button. You can change the function assigned to each button to exposure and focus setting, focus lock, or exposure lock. The AEL and AFL functions save the exposure value or focus area respectively when you press [AEL]. The function executed by half-pressing [**Shutter**] varies according to the function assigned to [AEL]. • **Metering & AF start***: Set an optimum exposure by calculating the brightness of the focus area and execute the auto focus function at the same time. • **AEL***: Execute the auto exposure lock function. (Half-pressing [**Shutter**] executes the auto focus lock function.) • **AEL Hold**: Keep executing the auto exposure lock function after shooting. (The exposure remains locked even after you capture a photo.) • **AFL**: Execute the auto focus lock function. (Half-pressing [**Shutter**] executes the auto exposure lock function.) • **AFL Hold**: Keep executing the auto focus lock function after shooting. (The focus remains locked even after you capture a photo.)

* Default

Button	Function
AEL AF-ON	• **AEL + AFL**: Execute the auto exposure and focus lock functions together. (Half-pressing [**Shutter**] executes no function.) • **AEL + AFL Hold**: Keep executing the auto exposure and focus lock functions together after shooting. (The exposure and focus remain locked even after you capture a photo.) • **FEL**: Execute the flash intensity lock function. (p. 113) • **FEL Hold**: Keep executing the flash intensity lock function after shooting. (The intensity remains locked even after you capture a photo.) (p. 113)
Custom ◄ Key Custom ► Key Custom ▼ Key	Set the function of the left, right, or down navigation button. (**None**, **AF Mode**, **AF Area***, **White Balance**, **ISO**, **Metering**, **Touch Operation**, **Dynamic Range**, **Minimum Shutter Speed**, **Auto ISO Range**, **Smart Filter**, **Picture Wizard***, **Continuous Settings**, **Timer Settings**, **Bracket Settings**, **Flash**, **i-Zoom**, **Focus Peaking**, **MF Assist**, **Framing Mode**, **Grid Line**, **Movie STBY***)
Custom Wheel	Select an item to adjust when rotating the navigation button. (**No**, **Shutter Speed**, **Aperture**, **ISO***, **AF Size**)
Command Dial	Select an item to adjust when scrolling the command dial 1 or command dial 2. (**Shutter Speed/Aperture***, **Aperture/Shutter Speed**)

174

AF Release Priority

Set to capture a photo when the focus is achieved.

<div align="right">* Default</div>

Option	Description
Focus*	Capture a photo only when the focus is achieved.
Release	Capture a photo when you press [**Shutter**] even when the focus is not achieved.

MobileLink/NFC Image Size

Set the size of photos to transfer to a smart phone using the MobileLink or NFC functions.

<div align="right">* Default</div>

Option	Description
Resize to 2M or lower	If a photo's size is larger than 3M, it will be transferred after resizing it to 2M or lower.
Original*	The photo will be transferred in its original size.

EVF button Interaction

Set to use the viewfinder or display when you press [**EVF**].

<div align="right">* Default</div>

Option	Description
Auto - EVF Only*	Pressing [**EVF**] will allow you to view the viewfinder or display in this order: • Set the proximity sensor to automatically select the display or viewfinder. • Use the viewfinder.
Main Display - EVF Only	Pressing [**EVF**] will allow you to view the viewfinder or display in this order: • Use the display. • Use the viewfinder.

• Wi-Fi functions, slideshow functions, interval shots playback, and **Manage Custom Mode**, **Edit Image** functions are not available when you use the viewfinder.
• The camera does not automatically select the display or viewfinder when you record or play videos. For example, if you start recording or playing a video while seeing through the viewfinder, the main display will not be available during recording or playing back.

Grid Line

Select a guide to help you compose a scene.
(**Off***, **4 X 4**, **3 X 3**, **Cross**, **Diagonal**)

AF Lamp

When shooting in dark places, turn the AF lamp on in order to have a better auto focus. The Auto Focus functions more accurately in dark places when the AF lamp is on. The AF lamp emits the light in irregular vertical patterns.

E-Shutter

* Default

Option	Description
Off*	Set to use the mechanical shutter.
On	Set to use the electronic shutter curtain first and the mechanical curtain second.

- This feature is available only when you attach a Samsung lens with Samsung NX mount.
- When you use a large diameter lens and a fast shutter speed, a "bokeh" effect (an aesthetic blur in out-of-focus areas) may be affected by the subject and the shooting conditions. To make the bokeh effect appear correctly, set the **E-Shutter** to **Off**.
- When you change the E-Shutter settings, the first curtain of the shutter is adjusted and you will hear a noise as the shutter adjusts. This is a normal situation when preparing the camera to operate the E-Shutter.
- This feature is not available when you attach the external flash (SEF-580A).

Lens Button Speed Settings

Set the zoom speed for the Power Zoom lens' buttons at either fast, medium, or slow speed. At fast speed, zoom noise increases and can be recorded in videos. This function is available only when you attach the Power Zoom lens.

Setting

Learn to configure your camera's settings.

To set Setting options,	In Shooting or Playback mode, press [MENU] → ⚙ → an option.

* Default

Item	Description
Sound	• **System Volume**: Set the sound volume or turn all sound off entirely. (**Off**, **Low**, **Medium***, **High**) ✎ Even if the system volume is turned off, the camera emits the sound while playing a video. • **AF Sound**: Set the sound the camera emits when you half-press the shutter button on or off. (**Off**, **On***) • **Button Sound**: Set the sound the camera emits when you press the buttons or touch the screen on or off. (**Off**, **On***) • **E-Shutter Sound**: Set to emit a sound when you use the electronic shutter. (**Off***, **On**) ✎ • The camera emits a sound only when the shutter speed is longer than 0.5 second. • This option may not be available in Smart mode.

* Default

Item	Description
Quick View	Set the Quick View time length–the amount of time the camera displays a photo immediately after you capture it. Select **Hold + Focus Zoom** to display the image and enlarge the focus area after shooting. (**Off**, **1 sec***, **3 sec**, **5 sec**, **Hold**, **Hold + Focus Zoom**)
Display Adjust	Adjust the display brightness, auto brightness setting, display color, or level gauge. • **Display Brightness**: You can adjust the display brightness manually. • **Auto Brightness**: Turn auto brightness on or off. (**Off**, **On***) • **Display Color**: You can adjust the display color manually. • **Horizontal Calibration**: Calibrate the level gauge. If the level gauge is not level, position the camera on the level surface, and then follow the on-screen instructions. ✎ • You cannot access the **Horizontal Calibration** option in Playback mode. • You cannot calibrate the level gauge in portrait orientation.

* Default

Item	Description
Auto Display Off	Set the display off time. The display turns off if you do not use the camera for the time you set. (**Off**, **30 sec***, **1 min**, **3 min**, **5 min**, **10 min**)
Power Save	Set power shut off time. The camera shuts off if you do not use it for the time you set. (**30 sec**, **1 min***, **3 min**, **5 min**, **10 min**, **30 min**) • The camera retains the power-off time setting even if you replace the battery. • Power Save may not work if the camera is connected to a computer or a TV or playing a slide show or a movie. • Power Save may not work when the camera is connected to a smart phone and Pro Suggest Market is in use.
Help Guide Display	• **Mode Help Guide**: Set to display help text about the selected mode when changing shooting modes. (**Off***, **On**) • **Function Help Guide**: Set to display help text about menus and functions. (**Off**, **On***) Press [🗑] to hide the help text.

