SAMSUNG

User Manual

WB650/WB660

This user manual includes detailed usage instructions for your camera. Please read this manual thoroughly.

Click a topic

- Quick reference
- Contents
- Basic functions
- Extended functions
- Shooting options
- Playback/Editing
- Appendixes
- Index

Health and safety information

Always comply with the following precautions and usage tips to avoid dangerous situations and ensure peak performance of your camera.

Warning—situations that could cause injury to yourself or others

Caution—situations that could cause damage to your camera or other equipment

Note—notes, usage tips, or additional information

Safety warnings

Do not use your camera near flammable or explosive gases and liquids

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.

Keep your camera away from small children and pets

Keep your camera and all accessories out of the reach of small children and animals. Small parts may cause choking or serious injury if swallowed. Moving parts and accessories may present physical dangers as well.

Prevent damage to subjects' eyesight

Do not use the flash in close proximity (closer than 1 m/3 ft) to people or animals. Using the flash too close to your subject's eyes can cause temporary or permanent damage.

Handle and dispose of batteries and chargers with care

- Use only Samsung-approved batteries and chargers. Incompatible batteries and chargers can cause serious injuries or damage to your camera.
- Never dispose of batteries in a fire. Follow all local regulations when disposing of used batteries.
- Never place batteries or cameras on or in heating devices, such as microwave ovens, stoves, or radiators. Batteries may explode when overheated.

Avoid interference with pacemakers

Maintain a minimum of 15 cm (6 inches) between cameras and pacemakers to avoid potential interference, as recommended by manufacturers and the independent research group, Wireless Technology Research. If you have any reason to suspect that your camera is interfering with a pacemaker or other medical device, turn off the camera immediately and contact the manufacturer of the pacemaker or medical device for guidance.

Safety precautions

CAUTION

Handle and store your camera carefully and sensibly

- Do not allow your camera to get wet—liquids can cause serious damage. Do not handle your camera with wet hands. Water damage to your camera can void your manufacturer's warranty.
- Do not expose the camera to direct sunlight or high temperatures for an extended period of time. Prolonged exposure to sunlight or extreme temperatures can cause permanent damage to your camera's internal components.
- Avoid using or storing your camera in dusty, dirty, humid, or poorly-ventilated areas to prevent damage to moving parts and internal components.
- Remove the batteries from your camera when storing it for an extended period of time. Installed batteries may leak or corrode over time and cause serious damage to your camera.
- Protect your camera from sand and dirt when using it on beaches or in other similar areas.
- Protect your camera from impact, rough handling, and excessive vibration to avoid serious damage.
- Exercise caution when connecting cables or adapters and installing batteries and memory cards. Forcing the connectors, improperly connecting cables, or improperly installing batteries and memory cards can damage ports, connectors, and accessories.
- 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.

Protect batteries, chargers, and memory cards from damage

- Avoid exposing batteries or memory cards to very cold or very hot temperatures (below 0º C/32º F or above 40º C/104º F). Extreme temperatures can reduce the charging capacity of your batteries and can cause memory cards to malfunction.
- 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.
- Prevent memory cards from making contact with liquids, dirt, or foreign substances. If dirty, wipe the memory card clean with a soft cloth before inserting in your camera.
- Do not allow liquids, dirt, or foreign substances to come in contact with the memory card slot. Doing so may cause the camera to malfunction.
- Turn off the camera when inserting or removing the memory card.
- Do not bend, drop, or subject memory cards to heavy impact or pressure.
- Do not use memory cards that have been formatted by other cameras or by a computer. Reformat the memory card with your camera.
- Never use a damaged charger, battery, or memory card.

Use only Samsung-approved accessories

Using incompatible accessories may damage your camera, cause injury, or void your warranty.

Protect your camera's lens

- 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.

Follow all safety warnings and regulations

Comply with any regulations that restrict the use of a camera in a certain area.

Turn off the camera near medical equipment

Your camera can interfere with medical equipment in hospitals or health care facilities. Follow all regulations, posted warnings, and directions from medical personnel.

Turn off the camera when in an aircraft

Your camera can cause interference with aircraft equipment. Follow all airline regulations and turn off your camera when directed by airline personnel.

Avoid interference with other electronic devices

Your camera emits radio frequency (RF) signals that may interfere with unshielded or improperly shielded electronic equipment, such as pacemakers, hearing aids, medical devices, and other electronic devices in homes or vehicles. Consult the manufacturers of your electronic devices to solve any interference problems you experience.

Important usage information

Allow only qualified personnel to service your camera

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.

Ensure maximum battery and charger life

- Overcharging batteries may shorten battery life. After charging is finished, disconnect the cable from your camera.
- Over time, unused batteries will discharge and must be recharged before use.
- Disconnect chargers from power sources when not in use.
- Use batteries only for their intended purpose.

Exercise caution when using the camera in humid environments

When transferring the camera from a cold environment to a warm and humid one, condensation can form on the delicate electronic circuitry and memory card. In this situation, wait for at least 1 hour until all moisture has evaporated before using the camera.

Check that the camera is operating properly before use

The manufacturer takes no responsibility for any loss of files or damage that may result from camera malfunction or improper use.

Use your camera in the normal position

Avoid contact with your camera's internal antenna.

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- Camera specifications or contents of this manual may be changed without prior notice due to upgrade of camera functions.
- You can download firmwares from www.samsung.com or www.samsungimaging.com.
- We recommend using your camera within a country where you purchase it.
- For Open Source License information, refer to the "OpenSourceinfo.pdf" in the provided CD-ROM.

Organization of the user manual

Basic functions 11

Learn about your camera's layout, icons, and basic functions for shooting.

Extended functions 27

Learn how to take a photo by selecting a mode and how to record a video or voice memo.

Shooting options 43

Learn about the options you can set in shooting mode.

Playback/Editing 66

Learn how to play back photos, videos, or voice memos and edit photos or videos. Also, learn how to connect your camera to your computer, photo printer, TV, or HDTV.

Appendixes 89

Refer to settings, error messages, specifications, and maintenance tips.

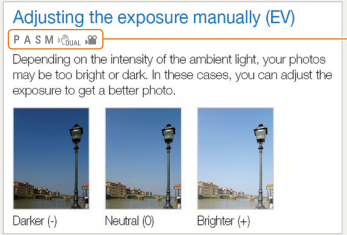
Indications used in this manual

Shooting mode	Indication
Smart Auto	iS
Auto	AUTO
Program	P
Aperture Priority, Shutter Priority, Manual	A·S·M
DUAL IS	DUAL
Map View	
Scene	SCN
Movie	

Shooting mode icons

These icons indicate that a function is available in the corresponding modes. The **SCN** mode may not support functions for all scenes.

e.g.)



Available in the Program, Aperture Priority, Shutter Priority, Manual, DUAL IS, and Movie modes

Icons used in this manual

Icon	Function
	Additional information
	Safety warnings and precautions
[ ]	Camera buttons; for example: [**Shutter**] (represents the shutter button)
( )	Page number of related information
→	The order of options or menus you must select to perform a step; for example: Select **Shooting** → **White Balance** (represents select **Shooting**, and then **White Balance**)
*	Annotation

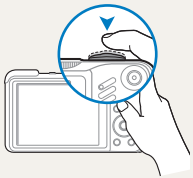
Abbreviations used in this manual

Abbreviation	Definition
ACB	Auto Contrast Balance
AEB	Auto Exposure Bracket
AF	Auto Focus
DIS	Digital Image Stabilization
DPOF	Digital Print Order Format
EV	Exposure Value
GPS	Global Positioning System
OIS	Optical Image Stabilization
WB	White Balance

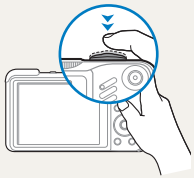
Expressions used in this manual

Pressing the shutter

- Half-press [**Shutter**]: press the shutter halfway down
- Press [**Shutter**]: press the shutter all the way down



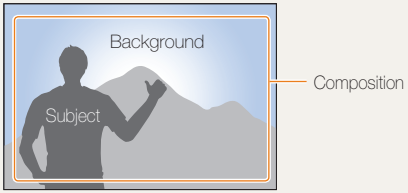
Half-press [**Shutter**]



Press [**Shutter**]

Subject, background, and composition

- **Subject**: the main object of a scene, such as a person, animal, or still life
- **Background**: the objects around the subject
- **Composition**: the combination of a subject and background



Exposure (Brightness)

The amount of light that enters your camera determines the exposure. You can alter the exposure with shutter speed, aperture value, and ISO speed. By altering the exposure, your photos will be darker or lighter.

Normal exposure

Overexposure (too bright)

Common questions

You can get answers to common questions. Solve problems easily by setting shooting options.

The subject's eyes appear red.	This is caused by a reflection from the camera flash. • Set the flash option to Red-eye or Red-eye Fix. (p. 47-48) • If the photo has already been taken, select Red-eye Fix in the edit menu. (p. 77)
Photos have dust spots.	Dust particles floating in the air may be captured in photos when using the flash. • Turn off the flash or avoid taking photos in a dusty place. • Set ISO speed options. (p. 49)
Photos are blurred.	This may be caused by taking photos in low light conditions or holding the camera incorrectly. • Use the DUAL mode. (p. 29) • Press [**Shutter**] halfway down to make sure the subject is focused. (p. 25)
Photos are blurred when shooting at night.	As the camera tries to let in more light, the shutter speed slows. This can make it difficult to steady the camera and may result in camera shake. • Turn on the flash. (p. 47-48) • Select **Night** in the **SCN** mode. (p. 30) • Set ISO speed options. (p. 49) • Use a tripod to prevent your camera from shaking.
Subjects come out too dark because of backlighting.	When the light source is behind the subject or when there is a high contrast between the light and dark areas, the subject may come out shaded. • Avoid shooting in front of the sun. • Select **Backlight** in the **SCN** mode. (p. 30) • Set the flash option to **Fill in**. (p. 48) • Set the Auto Contrast Balance (**ACB**) option. (p. 59) • Adjust the exposure. (p. 59) • Set the metering option to **Spot** if a bright subject is in the center of the frame. (p. 60)

Quick reference

Taking photos of people

- **SCN** mode > Beauty Shot, Portrait, Children ▶ 30
- Red-eye, Red-eye Fix (to prevent or correct red-eye) ▶ 47-48
- Face Detection ▶ 54

Taking photos at night or in the dark

- **SCN** mode > Night, Dawn, Firework ▶ 30
- Flash options ▶ 47
- ISO speed (to adjust the sensitivity to light) ▶ 49

Taking action photos

- **S** mode ▶ 34
- Continuous, Motion Capture ▶ 62

Taking photos of text, insects, or flowers

- **SCN** mode > Close Up, Text ▶ 30
- Macro, Auto Macro, Manual Focus (to take close-up photos) ▶ 50
- White balance (to change the color tone) ▶ 60

Adjusting the exposure (brightness)

- ISO speed (to adjust the sensitivity to light) ▶ 49
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Reducing camera shake

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Basic functions

Learn about your camera's layout, icons, and basic functions for shooting.

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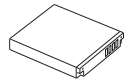
Unpacking

Check your product box for the following items.

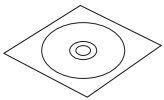
Camera

AC adapter/USB cable



Rechargeable battery

Strap



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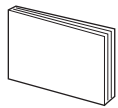
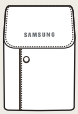


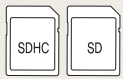
Quick Start Manual

The illustrations may differ from your actual items.

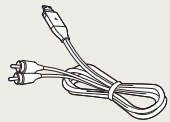
Optional accessories



Camera case

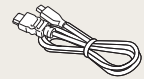


Memory cards



A/V cable

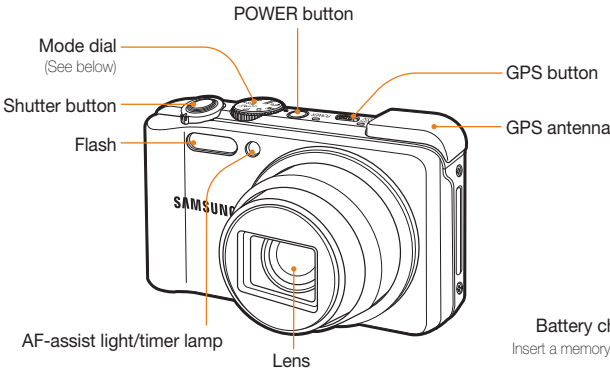
Battery Charger

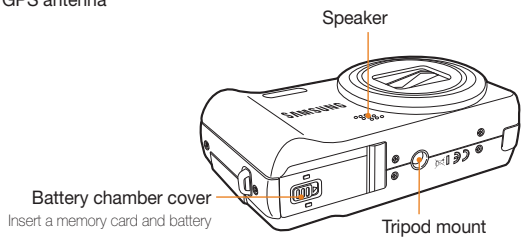


HDMI cable

Camera layout

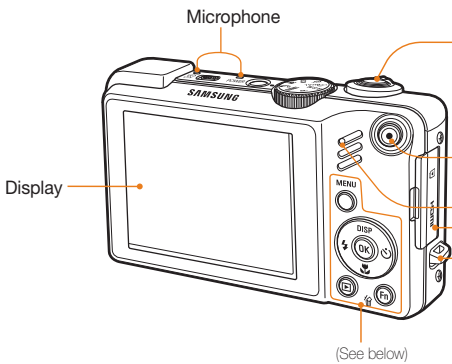
Before you start, familiarize yourself with your camera's parts and their functions.

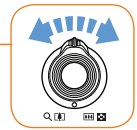




Icon	Mode	Description
iS	Smart Auto	Take a photo by letting the camera select a scene mode as it detects
AUTO	Auto	Take a photo quickly and easily with minimal settings
P	Program	Take a photo by setting options
A·S·M	Aperture Priority, Shutter Priority, Manual	Set the aperture priority, shutter priority, or manual mode **Aperture Priority** : Take a photo by adjusting the aperture value (The shutter speed is set automatically.) **Shutter Priority** : Take a photo by adjusting the shutter speed (The aperture value is set automatically.) **Manual** : Take a photo by adjusting both the aperture value and shutter speed

Icon	Mode	Description
DUAL	DUAL IS	Take a photo with options suitable for reducing camera shake
	Map View	Using the map view information, you can check the current location data, and find the shooting location of the picture, recorded with location data.
SCN	Scene	Take a photo with options preset for a specific scene
	Movie	Record a video





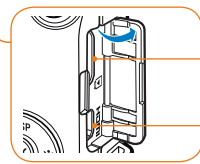
Zoom button

- Zoom in or out in Shooting mode.
- Zoom in on part of a photo, view files as thumbnails, or adjust volume in Playback mode.
- Adjust volume in Playback mode.

Video shooting button

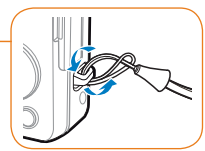
Status lamp

- **Blinking**: When saving a photo or video, being read by a computer or printer, or out of focus
- **Steady**: When connecting to a computer or in focus



USB and A/V port
Accepts USB cable or A/V cable

HDMI port
Accepts HDMI cable

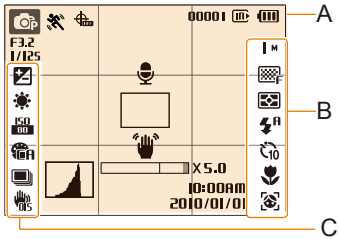


Button		Description
MENU	**MENU**	Access options or menus.
DISP OK	**Navigation**	See the navigation table below.
OK	**OK**	Confirm the highlighted option or menu.
▶	**Playback**	Enter Playback mode.
Fn	**Function**	• Access options in Shooting mode. • Delete files in Playback mode.

	In Shooting mode	While setting
DISP	Change the display option	Move up
❀	Change the macro option	Move down
ϟ	Change the flash option	Move left
⏲	Change the timer option	Move right

Icons

The icons displayed will change according to the mode you select or the options you set.



A. Information

Icon	Description
	Selected shooting mode
	Indicates the status of moving subject
	GPS options and status
X5.0	Zoom ratio
00001	Available number of photos
00:01:00	Available recording time
	Internal memory
	Memory card inserted
	• : Fully charged • : Partially charged • : Charging needed
F3.2	Aperture value
1/125	Shutter speed
	Voice memo
	Auto focus frame
	Camera shake
10:00AM 2010/01/01	Current date and time
	Histogram (p. 21)
	Grid lines

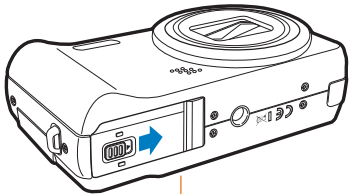
B. Icons on the right

Icon	Description
M	Photo resolution
320	Video resolution
	Photo quality
30	Frame rate
	Metering option
A	Flash
10	Timer
	Focus distance
	Face detection

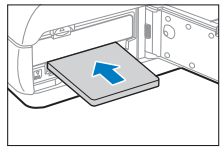
C. Icons on the left

Icon	Description
	Exposure value
	White balance
	Face tone
	Face retouch
ISO 80	ISO speed
	Photo style
	Image adjustment (contrast, sharpness, saturation)
	Smart Filter
OFF	Voice muted
	Burst type
OIS	Optical Image Stabilization (OIS)

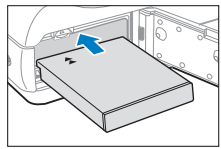
Inserting the battery and memory card

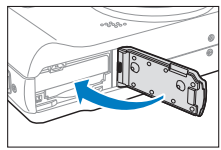


Insert a memory card with the gold-colored contacts facing down.

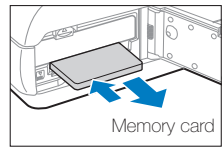


Insert the battery with the Samsung logo facing down.

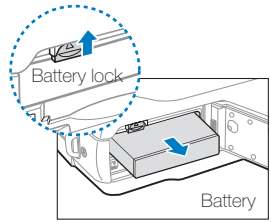




Removing the battery and memory card



Push gently until the card disengages from the camera and then pull it out of the slot.



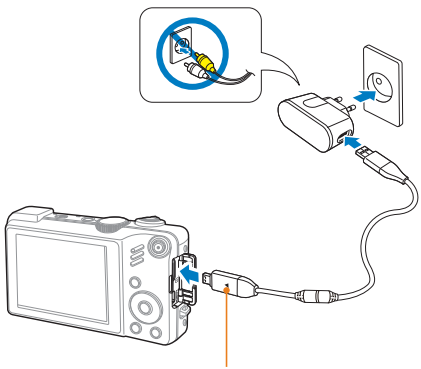
Push the lock up to release the battery.

The internal memory can be used as a temporary storage device when the memory card is not inserted.

Charging the battery and turning your camera on

Charging the battery

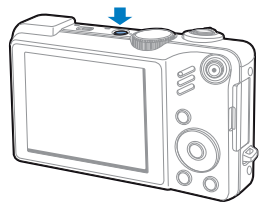
Before using the camera for the first time, you must charge the battery. Attach the USB cable to the AC adapter and then plug the end of cable with the indicator light into your camera.



Turning on your camera

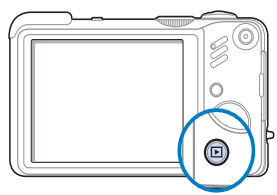
Press [**POWER**] to turn your camera on or off.

- The initial setup screen appears when you turn on the camera for the first time. (p. 18)



Turning on your camera in Playback mode

Press [▶]. The camera turns on and accesses Playback mode immediately.



Press and hold [▶] to mute camera sounds.

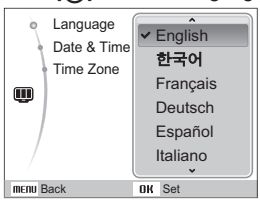
Performing the initial setup

The initial setup screen appears to allow you to configure the camera's basic settings.

1 Press [**POWER**].

- The initial setup screen appears when you turn on the camera for the first time.

2 Press [] to select **Language** and press [] or [**OK**].

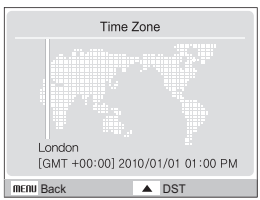


3 Press [**DISP**] or [] to select a language and press [**OK**].

4 Press [**DISP**] or [] to select **Time Zone** and press [] or [**OK**].

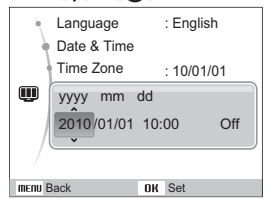
5 Press [] or [] to select a time zone and press [**OK**].

- To set the daylight-saving time, press [**DISP**].



6 Press [**DISP**] or [] to select **Date & Time** and press [] or [**OK**].

7 Press [] or [] to select an item.



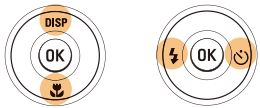
8 Press [**DISP**] or [] to set the date and time or select a date format, and press [**OK**].

Selecting options

You can select options by pressing [**MENU**] and pressing the navigation button([**DISP**], [ ], [ ], [ ]).

> You can also access shooting options by pressing [**Fn**] but some options are not available.

1. In Shooting mode, press [**MENU**].
2. Press the navigation button to select to an option or menu.
   - Press [**DISP**] or [ ] to move up or down; press [ ] or [ ] to move left or right.



3. Press [**OK**] to confirm the highlighted option or menu.

Going back to the previous menu

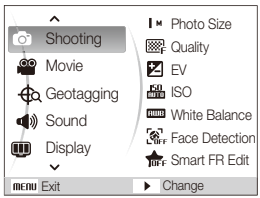
Press [**MENU**] again to go back to the previous menu.

> Press [**Shutter**] to return to Shooting mode.

E.g. Selecting a white balance option in the P mode

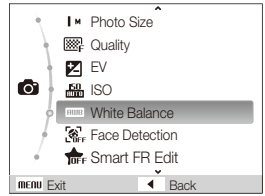
1 Rotate the mode dial to **P**.

2 Press [**MENU**].

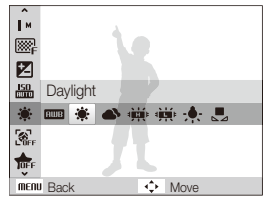


3 Press [**DISP**] or [ ] to select to **Shooting** and then press [ ] or [**OK**].

4 Press [**DISP**] or [ ] to select to **White Balance** and then press [ ] or [**OK**].



5 Press [ ] or [ ] to select to a white balance option.



6 Press [**OK**].

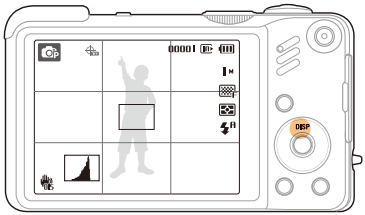
Setting the display and sound

Learn how to change the basic settings for the display and sound according to your preferences.

Changing the display type

Select a style of display for Shooting or Playback mode.

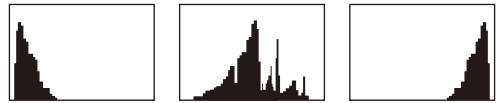
Press [**DISP**] repeatedly to change a display type.



Mode	Description
Shooting	• Display all information about shooting • Hide information about shooting, except the available number of photos • Display grid lines and histogram
Playback	• Display all information about the current photo • Hide all information about the current file • Display information about the current file, except the shooting settings and histogram

About a histogram

A histogram is a graph that displays how light is distributed in your photo. If the histogram has a high peak on the left, your photos are dark. A peak on the right of the graph means that your photos are bright. The height of the peaks is related to color information. The more of a particular color, the taller the peak.



Underexposed Well Exposed Overexposed

Setting the sound

Set whether your camera emits a specified sound when you operate your camera.

1 In Shooting or Playback mode, press [**MENU**].

2 Select **Sound** → **Beep Sound** → an option.

Option	Description
Off	The camera does not emit any sounds.
1/2/3	The camera emits sounds.

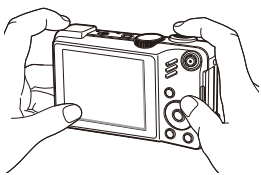
3 Press [**MENU**] to return to the previous mode.

Taking photos

Learn basic actions to take photos easily and quickly in the Smart Auto mode.

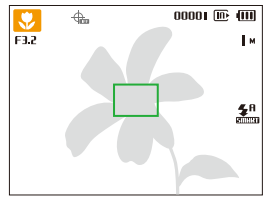
1 Rotate the mode dial to S.

2 Align your subject in the frame.



3 Half-press [**Shutter**] to focus.

- A green frame means the subject in focus.



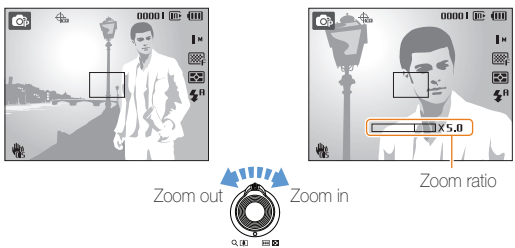
4 Press [**Shutter**] to take a photo.

See page 25 for tips to get clearer photos.

Zooming

You can shoot close-up photos by adjusting the zoom. Your camera has a 15X optical zoom and 5X digital zoom. By using both, you can zoom in up to 75 times.

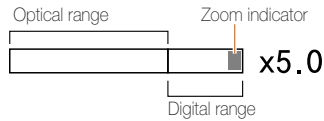
Rotate [**Zoom**] right to zoom in on your subject. Rotate [**Zoom**] left to zoom out.



The zoom ratio available for videos differs.

Digital zoom

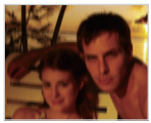
If the zoom indicator is in the digital range, your camera is using the digital zoom. The picture quality may deteriorate when you use the digital zoom.



- The digital zoom is not available when using S, DUAL, **SCN** (, , , , ,), and modes and when used with **Face Detection**.
- It may take longer to save a photo when using the digital zoom.
- The zoom sound may be recorded if you use the zoom while recording a video.

Reducing camera shake (OIS)

Reduce camera shake optically in Shooting mode.



Before correction

After correction

1 In Shooting mode, press [**MENU**].

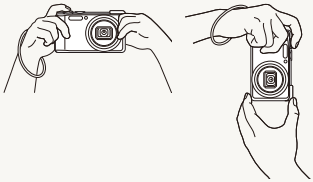
2 Select **Shooting** → **OIS** → an option.

Option	Description
OFF	**Off**: Deactivate the OIS function.
OIS	**On**: Activate the OIS function.

- OIS may not function properly when:
  - you move your camera to follow a moving subject
  - you use digital zoom
  - there is too much camera shake
  - the shutter speed is slow (e.g., when you select **Night** in the **SCN** mode)
  - the battery is low
  - you take a close-up shot
- If you use the OIS function with a tripod, your images may be blurred by the vibration of the OIS sensor. Deactivate the OIS function when you use a tripod.
- If the camera is impacted, the display will be blurry. In this case, turn off the camera and turn it on again to use the OIS function correctly.

Tips for getting a clearer photo

Holding your camera correctly

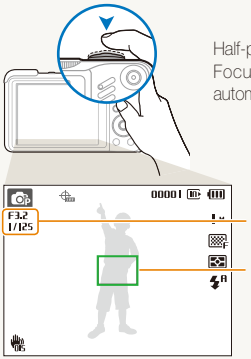


Make sure nothing is blocking the lens.

Reducing camera shake

- Set the Optical Image Stabilization option to reduce camera shake optically. (p. 24)
- Select the DUAL mode to reduce camera shake both optically and digitally. (p. 29)

Half-pressing the shutter button



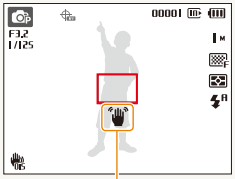
Half-press [**Shutter**] and adjust the focus. Focus and exposure will be adjusted automatically.

The aperture value and shutter speed are set.

Focus frame

- Press [**Shutter**] to take the photo if displayed in green.
- Change the frame and half-press [**Shutter**] again if displayed in red.

When is displayed



Camera shake

When shooting in the dark, avoid setting the flash option to **Slow Sync** or **Off**. The aperture remains open longer and it may be harder to hold the camera still.