* Default

Item	Description
Language	Set a language the camera shows on the display.
Date and Time	Set date, time, date format, and time zone. (**Time Zone**, **Date Settings**, **Time Settings**, **Date Type**, **Time Type**)
Video Out	Set the video signal output appropriate for your country when connecting the camera to an external video device such as a monitor or HDTV. • **NTSC**: USA, Canada, Japan, Korea, Taiwan, Mexico, etc. • **PAL** (Supports only PAL B, D, G, H, or I): Australia, Austria, Belgium, China, Denmark, Finland, France, Germany, England, Italy, Kuwait, Malaysia, New Zealand, Singapore, Spain, Sweden, Switzerland, Thailand, Norway, etc.
Anynet+ (HDMI-CEC)	When you connect the camera to an HDTV that supports Anynet+ (HDMI-CEC), you can control the play function of the camera with the TV remote control. • **Off**: You cannot control the play function of camera with the TV remote control. • **On***: You can control the play function of camera with the TV remote control.

178

* Default

Item	Description
HDMI Output	When you connect the camera to an HDTV with an HDMI cable, you can change the resolution of the image. • **NTSC**: **Auto***, **4096X2160p**, **3840X2160p**, **1080p**, **720p**, **480p**, **576p** (activates only when **PAL** is selected) *If the connected HDTV does not support the resolution you select, the camera sets the resolution one level lower.*
File Name	Set the method of creating file names. • **Standard***: SAM_XXXX.JPG (sRGB)/ _SAMXXXX.JPG (Adobe RGB) • **Date**: – sRGB files - MMDDXXXX.JPG. For example, for a photo captured on Jan. 01, the file name would be 0101XXXX.jpg. – Adobe RGB files - _MDDXXXX.JPG for the months Jan through Sept. For the months Oct through Dec, the month number is replaced by the letters A (Oct.), B (Nov.) and C (Dec.). For example, for a photo captured on Feb. 03, the file name would be _203XXXX.jpg. For a photo captured on Oct. 05, the file name would be _A05XXXX.jpg.

* Default

Item	Description
File Number	Set the method of numbering files and folders. • **Reset**: After using the reset function, the next file name is started at 0001. • **Series***: New file numbers continue the existing number sequence, even if you have installed a new memory card, formatted the card, or deleted all photos. • The first folder name is 100PHOTO, if you have selected the sRGB color space and Standard file naming, the first file name is SAM_0001. • File name numbers are increased by 1 from SAM_0001 to SAM_9999. • Folder numbers are increased by 1 from 100PHOTO to 999PHOTO. • The maximum number of files that can be saved in one folder is 9,999. • File numbers are assigned according to DCF (Design rule for Camera File system) specifications. • If you change a file name (for example, on a computer), the camera will not be able to play the file.
Folder Type	Set the type of folder. • **Standard***: XXXPHOTO • **Date**: XXX_MMDD

179

* Default

Item	Description
Format	Format the memory card. Formatting deletes all existing files including protected files. (**No***, **Yes**) ✏ Errors can occur if you use a memory card formatted by another brand of camera, a memory card reader, or a computer. Please format memory cards in the camera before using them to capture photos.
Device Information	View the firmware version of the body and the lens, Wi-Fi Mac address, Bluetooth Mac address, and network certification number, or update the firmware. • **Software Update**: Update the firmware of the camera body or lens by connecting the camera to a computer via USB cable. (**Body Firmware**, **Lens Firmware**) • **Wi-Fi Software Update**: Update the firmware of the camera body or lens via Wi-Fi. ✏ • You can update the firmware by connecting the camera to the computer and starting i-Launcher. For more details, refer to page 198. • You cannot run a firmware upgrade without a fully charged battery. Recharge the battery fully before running a firmware upgrade. • If you update the firmware, user settings and values will be reset. (Date, time, language, and video out will not change.) • Do not turn the camera off while the update is in progress. • Remaining storage on the memory card must be more than 1 GB to update the firmware via Wi-Fi.

* Default

Item	Description
Bluetooth	Set to use the Bluetooth feature. (**On***, **Off**)
Wi-Fi Network	Set to connect to a Wi-Fi network. (**On**, **Off***)
Bluetooth Auto Time Set	Set to sync the camera's date and time with the smart phone when connecting the camera to a smart phone via Bluetooth. (**Off***, **On**)
Wi-Fi Privacy lock	Set to require a PIN when connecting the camera and a smart phone. • **PIN**: Enter a PIN before connecting. • **None***: Allow a connection without requiring a PIN. ✏ • Connections will automatically be made without requiring a PIN when using the NFC function. • PINs are automatically generated and renewed only when you reset the camera settings or update the firmware. • If you have previously connected your camera to a smart phone via a PIN, they will connect automatically.

* Default

Item	Description
Dual-band Mobile AP	Set a frequency for using the camera as an AP for the Quick Transfer, MobileLink, or Remote Viewfinder features. (**2.4 GHz***, **5 GHz**) If you use the camera in a country other than the one where it was purchased, the 5 GHz Wi-Fi feature may not function properly, due to differences in radio frequencies. In this case, use the 2.4 GHz Wi-Fi feature instead.
Sensor Cleaning	• **Sensor Cleaning**: Remove dust from the sensor. • **Start-Up Action**: When on, the camera performs sensor cleaning each time you turn it on. (**Off***, **On**) • **Shut down Action**: When on, the camera performs sensor cleaning each time you turn it off. (**Off***, **On**) As this product uses interchangeable lenses, the sensor can get dust on it when you change lenses. This can lead to dust particles appearing in the photos you capture. It is recommended not to change lenses when you are in a particularly dusty area. Also, make sure to attach the lens cap to the lens when not using it.

* Default

Item	Description
Battery Selection	Set the priority of using and charging the internal battery (the camera) and external battery (a vertical grip) when using a vertical grip. This function is supported only when the vertical grip is attached. • **Auto***: Use the external battery (a vertical grip) first and charge the internal battery (the camera) first. • **Internal**: Use and charge the internal battery (the camera) first. Use the external battery (a vertical grip) after the internal battery (the camera) depletes. • **External**: Use and charge the external battery (a vertical grip) first. Use the internal battery (the camera) after the external battery (a vertical grip) depletes.
Reset	• **Camera Menu***: Return the setup menu and shooting options to the factory defaults. • **Key Mapping**: Return the custom button functions to the factory defaults. • **C1/C2 Mode**: Return the Custom 1 and Custom 2 mode settings to the factory defaults. • **Bluetooth/Wi-Fi**: Return the connection history, ID, and password of the Bluetooth and Wi-Fi functions to the factory defaults. • **All**: Return all settings to the factory defaults. (Date, time, language, and video output settings will not change.)
Open Source License	View open source licenses.

Chapter **6**

Appendix

Get information about error messages, camera maintenance, using programs on a computer, firmware updates, troubleshooting tips, specifications, and glossary terms.

Error messages

When the following error messages appear, try these remedies.

Error messages	Suggested remedies
Lens is locked	The lens is locked. Rotate the lens counter-clockwise until you hear a click. (p. 59)
Card Error	• Turn off the camera, and then turn it on again. • Remove the memory card and insert it again. • Format the memory card.
Low Battery	Insert a charged battery or recharge the battery.
No Image File	Capture photos or insert a memory card that contains photos.
File Error	Delete the damaged file or contact a service center.
Memory Full	Delete unnecessary files or insert a new memory card.
Card Locked	You can lock SD, SDHC, or SDXC card to prevent files from being deleted. Unlock the card when shooting. (p. 187)

Error messages	Suggested remedies
Unable to capture a photo because folder and file number on the memory card reached the maximum values. Reset the folder number?	File names do not match the DCF standard. Follow the on-screen instructions to reset the folder number.
Error 00	Turn off your camera and remount the lens. If the message still appears, contact a service center.
Error 01/02	Turn off your camera, remove the battery, and insert again. If the message still appears, contact a service center.

Maintaining the camera

Cleaning the camera

Camera lens and display

Use a brush to remove dust and wipe the lens gently with a soft cloth.
If any dust remains, apply lens cleaning liquid to a piece of cleaning paper and wipe gently.
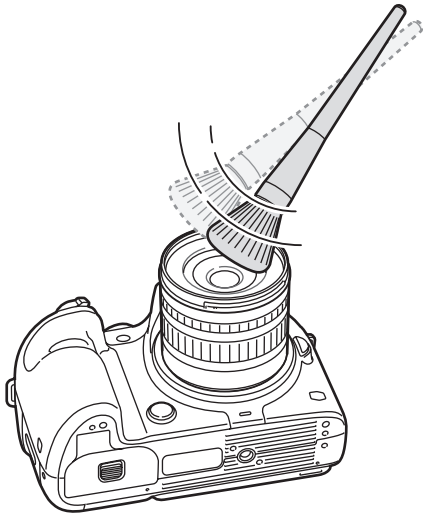
Image sensor

Depending on different shooting conditions, dust may appear in photos because the image sensor is exposed to the external environment. This problem is normal, and the exposure to dust occurs in everyday use of the camera. You can remove dust from the sensor by operating the sensor cleaning function. (p. 181) If dust remains after cleaning the sensor, contact a service center. Do not insert the blower into the mounting opening of the lens.

Camera body

Wipe gently with a soft, dry cloth.

⚠ Never use benzene, thinners, or alcohol to clean the device. These solutions can damage the camera or cause it to malfunction.

Using or storing the camera

Inappropriate places to use or store the camera

• Avoid exposing the camera to very cold or very hot temperatures.

• Avoid using your camera in areas with extremely high humidity, or where the humidity changes drastically.

• Avoid exposing the camera to direct sunlight and storing it in hot, poorly ventilated areas, such as in a car during summer time.

• Protect your camera and the display from impact, rough handling, and excessive vibration to avoid serious damage.

• Avoid using or storing your camera in dusty, dirty, humid, or poorly ventilated areas to prevent damage to moving parts and internal components.

• Do not use your camera near fuels, combustibles, or flammable chemicals. Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the camera or its accessories.

• Do not store the camera where there are mothballs.

Using on beaches or shores

• Protect your camera from sand and dirt when you use it on beaches or in other similar areas.

• Your camera is not waterproof. Do not handle the battery, adapter, or memory card with wet hands. Operating the camera with wet hands may cause damage to your camera.

Storing for extended period of time

• When you store the camera for an extended period, place it in a sealed container with an absorbent material, such as silica gel.

• Over time, unused batteries will discharge and must be recharged before use.

• The present date and time can be initialized when the camera is turned on after the camera and battery have been separated for a prolonged period.

185

Using the camera with caution in humid environments

When you transfer the camera from a cold environment to a warm one, condensation can form on the lens or internal components of the camera. In this situation, turn off the camera and wait for at least 1 hour. If condensation forms on the memory card, remove the memory card from the camera and wait until all moisture has evaporated before reinserting it.

Other cautions

• Do not swing your camera by the strap. This may cause injury to yourself or others or damage to your camera.

• Do not paint your camera, as paint can clog moving parts and prevent proper operation.

• Turn off the camera when not using it.

• Your camera consists of delicate parts. Avoid impacts to the camera.

• Protect the display from external force by keeping it in the case when not in use. Protect the camera from scratches by keeping it away from sand, sharp implements, or loose change.

• Do not use the camera if the screen is cracked or broken. Broken glass or acrylic could cause injury to your hands and face. Take the camera to a Samsung service center to have it repaired.

• Never place cameras, batteries, chargers, or accessories near, on, or in heating devices, such as microwave ovens, stoves, or radiators. Heat can deform or overheat these devices, which can cause a fire or explosion.

• Do not expose the lens to direct sunlight, as this may discolor the image sensor or cause it to malfunction.

• Protect your lens from fingerprints and scratches. Clean your lens with a soft, clean, debris-free lens cloth.

• The camera may turn off if impacted from the outside. This is to protect the memory card. Turn on the camera to use it again.

• While you use the camera, it may heat up. This is normal and should not affect your camera's lifespan or performance.

• When you use the camera in low temperatures, it may take some time to turn on, the color of the display may be changed temporarily, or after-images may appear. These conditions are not malfunctions and they will correct themselves when the camera is returned to milder temperatures.

• Paint or metal on the outside of the camera may cause allergies, itchy skin, eczema, or swelling for people with sensitive skin. If you experience any of these symptoms, stop using the camera immediately and consult a doctor.

• Do not insert foreign objects into any of your camera's compartments, slots, or access points. Damage due to improper use may not be covered by your warranty.

• Do not allow unqualified personnel to service the camera or attempt to service the camera yourself. Any damage that results from unqualified service is not covered by your warranty.

About memory card

Supported memory card

This product supports SD (Secure Digital), SDHC (Secure Digital High Capacity), SDXC (Secure Digital eXtended Capacity), microSD, microSDHC, or microSDXC memory cards.

Terminal

Write-protect switch

Label (front)
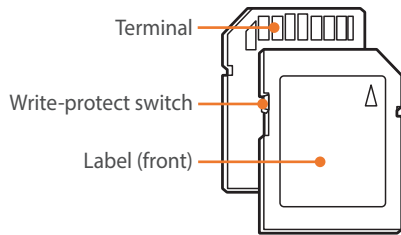
You can prevent files from being deleted by using the write-protect switch on an SD, SDHC, or SDXC card. Slide the switch down to lock or slide it up to unlock. Unlock the card when capturing photos and videos.

Memory card adapter
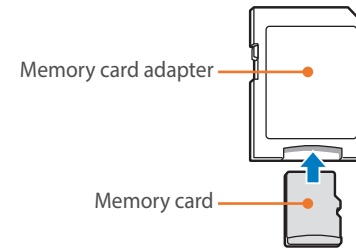
Memory card

To use micro memory cards with this product, a PC, or a memory card reader, insert the card into an adapter.

Memory card capacity

The memory capacity may differ depending on shooting scenes or shooting conditions. These capacities are based on a 2 GB SD card.

	Size	Quality						
		Super Fine	Fine	Normal	RAW	RAW + S.Fine	RAW + Fine	RAW + Normal
Photo	28.0M (6480X4320)	XXX	XXX	XXX	XXX	XXX	XXX	XXX
	13.9M (4560X3040)	XXX	XXX	XXX	-	XXX	XXX	XXX
	7.1M (3264X2176)	XXX	XXX	XXX	-	XXX	XXX	XXX
	3.0M (2112X1408)	XXX	XXX	XXX	-	XXX	XXX	XXX
	23.0M (6480X3648)	XXX	XXX	XXX	-	-	-	-
	11.9M (4608X2592)	XXX	XXX	XXX	-	XXX	XXX	XXX
	6.2M (3328X1872)	XXX	XXX	XXX	-	XXX	XXX	XXX
	2.4M (2048X1152)	XXX	XXX	XXX	-	XXX	XXX	XXX
	18.7M (4320X4320)	XXX	XXX	XXX	-	XXX	XXX	XXX
	9.5M (3088X3088)	XXX	XXX	XXX	-	XXX	XXX	XXX
	4.7M (2160X2160)	XXX	XXX	XXX	-	XXX	XXX	XXX
	2.0M (1408X1408)	XXX	XXX	XXX	-	XXX	XXX	XXX

Size		Quality	
		HQ	Normal
Video	**DC 24P** 4096X2160 (24 fps)	Approx. XX' XX"	Approx. XX' XX"
	UHD 30P 3840X2160 (30 fps	Approx. XX' XX"	Approx. XX' XX"
	FHD 60P 1920X1080 (60 fps)	Approx. XX' XX"	Approx. XX' XX"
	FHD 30P 1920X1080 (30 fps)	Approx. XX' XX"	Approx. XX' XX"
	FHD 24P 1920X1080 (24 fps)	Approx. XX' XX"	Approx. XX' XX"
	FHD 15P * 1920X1080 (15 fps)	Approx. XX' XX"	Approx. XX' XX"
	HD 60P 1280X720 (60 fps)	Approx. XX' XX"	Approx. XX' XX"
	HD 30P 1280X720 (30 fps)	Approx. XX' XX"	Approx. XX' XX"
	VGA 60P 640X480 (60 fps)	Approx. XX' XX"	Approx. XX' XX"
	VGA 30P 640X480 (30 fps)	Approx. XX' XX"	Approx. XX' XX"

* **FHD 15P** is available only with some Smart Filter options.
- The figures above are measured without using the zoom function.
- Available recording time may vary if you use the zoom.
- Several videos were recorded in succession to determine the total recording time.
- The maximum recording time is 29 minutes and 59 seconds per file.