- Use a tripod or set the flash option to **Fill in**. (p. 48)
- Set ISO speed options. (p. 49)

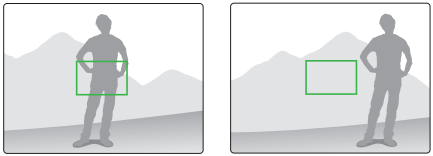
Preventing your subject from being out of focus

It may be difficult to get your subject in focus when:

- there is little contrast between the subject and background (When your subject is wearing a color of clothing that is similar to the background)
- the light source behind the subject is too bright
- the subject is shiny
- the subject includes horizontal patterns, such as blinds
- the subject is not positioned in the center of the frame

Use the focus lock

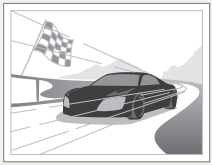
Half-press [**Shutter**] to focus. When the subject is in focus, you can reposition the frame to change the composition. When you are ready, press [**Shutter**] to take your photo.



- When you take photos in low light

Turn on the flash. (p. 47-48)

- When subjects are moving fast



Use the continuous or motion capture function. (p. 62)

Extended functions

Learn how to take a photo by selecting a mode and how to record a video or voice memo.

Using the Smart Auto mode 28
Using the DUAL IS mode 29
Using the Scene mode 30
Adjusting face tone and hiding imperfections 30
Using the frame guide 31
Using the Program mode 32
Using the Aperture Priority, Shutter Priority, or Manual mode 33
Using the Aperture Priority mode 34
Using the Shutter Priority mode 34
Using the Manual mode 35
Using GPS 36
Taking pictures with geotagging 36
Using Map View mode 38
Checking the current location on the map 38
Checking shooting location on the map 39
Recording a video 40
Using the Smart Scene Detection mode 41
Recording voice memos 42
Recording a voice memo 42
Adding a voice memo to a photo 42

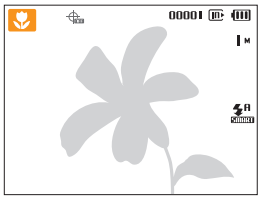
Using the Smart Auto mode

In this mode, your camera automatically chooses the appropriate camera settings based on a defected type of scene. It will be helpful if you are not familiar with the camera settings for various scenes.

1 Rotate the mode dial to S.

2 Align your subject in the frame.

- The camera selects a scene automatically. An appropriate mode icon will appear at the top left of the screen.



Icon	Description
	Appears when taking photos of landscapes.
	Appears when taking photos of bright backgrounds.
	Appears when taking photos of landscapes at night. This is available only when the flash is off.
	Appears when taking portraits at night.
	Appears when taking photos of landscapes with backlighting.
	Appears when taking portraits with backlighting.
	Appears when taking portraits.
	Appears when taking close-up photos.

Icon	Description
	Appears when taking close-up photos of text.
	Appears when taking photos of sunsets.
	Appears when taking photos of clear skies.
	Appears when taking photos of forested areas.
	Appears when taking close-up photos of colorful subjects.
	Appears when taking close-up portraits of people.
	Appears when the camera and subject are stable for a while.
	Appears when taking photos of actively moving subjects.
	Appears when taking photos of fireworks. This is available only when you use a tripod.

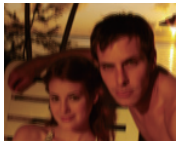
3 Half-press [**Shutter**] to focus.

4 Press [**Shutter**] to take the photo.

- If the camera does not recognize a proper scene mode, S will not change and the default settings will be used.
- Even if there is a face detected, the camera may not select a portrait mode depending on the subject's position or lighting.
- The camera may not select the correct scene depending on shooting environments, such as camera shake, lighting, and distance to the subject.
- Even if you use a tripod, the mode may not be detected depending on the subject's movement.

Using the DUAL IS mode

Reduce camera shake and prevent blurred photos with Optical and Digital Image Stabilization functions.



Before correction

After correction

1 Rotate the mode dial to DUAL.

2 Align your subject in the frame and half-press [**Shutter**] to focus.

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

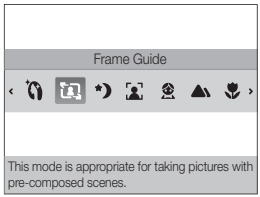
- The digital zoom will not work in this mode.
- The photo will be corrected optically only when taken with a light source that is brighter than fluorescent light.
- If your subject is moving rapidly, the photo may be blurry.
- Set the Optical Image Stabilization option to reduce camera shake in different shooting modes. (p. 24)

Using the Scene mode

Take a photo with options preset for a specific scene.

1 Rotate the mode dial to **SCN**.

2 Select a scene.



- To change the scene mode, press [**MENU**] and select **Scene** → a scene.
- For the Beauty Shot mode, see "Adjusting face tone and hiding imperfections."on page 30-31.
- For the Frame Guide mode, see "Using the frame guide" on page 31.

3 Align your subject in the frame and half-press [**Shutter**] to focus.

4 Press [**Shutter**] to take the photo.

Adjusting face tone and hiding imperfections

Take a photo of a person with options to hide facial imperfections.

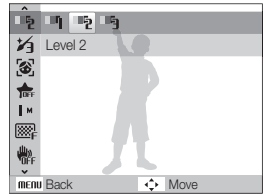
1 Rotate the mode dial to **SCN**.

2 Select **Beauty Shot**.

3 To make the subject's skin tone appear lighter (face only), press [**MENU**].

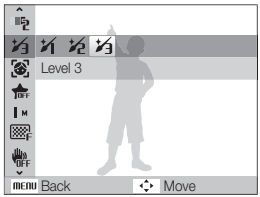
4 Select **Shooting** → **Face Tone** → an option.

- Select a higher setting to make skin tone appear lighter.



5 To hide facial imperfections, press [**MENU**].

6 Select **Shooting** → **Face Retouch** → an option.
- Select a higher setting to hide a greater number of imperfections.



7 Align your subject in the frame and half-press [**Shutter**] to focus.

8 Press [**Shutter**] to take the photo.

The focus distance will be set to **Auto Macro**.

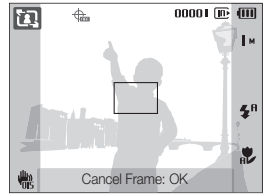
Using the frame guide

When you want another person to take a photo of you, you can compose the scene with the frame guide feature. The frame guide will help the other person take a photo of you by showing the part of the pre-composed scene.

1 Rotate the mode dial to **SCN**.

2 Select **Frame Guide**.

3 Align your subject in the frame and press [**Shutter**].
- Transparent guides will appear on the left and right of the frame.



4 Ask another person to take a photo.
- The person must align the subject in the frame by using the guides, and then press [**Shutter**] to take the photo.

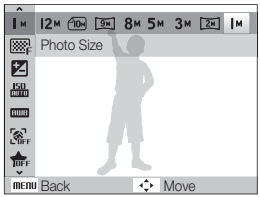
5 To cancel the guides, press [**OK**].

Using the Program mode

Set various options (except for shutter speed and aperture value) in the Program mode.

1 Rotate the mode dial to **P**.

2 Set options. (For a list of options, refer to “Shooting options.”)



3 Align your subject in the frame and half-press [**Shutter**] to focus.

4 Press [**Shutter**] to take the photo.

Using the Aperture Priority, Shutter Priority, or Manual mode

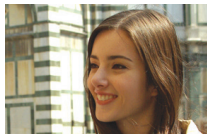
Adjust aperture value or shutter speed to control the exposure of your photos. You can use these options in the Aperture Priority, Shutter Priority, and Manual modes.

Aperture value

The aperture is a hole through which light is admitted. You can adjust the aperture value to control how much light reaches the lens when you capture a photo. By decreasing the aperture value (opening the aperture wider), more light will enter and objects that are farther away will appear out of focus. This is good for close-up or portrait shots to draw attention to the main subject.

Alternatively, as you increase the aperture value, objects from near to far are in sharp focus. This is good for landscape shots to show the entire scope of the scene.

Big aperture value



Small aperture value

Shutter speed

Shutter speed controls how long the camera's shutter remains open when you capture a photo. When you decrease the shutter speed, more light enters your camera and the photo will appear brighter. However, a slower shutter speed can also result in blurry photos if either the subject or the camera is moving.

When you increase the shutter speed, the photo will appear darker. However, a faster shutter speed will also reduce the blurring if your subject or the camera is in motion.

Slow shutter speed

Fast shutter speed

Using the Aperture Priority mode

The Aperture Priority mode allows you to manually set the aperture value while the camera automatically selects an appropriate shutter speed.

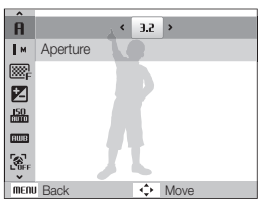
1 Rotate the mode dial to **A·S·M**.

2 Select **A** and press [**OK**].

3 Press [**MENU**].

4 Select **Shooting** → **Aperture** and then adjust the aperture value.

- See page 33 for more information about the aperture value.



5 Set options. (For a list of options, refer to “Shooting options.”)

6 Align your subject in the frame and half-press [**Shutter**] to focus.

7 Press [**Shutter**] to take the photo.

Using the Shutter Priority mode

The Shutter Priority mode allows you to manually set the shutter speed while the camera automatically selects an appropriate aperture value.

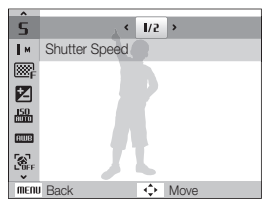
1 Rotate the mode dial to **A·S·M**.

2 Select **S** and press [**OK**].

3 Press [**MENU**].

4 Select **Shooting** → **Shutter Speed** and then adjust the shutter speed.

- See page 33 for more information about the shutter speed.



5 Set options. (For a list of options, refer to “Shooting options.”)

6 Align your subject in the frame and half-press [**Shutter**] to focus.

7 Press [**Shutter**] to take the photo.

Using the Manual mode

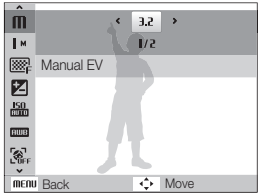
The Manual mode allows you to manually adjust both the aperture value and the shutter speed.

1 Rotate the mode dial to **A·S·M**.

2 Select M and press [**OK**].

3 Press [**MENU**].

4 Select **Shooting** → **Manual EV** and then adjust the aperture value and shutter speed.



5 Set options. (For a list of options, refer to “Shooting options.”)

6 Align your subject in the frame and half-press [**Shutter**] to focus.

7 Press [**Shutter**] to take the photo.

Using GPS

AUTO P A S M DUAL

Photos with geotagging can be taken.

Taking pictures with geotagging

When the GPS function is turned on, location information is written on the photos. Your location can be checked since the camera has a built-in GPS receiver.

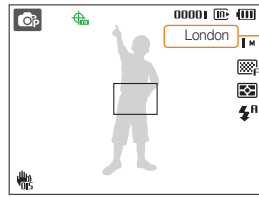
1 In Shooting mode, select [**GPS ON**] on the top of the camera.

2 Press [**MENU**].

3 Select **Geotagging** and a desired setting.

GPS Valid Time Settings	In case of failure in receiving a GPS signal, select the time for reusing the most recently recorded geotag. (If the signal reception still fails even after the valid time, the geotag is not recorded.)
Location Display	Display current location in Shooting mode. (Displayed in Korean if it is set in Korean and in English if it is set in other languages.)
GPS Reset	Select this if you wish to make a new search for a GPS satellite near your location, not for a GPS satellite currently used.
Map Information	Display version of GPS data information and Map information provider.

4 Press [**MENU**] to return to the Shooting mode.

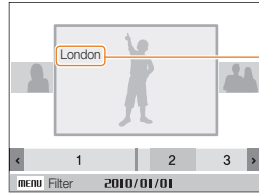


Current location display

5 Align your subject in the frame and press the shutter halfway to focus.

6 Press [**Shutter**] to take a picture.

- A photo is captured with geotagging.
- The name of a location is displayed on the 1 display, 3 thumbnail Display in Play mode.



Name of a location

- Geotags stored for a photo can be checked through the Intelli-studio program.

The GPS signal reception status can be checked with ⌖ colors in the shooting mode.

	GPS signal reception is normal.
	GPS signal reception is impossible.
	GPS signal reception is impossible and is in the valid time.
	GPS is turned off.

- Geotags are recorded when taking pictures by using the **Continuous** or **AEB** shooting method.
- If the valid time elapses when taking pictures with the **Continuous** or **AEB** shooting method, geotags are not recorded for the pictures taken after the valid time elapses.
- When taking pictures with the **Motion Capture** shooting method, geotags are not recorded.
- Take pictures in an open outside space for good GPS signal reception.
- GPS signal reception may take longer depending on the GPS satellite condition.
- GPS signal reception may take longer depending on the surrounding conditions (between buildings, low lying area, areas with many reflectors, e.g. mirrors) and the weather conditions.
- An error may occur with geotagging depending on the conditions for checking the location.
- Geotagging (city name) may be displayed differently due to zoning changes.
- The time for recorded geotags is not stored.
- Geotagging is not recorded in **Movie** mode.
- If there is no GPS data containing reception areas in the camera, "**Map unavailable.**" is displayed.
- When taking pictures with recorded geotags, Korean and English are supported to display location names, but only English is supported in Playback mode.
- GPS location names may differ depending on the areas for use, and are displayed only in the units of city/suburb.

Using Map View mode

The location where a picture with location information was taken and its name can be checked on the map.

Checking the current location on the map

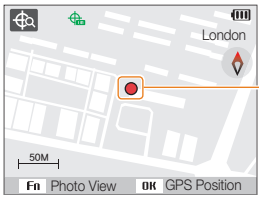
The current location can be checked by receiving a GPS signal.

Select **GPS ON** on the top of the camera.

1 Set the mode dial to .

2 Press [**OK**] to check the current location.

- Before the GPS signal reception is complete, a certain location for each country is displayed.
- When the GPS signal reception is complete, the current location is displayed on the map.
- A desired location can be viewed by pressing [**DISP**/ / /] to move.