Cautions when using memory cards

• Avoid memory cards to very cold or very hot temperatures (below 0 ℃/32 °F or above 40 ℃/104 °F). Extreme temperatures can cause memory cards to malfunction.

• Insert a memory card in the correct direction. Inserting a memory card in the wrong direction may damage your camera and memory card.

• Do not use memory cards that have been formatted by other cameras or by a computer. Reformat the memory card with your camera.

• Turn off the camera when you insert or remove the memory card.

• Do not remove the memory card or turn off your camera while the lamp is blinking, as this may damage your data.

• When the lifespan of a memory card has expired, you cannot store any more photos on the card. Use a new memory card.

• Do not bend, drop, or subject memory cards to heavy impact or pressure.

• Avoid using or storing memory cards near strong magnetic fields.

• Avoid using or keeping memory cards in areas with high temperature, high humidity, or corrosive substances.

• Prevent memory cards from making contact with liquids, dirt, or foreign substances. If dirty, wipe the memory card clean with a soft cloth before you insert the memory card in your camera.

• Do not allow liquids, dirt, or foreign substances to come in contact with memory cards or the memory card slot. Doing so may cause memory cards or the camera to malfunction.

• When you carry a memory card, use a case to protect the card from electrostatic discharges.

• Transfer important data to other media, such as a hard disk, CD, or DVD.

• When you use the camera for an extended period, the memory card may become warm. This is normal and does not indicate a malfunction.

• Use a memory card that meets the standard requirements.

The manufacturer is not responsible for any loss of data.

About the battery

Use only Samsung-approved batteries.

Battery specifications

Item	Description
Model	BP1900
Type	Lithium-ion battery
Cell capacity	1,900 mAh
Voltage	7.2 V
Charging time* (When the battery is completely discharged.)	Approx. XXX min.

* The figures above are based on when you use the provided USB cable and AC adaptor. Charging the battery by connecting it to a computer may take longer.

⚠️ **Personal injury or death can occur if the battery is handled carelessly or improperly. For your safety, follow these instructions for proper battery handling:**

- The battery can ignite or explode if not handled properly. If you notice any deformities, cracks, or other abnormalities in the battery, immediately discontinue use of the battery and contact your manufacturer.
- Use only authentic, manufacturer-recommend battery chargers and charge the battery only by the method described in this user manual.
- Do not place the battery near heating devices or expose to excessively warm environments, such as the inside of an enclosed car in the summertime.
- Do not place the battery in a microwave oven.
- Avoid storing or using the battery in hot, humid places, such as spas or shower enclosures.

- Do not rest the device on flammable surfaces, such as bedding, carpets, or electric blankets for a prolonged period.
- When the device is switched on, do not leave it in any confined space for a prolonged period.
- Do not allow battery terminals to come in contact with metallic objects, such as necklaces, coins, keys, or watches.
- Use only authentic, manufacturer-recommended, Lithium-ion replacement batteries.
- Do not disassemble the battery or puncture it with any sharp object.
- Avoid exposing the battery to high pressure or crushing forces.
- Avoid exposing the battery to major impacts, such as dropping it from high places.
- Do not expose the battery to temperatures of 60 ℃ (140 ℉) or above.
- Do not allow the battery to come in contact with moisture or liquids.
- Battery shall not be exposed to excessive heat such as sunshine, fire, or the like.

Disposal guidelines

- Dispose of the battery with care.
- Do not dispose of the battery in a fire.
- Disposal regulations may differ by country or region. Dispose of the battery in accordance with all local and federal regulations.

Guidelines for charging the battery

Charge the battery only by the method described in this user manual. The battery can ignite or explode if not charged properly.

Battery life

Shooting mode	Average time / Number of photos
Photos	Approx. XXX min./Approx. XXX photos
Videos	Approx. XXX min. (Record videos at 1920X1080 resolution and 30 fps.)

• The figures above are based on the CIPA test standards.
Your results may differ depending on your actual usage.

• Available shooting time differs depending on background, shooting interval, and use conditions.

• Several videos were recorded in succession to determine the total recording time.

Low battery message

When the battery has fully discharged, the battery icon will turn red and the “**Low Battery**” message will appear.

Notes about using the battery

• Avoid exposing batteries to very cold or very hot temperatures (below 0 ℃/32 °F or above 40 ℃/104 °F). Extreme temperatures can reduce the charging capacity of your batteries.

• When you use the camera for an extended period, the area around the battery chamber may become warm. This does not affect the normal use of the camera.

• Do not pull the power supply cord to disconnect the plug from the power outlet, as this may cause a fire or electric shock.

• In temperatures below 0 ℃/32 °F, battery capacity and battery life may decrease.

• Battery capacity may decrease in low temperatures, but will return to normal in milder temperatures.

• Remove the batteries from your camera when storing it for an extended period. Installed batteries may leak or corrode over time and cause serious damage to your camera. Storing the camera for extended periods with the battery installed causes the battery to discharge. You may not be able to recharge a fully discharged battery.

• When you do not use the camera for an extended period (3 months or more), check the battery and recharge it regularly. If you let the battery discharge continually, its capacity and life may decrease, which can lead to a malfunction, fire, or explosion.

Cautions about using the battery

Protect batteries, chargers, and memory cards from damage.

Prevent batteries from making contact with metal objects, as this can create a connection between the + and – terminals of your battery and lead to temporary or permanent battery damage and may cause a fire or electric shock.

Notes about charging the battery

• If the status lamp is off, ensure that the battery is inserted correctly.

• If the camera is on while charging, the battery may not fully charge. Turn off the camera before charging the battery.

• Do not use your camera when you are charging the battery. This may cause a fire or electric shock.

• Do not pull the power supply cord to disconnect the plug from the power outlet, as this may cause a fire or electric shock.

• Let the battery charge for at least 10 minutes before turning on the camera.

• If you connect the camera to an external power source when the battery is depleted, using high energy-consuming functions will cause the camera to turn off. To use the camera normally, recharge the battery.

• If you reconnect the power cable when the battery is fully charged, the status lamp turns on for approximately 30 minutes.

• Using the flash or recording videos depletes the battery quickly. Charge the battery fully before using the camera.

• If the status lamp blinks in red, reconnect the cable, or remove the battery and insert it again.

• If you charge the battery when the cable is overheated or the temperature is too high, the status lamp may blink in red. Charging will start when the battery cools down.

• Overcharging batteries may shorten battery life. After charging is finished, disconnect the cable from your camera.

• Do not bend or place heavy objects on the AC cable. Doing so may damage the cable.

Notes about charging with a computer connected

• Use only the provided USB cable.

• The battery may not charge when:
  - you use a USB hub
  - other USB devices are connected to your computer
  - you connect the cable to the port on the front side of your computer
  - the USB port of your computer does not support the power output standard (5 V, 500 mA)

Handle and dispose of batteries and chargers with care

• Never dispose of batteries in a fire. Follow all local regulations when you dispose of used batteries.

• Never place batteries or cameras on or in heating devices, such as microwave ovens, stoves, or radiators. Batteries may explode when they are overheated.

194

Using programs on a PC

You can view and edit files using the provided programs. You can also send the files to a PC wirelessly.

Using i-Launcher

i-Launcher allows you to update the firmware of the camera or the lens, or download the User Manual. It also allows you to download and install the Movie Converter, DNG Converter, and PC Auto Backup program.