Current location display

Viewing the map by enlarging

Turn the dial to the right [Zoom T/Enlarge]
(Turn the dial to the left [**Zoom W/Reduce**])

- WGS 84 (World Geodetic System 1984) for GPS is used.
- Location information may not be displayed even if the GPS signal is received, depending on the area for use.
- The battery's consumption may occur faster when using the GPS function.
- The GPS function is only supported in 63 countries including Germany, the USA, Spain, the UK, Italy, India, China, Canada, France and Korea. For the 55 countries for which the location information is supported, GPS data can be downloaded from the Samsung website. In China however, location information can be checked only when the camera is purchased in China.
- GPS location information may have a permissible range. (Approximately 350 m)
- GPS data for each country containing reception areas can't be updated.
- Currently received GPS data is deleted if the signal is not received within the valid GPS time.
- Only Korean, Chinese and English are supported for display on the map.
- If you move after GPS data is received, the current location is not automatically updated. If the **OK** button is pressed, the current location is updated.
- If **GPS ON** on the top of the camera is not selected or in areas where GPS signal reception is impossible, a certain location for each country or the location where the signal was recently received is displayed on the map.
- If there is no GPS data for each country containing reception areas in the camera, map information is not displayed.
- If you wish to return to shooting or playback mode in Map View mode, select the other mode by turning the mode dial.
- The GPS information is deleted when formatting the memory card. Please download the GPS data and save it before formatting the memory card.

Checking shooting location on the map

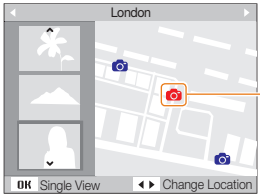
The location where a picture with location information was taken and its name can be checked on the map.

Select **GPS ON** on the top of the camera.

1 Set the mode dial to .

2 Press [**OK**].
- The current location is displayed on the map.

3 Press [**Fn**].
- Pictures with location information are displayed in the order they were taken in.
- Press [**Fn**] to cancel the thumbnail view. Press [**Fn**] once again to return to thumbnail view.

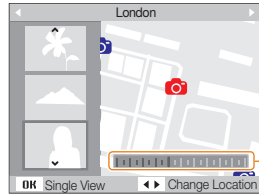


Shooting location display

4 Select a desired picture by pressing [▶/⏲].
- The location the picture was taken in is displayed.
- A desired location can be viewed by pressing [**DISP**/✿/▶/⏲] to move.

Viewing the map by enlarging

Turn the dial to the right [Zoom T/Enlarge]
(Turn the dial to the left [**Zoom W/Reduce**])



Enlargement adjustmer

- GPS data must be stored in an external memory to normally operate the Map View mode.
- A maximum of 3 thumbnail images can be displayed on the screen.
- If there is no location information on a picture, the location name is not displayed on the map in Map View mode.
- GPS data for each country containing reception areas can be downloaded from the websites at www.samsung.com or www.samsungimaging.com. Refer to the websites for further information.

Recording a video

Record videos of up to 20 minutes in length in high definition. The recorded video is saved as an H.264 (MPEG-4.AVC) file.

- H.264 (MPEG-4 part10/AVC) is a high-compression video format established by international standard organizations ISO/IEC and ITU-T.
- Some memory cards may not support high definition recording. In this case, set a lower resolution. (p. 44)
- When the Optical Image Stabilization ( ) is activated, your video may be recorded with the OIS operation sound.
- The zoom sound may be recorded if you use the zoom while recording a video.

1 Rotate the mode dial to .

2 Press [**MENU**].

3 Select **Movie** → **Frame Rate** → a frame rate (the number of frames per second).

- As the number of frames increases, action appears more natural, but the file size is increased.

60 FPS is available only when the video resolution is 320 x 240.

4 Press [**MENU**].

5 Select **Movie** → **Voice** → a sound option.

Option	Description
	Off: Record a video without sound.
	On: Record a video with sound.
	Zoom Mute : Record a video without sound while zooming.

6 Set other options as desired.
(For options, refer to “Shooting options.”)

7 Press [**Shutter**] to start recording.

8 Press [**Shutter**] again to stop recording.

To pause recording

The camera allows you to pause temporarily while recording a video. With this function, you can record your favorite scenes as a single video.

Press [**OK**] to pause while recording. Press it again to resume.

How to use Video shooting button

By pressing the movie recording button in the shooting mode, you can directly start recording movies. To disable the movie recording function, press the movie recording button one more time.

Using the Smart Scene Detection mode

In this mode, your camera automatically chooses the appropriate camera settings based on a detected type of scene.

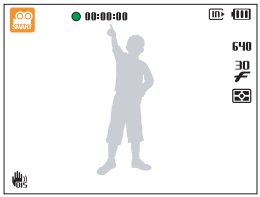
1 Rotate the mode dial to .

2 Press [**MENU**].

3 Select **Movie** → **Smart Scene Detection**→ **On**.

4 Align your subject in the frame.

- The camera selects a scene automatically. An appropriate mode icon will appear at the top left of the screen.



	Appears when recording videos of landscapes.
	Appears when recording videos of clear skies.
	Appears when recording videos of forested areas.
	Appears when recording videos of sunsets.

5 Press [**Shutter**] to start recording.

6 Press [**Shutter**] again to stop recording.

- If the camera does not recognize a proper scene mode, will not change and the default settings will be used.
- The camera may not select the correct scene depending on shooting environments, such as camera shake, lighting and distance to the subject.

Recording voice memos

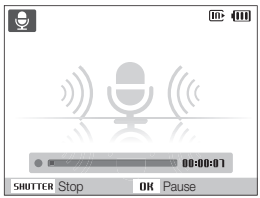
AUTO P A S M DUAL SCN

Learn how to record a voice memo that you can play back at any time. You can add a voice memo to a photo as a short reminder of shooting conditions.

> You will get the best sound quality when recording 40 cm away from the camera.

Recording a voice memo

1. In Shooting mode, press [**MENU**].
2. Select **Shooting** → **Voice** → **Record**.
3. Press [**Shutter**] to record.



   - Press [**OK**] to pause or resume recording.
   - You can record voice memos of up to 10 hours in length.
4. Press [**Shutter**] to stop.
   - Press [**Shutter**] again to record a new voice memo.
5. Press [**MENU**] to switch to Shooting mode.

Adding a voice memo to a photo

1. In Shooting mode, press [**MENU**].
2. Select **Shooting** → **Voice** → **Memo**.
3. Align your subject in the frame and take a photo.
   - You will begin recording a voice memo right after taking the photo.
4. Record a short voice memo (10 seconds maximum).
   - Press [**Shutter**] to stop recording a voice memo.

Shooting options

Learn about the options you can set in shooting mode.

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Selecting a resolution 44
Selecting image quality 44
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Preventing red-eye 47
Using the flash 47
Adjusting the amount of flash 48
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Selecting a resolution and quality

Learn how to change the image resolution and quality settings.

Selecting a resolution

As you increase the resolution, your photo or video will include more pixels, so it can be printed on larger paper or displayed on a larger screen. When you use a high resolution, the file size will also increase.

When taking a photo:

1 In Shooting mode (except mode), press [**MENU**].

2 Select **Shooting** → **Photo Size** → an option.

Option	Description
12M	**4000 X 3000**: Print on A1 paper.
10M	**3984 X 2656**: Print on A2 paper in wide ratio (3:2).
9M	**3840 X 2160**: Print on A2 paper in panorama ratio (16:9) or play back on an HDTV.
8M	**3264 X 2448**: Print on A3 paper.
5M	**2560 X 1920**: Print on A4 paper.
3M	**2048 X 1536**: Print on A5 paper.
2M	**1920 X 1080**: Print on A5 paper or play back on an HDTV.
1M	**1024 X 768**: Attach to email.

When recording a video:

1 In the mode, press [**MENU**].

2 Select **Movie** → **Movie Size** → an option.

Option	Description
1280 HQ	**1280 X 720 HQ**: Play back high-quality files on an HDTV.
1280	**1280 X 720**: Play back on an HDTV.
640	**640 X 480**: Play back on a general TV.
320	**320 X 240**: Post on a web page.

Selecting image quality

Photos you take are compressed and saved in JPEG format. Higher quality images will result in larger sizes.

1 In Shooting mode, press [**MENU**].

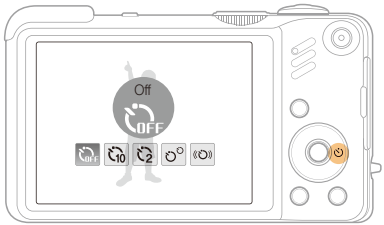
2 Select **Shooting** → **Quality** → an option.

Option	Description
SF	**Super Fine**
F	**Fine**
N	**Normal**

Using the timer

Learn how to set the timer to delay shooting.

1 In Shooting mode, press [ ].



2 Select an option.

Option	Description
	Off: The timer is not active.
	10 Sec: Take a photo in 10 seconds.
	2 Sec: Take a photo in 2 seconds.
	Double: Take a photo in 10 seconds and take another in 2 seconds.
	Motion Timer: Detect your movement and then take a photo. (p. 46)

The options may differ depending on the shooting mode.

3 Press [**Shutter**] to start the timer.

- The AF-assist light/timer lamp blinks. The camera will automatically take a photo at the specified time.

- Press [ ] to cancel the timer.
- Depending on the selected face detection option, the timer is not available or some timer options are not available.

Using the motion timer

1 In Shooting mode, press [⏲].

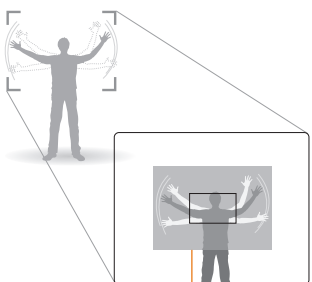
2 Select (⏲).

3 Press [**Shutter**].

4 Stand within 3 m from the camera within 6 seconds after pressing [**Shutter**].

5 Make a motion, such as waving your arms, to activate the timer.

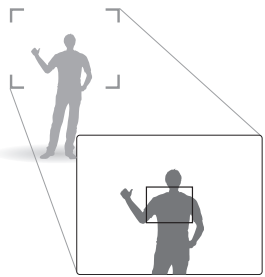
- The AF-assist light/timer lamp will start to blink rapidly when the camera detects you.



The detection range of the motion timer

6 Pose for your photo while the AF-assist light/timer lamp is blinking.

- The AF-assist light/timer lamp will stop blinking just before the camera automatically takes a photo.



The motion timer may not work when:

- you are more than 3 m away from the camera
- your movements are too subtle
- there is too much light or backlight

Shooting in the dark

Learn how to take photos at night or in low light conditions.

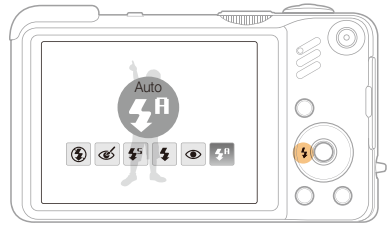
Preventing red-eye AUTO P SCN

If the flash fires when you take a photo of a person in the dark, a red glow may appear in the eyes. To prevent this, select **Red-eye** or **Red-eye Fix**.

Using the flash AUTO P A S M SCN

Use the flash when taking photos in the dark or when you need more light on your photos.

1 In Shooting mode, press [⚡].



2 Select an option.

Option	Description
⚡	**Off**: • The flash will not fire. • Camera shake warning (✋) will be displayed when shooting in low light.
⚡A Optimized	**Auto**: The camera will select a proper flash setting for the detected scene in the SCN mode.
👁	**Red-eye Fix***: • The flash fires when the subject or background is dark. • The camera corrects red-eyes through its advanced software analysis.

Option	Description
	Slow Sync: • The flash fires and the shutter stays open longer. • Select this when you want to capture ambient light to reveal more details in the background. • Use a tripod to prevent your photos from blurring.
	Fill in: • The flash always fires. • Light intensity is adjusted automatically.
	Red-eye*: • The flash fires when the subject or background is dark. • The camera reduces red-eyes.
	Auto: The flash fires automatically when the subject or background is dark.

The options may differ depending on the shooting mode.
* There is an interval between two bursts of the flash. Do not move until the flash fires a second time.

- Flash options are not available if you set burst options or select **Self-Portrait** or **Blink Detection**.
- Make sure that your subjects are within the recommended distance from the flash. (p. 104)
- If there is reflected light or much dust in the air, tiny spots may appear on your photo.

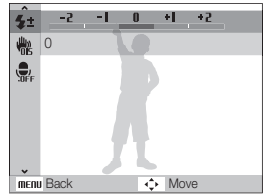
Adjusting the amount of flash P A S M

Adjust the amount of flash to avoid overexposure or underexposure.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Flash EVC**.

3 Adjust the amount of flash.



- Adjusting the flash amount may not be effective if:
  - the subject is too close to the camera
  - you set a high ISO speed
  - the exposure value is too big or too small
- In some shooting modes, you cannot use this function.

Adjusting the ISO speed P A S M

The ISO speed is the measure of a film's sensitivity to light as defined by the International Organization for Standardization (ISO). The higher ISO speed you select, the more sensitive to light your camera becomes. With a higher ISO speed, you can get a better photo without using the flash.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **ISO** → an option.

- Select ISO AUTO to use an appropriate ISO speed based on the brightness of the subject and lighting.

- The higher ISO speed you select, the more image noise you may get.
- When **Motion Capture** is set, ISO speed will be set to **Auto**.
- When you set the ISO speed to 3200, you can select only 3M or lower resolution.

Changing the camera's focus

Learn how to adjust the camera's focus according to your subjects.

Using macro

AUTO P A S M DUAL

Use macro to take close-up photos of subjects, such as flowers or insects. Refer to macro options in "Setting the focus distance."

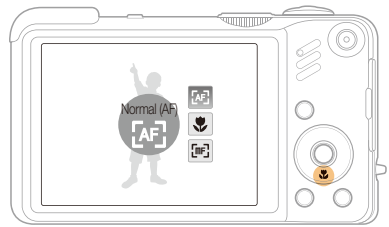
- Try to hold the camera very still to prevent blurry photos.
- Turn off the flash if the distance to the subject is less than 80 cm.

Setting the focus distance

AUTO P A S M DUAL

To take sharp photos, select the appropriate focus according to your distance from the subject.

1 In Shooting mode, press [].



2 Select an option.

Option	Description
AF	**Normal (AF)**: Focus on a subject farther than 80 cm (farther than 2 m when using zoom).
	Macro: Focus on a subject 3-80 cm (1-2 m when using zoom).
	Auto Macro: Focus on a subject farther than 3 cm (farther than 1 m when using zoom).
MF	**Manual Focus**: Focus on a subject by manually adjusting the focus distance. (p. 51)

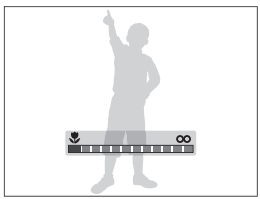
The options may differ depending on the shooting mode.

Adjusting the focus distance manually

1 In Shooting mode, press [ ].

2 Select **Manual Focus**.

3 Rotate the navigation button to adjust the focus distance.



- When you adjust the focus distance manually and the subject is out of focus, the photo may become blurry.
- If you use this function, you cannot set the face detection and focus area options.

Using tracking auto focus P A S M SCN

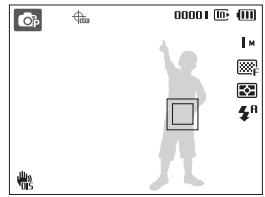
Tracking AF allows you to track and auto focus on your subject, even when you are moving.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Focus Area** → **Tracking AF**.

3 Focus on the subject you want to track and press [**OK**].

- A focus frame will appear on the subject and will follow the subject as you move the camera.



- The white frame means that your camera is tracking the subject.
- The green frame means that your subject is in focus when you half-press [**Shutter**].

4 Press [**Shutter**] to take the photo.

- Press [**OK**] to change the focus area.

- Tracking a subject may fail when:
  - the subject is too small or the subject moves excessively
  - the subject is backlit or you are shooting in a dark place
  - colors or patterns on the subject and the background are the same
  - the camera shakes excessively

  In these cases, the focus frame will appear as a white single-line frame.
- If the camera fails to track the subject, you must reselect the subject to track.
- If the camera fails to fix the focus, the focus frame will change to a red single-line frame.
- If you use this function, you cannot set face detection and photo style options.

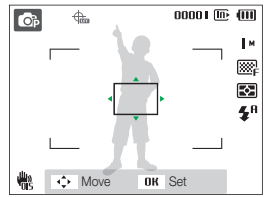
Using selection focus

P A S M DUAL

You can focus on a particular part of your scene. Select where you want to focus.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Focus Area** → **Selection AF**.



3 Rotate or press the navigation button to move the frame to the area you want to focus and press [**OK**].

4 Press [**Shutter**] to take the photo.
- Press [**OK**] to change the focus area.

If you use this function, the face detection options are not available.

Adjusting the focus area

AUTO P A S M DUAL SCN

You can get clearer photos by selecting an appropriate focus area according to your subject's location in the scene.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Focus Area** → an option.

Option	Description
	Center AF: Focus on the centre (suitable when subjects are located in the centre).
	Multi AF: Focus on one or more of 9 possible areas.
	Tracking AF: Focus on and track the subject. (p. 51)
	Selection AF: Focus on the area you select. (p. 52)

The options may differ depending on the shooting mode.

Using face detection

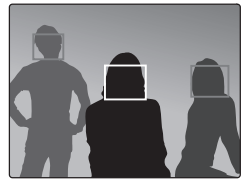
AUTO P A S M DUAL SCN

If you use face detection options, your camera can automatically detect a human face. When you focus on a human face, the camera adjusts the exposure automatically. Take photos quickly and easily by using **Blink Detection** to detect closed eyes or **Smile Shot** to capture a smiling face. You can also use **Smart Face Recognition** to register faces and prioritize the focus on them.

- In some scene modes, face detection is unavailable.
- Face detection may not be effective when:
  - the subject is far from the camera (The focus frame will appear orange for **Smile Shot** and **Blink Detection**)
  - it is too bright or too dark
  - the subject is not facing the camera
  - the subject is wearing sunglasses or a mask
  - the subject is in backlighting or the lighting condition is unstable
  - the subject's facial expression changes remarkably
- Face detection is not available when using a photo style, smart filter effect, or image adjustment option or when used with **Tracking AF**.
- Face detection is not available when using the digital zoom.
- When you use the face detection option, the digital zoom will not work.
- Depending on the selected face detection option, the timer is not available or some timer options are not available.
- Depending on the selected face detection option, some burst options are not available.
- When you take photos of detected faces, they will be registered in the face list.
- The options may differ depending on the shooting mode.
- You can view registered faces in order of priority in Playback mode. (p. 69) Even though faces are registered successfully, they may not be classified in Playback mode.
- The detected face in Shooting mode may not appear in the face list or Smart Album.

Detecting faces

Your camera automatically detects human faces (up to 10 human faces).



1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Face Detection** → **Normal**.

- The closest face appears in a white focus frame and the rest of the faces appear in grey focus frames.

- The closer you are to the subject, the quicker your camera will detect faces.
- When you use the burst option, the detected faces may not be recognized.

Taking a self-portrait shot

Take photos of yourself. The focus distance will be set to close-up and your camera will emit a beep.

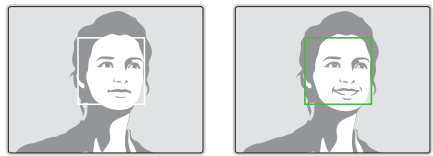
1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Face Detection** → **Self-Portrait**.

3 When your hear a quick beep, press [**Shutter**].

Taking a smile shot

The camera automatically releases the shutter when it detects a smiling face.



1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Face Detection** → **Smile Shot**.

- When your subject smiles broadly, your camera can detect the smile more easily.

Detecting eye blinking

If your camera detects closed eyes, it will automatically take 2 photos in succession.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Face Detection** → **Blink Detection**.

- Hold your camera still while "**Capturing**" is displayed on the screen.
- When blink detection fails, "**Picture taken with eyes closed**." message appears. Take another photo.

Using smart face recognition

The camera automatically registers faces that you frequently photograph (up to 10 people). This feature will automatically prioritize the focus on those faces and favorite faces. This feature is available only when you use a memory card.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Face Detection** → **Smart Face Recognition**.

The nearest face appears in a white focus frame and the rest of the faces appear in grey focus frames.

- : Indicate favorite faces
  (To register favorite faces, see page 57).
- : Indicate faces that the camera automatically registers.

- The camera may recognize and register faces incorrectly depending on lighting conditions, remarkable changes in the subject's pose or face, and whether or not the subject is wearing glasses.
- The camera can automatically register up to 12 faces. If the camera recognizes a new face when there are 12 registered faces, it will replace the face in the lowest priority with the new one.
- The camera can detect up to 10 faces in one scene.

Registering faces as your favorites (My Star)

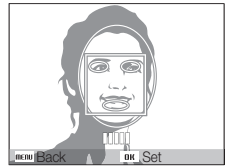
You can register your favorite faces to prioritize the focus and exposure on those faces. This feature is available only when you use a memory card.

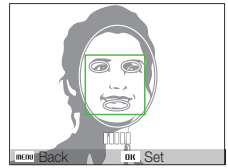
1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Smart FR Edit** → **My Star**.

3 Align your subject and press [**Shutter**] to register the face.

- If the subject's face is not aligned with the oval guideline, the white frame will not appear.
- You can take photos of a subject's face directly from the front, to the left side, to the right side, from above, or from below.
- Take photos of one person at a time when registering faces.





4 When you are finished taking the photos, the face list appears.

- Your favorite faces are indicated with a ★ on the face list.

- You can register up to 8 favorite faces.
- The flash option will be set to **Off**.
- If you register the same face twice, you can delete one of the faces in the face list.

Viewing your favorite faces

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Smart FR Edit** → **Face List** .

- To change the ranking of the favorite faces, press [**Fn**] and select **Edit Ranking**.(p. 68)
- To cancel the favorite faces, press [**Fn**] and select **Delete My Star.** (p. 68)

Adjusting brightness and color

Learn how to adjust the brightness and color for better image quality.

Adjusting the exposure manually (EV)

P A S M DUAL

Depending on the intensity of the ambient light, your photos may be too bright or dark. In these cases, you can adjust the exposure to get a better photo.

Darker (-)

Neutral (0)

Brighter (+)

1. In Shooting mode, press [**MENU**].
2. Select **Shooting** → **EV**.
3. Select a value to adjust the exposure.

- Once you adjust the exposure, the setting will remain the same. You may need to change the exposure value later to avoid overexposure or underexposure.
- If you cannot decide on an appropriate exposure, select **AEB** (Auto Exposure Bracket). The camera takes photos with different exposures: normal, underexposed, and overexposed. (p. 62)

Compensating for backlighting (ACB) P A S M

When the light source is behind your subject or there is high contrast between your subject and the background, your subject is likely to appear dark in the photo. In this case, set the Auto Contrast Balance (ACB) option.

Without ACB

With ACB

1. In Shooting mode, press [**MENU**].
2. Select **Shooting** → **ACB** → an option.

Option	Description
OFF	**Off**: ACB is off.
	On: ACB is on.

- The ACB feature is always on in the AUTO mode.
- You cannot set burst options when this feature is on.

Changing the metering option P A S M DUAL

The metering mode refers to the way in which a camera measures the quantity of light. The brightness and lighting of your photos will vary depending on the metering mode you select.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Metering** → an option.

Option	Description
	Multi: • Your camera divides the scene into several areas, and then measures the light intensity of each area. • Suitable for general photos.
	Spot: • Your camera measures only the light intensity of the very centre of the frame. • If a subject is not in the centre of the scene, your photo may be improperly exposed. • Suitable for a subject with backlighting.
	Center-weighted: • Your camera averages the meter reading of the entire frame with emphasis placed on the centre. • Suitable for photos with subjects in the centre of the frame.

Selecting a light source (White balance)

P A S M DUAL

The color of your photo depends on the type and quality of the light source. If you want the color of your photo to be realistic, select an appropriate lighting condition to calibrate the white balance, such as Auto WB, Daylight, Cloudy, or Tungsten.

AWB (Auto WB)

(Daylight)

(Cloudy)

(Tungsten)

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **White Balance** → an option.

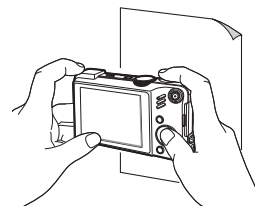
Icon	Description
AWB	**Auto WB**: Use automatic settings depending on the lighting conditions.
	Daylight: Select when taking outdoor photos on a sunny day.
	Cloudy: Select when taking outdoor photos on a cloudy day or in shadows.
	Fluorescent_H: Select when shooting under a daylight fluorescent or three-way fluorescent light.
	Fluorescent_L: Select when shooting under white fluorescent light.
	Tungsten: Select when taking indoor photos under incandescent bulbs or halogen lamps.
	Measure: Shutter (Custom setting): Use your pre-defined settings.

Defining your own white balance

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **White Balance** → **Measure: Shutter**.

3 Aim the lens at a piece of white paper.



4 Press [**Shutter**].

Using burst modes P A S M SCN

It can be difficult to take photos of fast-moving subjects or capture natural facial expressions and gestures of your subjects in photos. In these cases, select one of the burst modes.

- You can use the flash, timer, and ACB only when you select **Single**.
- When you select **Motion Capture**, the ISO speed will be set to **Auto**.
- Depending on the selected face detection option, some burst options are not available.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Drive** → an option.

Option	Description
	Single: Take a single photo.
	Continuous: • While you are pressing [**Shutter**], the camera takes photos continuously. • The maximum number of photos depends on the capacity of your memory card.
	Motion Capture: • While you are pressing [**Shutter**], the camera takes VGA photos (6 photos per second; maximum of 30 photos). • The camera automatically shows you the photos just taken and then saves them.
AEB	**AEB**: • Take 3 photos with different exposures: normal, underexposed, and overexposed. • Use a tripod to prevent blurry photos.

The options may differ depending on the shooting mode.

Improving your photos

Learn how to improve your photos by applying photo styles or colors, or make some adjustments.

Applying photo styles AUTO P A S M

Apply a different photo style to your photos, such as Soft, Vivid, or Forest.

Soft

Vivid

Forest

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Photo Style Selector** → an option.

- Select **Custom RGB** to define your own RGB tone.

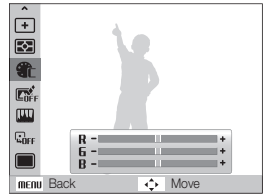
- Select **Normal** if you want to use face detection options.
- When you select Sketch, the photo will be automatically resized to 5M or smaller.
- If you use this function, you cannot set the smart filter and image adjustment options.

Defining your own RGB tone

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Photo Style Selector** → **Custom RGB**.

3 Select a color (R: Red, G: Green, B: Blue).



4 Adjust the amount of the selected color.
(-: less or +: more)

Applying smart lens effects AUTO P A S M

Apply various lens effects to your photos to create unique images.

Miniature

Vignetting

Fish-eye 1

Fish-eye 2

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Smart Filter**.

3 Select an effect.

Option	Description
OFF	**Normal**: No effect
	Miniature: Make a photo of a life-size location or object look like a photo of a miniature scale model. Blurring parts of the photo makes the scene seem much smaller than it actually is.
	Vignetting: Apply the retro-looking colors, high contrast, and strong vignette effect.
	Fish-eye 1: Distort close objects to imitate the visual effect of a fisheye lens.
	Fish-eye 2: Blacken the edges of the frame and distort objects to imitate the visual effect of a fisheye lens.

- If you select **Miniature** when recording a video, the miniature recording time is displayed with the icon and is shorter than the real recording time.
- If you select **Miniature** when recording a video, the sound will not be recorded.
- When you apply a smart filter effect while recording a video, the video will be automatically resized to 640 or smaller.
- If you use this function, you cannot set the photo style and image adjustment options.

Adjusting your photos P A S M

Adjust the contrast, sharpness, and saturation of your photos.

1 In Shooting mode, press [**MENU**].

2 Select **Shooting** → **Image Adjust**.

3 Select an adjustment option.
- Contrast
- Sharpness
- Saturation

4 Select a value to adjust the selected item.

Contrast option	Description
-	Decrease the color and brightness.
+	Increase the color and brightness.

Sharpness option	Description
-	Soften the edges on your photos (suitable for editing the photos on your computer).
+	Sharpen the edges to improve the clarity of your photos. This may also increase the noise on your photos.

Saturation option	Description
-	Decrease the saturation.
+	Increase the saturation.

- Select **0** if you do not want to apply any effects. (suitable for printing)
- When Image Adjust is set, Photo Style Selector function is not available.