Opening i-Launcher

On your computer, select **Start** → **All Programs** → **Samsung** → **i-Launcher** → **Samsung i-Launcher**. Or, click **Applications** → **Samsung** → **i-Launcher** on your Mac OS computer.

Available programs

Icon	Description
Software Update	Download the firmware of the camera body or lens. For information about updating the firmware, refer to page 198.
Manual Download	Download the User Manual.
Movie Converter	Download this program to convert HEVC files to another format. To edit video files using some editing programs, convert HEVC files to another format (ProRes 422 or H.264).
DNG Converter	Download this program to convert Samsung RAW files (SRW) to DNG files.
PC Auto Backup	i-Launcher provides a link for downloading the PC Auto Backup program when you connect the camera to a computer. You can send photos or videos that you captured with the camera to a PC wirelessly. For information about installing PC Auto Backup, refer to page 163.
Samsung RAW Converter	Download this program to convert RAW files into the desired file format.

Installing i-Launcher on a PC

If your web browser or operating system does not support the web version of i-Launcher, you can install the PC version. Connect your camera to the computer and follow the on-screen instructions to install i-Launcher.

Requirements for Windows OS

Item	Requirements
CPU	Intel® i5 3.3 GHz or higher/ AMD Phenom™ IIx4 3.2 GHz or higher
RAM	Minimum 512 MB RAM (1 GB or more recommended)
OS*	Windows 7, Windows 8
Hard disk capacity	250 MB or more (1 GB and above recommended)
Others	• CD-ROM drive • 1024X768 pixels, 16-bit color display compatible monitor or higher (1280X1024 pixels, 32-bit color display recommended) • USB 2.0 or 3.0 port • nVIDIA Geforce 7600GT or higher/ ATI X1600 series or higher

* A 32-bit version of i-Launcher will be installed—even on 64-bit editions of Windows 7 and Windows 8.

- The requirements on the following page are recommendations only. i-Launcher may not work properly even when the computer meets the requirements, depending on the condition of your computer.
- If your computer does not meet the requirements, videos may not play correctly.

The manufacturer is not responsible for any damage that results from using unqualified computers such as a computer you assembled yourself.

Requirements for Mac OS

Item	Requirements
OS	Mac OS 10.5 or higher (except PowerPC)
RAM	Minimum 256 MB RAM (512 MB or more recommended)
Hard disk capacity	Minimum 110 MB
Others	USB 2.0 or 3.0 port, CD-ROM drive

Installing Samsung RAW Converter

Launch i-Launcher, and then follow the on-screen instructions to install the program.

Using Samsung RAW Converter

Photos captured by a camera are often transformed to JPEG formats and stored in the memory according to the settings of the camera at the time of shooting. RAW files are not transformed to JPEG formats and are stored in the memory without any changes. With Samsung RAW Converter, you can calibrate exposures, White Balances, tones, contrasts, and colors of photos. You can also edit JPEG or TIFF files as well as RAW files. For more information, refer to the program guide.

> • Depending on your version of Samsung RAW Converter, you may not be able to open RAW files. In this case, update the program.
> • In Samsung RAW Converter, an image's brightness, color and other effects may be displayed differently. This occurs because the original camera settings and options applied during image capture are removed, ready for it to be processed in Samsung RAW Converter.

Updating the firmware

Connect the camera to the computer and update the firmware of the camera of the lens.

> • You cannot run a firmware upgrade without a fully charged battery. Recharge the battery fully before running a firmware upgrade.
> • If you update the firmware, user settings and values will be reset. (Date, time, language, and video out will not change.)
> • Do not turn the camera off while the update is in progress.

1 Turn off the camera.

2 Connect your camera to the computer with the USB cable.
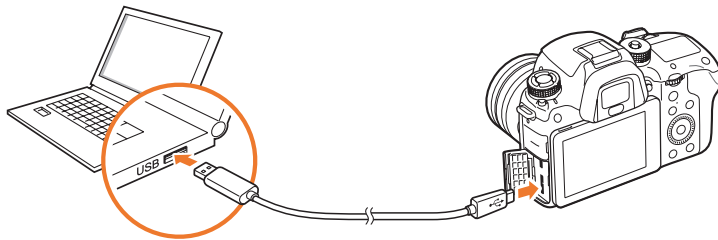
> • You must plug the small end of the USB cable into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.
> • If you try to plug the USB cable into the HDMI port, the camera may not work properly.

3 Turn on the camera.

4 On the computer, select **i-Launcher** → **Software Update**.

5 Follow the on-screen instructions to download the firmware to the camera.
   • You can download the firmware of the camera or the lens.

6 Turn off the camera when the download completes.

7 Remove the USB cable.

8 Turn on the camera.

9 Press [**MENU**] → ⚙ → **Device Information** → **Software Update** → **Body Firmware** or **Lens Firmware**.

10 Select **Yes** from a pop-up window on the camera to update the firmware.

198

Before contacting a service center

If you are having trouble with your device, try these troubleshooting solutions before contacting a service professional.

> When you leave your camera at a service center, be sure to also leave the other components that may have contributed to the malfunction, such as the memory card and battery.

Situation	Suggested remedies
Cannot turn on the camera	• Ensure that the battery is inserted. • Ensure that the battery is inserted correctly. • Charge the battery.
The power turns off suddenly	• Charge the battery. • Your camera may be in Power save mode or the display turns off automatically. (p. 178) • The camera may be turned off automatically to prevent the memory card from being damaged due to excessive heat. Turn on your camera again.
The camera is losing battery power quickly	• The battery may lose power more quickly in low temperatures (below 0 ℃/32 ℉). Keep the battery warm by putting it into your pocket. • Using the flash or recording videos depletes the battery quickly. Recharge if needed. • Batteries are consumable parts that must be replaced over time. Get a new battery if the battery life is diminishing quickly.

Situation	Suggested remedies
Cannot capture photos	• There is no space on the memory card. Delete unnecessary files or insert a new card. • Format the memory card. • The memory card is defective. Get a new memory card. • The memory card is locked. Unlock the card. (p. 187) • Ensure that the camera is switched on. • Charge the battery. • Ensure that the battery is inserted correctly.
The camera freezes	Remove the battery and insert it again.
The camera heats up	While using the camera, it may heat up. This is normal and should not affect your camera's lifespan or performance.
The flash fires unexpectedly	The flash may fire due to static electricity. The camera is not malfunctioning.
The flash does not work	• The flash option may be set to **Off**. (p. 108) • You cannot use the flash in some modes.
The date and time are incorrect	Set the date and time under the ⚙ menu. (p. 178)
The display or buttons do not work	Remove the battery and insert it again.

Situation	Suggested remedies
The memory card has an error	• Turn off the camera, and then turn it on again. • Remove the memory card, and then insert it again. • Format the memory card. See "Cautions when using memory cards" for more details. (p. 190)
Your computer does not recognize an SDXC or UHS-1/UHS-2 memory card	SDXC memory cards use the exFAT file system. To use SDXC memory cards or UHS-1/UHS-2 memory cards that are formatted with the exFAT file system on a Windows XP computer, download and update the exFAT file system driver from the Microsoft website.
Your TV or computer cannot display photos and videos that are stored on an SDXC or UHS-1/UHS-2 memory card	SDXC memory cards use the exFAT file system. To use SDXC memory cards or UHS-1/UHS-2 memory cards that are formatted with the exFAT file system, ensure that the external device is compatible with the exFAT file system before connecting the camera to the device.
Cannot display files	If you change the name of a file, your camera may not play the file (the name of the file should meet the DCF standard). If you encounter this situation, display files on your computer.

Situation	Suggested remedies
The photo is blurry	• Ensure that the focus option you set is suitable for the kind of shot you are capturing. • Use a tripod to prevent your camera from shaking. • Ensure that the lens is clean. If not, clean the lens. (p. 184)
The colors in the photo do not match the actual scene	An incorrect White Balance can create unrealistic color. Select the proper White Balance option to suit the light source. (p. 87)
The photo is too bright or too dark.	Your photo is overexposed or underexposed. • Adjust the aperture value or the shutter speed. • Adjust the ISO sensitivity. (p. 85) • Turn the flash off or on. (p. 108) • Adjust the exposure value. (p. 118)
Photos are distorted	This camera can have minute distortion when using a wide-angle lens that enables shooting with a wide angle of view. This is normal, and does not cause malfunction.
Horizontal lines appear on the photo	This may occur when the subject is exposed to a fluorescent or mercury-vapor light source. Select a slow shutter speed.

200

Situation	Suggested remedies
Playback screen does not appear on the connected external device	• Ensure that HDMI cable is properly connected to the external monitor. • Ensure that the memory card is properly recorded.
Your computer does not recognize your camera	• Ensure that the USB cable is connected correctly. • Ensure that the camera is switched on. • Ensure that you are using a supported operating system.
Your computer disconnects the camera while transferring files	The file transfer may be interrupted by static electricity. Disconnect the USB cable and connect it again.
i-Launcher is not functioning properly	• End i-Launcher and restart the program. • Depending on your computer's specifications and environment, the program may not launch automatically. In this case, click **Start** → **All Programs** → **Samsung** → **i-Launcher** → **Samsung i-Launcher** on your Windows computer. (For Windows 8, open Start screen, and then select **All apps** → **Samsung i-Launcher**.) Or, click **Applications** → **Samsung** → **i-Launcher** on your Mac OS computer.

Situation	Suggested remedies
Auto Focus does not work	• Subject is not in focus. When the subject is outside the AF area, shoot by moving the subject inside the AF area and half-pressing [**Shutter**]. • Subject is too close. Step back from the subject and shoot. • The focus mode is set to MF. Switch the mode to AF.
AEL feature does not work	AEL feature does not work in AUTO, M, and S modes. Select another mode to use this feature.
Lens does not work	• Ensure that the lens is properly mounted. • Remove the lens from the camera and remount it.
External flash does not work	Ensure that the external device is properly mounted and turned on.
The date & time settings screen appears when you power on the camera	• Set the date and time again. • This screen appears when the camera's internal power source is completely discharged. Insert a fully charged battery and wait at least 72 hours in power off status for the internal power source to be recharged.

201

Camera specifications

Image Sensor

Type	CMOS
Sensor size	23.5X15.7 mm
Effective pixels	Approx. 28.2 mega-pixels
Total pixels	Approx. 30.7 mega-pixels
Color filter	RGB primary color filter

Lens Mount

Type	Samsung NX Mount
Available lens	Samsung lenses

Image Stabilization

Type	Lens shift (depends on lens)
Mode	Off/Mode 1/Mode 2

Distortion Correct

Off/On (depends on lens)

i-Function

intelli-zoom (X1.2, 1.4, 1.7, 2.0)

Dust Reduction

Type	Super sonic drive

Display

Type	Super AMOLED with Touch Panel (C-type Touch Control Enabled)
Size	3.0" (Approx. 76.8 mm)
Resolution	FVGA (720X480) 1036 k dots (S-Stripe)
Field of view	Approx. 100 %
Angle	Tiltable (Up 90°, Down 45°)
User display	Grid Line, Icons, Histogram, Distance Scale, Level gauge, Overexposure Guide

Viewfinder

Type	Electronical viewfinder (OLED) (proximity sensor)
Resolution	XGA Approx. 3146k pixels
Eye relief	Approx. 21.0 mm
Diopter adjustment	Approx. -4.0–+2.0 m^{-1}
Field of view	Approx. 100 %
Magnification	Approx. 1.04 X (APS-C, 50 mm, -1 m^{-1})

Focusing	
Type	Hybrid AF
Focusing point	• Total AF point: 205 points (Phase Detection AF), 209 points (Contrast AF) • Multi: 35 points, Moveable multi focus frame (35 points (7X5)) • Face detection: Max. 10 faces • Object tracking AF • Predictive multi AF
Mode	Action AF, Single AF, Continuous AF, Manual Focus
AF Assist Lamp	Yes (pattern LED)

Shutter	
Type	Electronically controlled vertical-run focal plane shutter
Speed	• Auto: 1/8,000 sec. (with mechanical shutter)–30 sec., 1/8,000 sec. (with electronic first curtain shutter) • Manual: 1/8,000 sec. (with mechanical shutter)–30 sec. (1/3 EV Step), 1/8,000 sec. (with electronic first curtain shutter) • Bulb (time limit: 8 min.)

Exposure	
Metering system	TTL 221 (17X13) Block segment
	Metering: Multi, Center-weighted, Advanced spot
	Metering range: EV 0–18 (ISO100 · 30 mm, F2)
Compensation	±5 EV (1/3 EV Step)
AE lock	AEL button
ISO equivalent	Auto, 100, 200, 400, 800, 1600, 3200, 6400, 12800, 25600 (1 EV or 1/3 EV Step) * Auto ISO settings are selectable up to ISO 6400.

Drive Mode	
Mode	Single, Continuous (user selectable), Timer, Bracket (Auto Exposure, White Balance, Picture Wizard, Depth)
Continuous shooting	• JPEG: 15 fps (with AF/AE, up to 45 fps) • RAW: 15 fps (with AF/AE, up to 15 fps) (RAW + 15 shots)
Bracket shooting	Auto exposure bracketing (±3 EV), White Balance bracketing, Picture Wizard bracketing, Depth bracketing
Self-timer	2–30 sec. (1 second interval)
Shutter release	via Micro USB port

203

Flash	
Type	Built-in flash
Mode	Smart Flash, Auto, Auto Red-eye, Fill in, Fill-in Red, 1st Curtain, 2nd Curtain, Off, Auto FP Sync (available only with supported external flashes)
Guide number	11 (based on ISO 100)
Angle of view	28 mm (35 mm film equivalent)
Sync speed	Less than 1/250 sec.
Flash EV	-3–+3 EV (0.3 EV Step), FEL
External flash	Optional Samsung external flashes
Sync terminal	Hot-shoe

Dynamic Range
Off/Smart Range+/HDR

White Balance	
Mode	Auto WB, Daylight, Cloudy, Fluorescent White, Fluorescent NW, Fluorescent Daylight, Tungsten, Tungsten (Auto), Flash WB, Custom Set, Color Temperature (Manual)
Micro adjustment	Amber/Blue/Green/Magenta 7 steps respectively

Picture Wizard	
Mode	Standard, Vivid, Portrait, Landscape, Forest, Retro, Cool, Calm, Classic, Custom1, Custom2, Custom3
Parameter	Color (Red, Green, Blue), Saturation, Sharpness, Contrast, Hue

Shooting	
Mode	Smart Auto, Program, Aperture Priority, Shutter Priority, Manual, Custom1, Custom2, Smart
Smart mode	Beauty Face, Landscape, Action Freeze, Rich Tones, Panorama, Waterfall, Silhouette, Sunset, Night, Fireworks, Light Trace, Multi Exposure, Auto Shutter
Smart filter	Vignetting, Miniature (H), Miniature (V), Watercolor, Selective Color (R, G, B, Y)

204

Size	• JPEG (3:2): 28M (6480X4320), 13.9M (4560X3040), 7.1M (3264X2176), 3.0M (2112X1408) • JPEG (16:9): 23M (6480X3648), 11.9M (4608X2592), 6.2M (3328X1872), 2.4M (2048X1152) • JPEG (1:1): 18.7M (4320X4320), 9.5M (3088X3088), 4.7M (2160X2160), 2.0M (1408X1408) • RAW: 28.0M (6480X4320) * 3D mode with 3D lens is available only with JPEG (16:9) 5.9M (3232X1824), 2.1M (1920X1080).
Quality	Super Fine, Fine, Normal, RAW, RAW+S. Fine, RAW+Fine, RAW+Normal
RAW standard	SRW (ver.2.0.0)
Color space	sRGB, Adobe RGB
Video	
Type	HEVC
Format	Movie: HEVC, Sound: AAC
Movie AE mode	Smart Auto, Program, Aperture Priority, Shutter Priority, Manual, Custom 1, Custom 2, Smart
Movie clip	Audio on/off (User selectable, Shooting time: Max. 29' 59")