Playback/Editing

Learn how to play back photos, videos, or voice memos and edit photos or videos. Also, learn how to connect your camera to your computer, photo printer, TV, or HDTV.

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Playing back

Learn actions to play back photos, videos, or voice memos, and managing files.

Starting Playback mode

View photos or play videos and voice memos stored in your camera.

1 Press [▶].

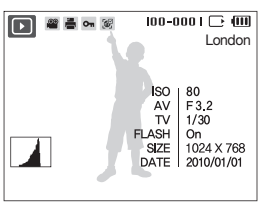
- The most recent file you have taken or recorded will be displayed.
- If the camera is off, it will turn on.

2 Press [⚡] or [⏱] to scroll through files.

- Press and hold [⚡] or [⏱] to view files quickly.

- If you want to view files stored in the internal memory, remove your memory card.
- The camera will not properly play back files that are too large or those taken with cameras from other manufacturers.

Display in Playback mode



Icon	Description
	Photo includes a voice memo
	Video file
	Print order has been set (DPOF)
	Protected file
	Photo includes a registered face; Available only when you use a memory card
100-0001	Folder name – File name
London	Shooting location display
	Histogram
ISO	ISO speed
AV	Aperture
TV	Shutter speed
FLASH	Flash option
SIZE	Photo resolution
DATE	Shooting Date and time

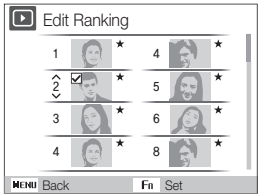
Ranking your favorite faces

You can change the ranking of your favorite faces or delete them. This feature is available only when you use a memory card.

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Face List Edit** → **Edit Ranking**.

3 Select a face from the list and press [**OK**].



4 Press [**DISP**] or [ ] to change the ranking of the face, and press [**Fn**].

Canceling your favorite faces

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Face List Edit** → **Delete My Star**.

3 Select a face and press [**OK**].

4 Press [**Fn**].

5 Select **Yes**.

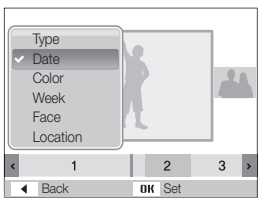
Viewing files by category in Smart Album

View and manage files by categories, such as date, file type, week, color, face, or location.

1 In Playback mode, rotate [**Zoom**] left.

2 Press [**MENU**].

3 Select a category.



Option	Description
Type	View files by the file type.
Date	View files by the date they were saved.
Color	View files by the dominant color of the image.
Week	View files by the weekday they were saved.
Face	View files by recognized faces and favorite faces. (Up to 20 people)
Loction	View files by recorded location information.

It may take some time for the camera to change the category and recognize files.

4 Press [▶] or [⏲] to scroll through files.

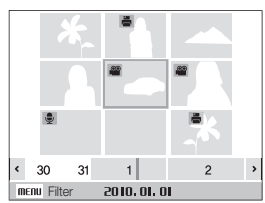
- Press and hold [▶] or [⏲] to view files quickly.

5 Press [**OK**] to return to the normal view.

Viewing files as thumbnails

Scan thumbnails of files.

In Playback mode, rotate [**Zoom**] left to display 9 or 20 thumbnails (rotate [**Zoom**] right to return to the previous mode).



To	Do this
Scroll through files	Press [**DISP**], [🌷], [▶], or [⏲].
Delete files	Press [**Fn**] and select **Yes**.

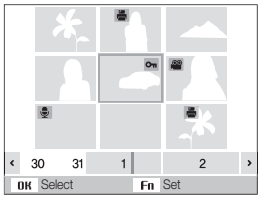
Protecting files

Protect your files from accidental deletion.

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Protect** → **Select**.
- To protect all files, select **All** → **Lock**.

3 Select the file you want to protect and press [**OK**].
- Press [**OK**] again to cancel your selection.



4 Press [**Fn**].

Deleting files

Delete single files or all files at once. You cannot delete protected files.

To delete a single file,

1 In Playback mode, select a file and press [**Fn**].

2 Select **Yes** to delete the file.

To delete multiple files,

1 In Playback mode, press [**Fn**].

2 Select **Multiple Delete**.

3 Select files you want to delete and press [**OK**].
- Press [**OK**] again to cancel your selection.

4 Press [**Fn**].

5 Select **Yes**.

To delete all files,

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Delete** → **All** → **Yes**.

Using the recycle bin

If you activate the recycle bin, files you delete will be sent to the recycle bin instead of being deleted permanently. This applies to single files or selected files only–if you choose to delete all files, those files will not be sent to the recycle bin.

To activate the recycle bin,

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Recycle Bin** → **On**.

To restore files from the recycle bin,

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Recycle Bin** → **Retrieve**.

- This function does not work for videos or voice memos.
- It may take longer to delete files when using the recycle bin function.
- If you format the internal memory, all files in the recycle folder will be deleted.
- The recycle bin will hold up to 10 MB of files. Once you exceed the 10 MB limit, the camera asks you whether to empty the recycle bin. Select **Yes** to empty the recycle bin or **No** to delete only the current file.

Copying files to the memory card

You can copy files from the internal memory to a memory card.

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **Copy to Card**.

3 Select **Yes** to copy files.

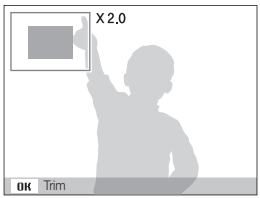
Viewing photos

Zoom in on part of a photo or view photos in a slide show.

Enlarging a photo

In Playback mode, rotate [**Zoom**] right to enlarge a photo (rotate [**Zoom**] left to reduce a photo).

The enlarged area and zoom ratio are indicated on the top of the screen. The maximum zoom ratio may vary depending on the resolution.



To	Do this
Move the enlarged area	Press [**DISP**], [✿], [⚡], or [⏲].
Trim the enlarged photo	Press [**OK**] (it will be saved as a new file).

Starting a slide show

You can apply effects and audio to your slide show.

1. In Playback mode, press [**MENU**].
2. Select **Multi Slide Show**.
3. Select a slide show effect option.
   - Skip to step 5 to start a slide show with no effects.

Option	Description
Images	Set the photos you want to view as a slide show. • **All**: View all photos in a slide show. • **Date**: View photos captured on a specific date in a slide show. • **Select**: View selected photos in a slide show.
Interval	• Set the interval between photos. • This is available when **Off** is selected in the effect option. • When used with effect options other than **Off**, the interval will be set to 1 sec.
Music	Select a background audio.
Effect	• Select a transition effect. • Select **Off** for no effects.

4 Set the slide show effect.

5 Select **Start** → **Play**.

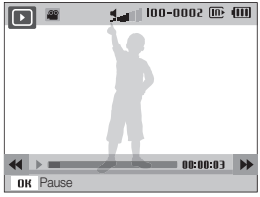
- To loop the slide show, select **Repeat**.
- Press [**OK**] to pause or resume the slide show.

To stop the slide show and switch to Playback mode, press [**OK**] and then [ ] or [ ].

Playing a video

You can play a video, capture an image from a video, or crop a video.

1 In Playback mode, select a video and press [**OK**].



2 Use the following buttons to control playback.

Press	To
[ ]	Scan backward.
[**OK**]	Pause or resume playback.
[ ]	Scan forward.
[Zoom] left or right	Adjust the volume level.

Trimming a video during playback

1 Press [**OK**] at the point where you want the new video to begin and rotate [**Zoom**] right.

2 Press [**OK**] to resume playback.

3 Press [**OK**] at the point where you want the new video to end and rotate [**Zoom**] right.

4 Select **Yes**.

- The original video should be at least 10 seconds long.
- The edited video will be saved as a new file.

Capturing an image during playback

5 Press [**OK**] at the point where you want to save a still image.

6 Press [ ].

A captured image will have the same file size as the original video file and will be saved as a new file.

Playing voice memos

Playing a voice memo

1 In Playback mode, select a voice memo and press [**OK**].

2 Use the following buttons to control playback.

Press	To
[ ]	Scan backward.
[**OK**]	Pause or resume playback.
[ ]	Scan forward.
[ ]	Stop playback.
[**Zoom**] left or right	Adjust the volume level.

Playing a voice memo added to a photo

In Playback mode, select a photo that includes a voice memo and press [**OK**].

- Press [**OK**] to pause or resume playback.

Editing a photo

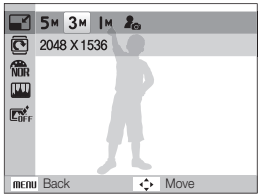
Perform photo editing tasks, such as resizing, rotating, eliminating red-eyes, and adjusting brightness, contrast, or saturation.

Edited photos will be saved as new files.

Resizing photos

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Resize** → an option.

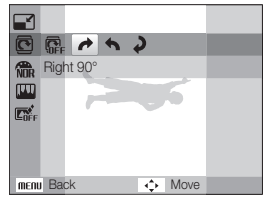


- Select to save the photo as a start image. (p. 91)
- Available options differ depending on the size of the selected photo.

Rotating a photo

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Rotate** → an option.



Depending on the original photo size, the rotated photo may be resized to a lower resolution.

Applying photo styles

Apply a different photo style to the photo, such as Soft, Vivid, or Forest.

Soft

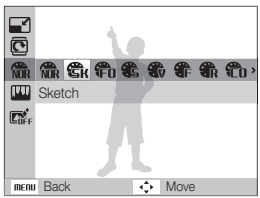
Vivid

Forest

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Photo Style Selector** → an option.

- Select **Custom RGB** to define your own RGB tone.

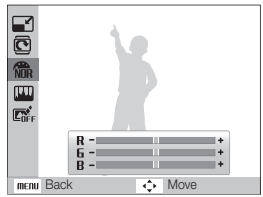


Defining your own RGB tone

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Photo Style Selector** → **Custom RGB**.

3 Select a color (R: Red, G: Green, B: Blue).



4 Adjust the amount of the selected color.
(-: less or +: more)

Correcting exposure problems

Adjust ACB (Auto Contrast Balance), brightness, contrast, or saturation; remove red-eye; hide facial imperfections; or add noise to the photo.

Adjusting ACB (Auto Contrast Balance)

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Image Adjust** → **ACB**.

Removing red-eye

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Image Adjust** → **Red-eye Fix**.

Hiding facial imperfections

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Image Adjust** → **Face Retouch**.

3 Select a level.
- As the number increases, the face becomes clearer.

Adjusting brightness/contrast/saturation

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Image Adjust**.

3 Select an adjustment option.
- : Brightness
- : Contrast
- : Saturation

4 Select a value to adjust the selected item.
(-: less or +: more)

Adding noise to the photo

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Image Adjust** → **Add Noise**.

Applying smart lens effects

Apply various lens effects to your photos to create unique images.

Miniature

Vignetting

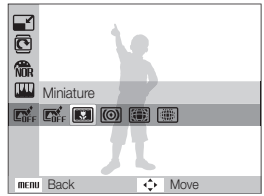
Fish-eye 1

Fish-eye 2

1 In Playback mode, select a photo and press [**MENU**].

2 Select **Edit** → **Smart Filter**.

3 Select an effect.



Creating a print order (DPOF)

Select photos to be printed and set options, such as number of copies or paper size.

- The memory card can be taken to a print shop that supports DPOF (Digital Print Order Format) or you can print photos directly through a DPOF-compatible printer at home.
- Wide photos may print with the left and right edges cut off, so be aware of the dimensions of your photos.
- You cannot set the DPOF for the photos stored in the internal memory.

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **DPOF** → **Standard** → an option.

Option	Description
Select	Print the selected photos.
All	Print all photos.
Reset	Reset your settings.

3 If you select **Select**, scroll to a photo and rotate [**Zoom**] left or right to select the number of copies. Repeat for the photos you want and press [**Fn**].

- If you select **All**, press [**DISP**] or [ ] to select the number of copies and press [**OK**].

4 Press [**MENU**].

5 Select **File Options** → **DPOF** → **Size** → an option.

Option	Description
Select	Specify the print size for the selected photo.
All	Specify the print size for all photos.
Reset	Reset your settings.

6 If you select **Select**, scroll to a photo and rotate [**Zoom**] left or rignt to select the print size. Repeat for the photos you want and press [**Fn**].

- If you select **All**, press [**DISP**] or [ ] to select the print size and press [**OK**].

Printing photos as thumbnails

1 In Playback mode, press [**MENU**].

2 Select **File Options** → **DPOF** → **Index** → **Yes**.

If you specify the print size, you can print photos only with DPOF 1.1-compatible printers.

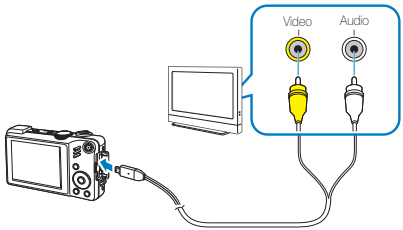
Viewing files on a TV or HDTV

Play back photos or videos by connecting your camera to a TV using the provided A/V cable.

1 Select a video signal output according to your country or region. (p. 93)

2 Turn off your camera and TV.

3 Connect your camera to your TV using the A/V cable.



4 Turn on your TV and select the video output mode using the TV remote control.

5 Turn on your camera and press [▶].

6 View photos or play videos using the buttons on your camera.

- On some TVs, digital noise may occur or part of an image may not appear.
- Images may not appear centred on the TV screen depending on your TV settings.
- You can capture photos or videos while the camera is connected to a TV.

Viewing files on an HDTV

You can view high-quality and uncompressed photos or videos on an HDTV using the optional HDMI cable. HDMI (High Definition Multimedia Interface) is supported by most HDTVs.

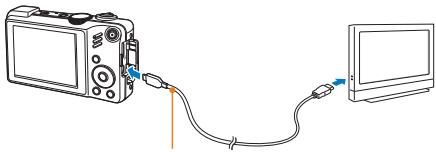
1 In Shooting or Playback mode, press [**MENU**].

2 Select **Settings** → **HDMI Size**.

3 Select an HDMI resolution.

4 Turn off your camera and HDTV.

5 Connect your camera to your HDTV using the optional HDMI cable.



6 Turn on your camera.

- The HDTV will be powered on automatically and the camera screen will be displayed.

7 View files using the buttons on your camera or a remote control of your camera or HDTV.

Transferring files to your computer (for Windows)

Transfer files to your computer using the built-in Intelli-studio program. You can also edit files or upload files to your favorite websites.

Requirements for Intelli-studio

Item	Requirements
CPU	Pentium 4, 3.2 GHz or higher (AMD Athlon™ 64FX, 2.6GHz or better)
RAM	Minimum 512 MB RAM (1 GB and above recommended)
OS	Windows XP SP2/Vista/7
Hard disk capacity	250 MB or more (1 GB or more recommended)
Others	• CD-ROM drive • nVIDIA Geforce 7600GT or higher/ATI X1600 series or higher • 1024 x 768 pixels, 16-bit color display compatible monitor (1280 x 1024 pixels, 32-bit color display recommended) • USB port, Microsoft DirectX 9.0c or later

- Intelli-studio may not perform correctly on some computers, even when the computer meets the requirements.
- If your computer does not meet the requirements, videos may not play correctly or it may take longer to edit videos.
- Install DirectX 9.0c or above before you use the program.
- You must use Windows XP/Vista/7 or Mac OS 10.4 or later to connect the camera as a removable disk.

Using a self-assembled PC or a PC and OS that are not supported may void your warranty.

Transferring files using Intelli-studio

Intelli-studio will start automatically when you connect the camera to your computer with the USB cable.

The battery will be charged while the camera is connected to a computer with the USB cable.

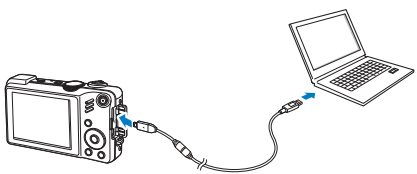
1 In Shooting or Playback mode, press [**MENU**].

2 Select **Settings** → **PC Software** → **On**.

3 Turn off the camera.

4 Connect the camera to your computer with the USB cable.

You must plug the end of the cable with the indicator light (▲) into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.



5 Turn on the camera.

- The computer recognizes the camera automatically.

If you set the USB option to **Select Mode**, select **Computer** from the pop-up window.

6 Select a folder on your computer to save new files.

- If your camera has no new files, the pop-up window for saving new files will not appear.

7 Select **Yes**.

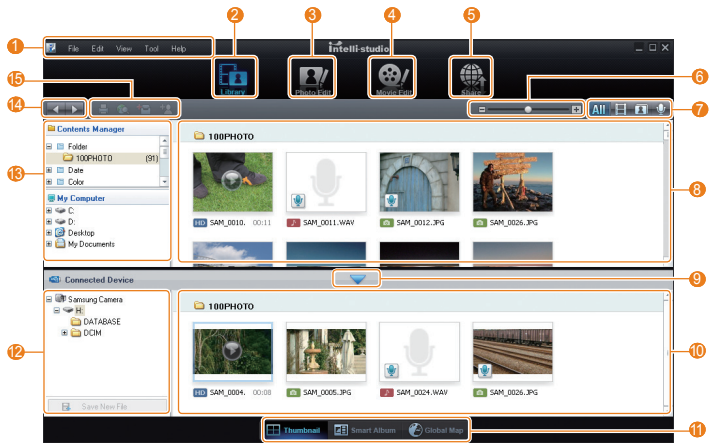
- New files will be transferred to the computer.

For Windows Vista, select **Run iStudio.exe** from the AutoPlay window.

Using Intelli-studio

Intelli-studio is a built-in program that allows you to play back and edit files. You can also upload files to websites, such as Flickr or YouTube. For details, select **Menu** → **Help** in the program.

- If you install Intelli-studio on your computer, the program will launch more quickly. To install the program, select **Menu** → Install **Intelli-studio on PC**.
- You cannot edit files directly on the camera. Transfer files to a folder on your computer before editing.
- You cannot copy files in your computer to the camera.
- Intelli-studio supports the following formats:s
  - Videos: MP4 (Video: H.264, Audio: AAC), WMV (WMV 7/8/9)
  - Photos: JPG, GIF, BMP, PNG, TIFF



Iteam	Requirements
❶	Open menus
❷	Display files in the selected folder
❸	Change to the Photo edit mode
❹	Change to the Video edit mode
❺	Change to the Sharing mode (You can send files by email or upload files to websites, such as Flickr or YouTube.)
❻	Enlarge or reduce the thumbnails in the list
❼	Select a file type
❽	View files of the selected folder on your computer
❾	Show or hide files of the connected camera
❿	View files of the selected folder on the camera
⓫	View files as thumbnails, in Smart Album, or on a map
⓬	Browse folders in the connected device
⓭	Browse folders in your computer
⓮	Move to the previous or next folder
⓯	Print files, view files on a map, store files in My Folder, or register faces

Transferring files by connecting the camera as a removable disk

You can connect the camera to your computer as a removable disk.

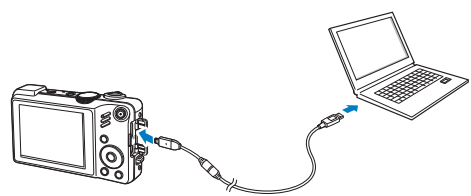
1 In Shooting or Playback mode, press [**MENU**].

2 Select **Settings** → **PC Software** → **Off**.

3 Turn off the camera.

4 Connect the camera to your computer with the USB cable.

You must plug the end of the cable with the indicator light (▲) into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.



5 Turn on the camera.
- The computer recognizes the camera automatically.

If you set the USB option to **Select Mode**, select **Computer** from the pop-up window.

6 On your computer, select **My computer** → **Removable Disk** → **DCIM** → **100PHOTO**.

7 Select the files you want and drag or save them to your computer.

Disconnecting the camera (for Windows XP)

The way to disconnect the USB cable for Windows Vista/7 is similar.

1 If the status lamp on your camera is blinking, wait until it stops.

2 Click on the tool bar at the bottom right of your PC screen.

3 Click the pop-up message.

4 Remove the USB cable.

The camera may not be removed safely when Intelli-studio is running. End the program before disconnecting the camera.

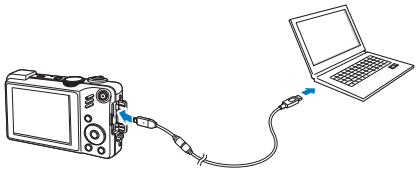
Transferring files to your computer (for Mac)

When you connect the camera to a Macintosh computer, the computer will recognize the device automatically. You can transfer files directly from the camera to the computer without installing any programs.

Mac OS 10.4 or later is supported.

1 Connect your camera to a Macintosh computer with the USB cable.

You must plug the end of the cable with the indicator light (▲) into your camera. If the cable is reversed, it may damage your files. The manufacturer is not responsible for any loss of data.



2 Turn on the camera.

- The computer recognizes the camera automatically and a removable disk icon will be displayed.

If you set the USB option to **Select Mode**, select **Computer** from the pop-up window.

3 Double-click the removable disk icon.

4 Transfer photos or videos to the computer.

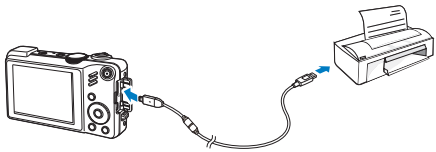
Printing photos with a photo printer (PictBridge)

Print photos with a PictBridge-compatible printer by connecting your camera directly to the printer.

1 In Shooting or Playback mode, press [**MENU**].

2 Select **Setting** → **USB** → **Printer**.

3 With the printer on, connect your camera to the printer with the USB cable.

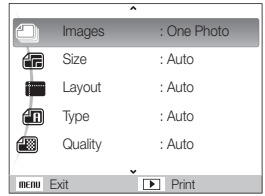


4 Turn on your camera.
- The printer recognizes the camera automatically.

5 Press [ϟ] or [⏲] to select a photo.
- Press [**MENU**] to set printing options. See "Configuring print settings."

6 Press [**OK**] to print.
- Printing starts. Press [ϟ] to cancel printing.

Configuring print settings



Option	Description
	Images: Select whether to print the current photo or all photos.
	Size: Specify the size of the print.
	Layout: Create thumbnail prints.
	Type: Select the type of paper.
	Quality: Set the printing quality.
	Date: Set to print the date.
	File Name: Set to print the name of the file.
	Reset: Reset the print options.

Some options are not supported by some printers.

Appendixes

Refer to settings, error messages, specifications, and maintenance tips.

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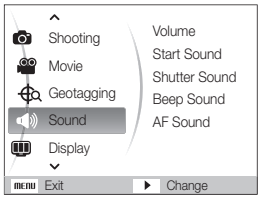
Camera settings menu

Learn about various options to configure your camera's settings.

Accessing the settings menu

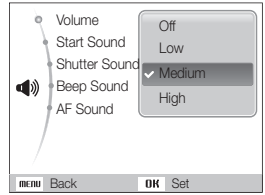
1 In Shooting or Playback mode, press [**MENU**].

2 Select a menu.



Menu	Description
	Sound: Set various camera sounds and volume. (p. 91)
	Display: Customize the display settings, such as language and brightness. (p. 91)
	Settings: Change the settings for the camera system, such as memory format, default file name, and USB mode. (p. 92-94)

3 Select an option and save your settings.



4 Press [**MENU**] to return to the previous screen.

Sound

* Default

Item	Description
Volume	Adjust the volume of any sound. (**Off**, **Low**, **Medium***, **High**)
Start Sound	Select a sound to be emitted when turning on your camera. (**Off***, **1**, **2**, **3**)
Shutter Sound	Select a sound to be emitted when pressing the shutter button. (**Off**, **1***, **2**, **3**)
Beep Sound	Select a sound to be emitted when pressing the buttons or switching modes. (**Off**, **1***, **2**, **3**)
AF Sound	Set a sound to be emitted when half-pressing the shutter button. (**Off**, **On***)

Display

* Default

Item	Description
Language	Select a language for the display text.
Function Description	Display a brief description of an option or menu. (**Off**, **On***)
Grid line	Select a type of the grid lines that helps you to compose a scene. (**2 X 2***, **3 X 3**, **X**, **+**)
Start Image	Set a start image to display when the camera turns on. • **Off***: Display no start image. • **Logo**: Display a default image stored in the internal memory. • **User Image**: Display the image you want. (p. 75) • Only one start image will be saved in the internal memory. • If you select a new photo as a start image or reset your camera, the current image will be deleted. • A wide image or image in 3:2 ratio cannot be set as a start image.
Display Brightness	Adjust the brightness of the screen. (**Auto***, **Dark**, **Normal**, **Bright**) **Normal** is fixed in Playback mode even if **Auto** is selected.
Quick View	Set the duration for reviewing a captured image before returning to Shooting mode. (**Off**, **0.5 sec***, **1 sec**, **3 sec**)
Power Save	If you perform no operations for 30 seconds, the camera automatically switches to Power save mode (press any button to deactivate the Power save mode). (**Off***, **On**)

Settings

* Default

Item	Description
Format	Format the internal memory and the memory card (all files-including the protected files-will be deleted). (**Yes**, **No**) If you use a memory card used with cameras from different manufacturers or a memory card reader, or one formatted on a computer, your camera may read the card incorrectly. Format the card before using it.
Reset	Reset menus and shooting options (date and time, language, and video output settings will not be reset). (**Yes**, **No**)
Date & Time	Set the date and time and select a date format. (**dd/mm/yyyy**, **mm/dd/yyyy**, **yyyy/mm/dd**, **Off***)
Time Zone	Select a region and set the daylight-saving time (DST).

* Default

Item	Description
File No.	Specify how to name files. • **Reset**: Set the file number to start from 0001 when inserting a new memory card, formatting a memory card, or deleting all files. • **Series***: Set the file number to follow the previous file number when inserting a new memory card, formatting a memory card, or deleting all files. • The default name of the first folder is 100PHOTO and the default name of the first file is SAM_0001. • The file number increases one by one from SAM_0001 to SAM_9999. • The folder number increases one by one from 100PHOTO to 999PHOTO. • The maximum number of files that can be stored in one folder is 9999. • The camera defines file names according to the Digital rule for Camera File system (DCF) standard. If you change the names of files intentionally, the camera may not play back the files.

* Default

Item	Description
Imprint	Set whether to display the date and time on your photos when printing. (**Off***, **Date**, **Date & Time**) • The date and time will be displayed on the bottom-right corner of the photo in yellow. • The date and time may not be printed on some printer models. • If you select in the **SCN** mode, the date and time will not be displayed.
Auto Power Off	Set the camera to automatically turn off when you are not using it. (**Off**, **1 min**, **3 min***, **5 min**, **10 min**) • Your settings will not change after replacing the battery. • The camera will not automatically turn off when: - it is connected to a computer or printer - you are playing a slide show or videos - you are recording a voice memo

* Default

Item	Description
Video Out	Set the video signal output according to your region. • **NTSC**: USA, Canada, Japan, Korea, Taiwan, Mexico. • **PAL*** (supports only BDGHI): Australia, Austria, Belgium, China, Denmark, Finland, Germany, England, Italy, Kuwait, Malaysia, New Zealand, Singapore, Spain, Sweden, Switzerland, Thailand, Norway.
AF Lamp	Set an assistant light to help you focus in dark places. (**Off**, **On***)
Anynet+ (HDMI-CEC)	Set to control the camera connected to a Samsung HDTV that supports Anynet+(CEC) with the TV remote control. • **On***: Control the camera with an HDTV remote control. • **Off**: View files without using an HDTV remote control.

* Default

Item	Description
HDMI Size	Select the resolution of photos when playing back files on an HDTV with the HDMI cable. (NTSC: **1080i***, **720p**, **480p**/ PAL: **1080i***, **720p**, **576p**) If the HDTV does not support the selected resolution, the HDTV automatically selects the next lower resolution.
USB	Set the function to use via a USB connection with a computer or printer. • **Computer***: Connect your camera to a computer for transferring files. • **Printer**: Connect your camera to a printer for printing files. • **Select Mode**: Select a USB mode when you connect your camera to another device.
PC Software	Set Intelli-studio to start automatically when you connect your camera to your computer. (**Off**, **On***)

Error messages

When the following error messages appear, try these remedies.