Smart filter	Vignetting, Miniature (H), Miniature (V), Watercolor, Selective Color (R, G, B, Y) *Smart Filter is available only with Full HD or lower.
Size	4096X2160 (24 fps only), 3840X2160 (30 fps only), 1920X1080, 1280X720, 640X480 * Recording with 3D lens is available only with Full HD.
Frame rate	• NTSC: 60 fps, 30 fps, 24 fps (4096X2160 only) • PAL: 50 fps, 25 fps, 24 fps
Multi Motion	x0.25 (1920X1080 30 fps/25 fps/15 fps, 1280X720 30 fps/25 fps, 640X480 30 fps/25 fps only), x0.5 (1920X1080 60 fps/50 fps/30 fps/25 fps/15 fps, 1280X720, 640X480 only), x5, x10, x20
Quality	HQ, Normal
Sound	Stereo (with Input Level Adjustment, Audio Level Display)
Edit	Still image capture, Time trimming
Playback	
Type	Single image, Thumbnails (15/28), Slide show, Movie
Edit	Smart Filter, Resize, Rotate, Face Retouch, Display Brightness, Contrast
Smart filter	Vignetting, Miniature (H), Miniature (V), Watercolor, Selective Color (R, G, B, Y)

Storage	
Media	External memory (optional): SD card (2 GB guaranteed), SDHC card (up to 32 GB guaranteed), SDXC card (up to 64 GB guaranteed, UHS-1, UHS-2 supported) - Class 10 and above recommended
File format	RAW (SRW (ver.2.0.0)), JPEG (EXIF 2.3), MPO (3D), DCF

Wireless network	
Type	IEEE 802.11b/g/n/ac
Function	Quick Transfer, Email, Auto Backup, Remote Viewfinder, MobileLink, Photo Beam, Bluetooth GPS Tagging, Auto Time setting, Full browser (SNS & Cloud), TV Link (Network), FOTA

NFC
Yes

Interface	
Video output	HDMI
HDMI	1.4a
Digital output	USB 2.0

External release	Yes
External microphone	Yes
DC power input	DC 5.0 V, 2 A via micro USB

Power Source	
Type	Rechargeable battery: BP1900 (1,900 mAh, 7.2 V) * The power source may differ depending on your region.

Dimensions (W X H X D)
138.5 X 102.3 X 50.4 mm (Mount, Body : 42.25 mm)

Weight
550 g (without battery and memory card)

Operating Temperature
0–40 °C

Operating Humidity
5–85 %

Software
Web i-Launcher, Samsung RAW Converter, DNG Converter, Samsung Movie Converter

* Specifications may change without notice to improve performance.
* Other brands and products names are trademarks of respective owners.

Glossary

AP (Access Point)

An access point is a device that allows wireless devices to connect to a wired network.

Ad-Hoc network

An ad-hoc network is a temporary connection for sharing files or an internet connection and between computers and devices.

AdobeRGB

Adobe RGB is used for commercial printing and has a larger color range than sRGB. Its wider range of colors helps you to easily edit photos on a computer.

AEB (Auto Exposure Bracket)

This feature automatically captures several images at different exposures to help you capture a properly-exposed image.

AEL/AFL (Auto Exposure Lock/Auto Focus Lock)

These features help you lock the exposure or focus on which you want to focus or calculate the exposure.

AF (Auto Focus)

A system that automatically focuses the camera lens on the subject. Your camera uses the contrast to focus automatically.

AMOLED (Active-matrix organic light-emitting diode)/ LCD (Liquid Crystal Display)

AMOLED is a visual display that is very thin and light, as it does not need backlighting. LCD is a visual display commonly used in consumer electronics. This display needs a separate backlight, such as CCFL or LED, to reproduce colors.

Aperture

The aperture controls the amount of light that reaches the camera's sensor.

Bluetooth

This feature allows you to exchange files with other devices.

Camera shake (Blur)

If the camera is moved while the shutter is open, the entire image may appear blurred. This occurs more often when the shutter speed is slow. Prevent camera shake by raising the sensitivity, using the flash, or using a faster shutter speed. Alternatively, use a tripod or the OIS function to stabilize the camera.

Cloud Computing

Cloud computing is a technology that allows you to store data on remote servers and to use them from a device with internet access.

Color space

The range of colors that the camera can see.

Color temperature

Color Temperature is a measurement in degrees Kelvin (K) that indicates the hue of a specific type of light source. As the color temperature increases, the color of the light source has a more bluish quality. As the color temperature decreases, the color of the light source has a more reddish quality. At 5,500 degrees Kelvin, the color of the light source is similar to the sun at midday.

Composition

Composition in photography means arranging objects in a photo. Usually, abiding by the rule of thirds leads to a good composition.

DCF (Design rule for Camera File system)

A specification to define a file format and file system for digital cameras created by the Japan Electronics and Information Technology Industries Association (JEITA).

Depth of field

The distance between the nearest and farthest points that can be acceptably focused in a photograph. Depth of field varies with lens aperture, focal length, and distance from the camera to the subject. Selecting a smaller aperture, for example, will increase the depth of field and blur the background of a composition.

Electronic first curtain shutter

The sensor acts as the first curtain of the shutter. With this function, the shutter reacts faster because no process is needed to operate the mechanical curtain.

EV (Exposure Value)

All the combinations of the camera's shutter speed and lens aperture that result in the same exposure.

EV Compensation

This feature allows you to quickly adjust the exposure value measured by the camera, in limited increments, to improve the exposure of your photos.

Exif (Exchangeable Image File Format)

A specification to define an image file format for digital cameras created by the Japan Electronic Industries Development Association (JEIDA).

Exposure

The amount of light allowed to reach the camera's sensor. Exposure is controlled by a combination of the shutter speed, the aperture value, and ISO sensitivity.

Flash

A speed light that helps to create adequate exposure in low-light conditions.

Focal length

The distance from the middle of the lens to its focal point(in millimeters). Longer focal lengths result in narrower angles of view and the subject is magnified. Shorter focal lengths result in wider angles of view.

Histogram

A graphical representation of the brightness of an image. The horizontal axis represents the brightness and the vertical axis represents the number of pixels. High points at the left (too dark) and right (too bright) on the histogram indicate a photo that is improperly exposed.

HEVC

High-efficiency Video Coding format, established by international standard organizations ISO-IEC and ITU-T. This codec is capable of providing good video quality at low bit rates.

209

Image sensor

The physical part of a digital camera that contains a photosite for each pixel in the image. Each photosite records the brightness of the light that strikes it during an exposure. Common sensor types are CCD (Charge-coupled Device) and CMOS (Complementary Metal Oxide Semiconductor).

IP (Internet protocol) address

An IP address is a unique number that is assigned to every device that is connected to the internet.

ISO sensitivity

The sensitivity of the camera to light, based on the equivalent film speed used in a film camera. At higher ISO sensitivity settings, the camera uses a higher shutter speed, which can reduce blur caused by camera shake and low light. However, images with high sensitivity are more susceptible to noise.

JPEG (Joint Photographic Experts Group)

A lossy method of compression for digital images. JPEG images are compressed to reduce their overall file size with minimal deterioration of the image resolution.

Metering

The metering refers to the way in which the camera measures the quantity of light to set the exposure.

MF (Manual Focus)

A system that manually focuses the camera lens on the subject. You can use the focus ring to focus on a subject.

MJPEG (Motion JPEG)

A video format which is compressed as a JPEG image.