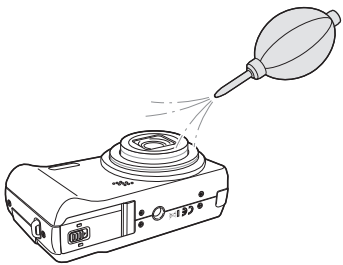
Error message	Suggested remedies
Card Error	• Turn off your camera and then turn it on again. • Remove your memory card and insert it again. • Format your memory card. (p. 92)
Card Locked	Unlock the memory card.
DCF Full Error	File names do not match the DCF standard. Transfer the files on the memory card to your computer and format the card. (p. 92)
File Error	Delete the damaged file or contact a service centre.
Low Battery	Insert a charged battery or recharge the battery.
Memory Full	Delete unnecessary files or insert a new memory card.
No Image File	Take photos or insert a memory card that has some photos.
Card not supported.	The inserted memory card is not available with your camera. Use only the memory card that fits to the standardization of manufactures.

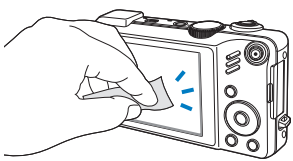
Camera maintenance

Cleaning your camera

Camera lens and display

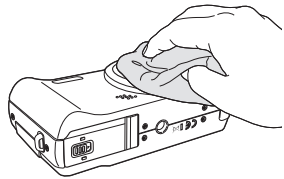
Use a blower brush to remove dust and wipe the lens gently with a soft cloth. If any dust remains, apply lens cleaning liquid to a piece of cleaning paper and wipe gently.





Camera body

Wipe gently with a soft, dry cloth.

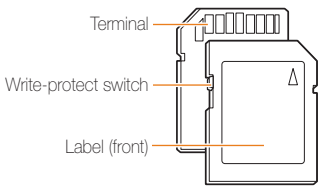


- Never use benzene, thinners, or alcohol to clean the device. These solutions can damage the camera or cause it to malfunction.
- Do not press on the lens cover or use a blower brush on the lens cover.

About memory cards

Memory cards you can use

You can use SD (Secure Digital) or SDHC (Secure Digital High Capacity) memory cards.



You can prevent files from being deleted by using a write-protect switch on the SD or SDHC card. Slide the switch down to lock or slide it up to unlock. Unlock the card when shooting.

Memory card capacity

The memory capacity may differ depending on shooting scenes or shooting conditions. These capacities are based on a 1 GB SD card:

	Size	Super fine	Fine	Normal	60 FPS	30 FPS	15 FPS
Photos	12M	147	284	403	-	-	-
	10M	167	313	441	-	-	-
	9M	202	367	528	-	-	-
	8M	211	374	537	-	-	-
	5M	339	566	792	-	-	-
	3M	532	802	1065	-	-	-
	2M	870	1144	1437	-	-	-
	1M	1471	1670	1872	-	-	-
* Videos	1280 HQ	-	-	-	-	12' 49"	23' 23"
	1280	-	-	-	-	14' 27"	26' 04"
	640	-	-	-	-	25' 00"	48' 02"
	320	-	-	-	50' 54"	73' 27"	94' 20"

* The recordable time may vary if you use the zoom. Several videos were recorded in succession to determine the total recording time.

About the battery

Use only Samsung-approved batteries.

Battery specifications

Mode	SLB-11A
Type	Lithium-ion battery
Cell capacity	1,130 mAh
Voltage	3.8 V
Charging time (when the camera is switched off)	Approx. 190 min

Battery life

Shooting time / Number of photos		Shooting conditions (when the battery is fully charged)
Photos	Approx. 120 min/ Approx. 240 photos	This is measured under the following conditions: in the AUTO mode, 12M resolution, Fine quality, OIS on. 1. Set the flash option to **Fill in**, take a single shot, and zoom in or out. 2. Set the flash option to **Off**, take a single shot, and zoom in or out. 3. Perform steps 1 and 2 for 30 seconds and repeat for 5 minutes. Then turn off the camera for 1 minute. 4. Repeat steps 1 to 3.
Videos	Approx. 100 min	Record videos at 1280 X 720 HQ resolution and 30 fps.

- The figures above are measured by Samsung's standards and may differ depending on actual usage.
- Several videos were recorded in succession to determine the total recording time.

Notes about charging the battery

- If the indicator light is off, make sure that the battery is inserted correctly.
- Turn off your camera when charging.
- Turn on your camera after charging the battery for more than 10 minutes.
- Using the flash or recording videos depletes the battery quickly. Charge the battery until the indicator light turns green.
- If the indicator light blinks in red or does not illuminate, 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 indicator light may turn orange. Charging will start when the battery cools down.

Notes about charging with a computer connected

- Use only the provided USB cable.
- The battery may not be charged 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)

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 adapters and charge the battery only by the method described in this user manual.
- Do not expose the battery to temperatures of 60 °C (140°F) or above.
- 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 allow the battery to come in contact with moisture or liquids.
- 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, Lithiumion replacement batteries.
- Do not disassemble or puncture the battery 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.

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.

Before contacting a service centre

If you are having trouble with your camera, try these troubleshooting procedures before contacting a service centre. If you have attempted the troubleshooting solution and are still having problems with your device, contact your local dealer or service centre.

Situation	Suggested remedies
Cannot turn on the camera	• Make sure that the battery is inserted. • Make sure 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. (p. 91) • The camera may turn off to prevent the memory card from being damaged due to an impact. Turn on your camera again.
The camera is losing battery power quickly	• The battery may lose power more quickly in low temperatures (below 0° C). 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 take photos	• There is no space on the memory card. Delete unnecessary files or insert a new card. • Format the memory card. (p. 92) • The memory card is defective. Get a new memory card. • The memory card is locked. Unlock the card. (p. 95) • Make sure that the camera is switched on. • Charge the battery. • Make sure that the battery is inserted correctly.
The camera freezes	Remove the battery and insert it again.
The flash does not work	• The flash option may be set to **Off**. (p. 47) • You cannot use the flash in the DUAL, , or some **SCN** modes.
The flash fires unexpectedly	The flash may fire due to static electricity. This is not a malfunction of the camera.

Situation	Suggested remedies
The date and time are incorrect	Set the date and time in the display settings menu.
The display or buttons do not work	Remove the battery and insert it again.
The memory card has an error	The memory card has not been reset. Format the card. (p. 92)
Cannot play back 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, play back files on your computer.
The photo is blurry	• Make sure that the focus option you set is suitable for close-up shots. (p. 50) • Make sure that the subject is within range of the flash. (p. 104) • Make sure that the lens is clean. If not, clean the lens. (p. 96)
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. 60)

Situation	Suggested remedies
The photo is too bright	Your photo is overexposed. • Adjust the exposure value. (p. 59) • Adjust the aperture value or the shutter speed. (p. 33) • Turn off the flash. (p. 47) • Adjust the ISO speed. (p. 49)
The photo is too dark	Your photo is underexposed. • Adjust the exposure value. (p. 59) • Adjust the aperture value or the shutter speed. (p. 33) • Turn on the flash. (p. 47) • Adjust the ISO speed. (p. 49)
The photo is distorted	The wide-angle lens may create distortions on the image. This is the normal feature of the wide-angle lens.
The TV does not display your photos	• Make sure that the camera is correctly connected to the external monitor with the A/V cable. • Make sure that your memory card contains photos.

Situation	Suggested remedies
Your computer does not recognize your camera	• Make sure that the USB cable is connected correctly. • Make sure that your camera is switched on. • Make sure that you are using a supported operating system.
Your computer disconnects the camera while transferring files	The file transmission may be interrupted by static electricity. Disconnect the USB cable and connect it again.
Your camera cannot play videos	• You can play videos only with the Intellistudio program. Install the program on your computer. (p. 83) • Make sure that the USB cable is connected correctly.

Situation	Suggested remedies
Intelli-studio is not functioning properly	• End Intelli-studio and restart the program. • You cannot use Intelli-studio on Macintosh computers. • Make sure that the **PC Software** is set to **On** in the settings menu. (p. 94) • Depending on your computer's specification and environments, the program may not launch automatically. In this case, click **Start** → **My Computer** → **Intelli-studio** → **iStudio.exe** on your computer

Camera specifications

Image sensor	
Type	1/2.3" (Approx. 1.10 cm) CCD
Effective pixels	Approx. 12.0 mega-pixels
Total pixels	Approx. 14.2 mega-pixels
Lens	
Focal length	Schneider-KREUZNACH lens f = 3.9 ~ 58.5mm (35 mm film equivalent: 24 ~ 360mm), 15X optical zoom
F-stop range	F3.2(W) ~ F5.8(T)
Digital zoom	• Still image mode: 1.0X - 5.0X • Play mode: 1.0X - 12.5X (depending on image size)
Display	
Type	AMOLED 3.0"
Feature	VGA 614,400 dots
Focusing	
Type	TTL auto focus (Multi AF, Center AF, Selection AF, Tracking AF, Manual Focus, Face Detection AF, Face Recognition AF)

Range

	Wide (W)	Tele (T)
Normal	80 cm - infinity	2 m - infinity
Macro	3 cm - 80 cm	1 m - 2 m
Auto Macro	3 cm - infinity	1 m - infinity
Manual	3 cm - infinity	1 m - infinity

Shutter speed
• Auto: 1- 1/2,000 sec. • Manual: 16 - 1/2,000 sec. • Night: 8 - 1/2,000 sec. • Firework: 2 sec.

Exposure	
Control	Program AE, Shutter Priority AE, Aperture Priority AE, Manual Exposure
Metering	Multi, Spot, Center-weighted
Compensation	±2EV (1/3EV steps)
ISO equivalent	Auto, 80, 100, 200, 400, 800, 1600, 3200
Flash	
Mode	Off, Auto, Red-eye, Fill in, Slow Sync, Red-eye Fix
Range	• Wide: 0.3 m - 5.0 m (ISO Auto) • Tele: 0.5 m - 3.0 m (ISO Auto)
EVC	±1EV (1/2 steps)
Recharging time	Approx. 4 sec.

Shake reduction
DUAL IS [Optical Image Stabilization (OIS) + Digital Image Stabilization (DIS)]

Effect	
Shooting mode	• Photo Style Selector: Normal, Soft, Vivid, Forest, Retro, Cool, Calm, Classic, Negative, Custom RGB, Sketch, Defog • Image Adjust: Sharpness, Contrast, Saturation • Smart Filter: Normal, Miniature, Vignetting, Fish-eye 1, Fish-eye 2

White Balance
Auto WB, Daylight, Cloudy, Fluorescent_H, Fluorescent_L, Tungsten, Custom Set

Shooting	
Photos	• Modes: Smart Auto (Portrait, Night Portrait, Backlight Portrait, Backlight, Landscape, White, Motion, Tripod, Night, Macro, Macro Text, Blue Sky, Sunset Sky, Natural Green, Natural Portrait, Macro Color, Firework), Auto, Program, Aperture Priority, Shutter Priority, Manual, DUAL IS, Movie, Scene (Beauty Shot, Night, Portrait, Children, Landscape, Text, Close Up, Sunset, Dawn, Backlight, Firework, Beach & Snow, Frame Guide), Map View • Drive: Single, Continuous, Motion Capture, AEB • Timer: Off, 10 sec, 2 sec, Double, Motion Timer
Videos	• Format: H.264 (Max recording time: 20 min) • Stereo recording with volume control and mute in zooming • Size: 1280 x 720 High Quality, 1280 x 720 Standard Quality, 640 x 480, 320 x 240 • Frame Rate: 60 FPS, 30 FPS, 15 FPS • Voice: Off, On • OIS: On, Off • Video editing (embedded): Pause during recording, Still image capture, Time trimming • Effect: Photo Style Selector, EV, White Balance, Metering, Smart Filter

Playback	
Type	Single image, Thumbnails, Multi slide show, Movie clip, Smart Album
Edit	Resize, Rotate, Photo Style Selector, Image Adjust, Smart Filter
Effect	• Photo Style Selector: Normal, Soft, Vivid, Forest, Retro, Cool, Calm, Classic, Negative, Custom RGB, Sketch, Defog • Image Adjust: ACB, Red-eye Fix, Face Retouch, Brightness, Contrast, Saturation, Add Noise • Smart Filter: Normal, Miniature, Vignetting, Fish-eye 1, Fish-eye 2

Voice recording	
• Voice Recording (Max 10 hours) • Voice Memo in a photo (Max. 10 sec.) • Stereo recording	
Storage	
Media	• Internal memory: Approx. 128 MB • External memory (Optional) - SD card (up to 2 GB guaranteed) - SDHC card (up to 8 GB guaranteed) Internal memory capacity may not match these specifications.
File format	• Photo: JPEG (DCF), EXIF 2.21, DPOF 1.1, PictBridge 1.0 • Video: MP4 (H.264 (MPEG-4.AVC)) • Audio: WAV

Image size	For 1GB SD			
		Super fine	Fine	Normal
	12M 4000 x 3000	147	284	403
	10M 3984 x 2656	167	313	441
	9M 3840 x 2160	202	367	528
	8M 3264 x 2448	211	374	537
	5M 2560 x 1920	339	566	792
	3M 2048 x 1536	532	802	1065
	2M 1920 x 1080	870	1144	1437
	1M 1024 x 768	1471	1670	1872
	These figures are measured under Samsung's standard conditions and may vary depending on shooting conditions and camera settings.			
Interface				
Digital output connector	USB 2.0 (20 pin)			
Audio output	Mono (Internal speaker), Stereo (Microphone)			
Video output	• AV: NTSC, PAL (selectable) • HDMI 1.4: NTSC, PAL (selectable)			
DC power input connector	20 pin, 4.4 V			

Power source	
Rechargeable battery	Lithium-ion battery (SLB-11A, 1,130 mAh)

The power source may differ depending on your region.

Dimensions (W x H x D)
106.6 x 60.5 x 28 mm

Weight
214.6 g (without battery and memory card)

Operating temperature
0 - 40˚C

Operating humidity
5 - 85 %

Software
Intelli-studio

Specifications are subject to change without prior notice.

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)
(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Samsung Eco-mark
It is Samsung's own symbol mark is used to effectively communicate Samsung's environmental friendly product activities to the consumers. The mark represents Samsung's continuous effort on development of environmental conscious products.

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

Correct disposal of batteries in this product
(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

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Please refer to the warranty that came with your product or visit our website http://www.samsungimaging.com/ for after-sales service or inquiries.

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CE