MPO (Multi Picture Object)

An image file format that contains multiple images in a file. An MPO file provides a 3D effect on MPO-compatible displays, such as 3D TVs or 3D monitors.

Noise

Misinterpreted pixels in a digital image that may appear as misplaced or random, bright pixels. Noise usually occurs when photos are shot with a high sensitivity or when a sensitivity is automatically set in a dark place.

NFC (Near Field Communication)

NFC is a set of standards for radio communication at very close proximity. You can use NFC-enabled devices to activate features or exchange data with other devices.

NTSC (National Television System Committee)

A video color encoding standard used most commonly in Japan, North America, the Philippines, South America, South Korea, and Taiwan.

Optical zoom

This is a general zoom which can enlarge images with a lens and does not deteriorate quality of images.

PAL (Phase Alternate Line)

A video color encoding standard used in numerous countries throughout Africa, Asia, Europe, and the Middle East.

Quality

An expression of the rate of compression used in a digital image. Higher quality images have a lower rate of compression, which usually results in a larger file size.

RAW (CCD raw data)

The original, unprocessed data, collected directly from the camera's image sensor. White Balance, contrast, saturation, sharpness, and other data can be manipulated with editing software before the image is compressed into a standard file format.

Resolution

The number of pixels present in a digital image. High resolution images contain more pixels and typically show more detail than low resolution images.

Shutter speed

Shutter speed refers to the amount of time it takes to open and close the shutter, and it is an important factor in the brightness of a photo, as it controls the amount of light which passes through the aperture before it reaches the image sensor. A fast shutter speed allows less time to let light in and the photo becomes darker and more easily freezes subjects in motion.

sRGB (Standard RGB)

International standard of color space established by the IEC (International Electrotechnical Commission). This is defined from color space for PC monitors and is also used as the standard color space for Exif.

Vignetting

A reduction of an image's brightness or saturation at the periphery (outer edges) compared to the center of the image. Vignetting can draw interest to subjects positioned in the center of an image.

White Balance (Color balance)

An adjustment of the intensities of colors (typically the primary colors red, green, and blue), in an image. The goal of adjusting the White Balance, or color balance, is to correctly render the colors in an image.

Wi-Fi

Wi-Fi is a technology that allows electronic devices to exchange data wirelessly over a network.

WPS (Wi-Fi Protected Setup)

WPS is a technology that secures wireless home networks.

Optional accessories

You can purchase the following optional items:

Lens, External flash, Shutter release (micro USB type), Vertical grip, External microphone, Rechargeable battery, Battery charger, Camera bag, Camera case, Memory card, Filter, USB cable, HDMI cable, Strap

> - To locate the type, image and availability of accessories, visit the Samsung website.
> - Before purchasing accessories, make sure they are compatible with your camera.
> - Use only Samsung-approved accessories. Samsung is not responsible for damage caused by using another manufacturer's accessories.

Index

Caution:

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorientate, or relocate, the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Operation in 5.15-5.25 GHz band is limited to indoor use only.
5150-5250MHz sont limité à l'intérieur utilisé.

FCC ID: A3LNX1

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

FCC/IC RF Radiation Exposure Statement:
This equipment complies with FCC/IC RF Radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
Caution:

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

IC: 649E-NX1

RF du FCC/IC d'exposition aux radiations: Cet équipement est conforme à l'exposition de la FCC/IC rayonnements RF limites établies pour un environnement non contrôlé. L'antenne pour ce transmetteur ne doit pas être même endroit avec d'autres émetteur sauf conformément à la FCC /IC procédures de produits Multi-émetteur. This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAUTION

**RISK OF EXPLOSION IF BATTERY IS REPLACED BY
AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS.**

This equipment may be operated in all EU countries.

Declaration of Conformity
Trade Name : Samsung Electronics America, Inc.
Model No. : NX1
Responsible Party: Samsung Electronics America, Inc.
Address : 85 Challenger Road, Ridgefield Park, NJ 07660
Telephone No.: 1-800-SAMSUNG (726-7864)
This device complies with Industry Canada License-Exempt RSS standard (S)
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received,
including interference that may cause undesired operation.

SAMSUNG

Declaration of Conformity

Product details

For the following

    Product ： DIGITAL CAMERA

    Model ： SAMSUNG NX1

Manufactured at:

    Manufacturer: Samsung Electronics Co., Ltd
                    129, Samsung Ro, Yeongtong-gu, Suwon-si,
                    Gyeonggi-do, 443-742, Korea

    Factory: TianJin Samsung Opto-Electronics Co., Ltd.
           No.9 ZhangHeng Street, Micro-Electronic Industrial
           Park, JinGang Road, Tianjin, China. 300385

(Factories name and address)

Hereby, Samsung Electronics Co., Ltd, declares that this digital camera is in compliance with the essential requirments and other relevant provisions of Directive 1999/5/EC and the DoC in the language of the manufacturer.

Declaration sentence in official languages

Nation	Declaration
Cesky	Samsung Electronics tímto prohlašuje, že tento digitální fotoaparát je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk	Samsung Electronics erklærer herved, at digitale kameraer overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch	Hiermit erklärt Samsung Electronic, dass sich die Digitalkamera in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti	Käesolevaga kinnitab Samsung Electronics digitaalkaamera vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Samsung Electronics declares that this digital camera is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español	Por medio de la presente Samsung Electronics declara que la cámara digital cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ η Samsung Electronics ΔΗΛΩΝΕΙ ΟΤΙ η ψηφιακή φωτογραφική μηχανή ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français	Par la présente Samsung Electronic déclare que l'appareil photo numérique est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano	Con la presente Samsung Electronicsdichiara che questa fotocamera digitale è conforme ai requisiti essenziali e alle altre disposizioni stabilite dalla Direttiva 1999/5/CE.
Latviski	Ar šo Samsung Electronics deklarē, ka digitālā kamera atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių	Šiuo Samsung Electronics deklaruoja, kad šis skaitmeninis fotoaparatas, atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands	Hierbij verklaart Samsung Electronics dat de digitale camera in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Nation	Declaration
Malti	Hawnhekk, Samsung Electronics, tiddikjara li din il-kamera diġitali hi konformi mar-rekwiżiti essenzjali u ma' dispożizzjonijiet rilevanti oħrajn ta' Direttiva 1999/5/KE.
Magyar	A Samsung Electronics kijelenti, hogy ez a digitális fényképezőgép megfelel az 1999/5/EK irányelv alapvető követelményeinek és egyéb vonatkozó előírásainak.
Polski	Niniejszym firma Samsung Electronics oświadcza, że ten aparat cyfrowy jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/WE.
Português	Samsung Electronics declara que esta câmera digital está conforme os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko	Samsung Electronics izjavlja, da je ta digitalni fotoaparat v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky	Samsung Electronics týmto vyhlasuje, že tento digitálny fotoaparát spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi	Samsung Electronics vakuuttaa täten että tämä digitaalikamera on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska	Härmed intygar Samsung Electronicsatt dessa digitalkameror står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Български	С настоящото Samsung Electronics декларира, че този цифров фотоапарат е в съответствие със съществените изисквания и другите приложими разпоредби на Директива 1999/5/ЕК.
Română	Prin prezenta, Samsung Electronics, declară că această cameră foto digitală este în conformitate cu cerinţele esenţiale şi alte prevederi relevante ale Directivei 1999/5/CE.
Norsk	Samsung Electronicserklærer herved at dette digitalkameraet er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
Türkiye	Bu belge ile, Samsung Electronics bu dijital kameranın 1999/5/EC Yönetmeliginin temel gerekliliklerine ve ilgili hükümlerine uygun olduğunu beyan eder.
Íslenska	Hér með lýsir Samsung Electronics því yfir að þessi stafræna myndavél sé í samræmi við grunnkröfur og önnur ákvæði tilskipunar 1999/5/EB.

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